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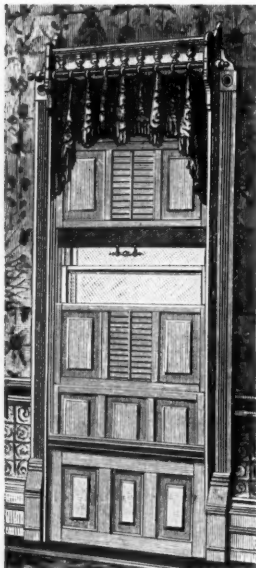
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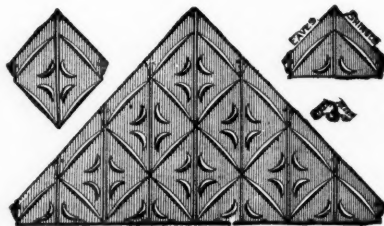
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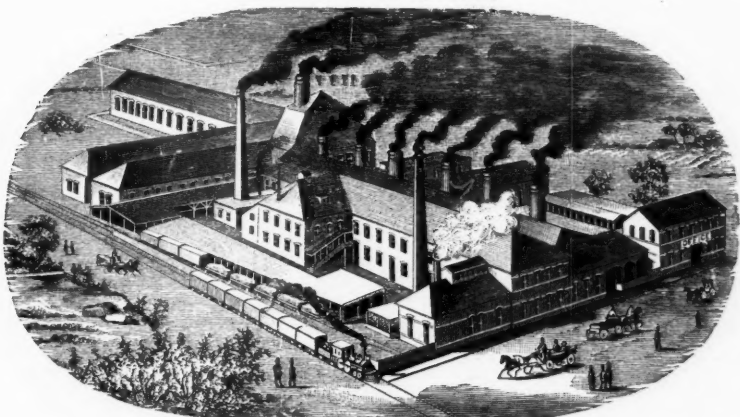
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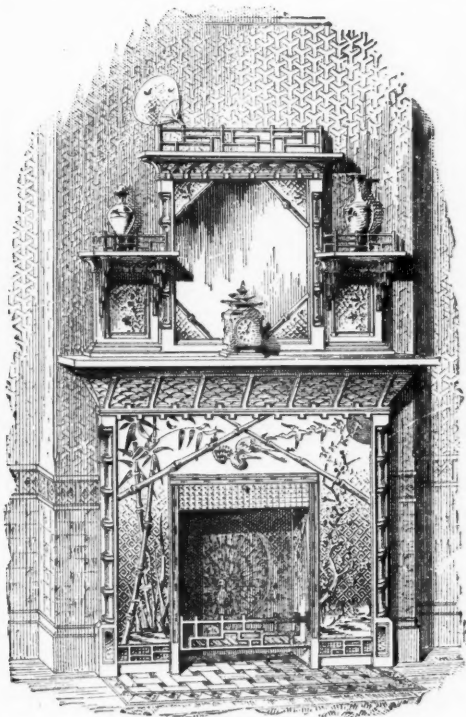
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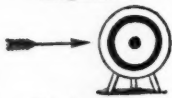
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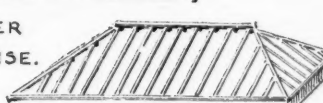
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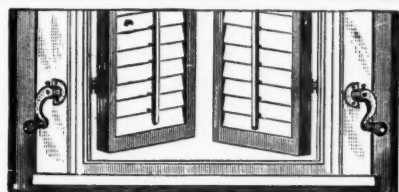


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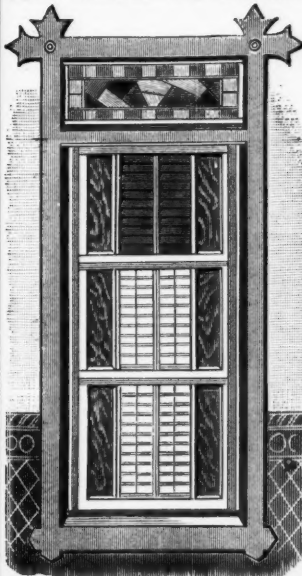
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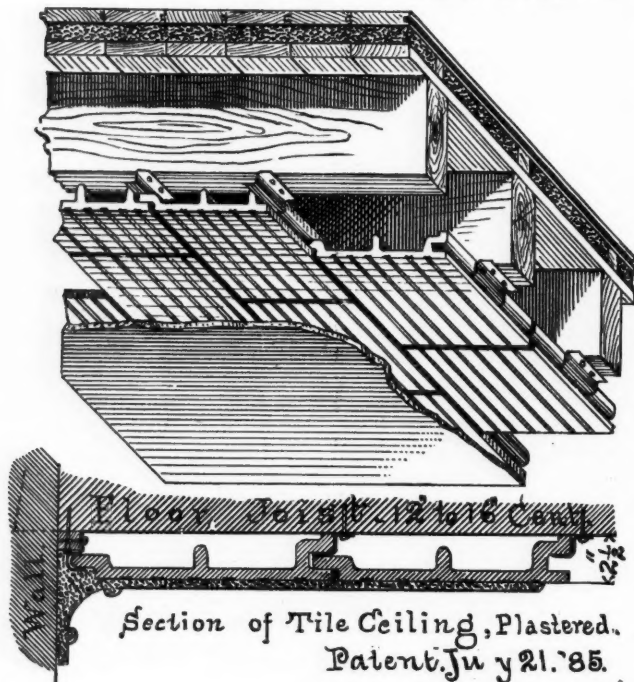
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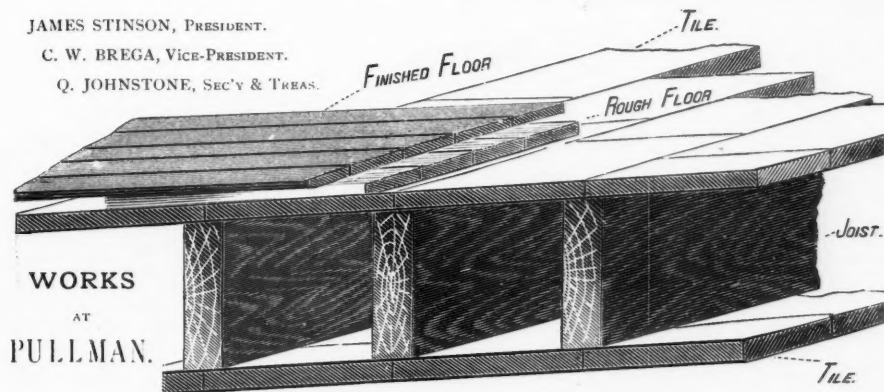
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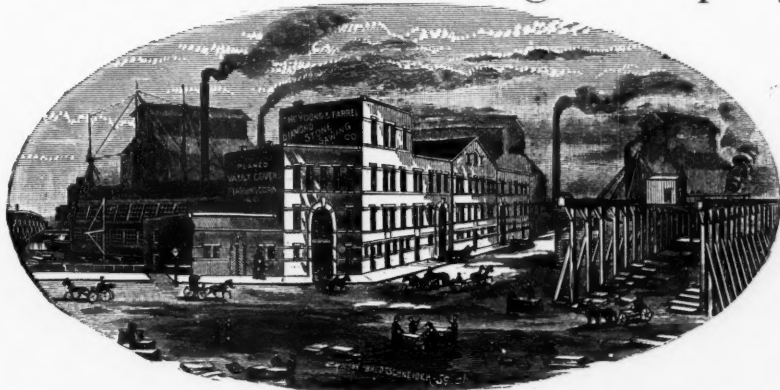
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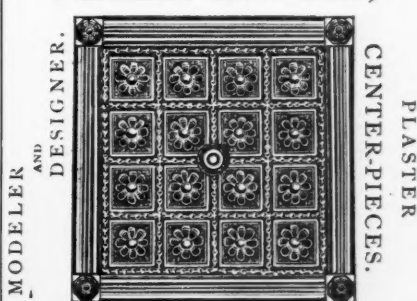
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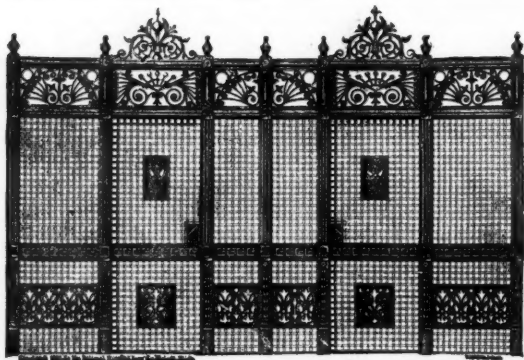


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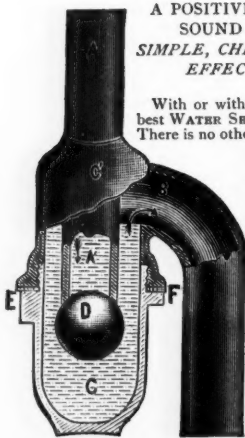
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PROPOSALS.

The Board of State House Commissioners for the State of Kansas will receive competitive plans for the completion of the central portion of the State house at Topeka, Kansas, at their office in Capitol square, Topeka, Kansas, on the fourth day of January, 1887, at 4 o'clock p.m.; said plans to consist of first, second and mezzanine floor plans, south and east elevations and transverse and longitudinal sections, all to a scale of eight feet to an inch, size of plan to be governed by plans of basement story, already adopted, to be seen at the office of the Board, style of architecture to be in harmony with the wings already built.

The Board of State House Commissioners will employ such skilled assistants as they may deem advisable to sit with them as an awarding committee. The Board of Commissioners will pay \$3,000 for the best plans submitted and \$1,500 for the second best, the plans for which premiums are awarded will become the property of the State of Kansas, with the right to use the whole or any part or any modification thereof without further claim from the authors for compensation or employment. Carefully prepared estimates of the cost of erecting and finishing the building will be required to accompany each plan submitted.

The Board reserve the right to reject any and all plans submitted.

By order of the Board of State House Commissioners of the State of Kansas.

E. B. ALLEN, Secretary of the Board.

SOLDIERS' AND SAILORS' MONUMENT.

[At Columbus, O.]

Designs for a soldiers', sailors' and marines' monument to be erected in Green Lawn Cemetery, at Columbus, O. (cost not to exceed nine thousand dollars), will be received at the office of the County Commissioners of Franklin county, Ohio, until 12 o'clock, noon, Wednesday, September 22, 1886.

All designs submitted shall be accompanied by full detail drawings and working plans, showing the exact manner of construction and inscriptions, and the ornaments, and also with full specifications designating all the different kinds of materials to be used, the exact method of construction, with probable cost. All drawing must be made on a scale of one-and-one-half inch to the foot, each design to be represented by perspective (or elevation) with plan, and, if necessary, sections on smaller scale. Each design to be signed by a motto, and the author's name forwarded under seal. The successful designer will be paid three per cent on contract price of monument for his designs, drawings, specifications and working plans, if let within his estimate. The lot on which the monument is to be erected is oblong, 50' by 100' in size. Board reserve the right to reject any or all designs.

By order of the Joint Board on Monument.

J. M. BRIGGS, President.

D. M. BEELSFORD, Secretary.

STEAM HEATING.

Proposals will be received for steam-heating apparatus for the Jackson county poorhouse, by F. A. Kennedy, superintendent of poor, at probate office, Jackson, Michigan, up to Friday noon, September 17, 1886. Specifications and plans on file with H. B. Flagler, architect, Jackson, Michigan. Right reserved to reject any or all bids. Jackson, Michigan, August 31, 1886. H. S. SMITH, Secretary of Board.

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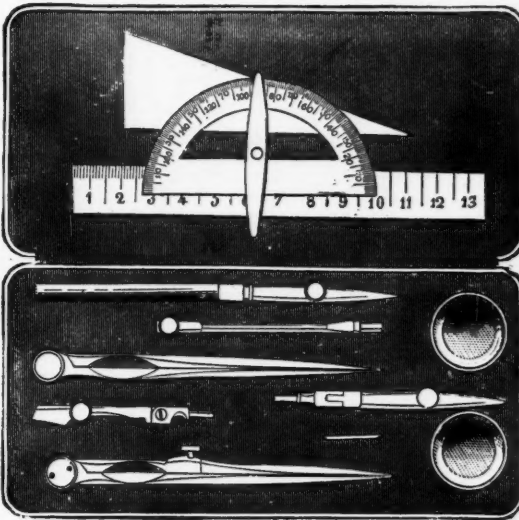
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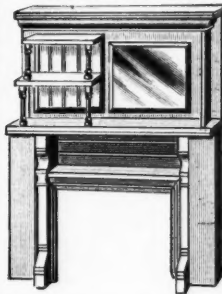
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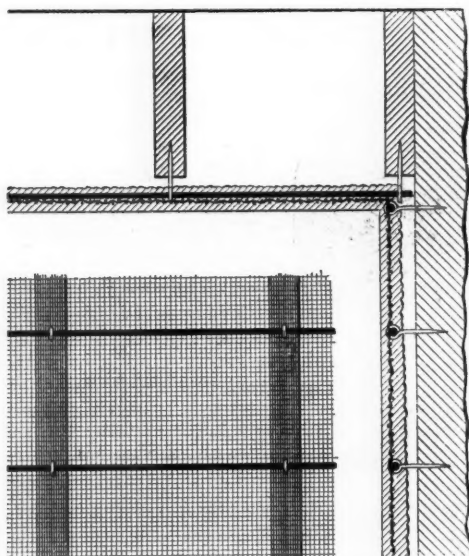
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The improvement consists (see accompanying diagram), for ceilings, of a series of eye bolts, driven into the under edge of each joist, every nine inches apart, to a regularly gauged projection from the lower edge of the joist; through these eye bolts an extended iron rod, running at right angles to the joists, and firmly secured to same. Wire cloth, of a proper number of wire and size mesh, is securely wired upon the rods. A surface is thus formed for the reception of the mortar one inch or more below the lower edge of the joist.

Side walls are constructed in a similar manner by driving the eye bolts into the studs or furring strips, and extending the wire cloth horizontally from end to end of wall, and the cloth secured the same as the ceiling.

The mortar, laid on the wire cloth, is keyed, as it is on lath, even more effectually, and when finished, it is a firm wall on all sides, of fire-resisting qualities, and isolated from the interior wood framework.

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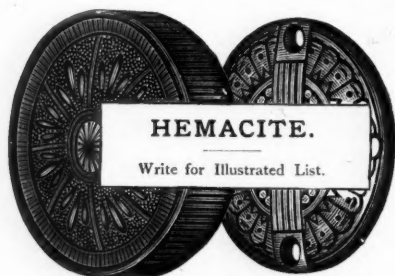
Economy of construction is one of the valuable merits of building improvements, and the inventor of this application has attained this object. There is no reason why this method should not become a universal one, for it is within the reach of every house builder.

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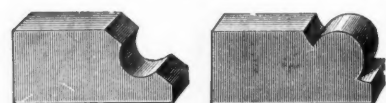
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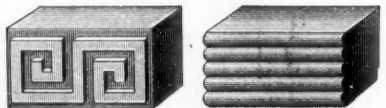
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Brickmason (Front).....	3 00	8 hrs. 4 00	4 50	5 00	4 00	4 00	5 00	5 00	5 00	5 00	5 00	5 00	4 00	4 50	5 00	5 00	4 25	2 50
Carpenter.....	2 50	2 50@2 75	2 50	1 75@2 25	2 50	2 75	3 00	3 50	2 75	2 50	2 50@3 00	3 50	2 25	2 50	2 40	2 50	2 50	1 75
Cabinetmaker.....				1 75@2 25					3 00		2 50	2 50	2 50	2 50	2 50	2 50	2 25	
Finisher.....		3 00	3 00	1 00@1 75			3 00	4 00	3 00		3 00	2 75	2 75	2 75	2 75	2 75	2 25	
Gasfitter.....	3 50	2 50@3 00	3 25	2 00@3 00	3 00	3 50		8 00	5 00		3 00@4 00	3 00	3 00	2 50	3 50	2 25	2 50	2 75
Laborer.....	1 25	1 60@1 76	1 50	1 50	1 50	1 75	1 25	2 50	1 50	1 00	1 75@2 00	1 50	1 25	1 60	1 25@1 50	1 25	1 50	1 00
Painter.....	2 00	2 25@2 50	2 50	1 50@2 50	2 50	2 50		2 50	2 50	2 50	2 50@3 00	3 00	2 00	2 75	2 50	2 25	2 50	1 75
Glazier.....	2 00		1 50@2 50	3 00	3 00	3 00		2 50	2 50		3 00	3 00	2 25	2 50	3 00	2 25	2 50	1 75
Plasterer.....	3 00	8 hrs. 3 50	3 50	3 25	3 00	3 00		4 00	4 00	2 25	4 00@4 50	2 66	3 00	3 00	4 50	4 00	2 50	1 75
Plumber.....	3 50	3 50@4 00	3 50	2 50@3 00	4 00	4 00		8 00	4 00		5 00	3 50	3 25	3 00	3 50	2 50	2 75	3 00
Stonemason.....	3 00	4 00	3 50	3 25	3 00	3 75		4 50	3 50		4 50@5 00	3 00	2 75	3 00	4 00	3 50	2 75	
Carver.....	5 00	4 50@5 00	5 50	5 00					4 00		5 00		4 00		3 00			
Stonemason.....	3 50	3 75@4 00	3 50	3 50	2 75			9 00	4 00		5 00	3 50	4 00		4 00	4 00	3 00	
Stonesetter.....	3 00	4 00	4 00	3 50	3 50			5 00	4 00		4 00	4 00	2 50		4 00	4 00	2 75	
Roof (Tin).....	7 50	4 00	2 75	1 25@2 25	2 75	3 00		3 00	2 50		2 50@3 00	3 00	2 25		2 50	2 50	2 25	2 00
Slat.....	3 00	3 00	3 25	1 75	2 50	2 75		2 75	3 50		3 50	3 00	2 50		2 50@3 00	3 50	2 50	2 00
Stairbuilder.....	3 00	3 25@3 75	2 75	2 75@3 00	3 00	4 00		8 00	3 50		5 00	2 50	3 00	3 00	3 00	3 00	2 50	
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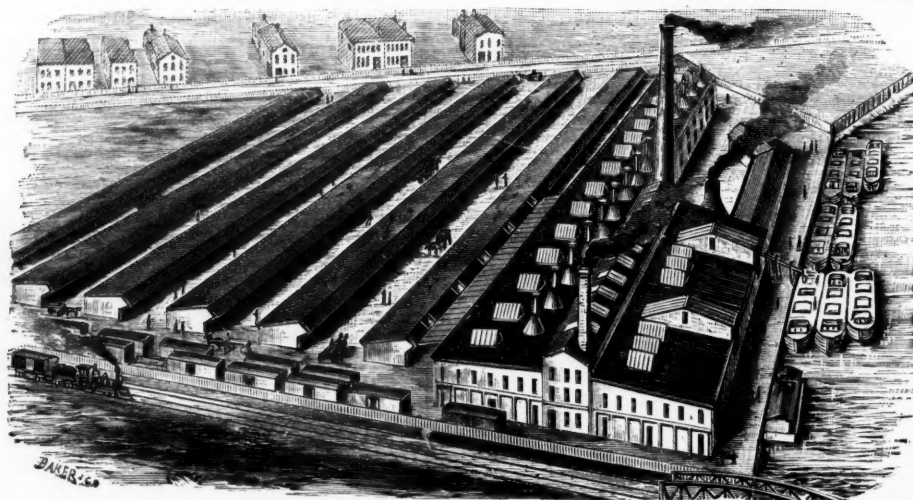
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No. 3

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Committee on Uniform Contracts and Specifications—The executive boards of the several state associations to report at the next session of the Western Association.

Committee to take charge of the Bill Governing the Office of Super-vising Architect of the United States—D. Adler, Chicago; D. H. Burnham, Chicago; J. F. Alexander, La Fayette, Ind.

Committee on Procuring Architectural Drawings and Photographs for Exhibition at the next Convention of the Western Association—The members of the Committee on Formation of State Associations.

Committee on Collection of Statistics on Competitions—C. E. Illsley, St. Louis, Mo.; Sidney Smith, Omaha, Neb.; E. H. Taylor, Des Moines, Iowa; G. W. Rapp, Cincinnati, Ohio; J. F. Alexander, La Fayette, Ind.

Committee to Represent the Western Association at the next Annual Convention of the American Institute—W. L. B. Jenney, Chicago, Ill.; J. F. Alexander, La Fayette, Ind.; W. F. Hackney, Des Moines, Iowa; Sidney Smith, Omaha, Neb.; J. G. Haskell, Topeka, Kas.

Committee on Statutory Revision—Dankmar Adler, Illinois, Chairman; Sidney Smith, Nebraska; I. Hodgson, Minnesota; J. F. Alexander, Indiana; C. H. Lee, Iowa; E. O. Fallis, Ohio; A. E. Cobby, Dakota; Chas. K. Ramsey, Missouri; J. S. Mathews, Wyoming; S. J. Osgood, Michigan; C. A. Curtain, Kentucky; E. Townsend Mix, Wisconsin.

Committee on Formation of State Associations—J. F. Alexander, La Fayette, Ind.; Chas. K. Ramsey, St. Louis, Mo.; E. H. Taylor, Des Moines, Iowa; I. Hodgson, Minneapolis, Minn.; H. P. McDonald, Louisville, Ky.; Geo. W. Rapp, Cincinnati, Ohio; D. M. Harteau, Green Bay, Wis.; Sidney Smith, Omaha, Neb.; W. H. Cusack, Nashville, Tenn.; T. Sully, New Orleans, La.; S. J. Osgood, Grand Rapids, Mich.; J. G. Haskell, Topeka, Kas.; S. A. J. Preston, Austin, Tex.; Mrs. Louise Bethune, Buffalo, N. Y.

A COMMITTEE of three of the Illinois State Association of Architects to take steps toward the entertainment of the architects attending the convention of the Western Association in November next, was appointed at the August meeting of the Illinois Association. The arrangements are, of course, not as yet completed, but if the success of the coming convention should be with the entertaining architects, this is already assured. No architect should think for a moment that his presence is not needed at this convention, and the benefits each visitor will derive cannot be computed in dollars and cents, the rapid growth of Chicago, and its importance from an architectural standpoint, making a few days' visit of the greatest value to the architect. The often-expressed opinion of members of the profession, that Chicago presents a more varied architecture than New York, should be one of the inducements to eastern architects to make this a visit of comparison, and in the convention none will be more heartily welcomed than architects from east of the Alleghanies. Preparations should be made, even now, by each individual architect in the United States, to leave his business the third week in November and attend this convention at Chicago.

THE annual convention of French architects under the auspices of the Société Centrale of Paris, was held in that city in the Ecole des Beaux Arts on the 7th to the 12th, inclusive, of last June. Several foreign architects of distinction were present. The programme was full and interesting, especially to American architects, as showing how our French confrères make their conventions profitable. There were essays as follows: on religious architecture, by M. Gosset, architect from Rheims; on the architectural exhibition at the Paris salon in 1866, by M. Moyaux, government architect; on the transactions of the late convention of learned societies, by M. Charles Lucas; on the unity of art, by M. Guillaume; on Chaldean architecture, by M. Henzey, and on the individual rights of ownership in artistic designs. There were also two biographical memoirs, one on the life and works of M. Th. Ballu, architect, and member of the Institute of France, and one on the life and works of the late M. Th. Labrousse, one of the most distinguished of French architects.

BESIDE the papers above noted and the resulting discussions, there were numerous excursions. One was to the new Jewish synagogue in the Rue de la Victoire, where the accomplished architect, M. Aldrophe, met the visitors and entertained them with an instructive exposition of the uses of the various parts of the structure. Another excursion was to an establishment, where decoration by mosaic is taught and practiced under government control; another to the new city hall and the old abbey church of St. Denis; another to a pavilion in the Louvre, where mosaic decoration was in progress; another to the new buildings of the Sorbonne; yet another to the Pantheon, and finally a Cimmerian promenade through a portion of the catacombs which underlie portions of Paris. Other subjects announced for discussion, but of which no detailed account appears, were the following: public competitions, architects' commissions (honoraires), sanitation, building industries or trades, architects' responsibilities, and their ownership of designs. It will be seen that many of these are precisely the same topics which command the attention of American architects today. One afternoon was

devoted to the mutual defense league, recently established for the purpose of assisting architects who are obliged to resort to litigation for self-protection against dishonest or unreasonable clients. This matter in particular seems worthy of consideration at the approaching conventions of the American Institute and the Western Association, and it is to be hoped that some reader will make a note of it and bring it up at the first opportunity.

IN view of the wholesale destruction of property, coupled with loss of life, wrought by the recent earthquake at Charleston, South Carolina, the movement of which was felt from the Atlantic to the Mississippi, it seems proper to raise the question whether we are to assume that a recurrence of the calamity is improbable, or are to adopt a method of construction in our larger buildings which will withstand similar strain. The Mexican and South American states are frequent sufferers from this cause, the Pacific coast is subject to shocks of greater or less severity; and, though Charleston has not experienced a severe shock since 1811, it is not at all improbable that a like disaster may occur within the next twenty years. It would certainly be the part of wisdom for the city of Charleston, while reconstructing her shattered buildings, to seek a measurable security from future demolition, at the expense of an increased expenditure in construction. The havoc that would be worked in any of our northern cities by a similar shock may well be imagined by one familiar with the method frequently employed in the erection of structures for commercial and manufacturing purposes. To place a roof on four walls of brick or stone, built to a height of from three to eight stories, without cross walls and lateral bracing in exterior walls, is an invitation to ruin by earthquake or by fire. If Americans are building for the pleasure of seeing their work tumble in before fire or earthquake, too many have hit on the proper construction to insure this result. If we are building that our work may outlast this generation and the ones thereafter, we need to inaugurate a new era, in which the skin-builder shall starve for the lack of a job. It may be fairly questioned whether the ultimate expenditure of capital is greater for good work than for bad; but in Charleston, at least, the earthquake has gained the right to be taken account of in the construction of a good building.

IS there any form of building that is safe against an earthquake shock? Against the severest possible shock, none. Against such shocks as are often felt in Italy and Greece, and are matter of course in Spain and parts of South America, being oftentimes more severe than that which demolished Charleston, safe constructions may be provided and are found in almost every structure in Spain, whether large or small. Moreover, these constructions are largely fireproof or readily lend themselves to fireproofing. The first method is by vaulting, that is, by a massive brick or stone construction which offers the resistance of a solid cube. The objections to this method are on the score of expense and of room, the latter being conclusive in any large American city. The other method, commonly employed in modern Spanish buildings, is a brick or stone construction, with cross walls at proper distances, all walls, both exterior and interior, being braced and cross braced with timber or iron. The general character of this construction was described in an article by Mr. Irving K. Pond, entitled "Houses and Streets in Spanish Cities," published in THE INLAND ARCHITECT for March, 1885. For the benefit of subsequent subscribers we make the following quotations: "There was a tendency, from the very first days of Spanish building, to treat the wall, not as a

homogeneous mass of masonry or brickwork, but rather as a frame filled in, as to its spaces, with some earthy material, such as mud, clay or brick. The reason for this treatment is probably found in the frequent occurrence of severe shocks of earthquake, which would easily demolish a tall, light wall, laid up in the ordinary manner, so that to get the required lightness and stiffness, framing was resorted to. * * * In some cities rolled iron beams are used for the frame, though generally timber frames are the more common. Even minor partitions are constructed in this way, so that it is not uncommon to see the frame complete to the height of three or four stories, before the masonry has been carried above the foundation, a complete skeleton of a house in which every space not destined to be filled by either a window or a door, is crossed by heavy diagonal braces. In the end all woodwork of the construction is imbedded out of sight in a fire-resisting material." The frame construction of Dutch houses lends itself to the same treatment, and may be made at once firm and strong and architectural in feeling. We shall welcome the day when owners give to architects and builders the opportunity to erect buildings which shall be permanent as well as convenient and artistic.

AN excellent opportunity for Ohio architects to carry out a resolution, made at the last meeting of the Association of Ohio architects, is presented by the following, which is sent us by a Cleveland architect, who says: "It is not much of a curiosity, being evidently based on the old idea that 'All fools are not yet dead,' and that architects are likely to furnish some living examples." It is as follows:

CLERK'S OFFICE, BOARD OF EDUCATION,
CLEVELAND, August 17, 1886.

Dear Sir,—The following resolution was adopted by the Board of Education, Monday, August 16, 1886, by Mr. Gunzenhauser:

Resolved, That the committee on buildings be, and they are hereby authorized and directed to procure, in any manner they may deem the most expedient, provided no cost be incurred, plans for school buildings. Said plans to be for both an eight and twelve-room building, containing all the requisite space for the proper seating of the required number of pupils, sufficiently lighted, heated, and ventilated, and be accompanied by a detailed estimate of the cost of the erection of the same, and when said plans are obtained, to present the same to this board for inspection.

The plans shall consist of basement, first and second story and a front and side elevation, to a uniform scale of $\frac{1}{8}$ inch to one foot; elevations to be without shading or coloring and plans colored only to illustrate material used.

The plans to be directed to the chairman of the committee on buildings and be sent to this office on or before Monday, September 6, 1886.

THOS. R. WHITEHEAD, Clerk.

As architects, whether members of national or state associations, will generally answer this invitation by silence, or by sending a copy of the Western Association competition code, these educational gentlemen will probably be obliged to consult the best interests of the public and secure an architect of standing to furnish the desired plans.

OF course, we do not believe that the Cleveland board of education intend its committee on buildings to take its command "to procure plans in any manner most expedient, provided no cost be incurred," in its literal sense, and in case of failure otherwise to proceed to burglarize the offices of Ohio architects. Though this seems like another way of saying "Get money honestly, John, but get money," it cannot be what is meant. An educational board should be sufficiently intelligent to say what they really mean in so important a resolution as this, though the mistake might be excusable with the commissioners of "Posey county"; but they evidently only have in mind that they want to get a good selection of drawings for some carpenter to work up a plan from, and that they shall get them for nothing. We have in the past mildly censured county and state commissioners for issuing like "invitations," feeling that their error was one of ignorance rather than of intent; but we cannot allow this excuse to obtain with the board of education of one of the most intelligent and advanced cities of the Union. If ignorance

be their excuse, the public should see that the future health and well-being of their children is in rather dangerous hands, for none should know so well as a board like this that a school building erected by the most proficient architect is none too healthy or well constructed for the safety and comfort of children.

ARTESIAN wells have in them sometimes an element of danger, as has been recently illustrated by an occurrence at Belle Plaine, Iowa. In this town several wells had been bored, and water reached unusually near the surface, about 250 feet, with a surface pressure of eighteen to twenty-five pounds to the square inch. Finally a well was bored at the intersection of two streets, and at fifty feet nearer the surface water was reached. The bore was two inch, the contractor believing the flow of water would increase it to three inches. While forcing the three-inch casing into the bore, the water forced itself upward outside the casing, rapidly increasing the aperture and the torrent becoming unmanageable, soon a stream a foot in diameter was pouring out, which, in a night, increased to three feet, the water rising four feet above the surface and spreading in every direction. The wells in other parts of the town had by this time ceased flowing. A force of men was immediately employed in providing channels for the overflow and walling in the aperture with heavy planks. The stratum was largely sand to a depth of sixty feet where a strata of blue clay was reached. Engineers were engaged who first inserted a fifteen-inch casing to a depth of eighty feet, when the supply of tubing gave out and the tube gradually sank sixty feet further. Then a three-inch tube, with a cone of cording twelve inches in diameter, was sunk through the tube already inserted, but without success. Then a five-inch casing with a heavy iron cone, twenty feet long and a diameter of thirty inches was sunk with a two-inch tube, which reached bottom at two hundred and ten feet as a guide. This cone weighed over a ton; they were unable to insert over sixty-two feet, and it is supposed to have struck the top of the fifteen-inch casing. At this writing the well still continues to flow. By sinking a casing the same size as the bore, and immediately with it, the chances of such an occurrence would be reduced to a minimum.

LA *Semaine des Constructeurs* mentions a radical change in the method of distributing prizes in architectural competitions, which has been suggested by the Central Architectural Society of Belgium, and is so fair and reasonable on its face that it seems strange that no one thought of it sooner. It relates to the usually considerable difference between the first premiums and the inferior ones, whereby the recipients of the second, third and lower prizes, whose designs are often but very slightly inferior in merit to that which the vote of the jury has placed highest, are so much more inadequately compensated for their services. For example, the first prize may be \$1,000, the second \$700, the third \$400, and fourth \$200. It is very likely to happen that the designs adjudged second and third, and perhaps fourth, may be so nearly equal in merit to that placed first, that the decision depends on a bare majority vote, which itself likely enough turns on some personal whim or some misunderstanding of the drawings or some other irrelevant matter. Indeed, it is often very possible that a change of a member or two on the committee would have resulted in quite a different award all round. Plainly, under such circumstances, it is most unjust to these almost successful competitors, that, besides the chagrin and loss attending a disappointment where they have come so near winning, they should be discriminated against by compensa-

tion at a rate so far below that of the best man, as the world calls him, but often, in fact, no whit better than half a dozen of the rest.

THE Belgian Society of Architects proposes to relieve competitors of this injustice, by leaving the jury free to apportion the various awards strictly according to the merits of the designs as adjudged by them. The precise amounts of the first prize, second prize, etc., are not to be prescribed in advance therefor, but only the aggregate of them all, the total sum which is to be distributed among a certain number of premiated competitors. These will share in it proportionally to the credits awarded their work, which, it is expected, will be estimated by some equitable system of marks to be determined by the jury. On this plan, if the design placed first should receive ninety-five marks, the next ninety, the third eighty-five and the fourth eighty, and there were to be but four premiums, each competitor would receive an equitably proportioned share of the prize fund. Supposing, for example, that the total sum to be distributed in premiums were \$7,000, the first design would be awarded \$1,900, the second \$1,800, the third \$1,700 and the fourth \$1,600. It is difficult to see what objection can be brought to this proposition of the Belgian architects. It appears, at a glance, so transparently just and fair to all parties concerned as to merit the instant assent of all parties interested in architectural competitions as soon as it is laid before them.

THE annual exhibit of paintings of the Inter-State Industrial Exposition at Chicago this season is devoted entirely to American work. A change of management has occurred, and this year the exhibit is under the directorship of Mr. William H. Beard, the famous animal painter. Mr. Beard's fitness for this position is peculiarly fortunate, as beside his fame as an artist and art critic he has a wide acquaintance among his fellow artists, who have the utmost confidence in his ability and fairness. Wedded to no particular school, Mr. Beard has presented a largely varied collection of paintings, and all with some claim to merit. In this connection we would suggest that next year a group of architectural effects in water colors, by architects, would be both interesting and instructive. A selection from those exhibited at the convention of the Western Association of Architects in November next could doubtless be secured for this purpose.

TO point out where the builders' exchanges could be made more valuable to members and public alike, and especially to architects, we would strongly recommend the establishment of well conducted and comprehensive exhibits of building materials and appliances. As we visit the cities of the West we find some such established, but, almost without exception, in the hands of private parties, often at a distance from the builders' meeting places, and partaking of the character of a museum with high rates charged for the admission of exhibits. This should not be. In the hands of a reliable exchange perfect operation can be assured, and all manufacturers would willingly send samples of their wares upon application and make no objection to paying part, or even the whole, net cost of the proportion of the floor space occupied by them. It would be a mistake for an exchange to expect to make a revenue from such an exhibit, and such a display of material, always ready for the inspection and comparison of members, and accessible to architects, is in itself of sufficient value to them to warrant their assuming the entire expense were this necessary.

Walls Crumble and Decay.

BY J. FREDERIC ELSOM.

VIEWED in the light of the reports of advertised experts, the average reader is led to conclude that the so-called disintegrating processes of nature will have much to account for when genius on his rambles discovers and makes plain the precise reasons for this early crumbling and decay of our modern architectural achievements of which the secular press is replete, for it is becoming fearfully common to read of these fearful disasters, and hundreds mourning for hundreds slain. That there are ultimate causes for this state of affairs is patent to all who have been called upon to mourn the losses or count their dead.

In a previous article on foundations, I called attention to some of the modern improvements in the materials and appliances used in this important part of building, but the trouble does not begin or end here as many know to their cost. When the use of lime, water and sand was first introduced as a cement to hold building materials together, chemistry had not clearly defined the silicate of lime and the like, that architects of that age might understand. Now, however, there is no mistaking what is needed and the chemical principles involved in these combinations; but with all the hurry, bustle and rapid transit of this marvelous nineteenth century chemical reactions and combinations are eventually the same as when discovered centuries ago, hence it is not to be expected that the desired reaction of lime, water, etc., can ensue in a few moments when chemistry teaches us that the silicate of lime cannot be formed with these three crude elements in less than thirty-six hours, then when we mix our mortar and apply at once can it be expected that this combination will ensue? No, a thousand times no, as much pertinency in reasoning that mud from the roadside will, by drying, make good mortar, which it will, in fact, equal, if it is not superior, to the stuff used in large quantities in many a large building creeping skyward so rapidly while I write.

Again, the condition of other material to be held together and supported by this mortar is often such as to augment rather than lessen this evil; the brick and stone are drawn to the site, allowed to dry and season for days, weeks, and perhaps months, before being placed in the wall; then this mortar, of itself only in a transitory state, is brought in contact, and the desired chemical reaction changed instantaneously.

To prove the reasonableness and efficacy of my theory, if such it may be called, take a sample of mortar, thoroughly dried, if you please, in a wall, or, what is better, from a wall that has given away prematurely; subject this to pressure, and my word for it, the result will be far short of the standard of the silicate of lime. It should be borne in mind that the mortar, besides being merely a holder together of the brick or stone, must of itself bear its own proportion of the superincumbent weight, and the instant it fails to bear this burden the entire wall, if made of the hardest granite, is weak in proportion. If one part of a structure will bear five hundred pounds of pressure to the square inch, all the rest of the material is good for this, and not a fraction more, on the same hypothesis that one weak piece in a structure makes a weak structure, no matter how good and strong the rest may be.

Notwithstanding all this, however, there are many actual natural causes which tend to the rapid crumbling and decay of mineral walls; some more active in the larger cities, while others find better fields for action in the buildings of smaller towns and rural manufactories; among these may be mentioned the seasoning of material, allusion to which was made in the foregoing. With the stone of this country, we invariably find they decrease in weight with age, and with some varieties I have found the combined moisture to be the same before and after this change, hence we must look to other volatile matters for this decrease. Of course I cannot in an article of this kind call attention to the various stone used for building purposes, but having a sample of oolite now in tow for a laboratory test I will give the results.

This variety of building stone is made up of the silicious remains of a low order of animal life and pure silica, which chemists report as siliceous. Now this stone, fresh from the quarries, was tested for its resistance to pressure, and after keeping in the laboratory at a temperature of say 80° Fahr. was again tested and found to have lost twenty-five pounds to the square inch, and its specific gravity was correspondingly less; hence, I am not sure but the gravity alone is a safe criterion for the loss of the resisting power of any building material, but will have more to say of this further on when some further tests are completed.

The original processes, then, of the formation of this particular variety of stone, more evidently such as admitted of the taking up of some, what we may call extraneous matter, and, when the surplus water found an avenue of escape by the stone being exposed to atmospheric influences in drying or seasoning, this was volatilized and carried away, lessening the weight and, of course, having these minute interstices that lessened the crushing strength. That the extra water was not the cause of this is

additionally shown by the contractile power the stone possessed, for it was found that in seasoning, the stone had decreased in size, but in what proportion to water I failed to make note of, hence it is plain to be seen that some portions pass off, leaving the stone in a spongy condition, and being, as we might say, part of the original combination, the stone lacks the contractile power to close these pores. What this and other substances are, will form the subject of another chapter.

[To be continued.]

Domestic Architecture.*

BY E. H. TAYLOR, ARCHITECT.

This assignment was made because the writer, in an unguarded moment before the beginning of actual practice, perhaps rashly, expressed a willingness to be content if he could establish a reputation for successful work in designing dwellings.

Experience has more or less modified that opinion, and yet the theory is a good one.

While the repeating of the same class of problems may be monotonous, and the change from one class to another restful and spicy, yet it is a great drawback to approximating perfection to not carry out one line of work by itself. The crudeness of our productions is largely due to the smattering study we give. First a dwelling, then a store, next a church, and so on through the list.

What design does not, in its executed form, show defects that make the author sigh for a chance to do it over again?

As the dwelling belongs to the broadest class, and its problems come most frequently, there is more opportunity in this line for excelling.

Here may and should be expressed the inmates' individuality throughout, and in no class is there more variety and exaction of requirements.

Ruskin, in his "Poetry of Architecture," says the architect should be a metaphysician and, studying the family for whom he plans a home, acquaint himself with the character and requirements of each member.

It must be remembered above all things that the dwelling is to be a practical structure. In none is awkward and incongruous work more deplorable. Its use is more constant and affects more people than any other building, in their health, happiness and general welfare. From birth to old age every person is intimately related to it, though not necessarily acquainted with any other. If illy planned and constructed its effects may be widespread, most serious and sad, touching mere matters of pleasure or the very lives of the dwellers. How many extra steps must be taken every day, simply from thoughtless arranging of doors and cupboards! How much extra work is caused by the affectation of what were once necessary methods, in the leaving of the good things of today, as for example the retrograde to the small and multiplied lights in windows!

Though the fancy is tickled by the odd and quaint, yet it should not be resorted to in places; it adds to liability to frequent repairs, or increased expense and added labor in the fight against collecting dust, rain and snow. How much openly expressed or silently thought profanity, from breakneck steps and other awkwardly, if not dangerously, planned elements! How easily might the ventilation of a room have been improved by thought for that end in placing doors and windows! How many cases there are where the ghosts of haunted houses come from defectively planned waste-pipes!

On the other hand, what extended and unending satisfaction comes from perfectly planned dwellings, where an appropriate place is provided for every piece of furniture; where the housewife has her heart's desire in number and size of closets; where every gas jet sheds its light in the right spots; where every fixture is in its proper place; in short, where everything contributes to the safety and convenience of the inmates!

While in this, the charming client of the fair sex graces our office with her presence; yet alas! she often tries our patience beyond endurance by persistently insisting upon the incorporation in her plans of the unsuitable and incongruous features she saw at — in her last summer's trip, or her Aunt Susan has in her house; and there are the hours spent in the vain attempt to get large closets for every room, if not more, in impossible places.

While commendable ambition longs for opportunity for distinction in designing lofty business blocks, churches, court and state houses, let it be remembered that it is not wise to despise the day of, or small things themselves.

Although the inmates of a home are the factors, yet the house plays no unimportant part, and to the latter the architect should be happy to contribute; than which, what can be nobler? What has more hallowed sacredness and tenderness around it, or who can estimate the comforts, attractions and possibilities of a true home?

Then cultivate patience for solving these problems in domestic architecture. Work them out with painstaking thought and conscientious faithfulness, making each, no matter how humble, as perfect as possible, and the members of many homes will call you blessed.

For dwelling houses and medium size stores, fireproofing has not as yet been generally adopted, the cost has, perhaps, been the drawback, or the old idea that what was good for our forefathers is good enough for us, may still exist; but in all new buildings the great object to be obtained is to make them as fireproof as possible. Economy of construction is often to be considered, and in such case the cheap and effective fireproofing will find a ready market. A fire-resisting construction, patented by J. N. Glover, of Chicago, seems to offer excellent protection from fire. It consists of plaster, laid on a bed of wirecloth, and isolated from the walls and ceilings on which it is applied. Its cost is only a trifle over the usual cost of common plastering. The entire building of J. H. Walker & Co., on Wabash avenue, has been treated in this way.

* Paper read at the semi-annual meeting of the Architectural Association of Iowa, August 17, 1886.

Architectural Ironwork.*

BY C. W. TROWBRIDGE.

IRON IN FOUNDATIONS.

OUR president tells us that no one member is eligible to membership in this club unless he makes two sketches or reads one paper each year. I have been booked for a paper tonight, and have my fears that before I conclude this reading you will wish I had made two sketches instead. I find putting my ideas on ironwork into shape on paper a rather difficult matter. Mark Twain, in his "Tramp Abroad," speaking of the facility with which men, animals and birds put their thoughts into words, says: "I have noticed a good deal, and there is no bird or cow, or anything, that uses as good grammar as the Blue Jay. You may say a cat uses good grammar. Well, a cat does; but you let a cat get interested once, let a cat get to pulling fur with another cat on a shed, nights, and you will hear grammar that will give you the lockjaw. Ignorant people think it is the noise that fighting cats make that is so aggravating, but it aint, it is their sickening grammar." When I get interested in a subject, my grammar is sometimes defective; still I hope you will find something interesting in the description of the processes which I shall give you tonight. A month or two ago I made a synopsis of the headings into which I thought to divide this paper, making the first part descriptive of the process of manufacturing iron into the shape in which it comes to an architectural ironworks, describing the making of pig-iron, wrought-iron bar and steel, devoting the second part of the paper to the processes in the architectural ironworks and at the building, classifying structural iron into foundation ironwork, cast-iron, wrought-iron and steel, and treating ornamental iron work under the head of cast and wrought ironwork, mentioning under each head some of the most important processes, giving some data regarding the strength of finished work and the influence of shop processes on the ultimate result; also mentioning some of the most common defects met with under the present régime, reasons that they occur, and the methods of detecting bad work. It would be useless for me to make any suggestions regarding design, as you are all probably better designers than I am. The only available place for me to be of service is to describe the shop methods, so that you may see what is the easiest to produce, and also avoid the error of designing or specifying anything which is an impossibility. I have found that the paper, as originally intended, would occupy too much time, so I have omitted entirely any mention of the process of manufacturing what the architectural ironwork consider as raw material, and will deal only with the work after it gets into the ordinary foundry and fitting shop. Even this I shall divide into two papers.

Iron and steel in foundations is a subject so entirely different from ordinary building works, that I have decided to mention cast and wrought-iron and steel at the same time, rather than separate them as I have in the rest of the paper. The conditions of service are so different from work not subject to oxidation, that entirely different methods must be employed in determining the factor of *ignorance* to be used in the design. Some prominent engineers and builders say that steel rails or other ironwork bedded in concrete, lime or cement, such is usually the case with foundation, will last always, instancing the iron clamps, etc., removed from old Roman walls 1,500 to 2,000 years old, and referring to many other similar cases in which iron has been found after a long period of time has elapsed to be in the same condition as the day it was put in the walls. I have, during the limited time I have been able to give this matter, inquired in several directions for data regarding ironwork in Chicago subject to conditions analogous to these under which our iron foundations exist. I have not been able to find any instances of iron fully covered with cement masonry at or near the Chicago sewer level, where any great number of years have elapsed to show what the actual result is, but in such cases as the holding-down bolts of engine beds and other machinery, and in cases of pipes for gas or water, passing through area or other walls, I have found several instances where the covering or masonry had become cracked, or never was sound or water-tight, moisture having worked in around the iron from the bottom end of the bolts and from places where the pipe entered the wall, resulting in very serious rusting for twelve or eighteen inches from the point of the exposure. This was attended with the customary swelling and destruction of the masonry adjacent. A prominent builder, who removed part of the foundation of a new office building to examine the condition of rails used in these foundations, found a thin film of rust on the surface of the rail sufficient to destroy the adhesion of the cement. The cement broke off in blocks, leaving the rail clean. This thin coating of rust was probably caused by the moisture of the cement when put in place. Whether any further oxidation would have taken place from moisture passing through the cement coating is an open question on which I have no data to form an opinion. The gas companies give some curious data regarding the life of iron pipe laid in the ordinary way, directly in the earth, both with and without the coating of tar or asphalt. Their experience is that different localities in the city give very different life to the pipe. For instance, in the neighborhood of Cottage Grove avenue and Thirty-first street, the life of ordinary wrought-iron service pipe is ten to fifteen years, and cast-iron mains, one-half to three-quarters inch thick, that were put down eighteen or twenty years ago, are still in good condition, while down town, where pipes lay in *made ground*, one-inch wrought-iron pipe lasts only three to five years, and cast-iron pipe eight to ten years before they are totally useless. In Market street there is a main laid eighteen to twenty feet below the surface, which, of course brings it below the water level of the river, which was put in place in 1852, and is now in good condition. This is probably owing to its always being covered with water, these conditions being much more favorable than at the sewer levels where water rises and falls around the pipe. An instance of the greater rapidity of oxidation where two different

metals are used in one construction underground, occurred where some large gas mains were cut at a street crossing to connect cross mains. As there was no provision made in the original mains for the cross mains, they cut holes in the sides of the main lines and bolted on sockets for the crosses, using wrought-iron bolts. These bolts rusted out about every three years, while the cast-iron remained sound, several sets of new bolts having already been put in said crosses. Mr. Forestall, vice-president of the Chicago Gas-light and Coke Co., says that where asphalt one-eighth to one-quarter of an inch thick is put around cast-iron pipe, that it is a positive and perfect protection against rust, that changes in temperature and levels of pipes are not great enough to crack this thick asphalt, that its elasticity enables it to remain sound. The reason they put this asphalt around the pipes after they are laid in place is that the gas acts chemically on the asphalt, dissolving it out of the bell and spigot joints. They had a case of thirty inch main where they had to go over the whole length and recaulk the lead in all the joints, owing to this action of the gas. Their experience has been that a mere coating applied with a brush or a coal tar varnish was not desirable, one-eighth to one-quarter of an inch being necessary to permanent protection.

Regarding the statements made by prominent architects and engineering authorities that steel rails bedded in concrete will last forever, while I do not feel like questioning their verdict I feel that I am perfectly justified in saying any small fracture of the cement covering will, by allowing the water to enter and start rusting and swelling ultimately result in the destruction of the entire foundation. It seems from my standpoint that it is of the utmost importance to prevent any possibility of harm coming to the concrete or mortar surrounding any ironwork that is at or near the sewer level, and in designing foundations with steel rails or other ironwork, pains must be taken to make sure that there will be no strain sufficient to crack the concrete surrounding the ironwork. I have also heard it advocated in some quarters that the concrete and the rail bedded in it acted together as one solid mass, or as a compound beam made of iron and concrete. I can hardly indorse any theory that would consider materials of different elasticity as working together in harmony under transverse strain, particularly where one material entirely surrounds the other. Suppose the load was sufficient to give the iron $\frac{1}{4}$ inch deflection in four feet. This would not approach the elastic limit of the iron, but the cement would surely crack and be worthless, letting in moisture which would rust and swell the iron, disintegrating the entire footing. I can see no safety except in designing footings that would carry the load on the ironwork only without deflection enough to destroy the concrete, and as a further precaution would suggest coating of ironwork heavily with asphalt or other waterproof elastic material before making your concrete covering. This is particularly a case where an ounce of prevention is worth a pound of cure. As we all know it is a pretty expensive operation to hold up a building and put in a new foundation.

I think the use of cast-iron footing instead of steel rails would yield more desirable results in all directions. The skin which forms on the outside of the casting has a silicious or glassy character which retards oxidation very much more than the natural coating on wrought-iron or steel.

The universal report is that cast-iron outlasts wrought-iron three to one. The shape in which cast iron could be used would also permit very thin beds of concrete below the iron. The form most natural to adopt for footings is the ordinary lintel, having a flat bottom laid directly on the concrete, the ribs running across the wall from side to side. I have made a sketch of a footing twelve feet wide for a three-foot brick wall, estimating the load at eight tons per square foot on the wall, which gives us two tons on the bottom of the footing. For steel rails I use an extreme fiber strain of 20,000 pounds to the square inch, which would give a total deflection of about $\frac{3}{8}$ ths of an inch. Using 3,000 pounds extreme fiber strain in the bottom of the cast iron lintel-shaped footing, would give a deflection of about $\frac{1}{4}$ th of an inch with the load above mentioned. I find that by using five layers of rails I would have for a section of a wall ten feet long 484.4 feet of rails, weighing 10,655 pounds. By using three layers of rails so proportioned that I get the same fiber strain for similar loads, I have for ten feet of wall 431 feet of rails, weighing 9,482 pounds. For a cast-iron footing I find it necessary to have the bottom plate two inches thick, with ribs twelve inches apart, fourteen inches high, two inches thick at the bottom, one and one-half inches thick at the top. This would weigh, for ten feet of wall, 15,400 pounds. As these castings would probably cost about $1\frac{3}{4}$ to 2 cents per pound, and the rails 2 to $2\frac{1}{4}$ cents per pound, delivered at the building, there would be a saving by the use of the rails of \$75.65 for five rows of rails, and of \$99.11 for three rows of rails over cast-iron in the cost of material in the ground for ten feet of wall. I have in this calculation taken a pretty high strain for the rails, and a low one for the castings, as in such places castings should not run any risk of being overloaded. I might say that I consider the factor of safety three for the steel rails and seven for the cast-iron. If the casting was as good as the one tested by me at Louisville a few years ago, the factor of safety would be mine; but as pointed out elsewhere in this paper, there are so many things that might make bad spots in castings, it is always best to allow a good large margin until foundries have testing machinery, and are ready to guarantee that lintels and such castings have been subjected to two or three times the working load and found perfect. When that time comes the weights of cast-iron used for transverse strains will be reduced at least one-half from the weight ordinarily used in our present practice. In concluding on this subject I will express my opinion that cast iron has so many qualities to recommend its use where iron foundations are decided upon, such as resistance to oxidation, both from its protecting skin and its greater thickness in the vital parts subject to the attacks of rust, the adaptability of form and the capacity to be cast in almost any desired size of footing up to, say 12 by 12 feet, that it will probably be used in the near future, and our time cannot be spent to better advantage than in trying to get definite and reliable information on this subject. I speak of the method of casting such pieces under the head of open green sand molding.

* Paper read before the Chicago Architectural Sketch Club, August 30, 1886.

STRUCTURAL CAST-IRON WORK.

I will describe the shop processes in the following order: Castings, wrought-iron and steel.

As castings have the longest and most interesting processes I will mention them first. Foundries purchase their iron for castings in the form of pig, using No. 1, 2 and 3, and scrap-iron in greater or less proportions, according to the market, using different mixtures according to the kinds of castings they wish to produce. Strong iron, such as they want for columns, lintels and frame work, are slightly red, short or brittle when hot, but very strong when cold. This quality is usually attributed to the sulphur in the iron, which makes the melted iron flow sluggish, like molasses. This is one of the reasons why constructional castings are made thick, say from $\frac{3}{8}$ of an inch upward, according to the size of the piece. When iron has less sulphur and more phosphorus it becomes cold, short, being very fluid when melted and running very freely in molds, forming sharp, clear outlines, such as we see in light shell work and in stove plates. Phosphorus also reduces the amount of shrinkage and the different minute variations in the amount of sulphur and phosphorus result in an infinite variety of foundry irons, each good for some particular use and often worthless for others. A foundryman, by using different kinds of pig and scrap, produces mixtures having the different qualities which they desire. This is a matter on which foundrymen each have their particular and peculiar ideas, and architects may depend upon it that no matter how carefully they may specify the iron they wish used, the foundryman will do as he pleases in the selection of irons and making his mixtures. Superintendence that goes back to the quality of finished product will be difficult and unsatisfactory.

In melting iron the process almost universally adopted is to melt pig and a small percentage of scrap, screws and rejected castings in a cupola furnace. This is simply a round iron tower lined with brick, and provided with blast pipes near the bottom, using a blower giving an air pressure varying from six to twelve inches of water. The iron and fuel is put in layers, the first layer of fuel being quite thick, to form a bed, and last the entire heat with small additions from the little layers of fuel between the charges of iron as they come down. As the iron melts it runs down through the fuel into the bottom, the fuel floating on top of the melted iron at the bottom of the furnace. The distance from the bottom of the cupola to the blast openings or *tuyères* varies in different foundries, according to the amount of iron they wish to accumulate in the cupola between times of tapping out. In some stove foundries the *tuyères* are very close to the bottom, and the iron runs continually, but in architectural foundries it is quite common to have space enough to hold three or four tons before tapping out. You will see that the iron and fuel are all charged in together, so that any sulphur or other impurities in the fuel are liable to get into the iron; thus only the best coke or coal are suitable for use in the cupola. Some foundries charge limestone or fluorspar with the iron. This forms a glass or slag, which takes up the dirt and floats on top of the melted metal. This is allowed to run out at a hole just below the level of the blast pipe. Oyster shells are sometimes used, but these are objectionable on account of the phosphorus in them. When the bottom of the cupola is nearly full of iron the slag runs off the top. When iron begins to run out of the slag hole it is time to tap out. As the iron is exposed to the air in the process of melting some of the carbon and silicon in pig iron burn out, making the resulting castings closer grained, lighter colored and harder than the pig from which they were made. For this reason all scrap would hardly do for a day's melt, but if an iron high in carbon and silicon is used, considerable quantities of scrap can be melted, the resulting castings being of the quality desired. We often hear the expression, "They use old kettles and stove lids at that foundry, their castings can't be good anyway." Let me say that when iron is good enough for kettles and stove lids it is good enough for anything else, and a small percentage of stove scrap mixed with some good, dark-colored, coarse grain No. 1 and a little silver gray will make tip-top columns and lintels.

Molds are classified into loam molds, dry sand and green sand. Loam is hardly ever used for architectural work on account of the expense and time required, but is just the thing for large pieces of machinery, petroleum retorts, glucose and sugar refinery kettles, etc., so I will not take time to describe loam molding here. Dry sand is used a little, but not much in architectural work, except for cores. For this it is almost universally used. Cores are made of coarse, sharp sand, free from loam, mixed with flour and molasses molded into shape and baked over night in an oven. Cores for columns are usually made in boxes, making one-half the core at a time, baking them in that shape and pasting them together afterward. Although in many places they use a half round pan, and at each end put a circular piece of iron the diameter the core is to be, using an iron-faced straight edge to sweep off the top of the core, making it full round in one piece. In these cases a pipe is put in the middle of the core to carry off the gas, this pipe being about one-third the diameter of the core and drilled full of holes. In case the core is made in halves a gutter is scraped out of each half, which leaves a hole for the gas when the two halves are put together. Small cores usually have wires or rods according to the size of the core put into them when they are made and drawn out afterward, leaving holes for the escape of gas; for although these cores are usually baked all night in a close vault or oven with iron doors and a good, big fire there is lots of moisture in them, which becomes steam, and highly superheated steam at that, when the melted iron surrounds the core. This steam, together with the carbonic oxide gas made by the decomposition of the molasses and flour, form an inflammable and explosive gas which you always see streaming out of the ends of column molds when they are poured, and which is lighted and burns with a strong flame for some time after the molds are full. If not lighted it soon finds some red-hot iron and lights itself with a loud report and some shock. Molders usually light the vent at once, as a shock sometimes injures the mold and spoils the casting. Accidents are sometimes caused by neglecting the venting of the core. I have seen a half ton of iron come out quicker than

it went in because the vent to the core got closed, the gas coming out rapidly and filling the space intended for the iron instead of passing off quietly through the vent pipe provided for it, throwing the iron out of the risers several feet high. Incidentally I might mention that it made things lively for the men around that mold, burning one or two men severely, and, of course ruining the mold completely. The man who made the mold got badly burned, but could only curse the core maker and wonder why he didn't see that the end of the core was stopped up. Small cores set for bolt holes, etc., usually vent into the adjoining sand of the mold, but larger ones always have to be provided with holes for the escape of gas. The reason I have taken up so much time in describing cores is the impossibility of making castings with cored spaces without providing ample means of venting. We often see architects design castings that are impossible on account of cores being entirely surrounded by iron, and my object is to say so much on this subject that you will always remember the necessity of good, free means of egress of gas. If ample means are not provided the result will be air holes, bubbles and all sorts of hollow spaces, which sometimes will seriously injure castings.

Dry sand molds are made the same as cores, baked in an oven. The advantages are greater strength of mold so that greater heights of metal can be poured in without forcing the sand out of shape and making the castings too thick. Pipes and other long pieces that are usually cast on end are made in dry sand with strong iron flasks. When we get to making columns on end they will be molded in dry sand too. The great obstacle in making columns on end is that dry sand costs more. The expense increases rapidly where irregularity, like caps, bases and brackets occur. These things have to be cast on, and while it is a very simple matter to cast a water pipe in dry sand, a flange 12 or 16 inches square on each end, and a bracket on each side two feet from the top, would make things very interesting. To mold dry sand with only one night's baking necessitates comparatively thin sand. The flask or case in which the mold is made would have to conform in a manner to the shape of the column, necessitating many expensive iron flasks for a small range of business. The utmost strength of flask is also necessary. For a column, say 16 feet high, made of iron, which weighs 450 pounds to the cubic foot would give a pressure of 7,200 pounds per square foot of fluid metal at the bottom of the cast, all of which has to be provided for.

Pipes are cast in iron flasks that are round and perforated for the escape of gas. The thickness of mold is very slight, only one or two inches. The cores are made on iron core barrels or pipes with an equally thin coating of sand all baked before use. Hay rope is wound closely around the core barrel the whole length, and considerable loam mixed with the sand. This is plastered onto the hay, the core barrel being turned around, and the superfluous sand scraped off with a straight edge to bring the core to proper size. When the cast is made this hay becomes charred about the time that the iron sets, and passes off in the form of gas, leaving the loam comparatively loose on the barrel. This enables the core barrel to be drawn out easily. It also allows room for shrinkage as the pipe cools. This shrinkage in the 16 foot pipe is about two inches in length, and for 12 inch diameter about $\frac{1}{8}$ of an inch in the diameter of the pipe. Now, suppose we had 18 inch square flanges, on the ends. If our mold was strong enough to stand 7,200 pounds pressure of fluid iron, it would object to the shrinkage of the two inches in length. Very good judgment would be required on the part of the molder to make a hay cushion, or anything else that would stand up to the pressure as long as the iron was fluid, and give way to the shrinkage when it commenced to cool, and was about the consistency of good, solid cheese. I think when columns are cast on end they will have to be designed without brackets and end flanges so that shrinkage can be taken care of and less expense incurred for flasks. The tendencies in modern designs of construction are such that designers would probably prefer to continue the use of green sand rather than omit the casting on of brackets and other projections.

Green sand molding is used for the great bulk of architectural work of today, and I don't think it an exaggeration to say that no trade connected with building calls for so much judgment, care, and fine hand skill as green sand molding on architectural work. Green sand is classified into snap work, flask work, bedding in and open sand. Green sand is a name which designates molds made of sand, dampened slightly with water, rammed into the required shape, and the iron poured in without baking or hardening of the mold by heat. For heavy castings coarse sand, with even a little fine gravel, is used, as it makes a porous mold through which the gas can escape rapidly. For finer work finer sand is used, and for stove plate very fine, clean sand that will take impressions of fine lines is necessary. Such sand would not do for thick castings as it would not let the large amount of gas generated by thick castings pass off rapidly enough. In all cases the faces of the mold next to the cast is made of a thin layer of fine sand, coarser sand being used for the backing and body of the mold. All these sands have to have a proportion of clay or loam to make them stand firm and keep their shape against the wash and pressure of the iron. For the different classes of work that have to be done in a house shop three or four kinds of sand have to be kept in stock, also clay to temper with. This preparation of the sand is quite an important matter, and many rough castings are produced, owing to carelessness or lack of skill in the selection and preparation of sand suitable for the work.

(To be continued.)

DURING the month of August the Babcock & Wilcox Company placed the following boilers: New York Steam Co., N. Y., twelfth order, 1750 horse-power; Young & Farrell, Chicago, third order, 82 horse-power; Lawrence Rope Works, Brooklyn, second order, 125 horse-power; Grand Avenue Cable Road, Kansas City, 600 horse-power; Swift Manufacturing Co., Columbus, Ga., second order, 75 horse-power; Albaitero & Arrache, City of Mexico, 184 horse-power; Thompson Bros., Philadelphia, 15 horse-power; New York Steam Co., N. Y., thirteenth order, 1,000 horse-power.

Association Notes.

WESTERN ASSOCIATION OF ARCHITECTS.—Convention will be held November 17, 1886, at Chicago. John W. Root, Chicago, secretary; W. L. B. Jenney, Chicago, secretary of foreign correspondence.

ILLINOIS STATE ASSOCIATION OF ARCHITECTS meets the first Thursday of every month, at 15 East Washington street, Chicago. Annual meeting first Thursday in October, 1886. Louis H. Sullivan, Chicago, secretary.

MISSOURI STATE ASSOCIATION OF ARCHITECTS meets at St. Louis on the second Tuesday in January, 1887. Thomas B. Annan, St. Louis, secretary.

KANSAS CITY SOCIETY OF ARCHITECTS meets Monday afternoon of each week, at 4 o'clock. Annual meeting second Saturday in April, 1887. F. B. Hamilton, secretary.

THE ARCHITECTURAL ASSOCIATION OF IOWA, annual meeting, second Wednesday of January, 1887. C. H. Lee, Des Moines, secretary.

THE ARCHITECTURAL ASSOCIATION OF MINNESOTA meets every other Tuesday at Minneapolis and St. Paul alternately. Annual meeting January 4, 1887. Irving W. Kelley, Minneapolis, secretary.

KANSAS STATE ASSOCIATION OF ARCHITECTS meets at Topeka on the third Tuesday of January, 1887. H. M. Hadley, Topeka, secretary.

ASSOCIATION OF OHIO ARCHITECTS meets semi-annually. Next meeting, third Thursday in January, 1887. O. C. Smith, Cincinnati, secretary.

ASSOCIATION OF TEXAS ARCHITECTS meets at Austin on the third Tuesday of January, 1887. S. A. J. Preston, Austin, secretary.

NEBRASKA STATE ASSOCIATION OF ARCHITECTS meets first Wednesdays in January, April, July and October each year. F. M. Ellis, Omaha, secretary.

THE CHICAGO ARCHITECTURAL SKETCH CLUB meets every alternate Monday, Builders' and Traders' Exchange. W. G. Williamson, secretary.

THE WESTERN SOCIETY OF ENGINEERS meets the first and third Tuesdays of each month at 4 o'clock P.M., at 15 East Washington street, Chicago.

THE MASTER PLUMBERS' SOCIETY, of Chicago, meets first and third Wednesdays of the month, 7:30 P.M., at 15 East Washington street.

ILLINOIS STATE ASSOCIATION OF ARCHITECTS.

At the monthly meeting on the second instant, a quorum not being present, the time was passed in sociality and informal discussion. There were present as guests, Architect E. H. Taylor, of Cedar Rapids, Iowa, and J. W. Beach, Esq., Chicago. The Committee on Sanitary Legislation were prepared to submit the following bill which will be presented at the October meeting for action.

AN ACT FOR THE REGULATION AND INSPECTION OF THE SANITARY CONSTRUCTION OF BUILDINGS.

SECTION 1. Be it enacted that it shall be the duty of any person intending to erect any building in a city or town, in which there is established an officer or department of health, to obtain from such officer or department a blank entitled "description of building," fill the same in a manner fully describing the intended building, with its plumbing and sewerage fixtures, and submit such description to the said officer or department for examination and approval, which approval shall be granted only on condition that assurance—direct and implied—is given that the sanitary conditions of building will be in accordance with the provisions of this act.

SEC. 2. No building permit shall be granted by any building department in such city or town before the above said approval is obtained and presented to such department.

SEC. 3. There shall be no privy pits on any lot adjacent to a street or alley wherein there is a public sewer, and all present pits of the kind shall be cleaned out and abandoned and contents removed off the premises within three months from notice being given to the effect by the officer of department of health.

SEC. 4. The boss-plumber executing the plumbing work or causing its execution, in any building—other than mere repairs—shall, before in any way concealing such work, be this through his own agency or that of other mechanics or operatives working upon said building, notify in writing the officer or department of health to the effect that the said plumbing work there and then is in a state of completion and allow such officer or department a full working day's time for proper inspection of and officially passing upon such said work.

SEC. 5. A habitable room in any building shall have one or more windows of dimensions not less than one tenth of the area of floor space of each room, and the open space or lightshaft to be established for such windows or window shall have an area of not less than fifteen superficial feet for a building three or less stories in height with an addition of five superficial feet for each additional story, and such open spaces shall be part of the lot upon which the building is to be erected.

SEC. 6. Skylight coverings of lightshafts shall be so constructed as to allow admittance of fresh air into the shaft, and openings for this effect shall be not less than one twentieth of the area of such lightshaft.

SEC. 7. Habitable rooms henceforth to be arranged or newly entered shall have an average height of not less than eight feet.

SEC. 8. The hallway in any building shall be lighted and ventilated, be it directly from the open air or indirectly from a skylight.

SEC. 9. A water-closet room, or bathroom with water-closet, shall have ventilation through an express and independent air shaft, the area of which shall not be less than one superficial foot. Said shaft to extend not less than two feet above the roof and be arranged for admission of air. Each bathroom shall be lighted by a window opening to a separate lightshaft or to the outside air, or by a French window off a general lightshaft.

SEC. 10. No alterations, additions or converting to a different purpose, which will change or alter any or all of the sanitary conditions or arrangements in any building, shall be made, except upon the express written approval of the proper officer of the said department of health; nor shall any additional structure be erected upon any lot on which there is already a building except upon such approval and a special written permit.

SEC. 11. Sewage drains shall be laid with a uniform decline of not less than one-tenth of an inch to the foot. There shall be a trap and adjacent air inlet in connection with the drainage system of each building, located without such building, and the entire sewerage systems for any building shall be so constructed as to allow ready and complete inspection when completed.

SEC. 12. Earthen sewage drains shall be laid upon a foundation expressly prepared for the same, and their joints shall be made absolutely tight and permanent.

SEC. 13. Metal sewage drains and soil pipes, if not enameled, or not of noncorrosive material, shall be covered inside and outside with a coat of asphaltum. Their joints and their connections with any tile drain shall be made absolutely tight, in manner as prescribed by the officer or department of health.

SEC. 14. Every soil and waste pipe shall be of durable and permanent material, satisfactory to the officer or department of health, and each pipe shall be vertically extended in the full size, through the roof of building to a point at least two feet beyond the highest surface of same.

SEC. 15. No chimney flue or waterleader pipe shall be used for conveyance of exhaust steam or for ventilating soil or waste pipe.

SEC. 16. All sewerage plumbing work shall be executed in a thorough manner satisfactory to the officer or department of health, whose privilege it shall be to make proper tests as to the quality of such work.

SEC. 17. There shall be a trap to every water-closet, sink and all other plumbers' fixtures in building.

SEC. 18. Overflow guards to any fixture, and wastepipes to refrigerators, shall have independent wastepipes, which have no connection with the sewerage system.

SEC. 19. No lead pipe shall be connected with an iron pipe except by means of a metallic ferrule or other means expressly approved by the officer or department of health.

SEC. 20. Any duct admitting fresh air to an apparatus intended for warming shall not be concealed below the lowest floor in a building.

SEC. 21. Any duly authorized officer of the said department of health shall, so far as may be necessary for the performance of his or their respective duties, have the right to enter any building or premises in such cities or towns.

SEC. 22. Any person violating any of the provisions of this act shall, upon conviction before a court of justice, be fined in a sum of money not less than \$250 nor more than \$500.

SEC. 23. Any person thus convicted and fined, as specified under Sec. 22, shall begin to rectify the said violations of this act within two days from conviction, and push such work with energy, so as to have it completed within a certain time to be set by the officer or department of health, and in default thereof become again and again subject to another fine, and still another, in accordance with said Section 22.

SEC. 24. Said court of justice is hereby still further authorized to issue, upon due application of any officer of a department of health, an injunction against the use or occupation of any building or structure which is erected or altered, maintained or used in violation of this act.

SEC. 25. This act shall take effect immediately after its passage.

SEC. 26. Any and all legal provisions being in conflict with this act shall be null and void.

After some informal discussion the meeting adjourned.

KANSAS CITY SOCIETY OF ARCHITECTS.

THE time of the weekly meetings of the Kansas City Society of Architects is Monday, at 4 o'clock P.M., in place of Saturday, as heretofore published. The first meeting after the summer recess will be held September 6, 1886.

CHICAGO MASTER PLUMBERS.

W. H. Genung, chief of the health department, attended the Master Plumbers' Association meeting of the 2d instant, and explained the different methods suggested by the health commissioner to prevent the escape of sewer gas, caused through defective connection of metal with tile piping where house-drains enter the sewer. At the present time the ordinance governing the point reads that "neither cement nor mortar can be used for the purpose," as either composition is even more porous than brick, through which atmosphere can be pressed with sufficient force to extinguish a light six inches from it. Mr. Genung said that any suggestion that could be made by the plumbers was acceptable to the health department. It was proposed that a new ordinance be framed which would contain a clause reading "the connection shall be made as the city office shall direct." After much debating, the plumbers decided in favor of a quarter-bend, with a hermetically-sealed trap, twelve inches from the point of its juncture with an iron sewer-pipe. It was stipulated that the sewer-builders should stop their part of the work within two feet of the point where the plumbers' work is obliged to commence, and that instead of leaving an upsticking "bend," as is at present done, the section should be horizontal, also with a trap twelve inches from its point of juncture. This, it is claimed, allows easy cleaning of matter collected in the pipe, and will, if properly sealed, entirely do away with the sewer-gas and its contingent molecules of malaria.

Our Illustrations.

KANSAS CITY EXCHANGE BUILDING COMPETITION.

The descriptions here given accompanied the drawings in the competition.

Design submitted by Architects Peabody & Stearns, Boston, marked "Puritan."*

The scheme herewith presented gives thirty-five excellent offices in the main office stories. The Board of Trade Hall and offices occupy the second floor. Above the hall is a skylight, which also lights the office corridors. The lavatories are isolated and near the boiler flue for ventilation. The restaurant is in the basement, with kitchen in sub-basement under same. The safety vault is in the sub-basement beneath the safety vault offices. The boiler and engine, etc., are in the sub-basement under the southern part of restaurant.

The offices in the building are numerous and all light and good. The corridors are thoroughly lighted. The hall is well lighted.

Design submitted by Architects Peabody & Stearns, Boston, under the device of a clover leaf.

The main hall is here placed in the fourth story, and is carried up into the roof, forming the main feature of the building outside and inside. The front of the building is intended to form an effective landmark from near and far. The safe deposit offices are in the basement and the safety vault is intended to be in the sub-basement beneath. The restaurant is in the basement, with kitchen in sub-basement beneath reaching from street to area. The boiler and coal room are under the southern half of restaurant, and also reach from street to area.

The full plan of office stories give thirty-two offices, and the formation of the Eighth street front makes them nearly all extremely desirable offices.

Design submitted by Architects Peabody & Stearns, Boston, under the device of a crescent.

In this design the elevators are massed together near the stairs. Visitors to offices above, by stairs or elevator, will not interfere with the Board of Trade business, as all the offices of the Board of Trade connect with each other by lobbies and corridors of their own.

The hall forms the central feature in the second floor. Liberal lobbies for those having business with members, and ample space for telegraph and telephone service, immediately adjoin this hall, and near by are the various offices called for. There are thirty-three offices to a floor in the main office stories, and the formation of the Eighth street front renders most of these offices very desirable. A sub-basement is intended to contain beneath the deposit vault offices a large deposit vault; beneath the north

*These architects were among the three paid competitors.

half of restaurant a kitchen reaching from street to area, and beside it, also reaching from street to area, a boiler and machinery and coal room.

The janitor's and watchman's bedrooms are intended to be in the roof story.

Design submitted by Architect George B. Post, New York, under the motto: "In me mea Spes Omnis."*

EDWARD H. ALLEN, ESQ., *President*; PROF. WILLIAM R. WARE, *Professional Adviser*.

Gentlemen,—I have the honor to submit the accompanying plans, with this memorandum as their explanation, as my scheme for your proposed new building.

I shall refer to the different features of construction and arrangement in the order of their presentation in your pamphlet of instructions.

As I have frequently found by test that confined wet clay will bear before initial compression a load of two tons to the foot, I contemplate a spread of footings to bring the pressure on the soil in the trenches within that limit.

I leave the choice of materials for façades for future discussion, in case my plans should receive your favorable consideration, with the comments that terra-cotta is somewhat cheaper in general than stone, and that my design does not contemplate the use of violent contrasts of color.

I cannot recommend the use of any slow burning construction in which wooden beams are inclosed in fireproofing material, as it has been my experience that when so inclosed the danger of rot is exceedingly great.

I have provided for the arrangement which has in my city been proved to be the most desirable for securing the maximum rents, by making no interior fixed partition walls, but by securing sufficient dynamical stability for the exterior walls by their form and dimensions, and supporting the floor throughout by columns and girders.

Any interior partitions may be removed at any time to suit the requirements of tenants, and it is my practice to make the floor construction sufficiently strong throughout to carry partitions at any point.

Thus if I have allowed too much space for the banks they may be made smaller. If direct and independent steps to the banks from the streets are required they may be provided.

Experience in my city has proved conclusively that there is great advantage in placing the restaurant and kitchen in the *top story*, if a service elevator is provided to connect it with the streets.

All windows in my plans have their heads in close proximity to the ceiling, and no sill is 2 feet 9 inches from the floor.

I have located the Board of Trade hall in the fourth and fifth story, to secure a proper height of ceiling to make it of good proportion.

I have also for the same reason run the small hall through two stories.

I have grouped the *elevators* in the most *central position*, and have arranged them in relation to each other to provide for the most rapid and systematic running.

Experience in my city has proved conclusively that even at very considerable sacrifice in other respects, it is an economy to place the elevators where they can be perfectly lighted at all their landings.

I propose to make cellar floor space (in preferably the east wing) for 400 horse-power of boilers, which would give, with a margin, steam for five elevators and steam heat, and 1,000 incandescent electric lamps, viz: 150 horse-power for heating, 150 horse-power for elevators, 100 horse-power for lamps.

The exhaust steam to be used in the circulation for heating, its pressure made constant by the introduction of live steam through an automatic equalizing valve.

The chimney is distant from all offices.

I propose to make the hall partitions throughout from 5 feet 6 inches above the floors, of glass, as is almost universal in the office buildings in my city, which insures perfect light; and to ventilate by windows, and if required by flues.

I propose to construct smoke flues in every pier, and by design have made roofs of low pitch so that these flues will draw.

With fireproof floors a fireplace may be built in any office but I do not recommend their general construction before renting the offices, as it has been conclusively proved by experience in a number of office buildings which I have erected, that unless the office is very large the loss of wall space for desks, on account of the mantel, is more than equivalent to the gain in comfort in the possibility of using an open fire. In several buildings which I should name were not these plans sent in without signature? Out of several hundred fireplaces, in the aggregate but a very few are used, and the demands of tenants to remove mantels to make room for desks are not very infrequent; I have consequently not indicated fireplaces on the plans except in a few offices.

The introduction of the fractional valve and its accompanying steam system has removed the most serious objection to direct steam as a means of heating offices.

I have made the ordinary provision for water-closets and urinals, and have added on each story a water-closet room for female clerks and stenographers.

I have arranged for fireproof storage vaults in the basement similar to those which I constructed in an important office building in my own city.

If desirable this might be altered to a safe deposit company, and the cellar under it might be also occupied by vaults.

The prescribed scale of the drawings and necessary limit of length of this communication makes it impossible to describe intelligibly the system of ventilation which I propose. If my plans are otherwise satisfactory, I shall refer to two or three similar structures, already constructed by me, in which the system is in successful daily operation.

As my second and third story plans are practically identical, I submit but one plan.

For the same reason I submit no Central street elevation, as it is practically identical with that of Wyandotte street.

* This architect was one of the three paid competitors.

It may be an assistance to the committee and its professional adviser, in their labor of making estimates, to state that my scheme contemplates the construction of about 1,600,000 cubic feet of fireproof building, and that I have erected a large number of fireproof buildings with iron beams, brick floor arches, fireproof partitions, tiled halls and hardwood trimmings at an expense, varying with the market and amount of elaboration, between twenty and forty cents per cubic foot. At the present time the cost of most materials entering into the construction of fireproof buildings is exceptionally low.

In conclusion I direct your attention to the facts.

1st. No attempt has been made to show the correct thickness of walls in the plans or sections.

I should so proportion them that the maximum pressure per square inch on the brickwork with the floors loaded should be 150 pounds.

2. The corridor north of the Exchange Hall and the corridor above it would be carried by girders.

As the cost of the structure will be in direct proportion to the number of cubic feet constructed, and as no equivalent gain in rents would be secured by making the main building deeper in the lower stories, this method of constructing the galleries referred to is economical.

The offices under them would be darkened to the same extent as rooms by a high piazza roof.

If galleries in the Exchange Hall are desired they may be constructed on the north wall. As they were not mentioned in the instructions I have not drawn them.

Respectfully yours,

"IN ME MEA SPES OMNIS."

Design submitted by Irving K. Pond, Chicago, under mark of "Notus."

It is desired to call attention to the following points in the plan designated—"NOTUS."

1. Direct light provided for all offices; southern exposure for the largest possible number.

2. Offices correspond in size to instructions, but capable of subdivision.

3. All corridors lighted by transom and by direct light.

4. Court so located as to give maximum southern exposure.

5. Location of court is such as to indicate position and extent of each hall, thus characterizing the building, and giving without loss of strength, an effect of loftiness and dignity incompatible with an unbroken front.

6. Each hall lighted from three sides.

7. The vault stack occupies the least lighted portion of the building.

8. The elevators are so placed as to be equally accessible from all entrances, of which those on Central and Wyandotte streets are so situated as to be nearest to the business center of the city.

9. Boilers, machinery and coal storage are in sub-basement, entered from Wyandotte street, on which boiler door is provided.

10. Safe hoistway, freight elevator and servants' stairway open on northeast corridor, adjoining boiler and ventilator flues.

11. Space for kitchen, stores, laundry, servants' quarters, etc., provided in roof, kitchen being lighted by top light.

12. Above the principal floor the tower is devoted to offices, which, by reason of near access through elevators and southern exposure, form the most desirable suites in the building.

13. Upper floors of tower devoted to restaurant uses as follows: eighth to business lunch, ninth to private dining-rooms, tenth with encircling gallery, to café. A restaurant with sufficient accommodation, would, on lower floor, intrude upon space extremely valuable for business purposes, but when in tower is readily accessible, commands a wide prospect of the city, and becomes a marked and attractive feature of the building.

14. The plan of the piers is such as to give at once the required strength and maximum of light, the window space being greater in width by upward of three feet than the distance between the piers. In all offices the window heads are square and close to the ceiling, those in the fourth story running above and at a distance behind the grand arches.

15. Fireplaces are provided in each office and in each hall, and to avoid smoky and non-acting chimneys, universally found in buildings of such height, with or without roofs, the flues run direct to attic, and connect with a large flue in which is placed an exhaust fan, giving power and directness of draft in connection with get-at-ability for cleaning and repairing. The expense of constructing the large flue through the attic and of running the exhaust fan, will be less than the expense of constructing individual exterior chimneys.

16. Ample accommodation is provided on each floor for general lavatories and closets, as also a basin with running water in each office.

17. The exterior is designed to be treated in red brick, with red sandstone of harmonious shade for basement and trimmings; roofs to be of red slate or tile.

18. The corner turrets are utilitarian features, and intended for dumb-waiters and staircases.

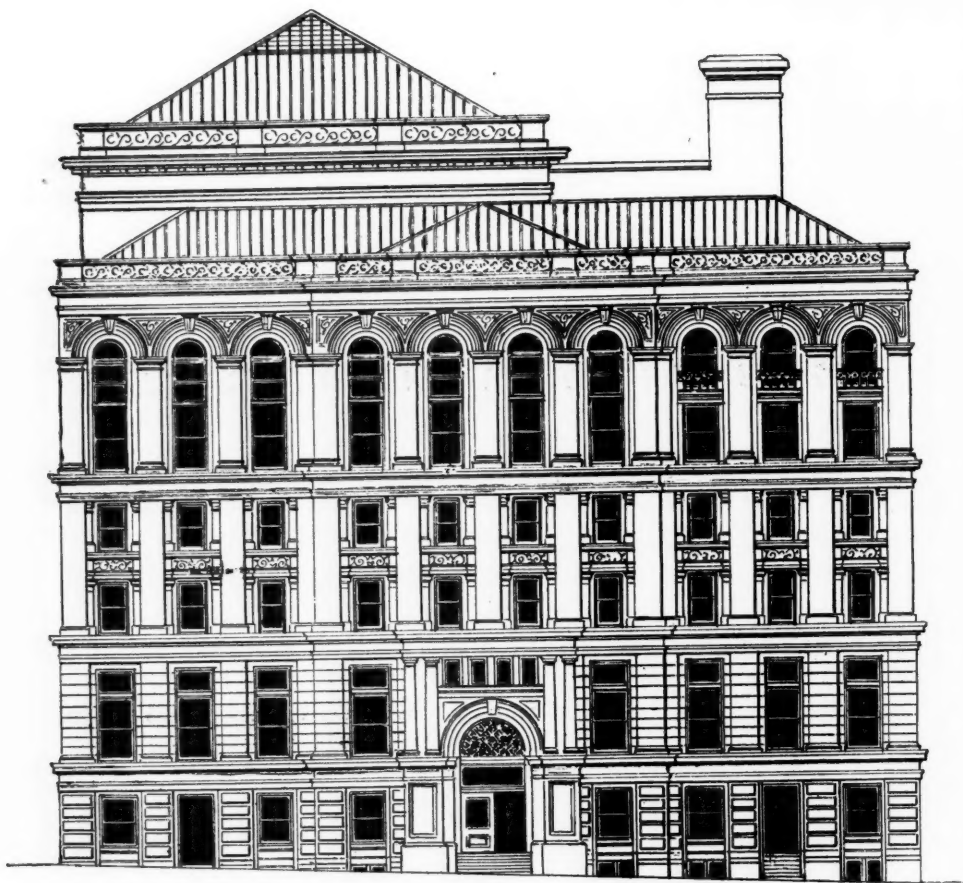
19. Clock in tower.

20. If it is absolutely essential that more office space be provided, the ceiling of the larger hall may be lowered to a level with the ceiling of the fourth story, and the entire fifth floor given over to offices, though from an artistic standpoint, such a change would be regarded as a grave error.

Respectfully submitted by "NOTUS."

JUNE 15, 1886.

AMONG the prominent buildings which have been recently covered with the Patten shingle, manufactured by Gummey, Spering, Ingram & Co., of Philadelphia, are the following: The court house at Mayfield, Ky.; a large church at Meridian, Miss.; a residence and warehouse at Gloucester, Mass.; a warehouse at Tamaqua, Pa., and the Exposition Building at Omaha, Neb. Several residences at Nashville, Tenn., have also been roofed with this shingle. The makers direct attention to the leading peculiarity of these shingles, which is the cleat, which not only holds the center of each and every shingle tightly in place, but serves also as a guide by which the succeeding courses are properly located and made straight.

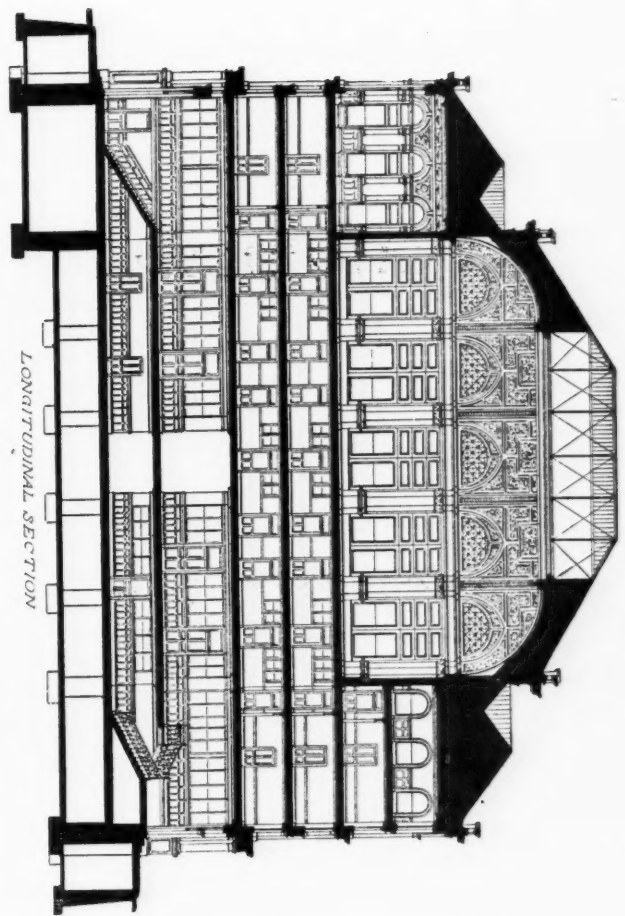


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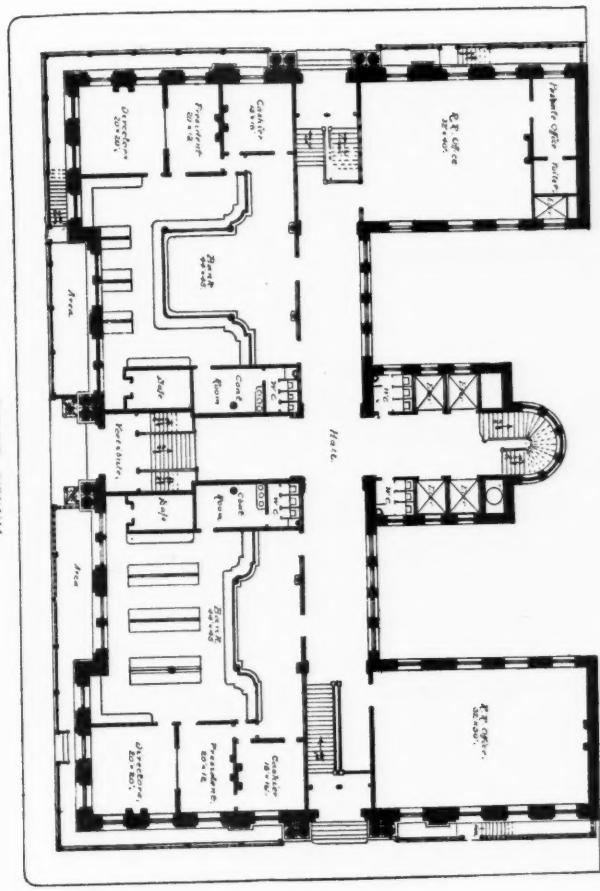
Inland Architect and Builder Print.

COMPETITIVE DESIGN FOR KANSAS CITY EXCHANGE BUILDING,

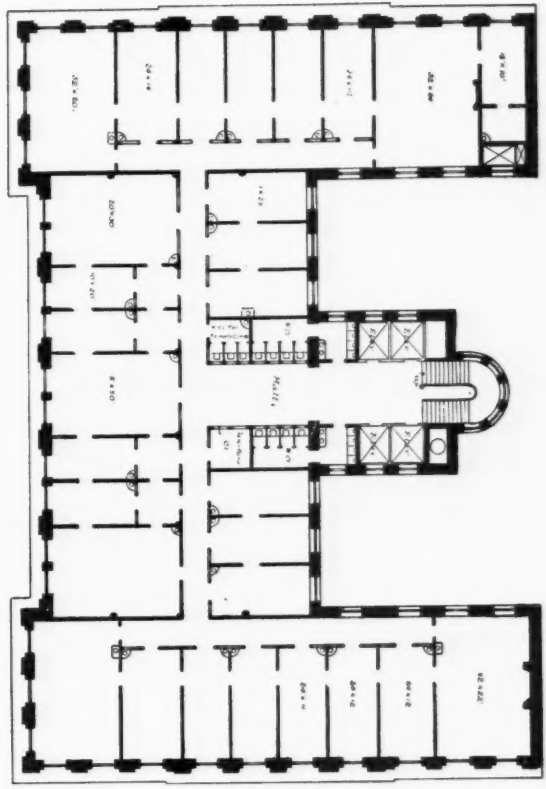
SUBMITTED BY "IN ME MEA SPES OMNIS," GEORGE B. POST, ARCHITECT, NEW YORK.



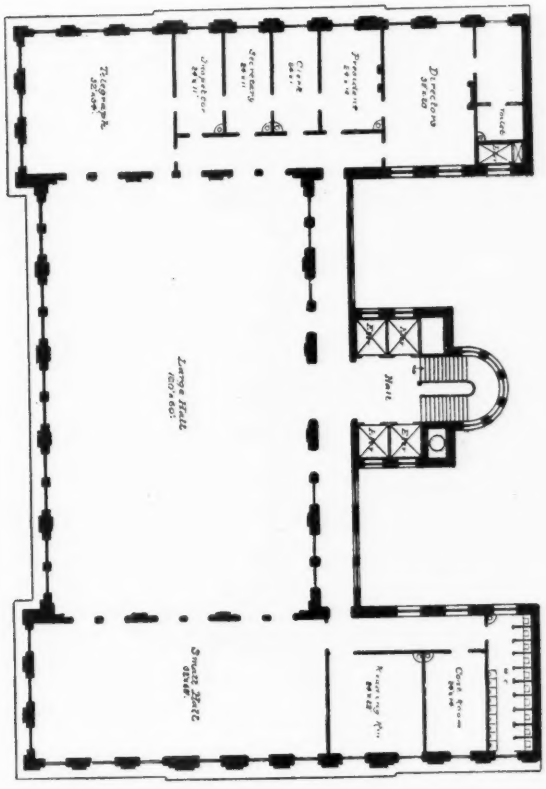
LONGITUDINAL SECTION



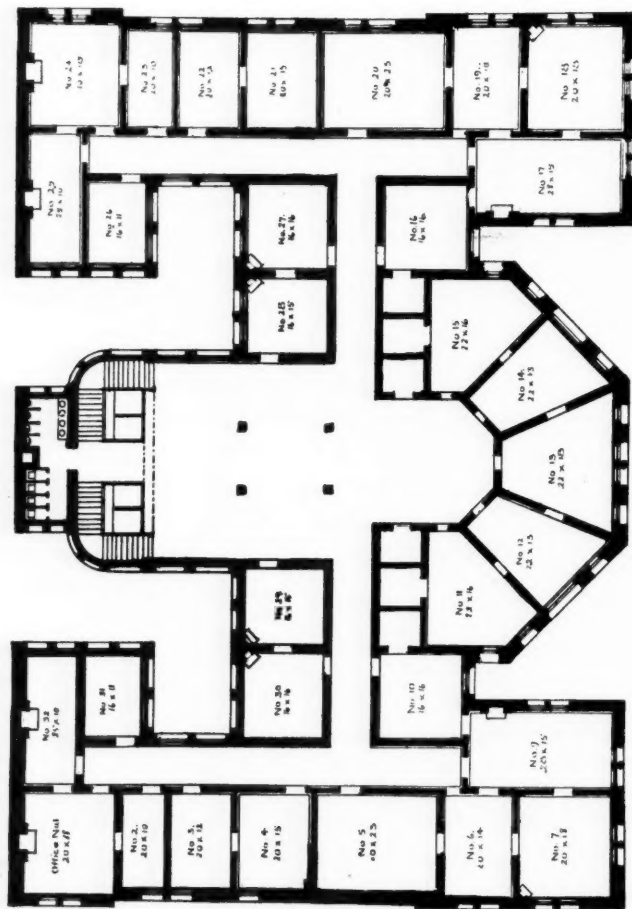
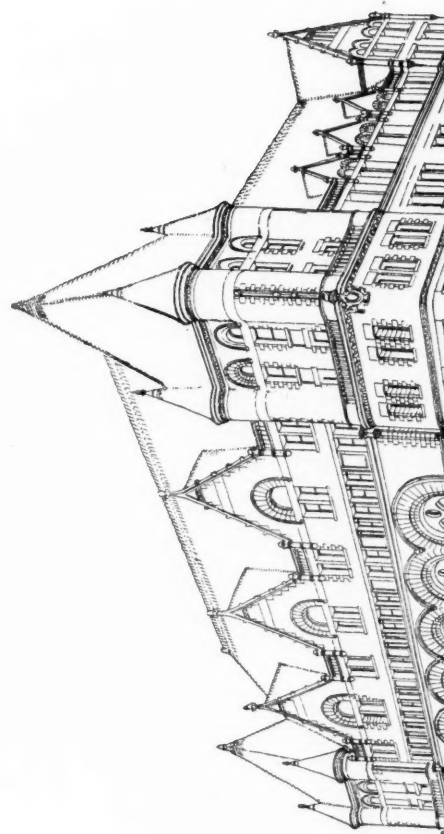
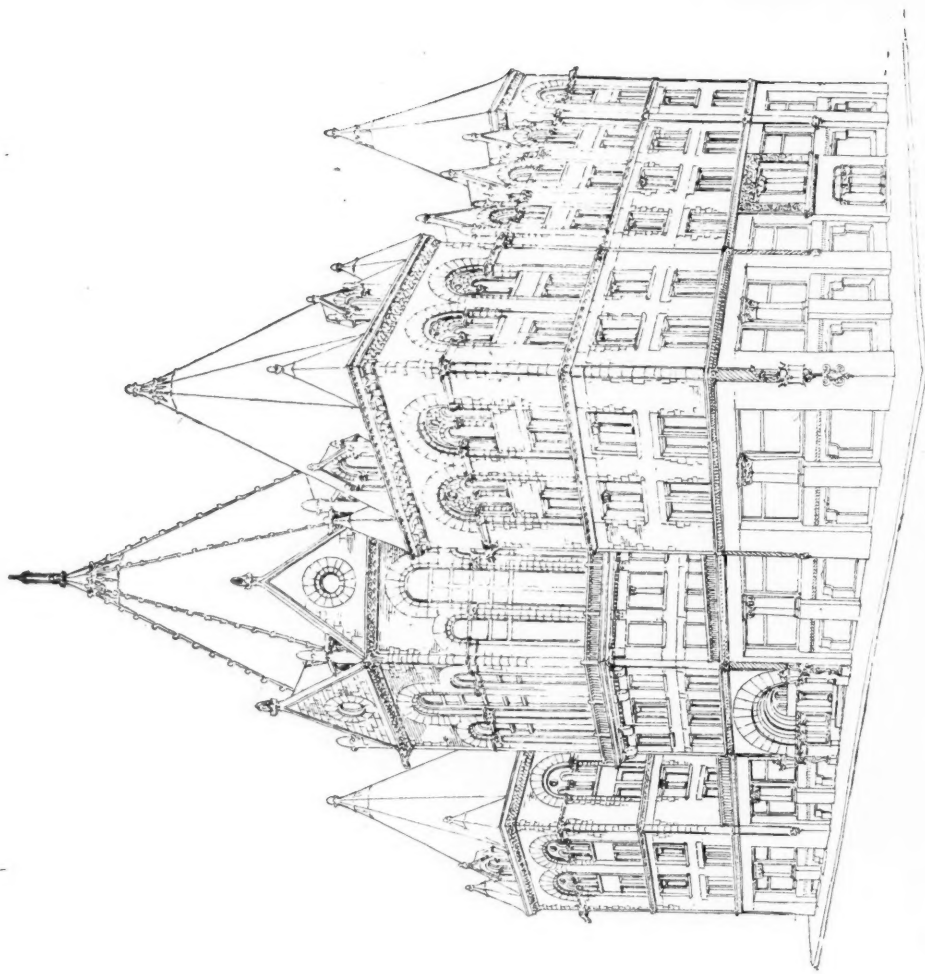
FIRST STORY.



SECOND & THIRD STORIES.
OFFICES

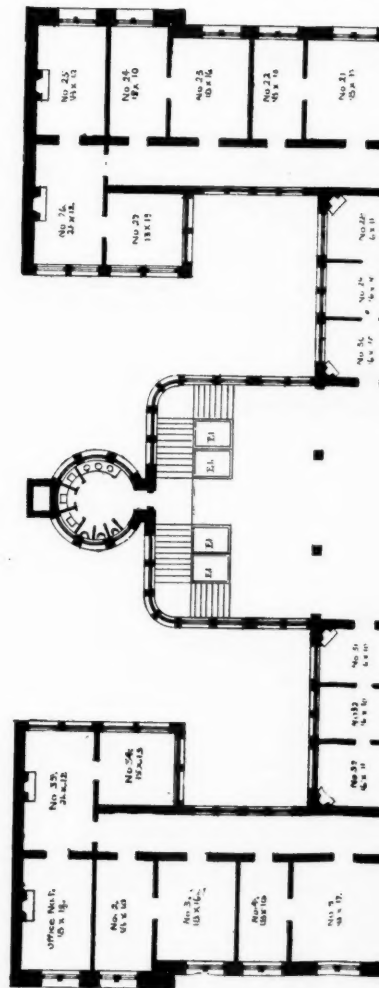


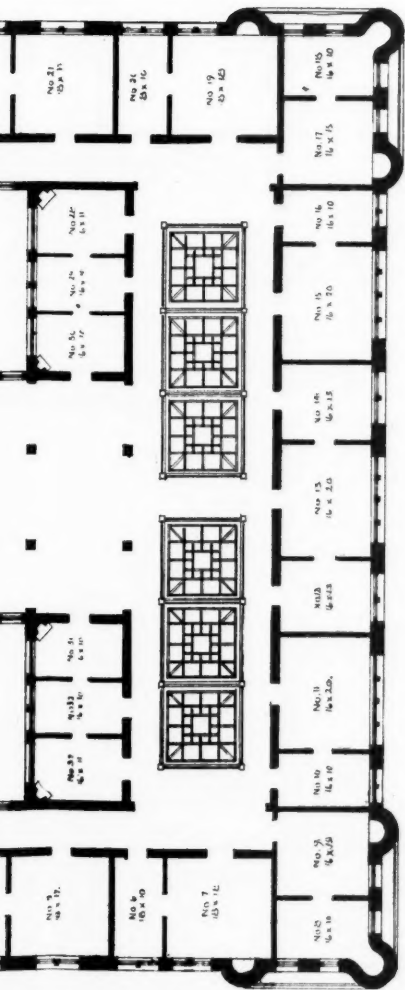
FOURTH STORY.



Fourth and Fifth Story Plans

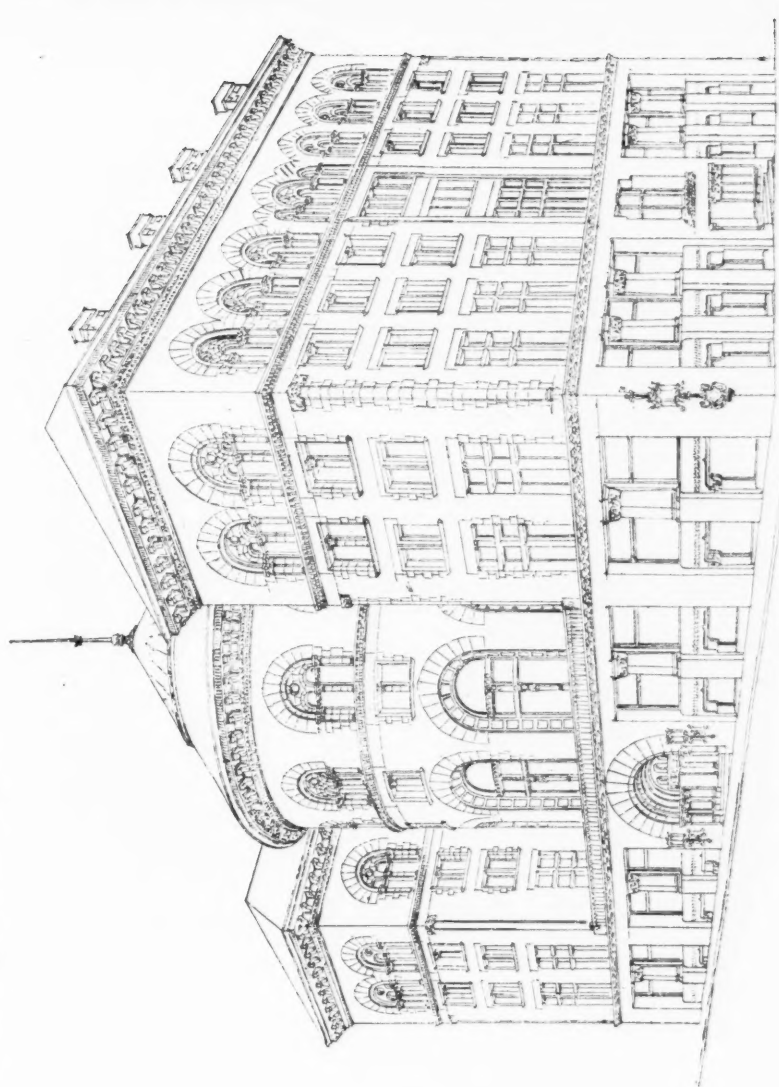
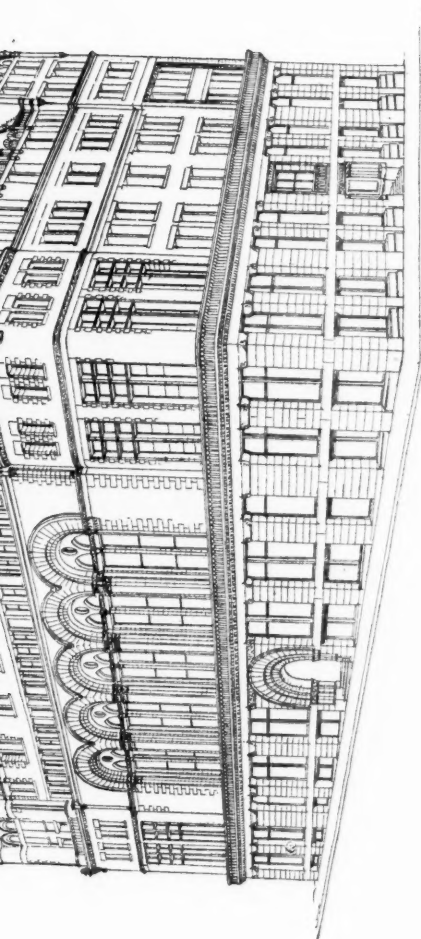
PLAN AND PERSPECTIVE OF "CLOVER LEAF" DESIGN.



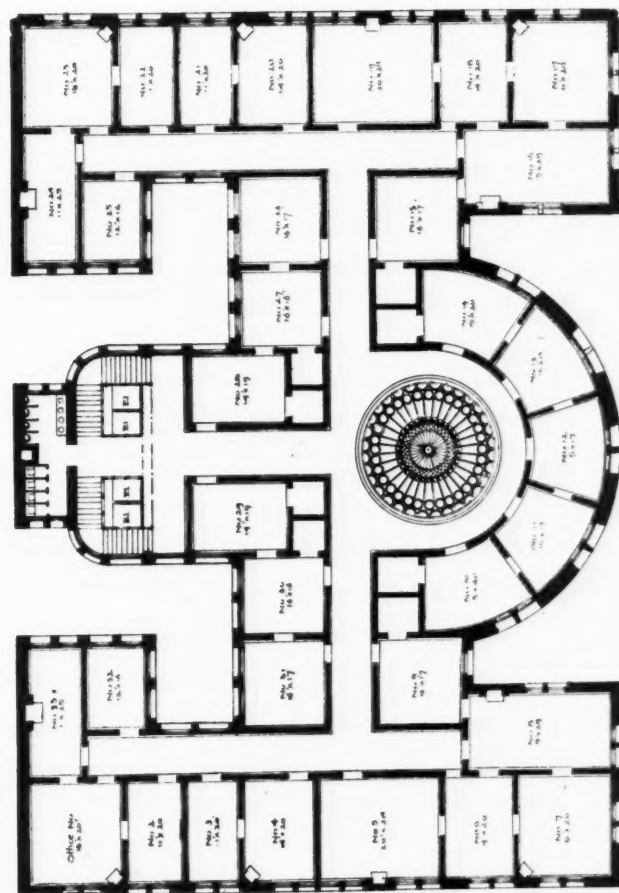


Fourth and Fifth Story Plans.

PLAN AND PERSPECTIVE OF "CRESCENT" DESIGN.



Inland Architect and Builder Print.

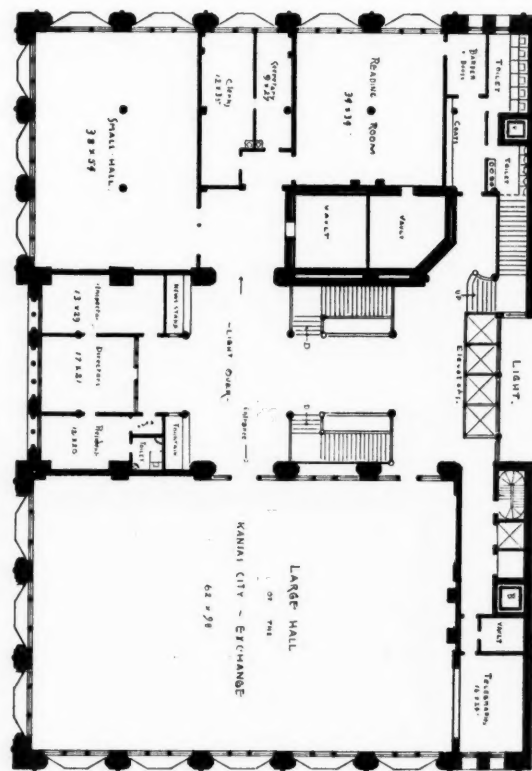
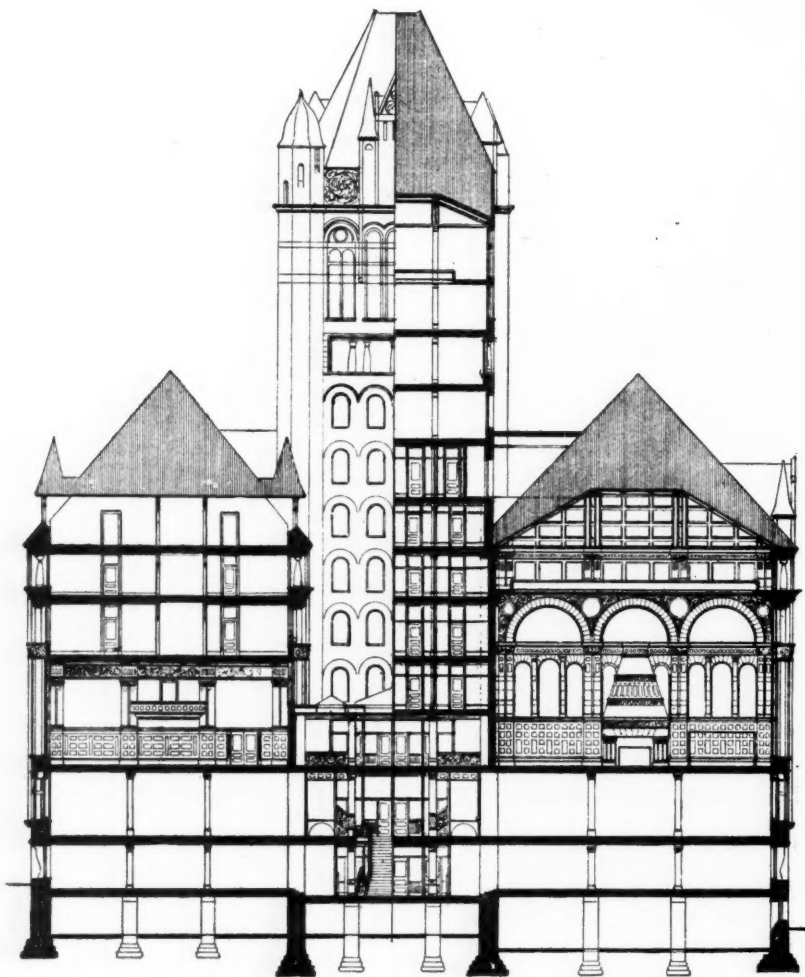
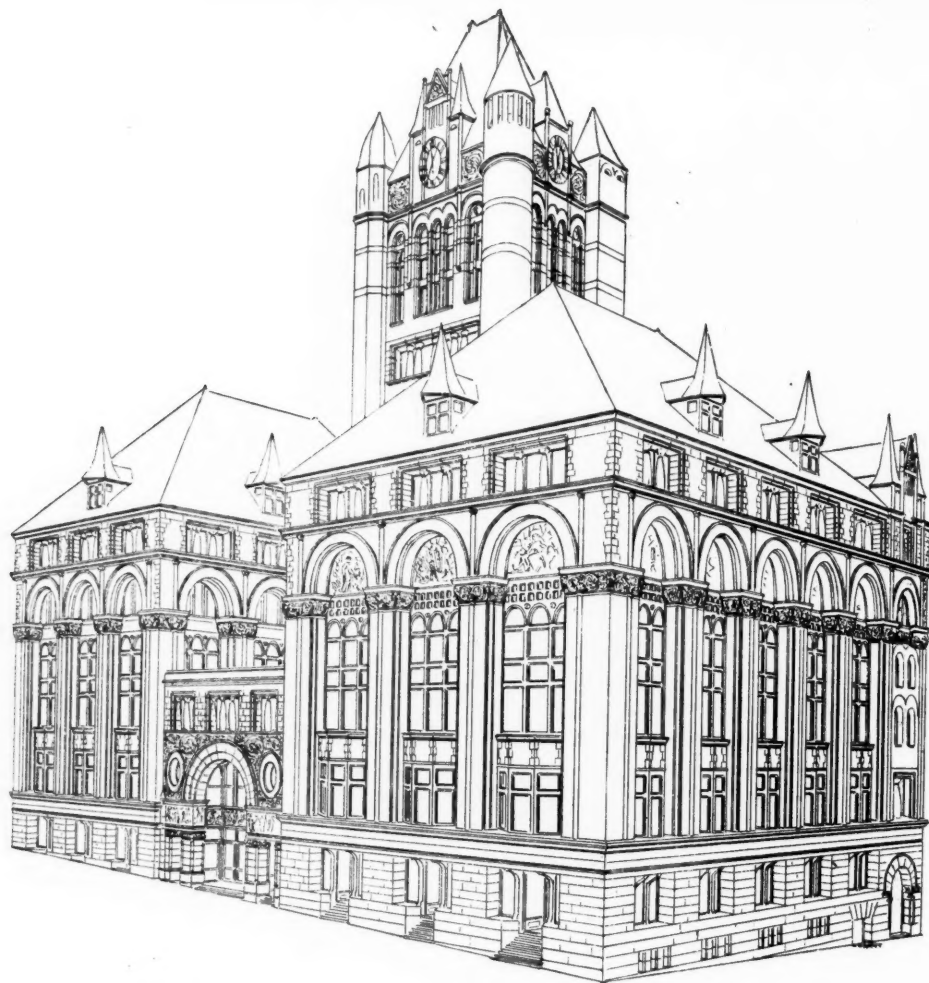


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PLAN AND PERSPECTIVE OF "PURITAN" DESIGN.

THREE COMPETITIVE DESIGNS FOR KANSAS CITY EXCHANGE BUILDING.

SUBMITTED BY "CLOVER LEAF," "CRESCENT" AND "PURITAN." PEABODY & STEARNS, ARCHITECTS, BOSTON, MASS.

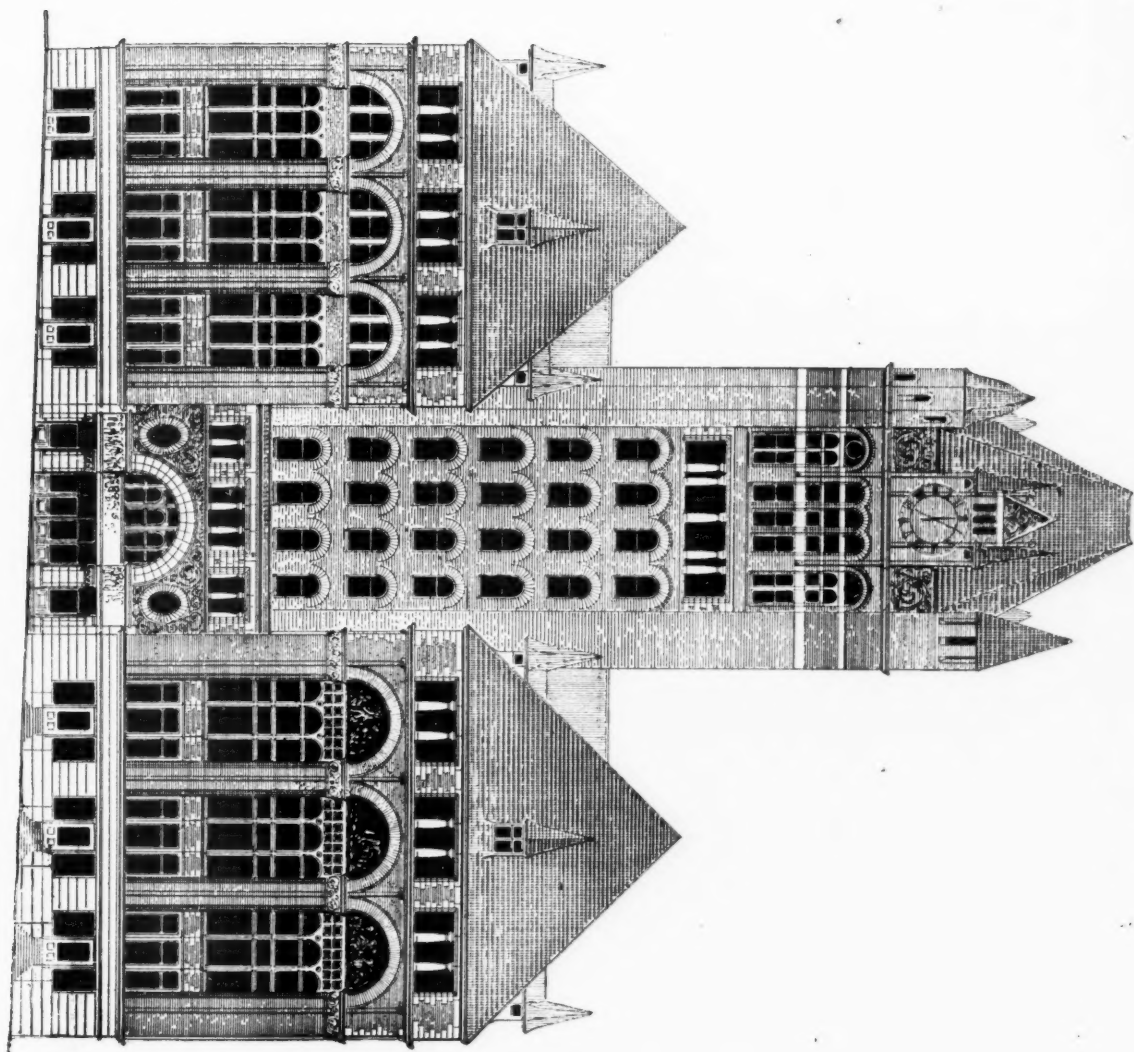
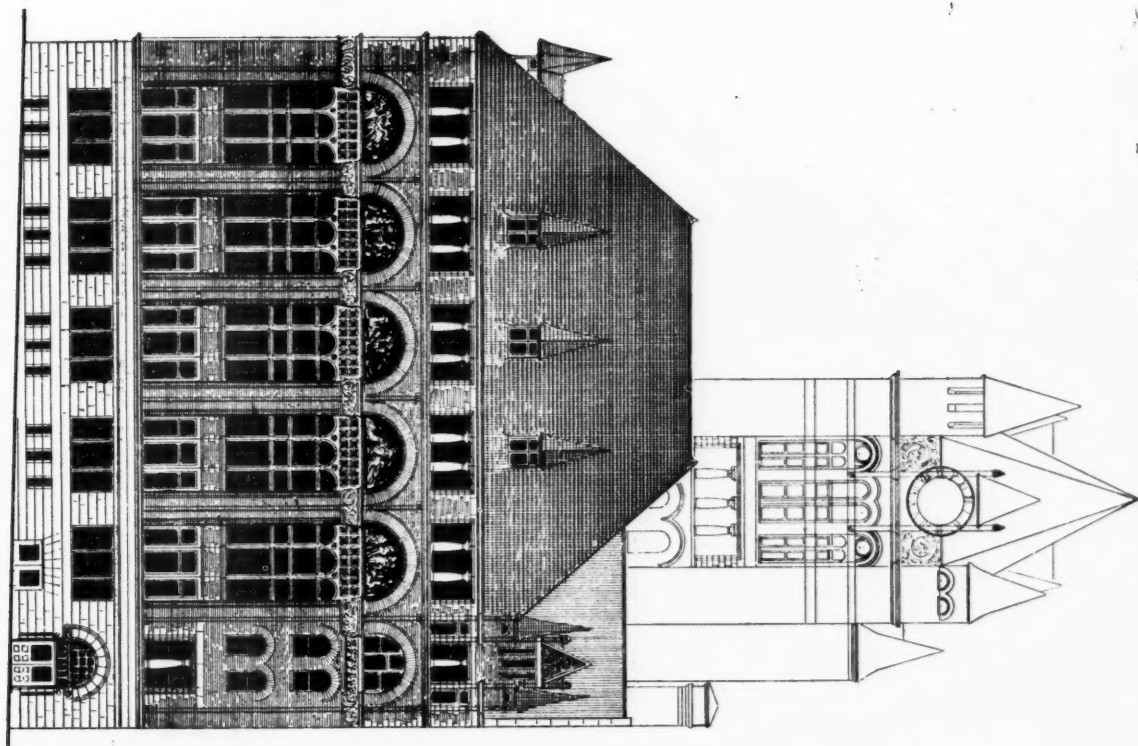


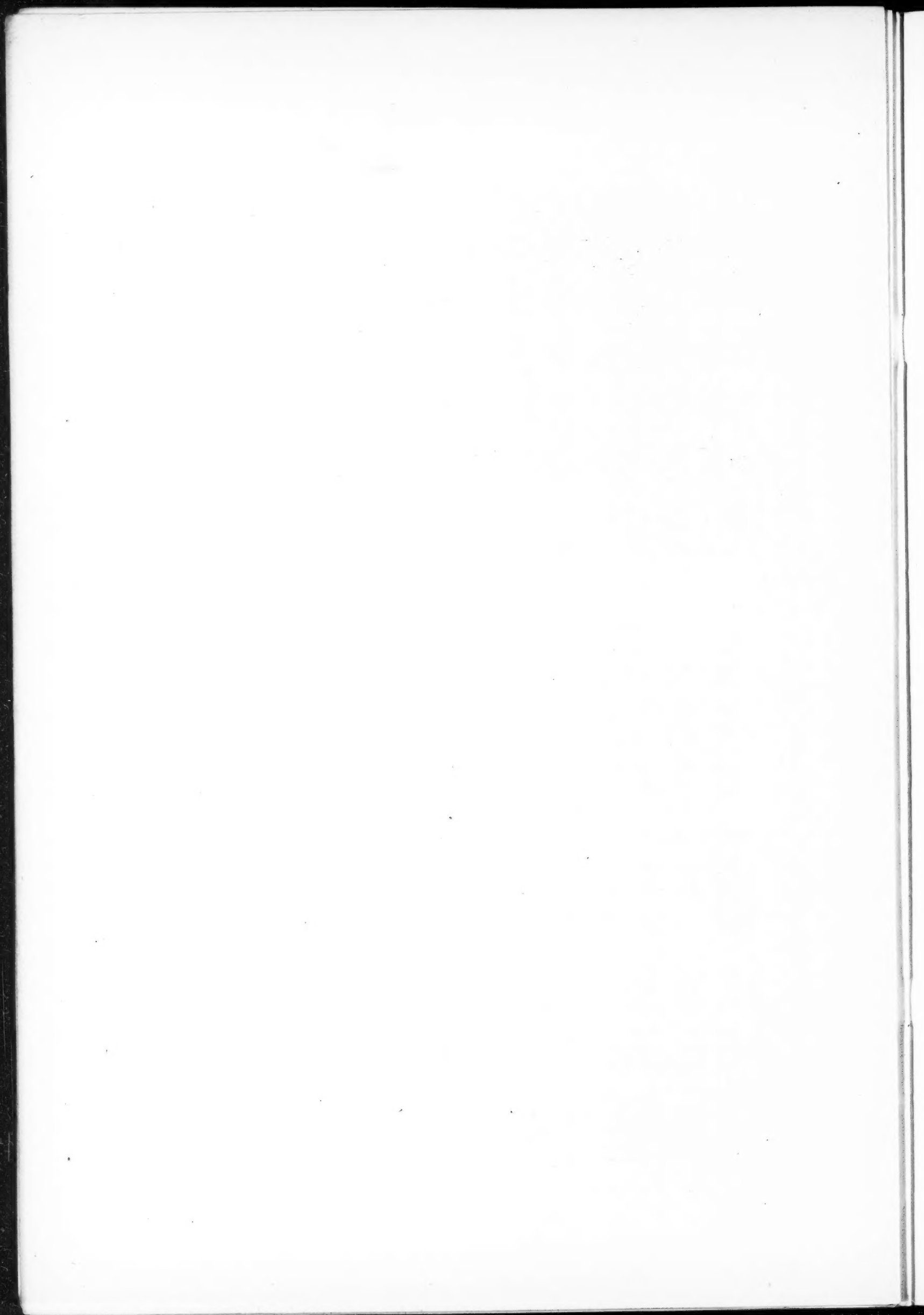
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Inland Architect and Builder Print.

COMPETITIVE DESIGN FOR KANSAS CITY EXCHANGE BUILDING.

SUBMITTED BY "NOTUS," IRVING K. POND, ARCHITECT, CHICAGO.





New Publications.

In no field of duty has one of our kindred arts been so exalted as in that of recent landscape photography. As an exponent of true progress in this hitherto difficult domain, we refer to an admirable series of views, taken along the line of the Cincinnati, Wabash & Michigan Railway, in Indiana and Michigan, with the new Collins camera, by Mr. W. F. Lesser, of St. Joseph, Mich. The novelty and distinguishing merit of the new camera are, that it dispenses with the focusing cloth and ground glass field, minutely defining all objects before it, and by instantaneous exposure of the dry plate, reproduces and perfectuates effects, in living nature, not heretofore attainable. The examples of its work before us were taken early in the year, when the instrument was still under adjustment. Even at this disadvantage they are a revelation. But the more recent published series, referred to above, are most strangely and wonderfully beautiful. All true art qualities combine in these. The atmospheric effects, the spray of the surf, the foam of the rapids and all of the delicate gradations of chiaroscuro, carrying the eye without blur or medley to the farthest horizon, all details and distance sharply defined become, by this art preservative, ours, not only for the instant of delighted discovery, but during the life of the imprint. Especially noteworthy are: the surf at St. Joe, with masquerading bathers; twilight in Sleepy Hollow; along the beautiful St. Joseph river; the falls at Niles; the cliffs at Wabash, winding to a dreamy distance; the reflected figures in the glassy pools of the parks at Warsaw, and the leafy nooks along Sodus Creek. For quiet beauty and well-defined character, these are perfect pictures. What encouragement may not photographing attain when it can reproduce the delicacy of this matchless work.

Art Age has made an excellent change in their form of issuing special plates. This is in the form of supplements, enabling subscribers to separate the illustrations for use as studies or for hanging and will be generally appreciated. *Art Age* represents art in this country not only in its selection of subjects, literary and pictorial, but in typography; an undoubted artist in type evidently having had a large share in the excellent make-up of this journal. It fills the field of contemporary art as perfectly as one journal well can; and, in these days of pseudo publication, without real aim or purpose, a journal like *Art Age*, which aims high and so nearly reaches an ideal is invaluable to the library of an artist, architect or to those in any way interested in art.

Mosaics.

THERE has been no change in the architectural firm of Thomas & Roger of Chicago.

GEO. J. SCHWARZ, well known in the pressed brick interest in Chicago, has connected himself with Lockwood & Kimball.

MESSRS. MERCHANT & CO., the roofing plate dealers, make some interesting statements in their advertisement in this issue, which it will profit architects to read.

HAY & PRENTICE CO., Chicago, have discontinued their down-town office at 175 Dearborn street, and will receive all communications at their general offices, 34 and 36 South Canal street.

ONE of the most recent partnerships in the architectural field is that of Miller & Thain, formed of C. C. Miller and J. A. Thain. With their experience and large acquaintance they may well expect a successful practice.

LIME cartridges are coming into use for blasting purposes. A hole is bored, the lined cartridge inserted, and water is poured over it. The increase in volume of the slaked lime splits and cracks the substance which it is desired to blast.

A DEPOSIT of mineral paint at Clifton, Tenn., is thought to be the largest in the world. It is said to be oily, of a Venetian red color, and that it is better for iron or tin roofs than lead, as it sticks better. It is believed that several million tons can be mined at a cost of 50 cents per ton.

CODDINGTON & HOGG have dissolved partnership, Mr. Coddington retiring from practice. James Oliver Hogg has formed a copartnership with Messrs. Nier & Byran, of Kansas City. They have also opened a branch office in Ft. Smith, Arkansas. The firm is now known as Nier, Hogg & Byran.

MAX I. DRACH, for a number of years chief draftsman for Mr. H. Wolters, the Louisville architect, has recently connected himself with the McDonald Bros., architects, at Louisville, Ky. He is one of the best educated men in the profession, and his addition to the firm of McDonald Bros., will increase, if possible, the high standing of that firm.

MR. RICHARD SMITH, who has for many years been well and favorably known to Chicago architects as a plaster contractor, has removed to Omaha, where he has entered into the manufacture of bricks and will also carry on plaster contracting. Mr. Smith's reputation in Chicago is such that he can be at once taken into the confidence of Nebraska architects.

ALBERT MILLET, brother of L. J. Millet, of Healy & Millet, and chief engineer of Panama Car Company, is now organizing a company for the construction of a cable road in that section of the country after the pattern of the one in Chicago. He is also civil engineering on the Panama canal under M. Ferdinand De Lesseps.

ARCHITECT FREDERICK BAUMANN, of Chicago, has presented to the health department a decidedly novel plan for disposing of the city's dead by way of cremation. His plan is to erect a gigantic mausoleum of stone, with a gradual ascending staircase that could be carried to any height. Thousands of vaults could be arranged in this structure, which could be rented in the same manner as is usual in cemeteries. A huge fire would be kept constantly burning to consume the gases generated by decomposition, the entire building being hollow, and open at the top.

ALL the machinery, tools and stock of the Warren Fire Escape Co., late of Warren, Ohio, manufacturers of Johnson's Patent Portable and Stationary Automatic Fire Escape, has been removed to Baltimore, Md., where the manufacture will continue with increased facilities under the new name of Warren Fire Escape Co., office No. 5 German street, Baltimore, Md. This life-saving machine, which weighs only about 3½ pounds, 4½ inches in diameter by 2 inches thick, steel case, nickel-plated phosphor bronze works and steel wire cable, with a breaking strain of over 600 pounds, is intended as a safeguard where there is danger of being cut off from escape by fire. The manufacturers are now prepared to execute orders promptly.

IN no line of the mechanical arts is there more skill employed than in the designing and manufacture of gas fixtures, and of the firms whose names are familiarly known to the architects of the country as the best exponents of artistic work in this line that of the Archer & Pancoast Manufacturing Company has become synonymous of all that is artistic, novel and elegant. The West is supplied from the Chicago house, where, under the management of H. G. Willard, large and beautifully appointed salesrooms in which domestic quietness and business facility combine to welcome the visitor and enable architect or client to select that which is most suitable for the adornment of cottage, palace or business structure. The season of finishing and furnishing approaches, and the earliest opportunity to visit this beautiful emporium should not be lost.

Trade Outlook.

OFFICE OF THE INLAND ARCHITECT AND BUILDER,
September 10, 1886.

The present trade and industrial outlook is encouraging. Building statistics show the country is ahead of last year at this time in the amount invested. Railroad construction is nearly double its last year's August limit. Railroad traffic and earnings show an improvement over 1885. The industries are more prosperous. The output in numerous branches is in excess of last year. Prices for raw and finished products are firmer, and the consumptive capacity is gaining ground steadily in all directions. Money is abundant for all legitimate enterprise, and would be for speculative purposes but for the dangers involved in speculation at this time. Railroad wreckers have ceased to ply their vocation and railroad builders are endeavoring to borrow money to push enterprises in the West and Northwest, where opportunities are offered for safe investment. The margin of profits have declined under necessary competition. This, however, instead of being an evil, is a check to unwise activity. Enterprise needs to be held in check. Business men have learned valuable lessons and have put them in practice, preventing over-production and too rapid expansion of capacity. The advice we have received from all parts of the country point to the one point, namely, that the country's requirements are once more slowly but healthfully expanding, and that prices will be firmer and more regular in the future. Building material of all kinds is in abundant supply. Lumber is cheap and plentiful. The variety is sufficient for all requirements. The trade desires more remunerative prices, but this hope is not likely to be realized. One creditable fact should be mentioned, namely, lumber dealers recognize the wisdom of not over-crowding the markets to the extent of demoralizing prices. The demand for builders' hardware has been exceptionally active. Trade combinations have arrested undue competition. Manufacturing capacity has been increased, and quite a number of establishments have started up in the West. The vast variety of products coming under the head of builders' material, have been increased. New products are being crowded onto the attention of builders, who are not slow to adopt the best results offered. The iron and steel industries are prosperous. Capacity is being increased and prices are improving. The rail makers will make rails enough to relay fifteen thousand miles of track. The pipe makers are oversold for months. The merchant steel maker never had more business booked for future delivery. Considerable material has been contracted for in foreign markets, such as blooms and slabs and furnace products. The production of coal, both anthracite and bituminous, is also in excess of last year. Mill and factory production is generally in excess of last year's figures, and a spirit of enterprise is abroad which will carry the volume of business to even larger proportions next year. Nails are in active demand at \$2@2.10 for iron and \$2.15@2.25 for steel. Plumbers' supplies have been in improving request in this and most other markets. Exports of copper from New York have fallen off 60 per cent as compared to last year. Pig iron is 21½. Tin and tin plates are quoted active, and the demand for architectural iron throughout the Northwest is quite active, stimulated by the lower prices ruling. Bar iron is \$1.80 for standard bars and \$2.20 for best refined. Galvanized iron, for building purposes is only in moderate request, but the prospects are that the mills will be soon all on full time.

The financial outlook is encouraging. Commercial failures are comparatively rare. The volume of liabilities continue 33 per cent behind last year. Manufacturing interests are much better organized this year than last, and hence there is less competition, less over-crowding and over-trading. Without taking anything for granted it may be safely said that the country is on a safer and stronger footing than ever before, and that the forces at work will carry us with greater activity and into vaster production without danger of depression or reaction. Our reports throughout the country are as encouraging as they could be expected at this season. We append below the latest trustworthy building information received.

Synopsis of Building News.

Abilene, Kan.—Architects Wing & Mahurin, of Fort Wayne, Ind., report: For L. B. Johns, of Fort Wayne, carriage works, main building, brick, 24 by 135 feet, wing from same, 85 by 24 feet, blacksmith shop and store room, 90 by 24 feet, frame, engine room, iron, brick and wood, machine shop, frame, the three in one building, 147 by 30 feet, paint shop, 24 by 100 feet, frame, two-story packing and varnish shop, 76 by 24 feet, frame, body shop, 30 by 60 feet, frame. All frame buildings and all roofs to be covered with iron; estimated cost \$15,000; taking figures.

Akron, Ohio.—Architects Weary & Kramer report two frame dwellings, to cost \$4,000 and \$5,000.

Alma, Mich.—Architects Spier & Rohns, of Detroit, report: For J. O. Lumsden, two-story frame dwelling, 30 by 60 feet, slate roof; cost \$4,500; George Gibson, builder.

Ashland, Ohio.—Architects Weary & Kramer, of Akron, report a frame dwelling; to cost \$5,000.

Ashland, Wis.—Architects Groff & Chamberlin, of Minneapolis, Minn., report: Brick M. E. church; cost \$15,000; under way. For Mrs. S. S. Vaughn, frame dwelling; cost \$5,000; under way. For same, three-story library building; cost \$5,000; under way.

Belding, Mich.—Architect O. Waterbury, of Ionia, reports: For Belding Bros., three-story brick silk mill, 45 by 160 feet, boiler room, 19 by 34 feet, tower 18 feet high; cost \$12,000; under way; Claire Allen, builder.

Belleville, Tex.—Architect Eugene T. Heiner, of Houston, reports: Austin County Court House, three-story brick building, 70 by 103 feet, slate roof; cost \$37,500; under way; Henry Kane, of Gonzales, contractor.

Bluffton, Ind.—Architects Wing & Mahurin, of Fort Wayne, report: For G. F. McFarren, two-story dwelling, 36 by 53 feet, pressed brick, slate roof, hot air heat; cost \$5,000; under way; Wm. Creeps, builder.

Bolivar, Tenn.—Architects McDonald Bros., of Louisville, Ky., report: Western Tennessee Hospital for Insane, four-story building, 850 by 450 feet; cost \$300,000; foundations being laid; work done by the day by the commissioners.

Butler, Pa.—Architect C. H. Owsley, of Youngstown, Ohio, reports: For C. G. Christie, brick house; cost \$10,000.

Canfield, Ohio.—Architect C. H. Owsley, of Youngstown, reports: Mahoning county court house, brick; cost \$20,000; Ch. Manser, builder.

Canon City, Col.—Architect George W. Roe reports: Hon. Thomas Macon, of Denver, has purchased the military college building at a cost of \$12,000, and is converting it into a residence, 40 by 62 feet; repairs to cost about \$3,500, are under way. For L. W. Parkhurst, one-story brick dwelling, 27 by 32 feet; cost \$1,100; under way. For G. W. Barch, six-room brick dwelling, 30 by 36 feet; cost \$1,600; under way; Bradbury & Bridwell, builders.

Cassville, Mo.—Architect W. E. Foley, of Springfield, reports: For School Board, two-story brick school building, 48 by 60 feet; cost \$5,450; under way; B. L. Dennesson, Neosho, builder.

Canton, Ohio.—Architects Weary & Kramer, of Akron, report: For Denber Watch Case Co., factory building, to cost about \$250,000.

Coleburne, Tex.—Architects Bristol & Clark, of Dallas, report: Two-story city hall building, 102 by 78 feet, frame, metal roof, seven schoolrooms, and a public hall or opera house, seating 650 persons; cost \$14,800; under way; J. H. Vosburg, builder.

Chicago, Ill.—The prediction that the fall would fully make up for the stoppage of work in the spring seems fully verified, and apparently nothing remains of the strikes of three months ago. Bricklayers are getting as high as sixty cents per hour, though other branches remain about as usual. There is every prospect that the amount of building this year will exceed that of last, and though this, at an increased cost with no increase of income, does not promise well for the future, it is hoped that the enforced inaction of the winter season will place building upon a more equitable basis for next year.

Architects John M. Van Osdel & Co. report: For John T. Dale, an eight-story building, 61 by 50 feet, brick, stone trimmings, felt roof, iron channels, beams, etc., skylights, closets, steam heat and power, passenger and freight elevators; to be erected on the corner of Harrison and Dearborn streets and Fourth avenue; A. Lanquist, mason; Nelson, carpenter.

Architect W. J. B. McCullough reports: For Wm. Fitzpatrick, three three-story flats, 24 by 60 feet, brick, stone trimmings, galvanized iron bays and cornices. Now being erected on Ogden avenue, near Polk street; cost \$21,000. For F. Campbell, three two-story flats, 21 by 68 feet, brick, stone trimmings, galvanized iron cornice; cost \$3,000; each under way.

Architect Fred. Kellenich reports: For M. Prinderville, two-story and basement store building, 36 by 60 feet, at 630 West 12th street, Indiana pressed brick, iron and plate-glass store fronts, felt roof; cost \$6,200; Minter, Scouller & Co., masons; Joseph Poitrass, carpenter. For Thos. Seaton, two-story and basement building, 25 by 80 feet, at 463 West Congress street, Trenton pressed brick front, Lake Superior brownstone and ornamental iron trimmings, furnaces, stained glass, cement floors, electric bells, etc.; cost \$7,500; contract not let. For Con. Credon, two-story cellar and attic residence, 21 by 62 feet, at 662 West Ohio street, St. Louis pressed brick, French slate roof, galvanized iron cornice, iron work; cost \$3,750; contract not let. For Mrs. J. Rowder, two-story building, 21 by 48 feet, at 586 13th place, pressed brick, stone trimmings, galvanized iron, plate and stained glass, mantels, etc.; cost \$2,800; contract not let. For Wm. Maher, five three-story and basement houses, 24 by 64 feet, corner of Polk and Nixon streets, buff Bedford stone front, felt roof, galvanized iron cornice. Also two three-story flat buildings, 24 by 50 feet, on Nixon street, buff Bedford stone front. For Thos. Fox, two-story and basement building, on corner of Robey street and 13th place, Indiana pressed brick, felt roof, galvanized iron trimmings; cost \$4,000; under way. For Frank Smith, pressed brick building, galvanized iron cornice, plate-glass, etc., to be erected on Western avenue, between Polk and Taylor streets; cost \$14,000; contract not let. For Andrew Whitehead, two-story and sub-cellar building, 23 by 54 feet, at 255 Oakley avenue, St. Louis pressed brick, molded brick trimmings, cornice, etc., felt roof, slate mantels; cost \$3,800; under way; Nic Lutz, mason; Joseph Poitrass, carpenter. For Joseph Wurnburg, two-story and basement building, 30 by 50 feet, at 115 Laffin street, Lake Superior brownstone front, galvanized iron cornice, under way. For Joseph Donnelly, three-story and basement and attic store building, 25 by 85 feet, corner of Throop and 10th streets, Indiana pressed brick, limestone trimmings, galvanized iron cornice; cost \$14,000; Mayer Bros., masons; Martin Neimes, carpenter. For D. Ryan, three-story and basement building, 24 by 72 feet, at 436 West 12th street, Indiana pressed brick, stone trimmings, galvanized iron cornice; cost \$5,500; under way. O'Connell, mason; John Maher, carpenter. For Wm. Schultz, two-story building, 25 by 55 feet, at 406 Armitage avenue, Indiana pressed brick, galvanized iron cornice; cost \$3,000; under way. For same, two-story and basement store building, 24 by 62 feet, at 404 Armitage avenue, Indiana pressed brick; contract not let. For Patrick Fitzgibbon, three-story and basement store building, corner of 14th and Morgan streets, Indiana pressed brick, galvanized iron cornice; cost \$5,200; contracts not let. For Daniel M. Simmons, three-story and basement store building, 24 by 70 feet, at 840 West 12th street, St. Louis pressed brick, stone trimmings, galvanized iron cornice, iron and plate-glass store front; cost \$5,500; Wm. Maher, mason; Wm. J. Donohoe, carpenter. For Thos. Martin, three-story flat building, 24 by 54 feet, at 630 West Taylor street, St. Louis pressed brick, Lake Superior brownstone trimmings, galvanized iron cornice; Wm. Maher, mason; Constantine & Dyer, carpenters.

Architects Furst & Rudolph report: For R. W. Healy, three-story store and flats, 50 by 80 feet, on Archer avenue; St. Louis pressed brick, Bedford stone trimmings; cost \$16,000; under way; J. E. Kavanagh, builder. For B. Gull, two-story store and flats, 50 by 60 feet, corner Twelfth street and Ashland avenue; stone fronts; cost \$17,000; under way; Geo. Lehman & Sons, masons; Thos. Clark & Son, carpenters. For Wm. Roeder, two-story building, corner of Laffin and Twelfth streets; cost \$10,000; W. Zulesdorf, mason; Reuttner Bros., carpenters. For John Borgwardt, four-story store and flat building, 24 by 75 feet, at 1021 Milwaukee avenue; St. Louis pressed brick; brownstone trimmings; cost \$5,000; under way; G. Krieg, mason; F. Schultz, carpenter.

Architect Adam F. Boos reports: For J. Lunkes, three-story and basement store and flats, 24 by 103 feet, corner of Clybourne and Fullerton avenues; Anderson pressed brick, Bedford stone trimmings, marble mantels, hardwood finish; cost \$13,000. For A. F. Pogge, two-story store and flats, 27 by 66 feet, at 618 Elston avenue; Indiana pressed brick, Lemont stone trimmings; cost \$6,000; contract not let. For Julius Frank, three-story stores and flats, 70 by 58 feet, at corner of Vine and Vedder streets; Indiana pressed brick, Lemont stone trimmings; cost \$12,000; P. Jung, carpenter.

Architect G. Diale reports: For Dr. Emerick, three-story stores and flats, on corner of Ashland and North avenues; Indiana pressed brick, Lemont stone trimmings; cost \$25,000. For Dr. Dahl, two-story dwelling, 24 by 60 feet, on North Lincoln street; Philadelphia pressed brick, brown and Bedford stone trimmings; cost \$6,000; contracts not let. For M. Webber, three-story store and flat building, 24 by 60 feet, on Milwaukee avenue; St. Louis pressed brick, Lemont stone trimmings; cost \$5,000; contract not let.

Architect John Otter reports: For J. Wiemann, three-story flats, 22 by 62 feet, at 400 Belden avenue; Anderson pressed brick, stone trimmings; cost \$10,000; under way; P. Olsen, mason; G. J. Hall, carpenter.

Architect W. G. Barfield reports: For Hickson & Jukes, seven two-story apartment houses, corner of Fullerton avenue and Berling street; Anderson pressed brick, terra-cotta trimmings; cost \$20,000; contracts not let. For Da Costa, alterations at 75 Clark street; cost \$5,000; under way. For W. G. Barfield, two-story dwelling, 22 by 54 feet, at 1022 Park avenue; Anderson pressed brick, terra-cotta trimmings; cost \$4,000; under way; Wm. Dykeman, mason; P. Gaylord, carpenter.

Architect S. M. Randolph reports: For N. Rutherford, three two-story dwellings, 29 by 60 feet, 33 and 35 Depyster street; Indiana pressed brick; cost \$9,000; under way; J. Rutherford, builder.

Architect H. R. Wilson reports: For H. Beck, three two-story dwellings, 50 by 66 feet, on Groveland avenue; Lake Superior brownstone fronts; cost \$9,000; under way; H. Morgan, mason.

Architects Bauer & Hill report: For A. Corwith, two-story building, 99 by 72 feet, rear of Market and Madison streets; cost \$7,000; under way; C. Prier, mason.

Architect J. F. Doerr reports: For John Joehm, three-story store and flats, at 3701 State street; Indiana pressed brick, Lemont stone trimmings; cost \$9,000; under way; H. Appel, mason.

Architect H. Hildenger reports: For A. Timroth, three-story stores and flats, 124 by 24 feet, on Ogden avenue and Taylor streets; Anderson pressed brick, Bedford stone trimmings; cost \$12,000. For C. Hoppel, two-story flats, 22 by 50 feet, Thirteenth street near Loomis; cost \$3,500; Indiana pressed brick, Lemont stone trimmings.

Architect Wm. Loughurst reports: For P. Miller, three-story flats, 23 by 70 feet, at 3435-3437 Wentworth avenue; St. Louis pressed brick, stone trimmings; cost \$7,000.

Architects Bruhus & Woehner report: For L. Woerner, two-story building, 84 by 60 feet, at Garfield Park and Madison street; Anderson pressed brick; cost \$10,000. For F. Hoerd, two-story frame building, 84 by 50 feet, corner of Belmont and Ashland avenues; cost \$7,000; E. Griesbach, carpenter.

Architect P. W. Ruehl reports: For Mrs. Bichel, three-story flat building, 21 by 60 feet, on Taylor street near Winthrop Place; St. Louis pressed brick, Lake Superior brownstone trimmings; cost \$8,000; Conrad Kies & Son, masons; John A. Wolf, carpenter. For T. C. Cawder, six two-story stores and flats, 135 by 65 feet, corner Thirty-fifth street and Forrest avenue; St. Louis pressed brick, Lemont stone trimmings; cost \$20,000; contracts not let.

Architect R. G. Pentecost reports: For H. Sweet, five three-story flat buildings, 111 by 58 feet, at the corner of Laffin and York streets; pressed and molded brick, brownstone trimmings; cost \$30,000; also preparing plans for about fifty cottages to be erected on Homer street and Armitage avenue, at a cost of about \$65,000, for the same party. For J. Gruenfeldt, store building, 50 by 60 feet; cost \$4,500.

Architect August Bessler reports: For Chas. Schurn, two-story and basement storage building, 30 by 35 feet, corner of Ashland avenue and Thirteenth Place; cost \$3,500; under way. For Mrs. Mary Holland, two-story and basement dwelling, 21 by 68 feet, at 660 West Twentieth street; Indiana pressed brick, stone trimmings; cost \$4,300; under way. For Jos. Rivers, two-story flats, 21 by 48 feet, on South Wood street near Twelfth street; Indiana pressed brick, stone trimmings; cost \$3,300; under way. For Jos. Hemmings, three-story and basement store building, 40 by 65 feet; Indiana pressed brick, stone trimmings; cost \$11,000; under way. For Mr. Eierdamm, at Lawndale, cottage, 23 by 45 feet; cost \$2,500; under way. For John Paul, two-story dwelling, 23 by 56 feet, on Ambrose near Robey street; Indiana pressed brick, stone trimmings; cost \$3,500; under way. For Henry Shirding, three-story and basement store building, 25 by 85 feet; St. Louis pressed brick, stone trimmings; cost \$10,000; under way.

Architect Clinton J. Warren reports: For Wm. Trego, two-story and attic and basement residence, 35 by 60 feet, Woodlawn avenue, near Forty-seventh street, Random Range stone basement, Anderson pressed brick first story, red slate second story, blue slate roof, galvanized iron cornices, hardwood finish, closets and bath, stained and bevel plate glass, steam heat, wood mantels, tiling, electric bells, speaking tubes, stable; cost \$14,000; under way; Lane, mason; Kelly Bros., carpenters.

Architect C. H. Gottig reports: For Henry Kehf, two-story cottage, 22 by 46 feet, on Montana street, frame building, hardwood finish, closets, bath, stained glass and mantels will be used; cost, \$2,000; to be commenced at once. For L. B. Mantonga, three-story and basement residence, 25 by 76 feet, on Dearborn avenue, Milwaukee pressed brick, Kasota pinkstone trimmings, all modern improvements, also stable; cost, \$20,000. For F. Spiegel, four-story store and flat building, 50 by 70 feet, 446-448 W. Lake street, pressed brick front, brownstone trimmings, galvanized iron cornice, stained glass, skylights, closets, bath, hardwood finish, tiling, hot air heat, mantels, bells, speaking tubes, dumb waiters, etc.; cost, \$18,000; under way; George Schneider, mason; Henry Briebach, carpenter.

Architect L. G. Hallberg reports: For Wm. H. Stoelker, two-four-story and basement residences, 26 by 57 feet, on La Salle avenue, stone and brick, galvanized iron cornices, slate roof, hardwood finish, wood mantels, hot air heat, closets and bath, stained glass, skylights, electric bells, speaking tubes; cost \$12,000; to be commenced at once. For John McEwan, two three-story and basement residences, 35 by 80 feet, on La Salle avenue, stone and brick, galvanized iron cornice, slate roof, skylights, stained glass, closets and bath, steam heat, hardwood finish and tiling, wood mantels, electric bells and speaking tubes, to be commenced at once. For C. W. Seneco, three-story flats 25 by 56 feet, on Belden avenue, near Larrabee street, Milwaukee pressed brick, stone trimmings, slate roof, galvanized iron cornice, wood mantels, closets and bath, skylights, stained glass, etc.; cost \$6,000; under way; C. W. Hellman, mason; X. R. Aube, carpenter. For Dr. C. W. Hunt, three-story flats, 53 by 25 feet, on Division, near State street, brick, stone trimmings, slate roof, galvanized iron cornices, skylights, stained glass, closets and bath, steam heat, hardwood finish and tiling, wood mantels, electric bells, speaking tubes; cost \$8,000; under way; C. W. Hellman, mason; X. R. Aube, carpenter. For Swedish Lutheran Church, brick and stone building, 93 by 100 feet, Market and Whiting streets, slate roof, galvanized iron cornices, iron beams, columns, etc., hardwood finish, stained glass, hot air heat; cost \$25,000; taking figures.

Architect W. L. Carroll reports: For L. H. Fluke, two-story frame dwelling, 24 by 32 feet, at Englewood; cost \$3,000. For A. C. Graham, two-story brick residence, 22 by 48 feet, 1546 Warren avenue, red sandstone trimmings; cost \$3,500; completed. For Tom Mackin, alterations and additions, 32 by 25 feet, four-story and basement residence block, 280 Indiana street; cost \$3,000; plans in preparation. For Antonio Sucrone, three-story and basement apartment building, 25 by 52 feet, 102 Indiana street; cost \$5,000; nearly completed. For Aaron McKay, two-story frame residence, 30 by 48 feet, at Ravenswood; cost \$3,000; under way; also making plans for alterations and additions to frame house, corner Lincoln and Monroe streets; cost \$2,500.

Architect C. L. Stiles reports: For Davis & Rankin, five-story warehouse, 120 by 100 feet, at 240 to 248 West Lake street; Anderson pressed brick; cost \$60,000; under way; Barney & Rodatz, masons.

Architect C. M. Palmer reports: For J. J. Gore, two-story dwellings, 50 by 72 feet, at 2623 Wabash avenue; stone fronts; cost \$16,000; under way; J. Boydell, mason; H. H. Roberts, carpenter.

Architect E. E. Snyder reports: For J. N. Cunningham, three-story stores and flats, 40 by 64 feet, on State near Indiana street; Anderson pressed brick, Carbondale brownstone; cost \$20,000; contracts not let.

Architect Geo. Beaumont reports: For Minnie Wiese, two-story dwelling, 25 by 67 feet, at 3121 Vernon avenue; St. Louis pressed brick, Lake Superior brownstone; cost \$10,000; under way; F. Blair, builder. For Enns Ayers, four two-story dwellings, corner of Ada and Fulton streets; Indiana pressed brick, stone trimmings; cost \$13,000; under way; John Pedgrift, mason; August Briebach, carpenter. For Tom N. Donnelly, two-story dwelling, 22 by 60 feet, at 3144 South Park avenue; Indiana pressed brick; cost \$7,000; under way.

Architect A. D. Huesdale reports: For A. H. Revell, three four-story stores and flats, 65 by 60 feet, 355 to 359 North Clark street; Anderson pressed brick, Portage brownstone; cost \$26,000; under way. For J. Williamson, three-story flats, 50 by 44 feet, on Robey street, near Harrison street; Indiana pressed brick, Portage brownstone; cost \$10,000.

Architect G. Isaacson reports: For Geo. A. Johnson, three four-story stores and flats, 67 by 50 feet, 212 to 216 West Indiana street; Anderson pressed brick, Hummelston stone trimmings; cost \$20,000; under way; G. Gilbert, mason.

Architects Cobb & Frost report: For C. R. Keith, three-story dwelling, 38 by 80 feet, 1808 Prairie avenue, granite front; cost \$40,000; John Angus, mason. For E. H. Van Ingen, three two-story dwellings, 57 by 60 feet, corner of La Salle avenue and Maple street; cost \$15,000. For J. T. Hammond, two-story stone front dwelling, 43 by 43 feet, on Bellevue place; cost \$20,000.

Architects Willet & Pashley report: For Whitman & Barnes Mfg. Co., five-story warehouse, 80 by 130 feet, on West Monroe street; cost \$70,000; Thomas Nicholson, mason; Blonden & McDonald, carpenters.

Architects Thomas & Rodger report: For Dr. A. Brooks, three three-story stores and flats, 68 by 80 feet, 1623 Wabash avenue; cost \$25,000; under way; John Angus, mason; Steinmetz & Eilenberger, carpenters. For James Walsh, three-story pressed brick residence, corner Pine and Erie streets; cost \$30,000; contracts not let.

Architect S. V. Shipman reports: For Grant Goodrich, two-story flat building, 44 by 65 feet, 2327 Dearborn street, Anderson pressed brick; cost \$12,000; under way.

Architect H. R. Wil on reports: For C. G. Gregory, block of five two-story dwellings, 100 by 60 feet, on South Park avenue; cost \$50,000; Fox & Hinds, masons; W. M. Loughlin, carpenter.

Architect H. B. Seeley reports: For A. T. Ewing, six-story warehouse, 88 by 144 feet, 264-70 Fifth avenue, Anderson pressed brick; cost \$60,000; under way; L. A. Daegling, mason; Goldie & Son, carpenters.

Architect L. G. Quackenboss reports: For Dr. R. L. Rea, two-story residence, 28 by 50 feet, at 275 Huron street, stone front; cost \$18,000; under way; George Hinch-cliff, mason; Diez & Peters, carpenters.

Architect L. B. Dixon reports: For Henry Hoyt, two-story stone front dwelling, 32 by 70 feet, on Calumet avenue; cost \$12,000. For M. Uebele, three-story dwelling, 25 by 52 feet, at 3728 Dearborn street, Indiana pressed brick; cost \$7,000; under way.

Architect Julius H. Huber reports: For Adam Schaaf, two-story brownstone front dwelling, 25 by 56 feet, on West Jackson street; cost \$15,000; contracts not let. For F. Adler, three-story store and flats, 25 by 92 feet, on State near Thirty-second street, Trenton pressed brick, brownstone trimmings; contract not let.

Architect H. Rehboldt reports: For Mrs. S. Gleason, three-story store and flat building, 48 by 55 feet on Thirty-first street, Indiana pressed brick, Lemont stone trimmings; cost \$12,000; under way.

Architect Fred Ahlschlagger reports: For German Lutheran Society, stone and brick church, 53 by 100 feet, corner of James avenue and Ullman street; cost \$30,000; contracts not let. For Mrs. Newman, block of five three-story stores and flats, 60 by 125 feet, corner Sixty-third street and Stewart avenue, brick, stone trimmings; cost \$43,000; under way. Alfred Wenberg, mason; E. B. Peterson, carpenter.

Architect C. Hine reports: For Turner & Bond, seventeen cottages, 22 by 40 feet each, on Oakley avenue, Raleigh street and vicinity, Indiana pressed brick; cost \$31,000.

Dearborn, Mich.—Architects Spier & Rohns, of Detroit, report: For Michigan Central Railroad Company, one and one-half story frame depot, 60 by 23 feet; slate roof, terra-cotta fireplace, hardwood finish, etc.; cost \$4,000.

Delphos, Ind.—Architects Wing & Mahurin, of Fort Wayne, report: For Jacob Werner, pastor, Lutheran church, 35 by 80 feet, brick, slate roof, spire 125 feet high; cost \$8,000; under way. Christ. Hitts, builder.

Detroit, Mich.—Architects Scott & Co., report: For A. G. Alexander, two-story double dwelling, 36 by 56 feet, brick, stone trimmings, gravel roof; cost \$5,000; Wright & Newton, builders. For William C. Colburn, three-story dwelling, 20 by 65 feet, brick, stone trimmings, gravel roof; cost \$6,000; Harry Chandler, builder. For John Graves, two-story dwelling, 35 by 32 feet, brick, stone trimmings; cost \$2,500; James Beattie, builder.

Architects Mason & Rice report: For Berry Bros., two-story store house, 76 by 115 feet, brick, gravel roof; cost \$10,000; George A. Dupuis, builder. For Mrs. H. A. Clark, two-story double dwelling, 52 by 78 feet, brick, stone trimmings, slate roof; cost \$12,000; projected. For Sacred Heart Parish, two-story school building, 38 by 50 feet, brick, stone trimmings, slate roof; cost \$5,000; projected. For S. G. Caskey, block of three-story double store and dwellings, 40 by 60 feet, brick, stone trimmings, gravel roof; cost \$12,000; Topping & Fisher, mason; Spitzley Bros., carpenters. For George Hendrie, three-story frame dwellings, 50 by 60 feet, interior finished in hardwood; cost \$12,000; Gideon Vivier & Son, builders. For John B. Dyer, three-story frame dwelling, 50 by 60 feet, interior finished in hardwood; cost \$7,000; Dumas & Ovielle, builders.

Architect W. E. Brown reports: For Edward Smith, three-story and basement dwelling, 50 by 100 feet, Ohio buffstone walls, cornices, gables, etc. Will be an elegant residence, with all modern improvements, to be erected on Woodward avenue; only contract let is for the stone work; Batchelder & Long contractors; cost of building not given.

Architects Hess & Raseman report: For Edison Electric Light Co., two-story factory building, 70 by 100 feet, brick, gravel roof; cost \$16,000; M. Scholl & Son, masons; Chandler Bros., carpenters; Young & Letts, stone.

Architect A. E. French reports: For St. Anne's Parish, three-story parochial residence, 40 by 76 feet, brick, stone trimmings, slate and tin roof; cost \$10,000.

Architects Donaldson & Meier report: For E. Aertz & Co., two-story double store building, 40 by 100 feet, brick, stone trimmings, gravel roof; cost \$5,000; M. Blay & Son, builders.

Architect Spier & Rohns report: For David Sutherland, two-story frame dwelling, 24 by 55 feet, second story and roof shingles; cost \$3,000. For Charles Gorham, additions and alterations to brick dwelling, 20 by 30 feet; cost \$4,000.

Messrs. Kitchen & Lewis are building for themselves fourteen frame dwellings, 20 by 40 feet; cost \$22,400.

George E. Depew is building six two-story frame dwellings, 26 by 54 feet; cost \$14,700.

A two-story brick school house, 40 by 60 feet, is being erected; cost \$7,000.

Messrs. Gideon Vivier & Son are building for themselves five brick dwellings; cost \$7,000.

John Willis is building for the Detroit Street Railway Co. a two-story frame car house and barn, 60 by 268 feet; cost \$4,000.

Building permits were issued during the month of July for new buildings to cost \$256,000; alterations, etc., cost \$20,250; total cost \$276,250.

Dubuque, Iowa.—Architect F. D. Hyde reports: For J. K. Graves, Fourth street elevator station and engine house, two-story frame, 20 by 30 feet; cost \$1,000; under way. John Bell, builder. For John R. Waller, three-story store building, 20 by 114 feet, pressed brick and terra-cotta front; cost \$6,500; under way.

Eddyville, Ky.—Architects McDonald Bros., of Louisville, report: Branch Penitentiary building, 600 by 400 feet; cost \$500,000; under way.

El Paso, Tex.—Talk of war has stopped building enterprises to some extent.

Architect E. Krause reports: For Marx, Blum & Shuster, three-story brick store building, 44 by 120 feet, brick basement; cost about \$30,000; under way. Smith, Fernandis & Wright, builders. For Mr. Phillips, two-story and basement brick and stone store building, 60 by 100 feet; cost \$10,000; under way. Saul & Co., builders. For Mr. Bronzen, two-story and basement brick and stone store building, 120 by 100 feet; cost \$34,000; under way. Rallenberry & Spencer, builders. For Joseph Shultz, three-story and basement brick and stone store building, 45 by 135 feet; cost \$21,000; under way. Buchanan & Co., builders. For Mr. Lackten, two-story brick and stone store building, 60 by 120 feet, rock basement; cost \$23,000; under way. Buchanan & Co., builders. For Dieter & Co., two-story and basement brick and stone store building, 85 by 100 feet; cost \$20,000; under way. Brower, builder. For George Look, one-story store building, 20 by 100 feet; under way. Sorenzen, builder. For C. Q. Stanton, two-story brick lodging house, 65 by 40 feet; cost \$3,500; Burton, builder. For same, one-story brick store, 24 by 68 feet; cost \$2,000; under way. Burton, builder. For A. Burton, two-story brick dwelling, 37 by 50 feet; cost \$3,500; under way. Burton, builder. For A. Hille, two-story brick and basement dwelling, 21 by 36 feet; cost \$2,800; under way. Burton, builder. For W. G. Warren, one-story factory building, 50 by 75 feet; cost \$1,800; Fruin, builder. For Mr. Provenzio, two-story brick dwelling, 32 by 40 feet; cost \$3,400; Rallenberry & Spencer, builders. For C. Q. Stanton, one-story brick dwelling, 40 by 60 feet; cost \$3,000. For Ketelson & Degetan, one-story brick dwelling; cost \$4,000; under way. For Mrs. R. Stely, four two-story, brick stores, 91 by 45 feet; cost \$6,000; under way. Also several smaller dwellings.

Essex Center, Mich.—Architects Spier & Rohns, of Detroit, report: For Michigan Central Railroad Company, one and one-half-story frame depot, 80 by 22 feet, slate roof, terra-cotta fireplace, hardwood finish, etc.; cost \$4,500.

Fort Wayne, Ind.—Architects Wing & Mahurin report: For Charles Centlivier, two-story frame cottage, 31 by 50 feet, slate roof; cost \$4,000; under way. Fred Kraft, builder; also frame boat house, 26 by 28 feet; cost \$1,000. For Mrs. Hattie Tolan, two-story frame cottage, 32 by 43 feet; cost \$2,000; A. H. Grothaltman, builder. For Charles Weller, two-story frame cottage; cost \$2,000; under way. William Ruchel, builder. For Henry Drover, repairs, etc.; cost \$2,000; projected. For Jacob Beattie, two-story brick dwelling, 32 by 35 feet, slate roof; cost \$2,500; under way; owner is the builder.

Garrettsville, Ohio.—Architect S. W. Foulk, of Newcastle, Pa., reports: Congregational church, two-story brick veneered building, slate roof; cost \$7,000.

Hillsboro, Tex.—Architects Bristol & Clark, of Dallas, report: City Hall and school building, two-story brick, metal roof and cornice; cost \$11,400; under way; Hughes & Boswell, builders.

Hinsdale, Mich.—Architect Joseph E. Mills, of Detroit, reports: For City of Hinsdale, two one-story school buildings, each 66 by 40 feet, brick, stone trimmings, slate roof; cost of both \$6,000; George P. Wolf, builder.

Jackson, Neb.—Architect G. G. Baldwin, of Sioux City, Iowa, reports: For Independent School District, brick school house, 40 by 60 feet, tin roof; cost \$5,000; under way; Severson & McMill, builders.

Kansas City, Mo.—Architect E. F. Fassett reports: For Frank Stophlett, two-story brick dwelling, 32 by 32 feet; cost \$3,000; under way. For O. H. Quail, two-story frame dwelling, 35 by 50 feet; cost \$5,000; under way. For A. T. & S. F. R. R., one-story frame depot, 18 by 33 feet; cost \$500; under way.

Architects Tinsley, Ramsden & Gooch report: Brick block of ten houses, three stories and basement, red sandstone trimmings; cost \$30,000; contracts let. For Colonel R. H. Hunt, eighteen sets of plans for flats in different parts of the city, on the boards,

brick, stone trimmings; cost \$75,000. For same, five houses, brick and open timber, with rough cast plaster fronts; cost \$11,000; contracts let. For L. Hammersburgh, remodeling store; cost \$10,000; contract let. For D. B. McMechan, six brick and stone houses; cost about \$25,000; under way. For Dr. T. J. Eaton, frame dwelling; cost \$4,500. For B. R. Bacon, remodeling house; cost \$4,000. For same, brick and frame barn; cost \$1,500. For Mrs. Mary Beck, frame dwelling; cost about \$3,500. For B. Donnelly, residence; cost \$25,000.

Architects Burnham & Root, of Chicago, Ill., are preparing plans for a large building to be erected for the Y. M. C. A.

Plans have been made for St. Mary's church, to be erected at the corner of Holmes and Thirteenth streets, at a cost of \$35,000.

The New England Mutual Insurance Co. propose to build a \$250,000 stone building; 90 by 130 feet.

Messrs. Lathrop & Smith are erecting a five-story fireproof building, 50 by 116 feet, on the corner of Sixth and Wyandotte streets. Messrs. Adams & Thayer and Bard & Welch are to build a four-story stone front business block on Main street. It will have a frontage of 200 feet; brick, stone and iron will be used in the construction, and the building will have all modern improvements.

Architects Nier, Hogg & Bryam report: For H. D. Wright, brick residence; cost \$8,000; under way. J. Sharp, builder.

Lebanon, Ind.—Architect J. W. Hammond, of Frankfort, reports: Remodeling brick M. E. Church, slate roof; cost \$3,500; under way. Daniels & Palmer, of Frankfort, contractors.

Little Rock, Ark.—Architect Max Olopp has prepared plans which have been accepted for the Pulaski county court house, brick and stone building, two and a-half stories high, fire-proofed; cost \$50,000.

Architect Thomas Harding: For R. W. Dawson, brick veneered building, 60 by 140 feet; cost \$6,000; J. Beattie, contractor.

Bids called for till October 10, 1886, for County Court House for Pulaski county, at Little Rock, Ark. W. F. Hill, county judge, brick and stone building; estimated cost, \$50,000; W. A. Orlopp, Little Rock, architect. Office for Pulaski Gas Light Company, brick, 40 by 40 feet; estimated cost, \$3,000; Rickow & Harris, architects.

Livingston, Tex.—Architect Eugene T. Heinen, of Houston, reports: Polk county jail, two-story brick building, 28 by 54 feet; cost \$9,000; contract to be let September 10.

London, Ky.—Architects McDonald Bros., of Louisville, report: Brick and stone court house, 60 by 75 feet; cost \$17,000; under way. J. W. Mullens, contractor.

Louisville, Ky.—Architects McDonald Bros. report: For the Southern Baptist Theological Seminary, one dormitory building, 260 by 160 feet, four-stories high, brick, terra-cotta trimmings, all modern conveniences, contracted for \$64,500; separate contracts; foundation under way. For Y. M. C. A., gymnasium building, 40 by 90 feet; cost \$5,000; under way. John Baumeister, contractor.

Marlin, Tex.—Architect Eugene F. Heiner, of Houston, reports: Falls county court house, three-story brick building, 76 by 118 feet; cost \$47,493; contract let August 19 to A. Baumbach, of Houston.

Marshall, Mich.—Architects Spier & Rohns, of Detroit, report: For C. T. Cook, two and one-half-story brick and stone dwelling, 40 by 60 feet, slate roof; cost \$8,000; S. H. & J. H. Egerton, builders.

Middlesex, Pa.—Architect S. W. Foulk, of Newcastle, reports: Presbyterian church, two-story brick, stone trimmings, slate roof; cost \$6,500.

Minneapolis, Minn.—Architect Warren H. Hayes reports: Present outlook is favorable for several large buildings to be started this fall, from my sketches. Have at present under way, the First Congregational Church, 98 by 142 feet; Lake Superior brownstone, broken ashlar; cost \$55,000; under way. Geo. Summers, builder.

Architects Groff & Chamberlin report: Present condition and outlook fair. For J. B. Crocker, two and one-half story frame; cost \$10,000; under way. For W. H. Groff, two and one-half story frame; cost \$15,000; under way. For P. G. Lamaroux, three-story brick and stone building; cost \$25,000; under way. For R. E. Grafton, three-story brick building; cost \$25,000; projected. For same, three-story brick; cost \$20,000; under way. For Chas. Oliver, frame dwelling; cost \$5,000; under way. For Samuel Davis, frame dwelling; cost \$6,000; under way. For L. Groff, frame dwelling; cost \$5,000; completed. For F. C. Penny, two and one-half story brick, tile and slate house; cost \$8,000. For J. H. Paul, three-story double house; cost \$8,000; projected. For L. S. Gillette, two and one-half story double brick and frame house; cost \$15,000. For F. G. J. G. Myers, frame dwelling; cost \$6,000; under way. For Crocker & Groff, two frame dwellings; cost \$5,000; under way. For A. Bates, frame dwelling; cost \$5,000; under way. For A. G. Bigelow, frame dwelling; cost \$3,000; completed.

Flink & Johnson, three-story wood and brick store and dwelling, 704 Cedar avenue; cost \$6,000. E. S. Woodworth, two-story wooden dwelling, 1601 Linden avenue; cost \$5,000. E. B. Chement, two-story frame dwelling, 1603 Linden avenue; cost \$5,000. Masonic Temple Association, eight-story brick and stone building, Sixth street and Hennepin avenue; cost \$200,000. Hall and Ducky, one and one-half-story brick and stone planing mill, Sixth street and Third avenue north; cost \$10,000. West and Stevens two two-story frame dwellings, 2118 and 3120 Bryant avenue south; cost \$10,000. A. Kelly, five three-story brick dwellings, 1213-1221, Hawthorne avenue; cost \$30,000. H. Pearson, two-story frame dwelling, 3101-3105 Garfield avenue; cost \$6,000. J. G. Gluck, two-story brick veneer dwelling, 1808 Hennepin avenue; cost \$8,000. C. A. Anderson, two two-story frame dwellings, 2832-2838 Garfield avenue south; cost \$6,000. Western Avenue Methodist Church, frame church building, 1500 Western avenue; cost \$6,000. W. H. Lyon, two and a-half-story frame dwelling, 638 Elwood avenue north; cost \$20,000. E. G. Pattee, two-story frame dwelling, 263 Cedar Lake avenue; cost \$5,000. C. E. Rogers, five two-story frame dwellings, 201 and 209 Fourth avenue N. E.; cost \$7,500. G. R. Kirkbride, two-story frame dwelling, 2201 First avenue south; cost \$5,000. Ingraam, Olson & Co., remodeling store building, 213-215 Nicollet avenue; cost \$10,000. W. A. Fuller, three three-story brick tenements, 1119 Hennepin avenue; cost \$12,000. J. Lussier, two two-story frame dwellings, 619, 627 Penn avenue north; cost \$10,300. P. J. Lamoreaux, six three-story brick, stone and wooden tenements, Eighth avenue and Lyndale; cost \$27,000. R. H. Jones, five three-story brick store and dwelling buildings, Franklin avenue E.; cost \$24,000. Northwestern Hospital Association, three-story brick hospital building; cost \$30,000. Mrs. M. E. French, two-story frame dwelling, 1787 Hennepin avenue; cost \$8,000. W. H. Tripp, two two-story frame dwellings, 2924-2928 Pleasant avenue; cost \$7,000. Minneapolis, Lyndale & Minnetonka Railway Company, engine house, machine shop, car house and coal shed, Thirty-first street and Blaisdell avenue; cost \$40,000. Joseph Campbell two two-story frame dwellings, 3008-3010 Garfield avenue; cost \$7,000. E. M. Cannon, two-story dwelling, 1516 Lake street east; cost \$5,000. H. T. Wells, three-story brick veneer dwelling, 1731 Hennepin avenue; cost \$25,000. S. P. Clark, three two-story frame dwellings, 2624-2628 Seventeenth avenue south; cost \$7,500. F. L. Mortimer, three-story brick dwelling and barn, Lyndale avenue and Fifty-fourth street; cost \$11,800. G. H. Brown, two double two-story brick veneer dwellings, 800-804 Lake street west; cost \$12,000. H. W. Taylor, two two-story frame dwellings, Seventeenth street, between Hawthorne and Linden avenues; cost \$6,000. First Congregational Church Society, church building, 800 Fifth street S. E.; cost \$55,000. C. Sullivan & C. O. Anderson, three three-story brick stores and dwellings, 1025, 1028 Washington avenue south; cost \$20,000.

Moherly, Mo.—Architects Nier, Hogg & Bryam, of Kansas City, report: For Board of Education, brick school building, 60 by 72 feet; cost \$10,000; under way.

Mount Vernon, Mo.—Architect S. B. Abbott, of North Springfield, reports: For School Board, brick school building, 32 by 64 feet, with two wings, 16 by 25 feet, stone trimmings, galvanized iron cornice, hot air heat; cost \$6,000; under way.

Mulberry, Ind.—Architect J. W. Hammond, of Frankfort, reports: Frame cottages for John Steckle and Emanuel Mitman; cost about \$1,200 each; under way. A. A. Bayles, of Frankfort, contractor.

Norfolk, Va.—Architect S. W. Foulk, of Newcastle, Pa., reports: For Young Men's Christian Association, four-story brick building, granite and terra-cotta trimmings; cost \$32,000; nearly completed. For James Pallas, two-story frame dwelling, slate roof; cost \$2,000.

Architects J. T. Moulton & Son, of Chicago, Ill., report: For Norfolk & Western R. R. Co., grain elevator, 60 by 87 6 feet, storage capacity 150,000 bushels; cost \$60,000; under way. J. T. Moulton & Son, architects, contractors and builders.

North Springfield, Mo.—Architect S. B. Abbott reports: For Second Presbyterian Church, chapel, pressed brick and stone, slate roof, lecture room 30 by 50 feet, other room 16 by 26 feet; cost \$3,500; under way. For Mr. Fay, alterations and additions; cost \$2,000; under way. D. E. Davis, contractor.

Oberlin, Ohio.—Architects Weary & Kramer, of Akron, report: For E. A. Webster, store building; cost not given.

Oskaloosa, Iowa.—Architect E. Clark, of Ottumwa, reports: For A. P. Spencer, two-story basement and mansard residence, 34 by 54 feet, brick basement, furnace heat; cost \$3,500; taking figures.

Ottumwa, Iowa.—Architect E. Clark reports: For A. D. Smith, two-story dwelling, 22 by 38 feet, frame; cost \$1,200. For R. T. Shea, remodeling residence; cost \$800; under way.

Parsons, Kan.—Architects Nier, Hogg & Bryam, of Kansas City, Mo., report: For Angell, Mathewson & Co., three-story brick hotel building, 122 by 100 feet; cost \$30,000; preparing plans.

Pierce City, Mo.—Architect W. E. Foley, of Springfield, reports: For the city, two-story brick building, 25 by 75 feet; cost \$3,200; under way; Max Andred, builder.

Richmond, Ind.—Architect John A. Hascoster reports: Business is improving. For A. L. Pogue, two-story stone front business block, 48 by 122 feet, slate and tin roof; cost \$9,300; projected. For Wm. H. Suddhof, two-story brick dwellings, stone trimmings, slate roof, all modern improvements; cost \$3,500; projected. For Frank Smelser, two-story frame cottage; cost \$1,500; projected.

Rushville, Ind.—Architect J. W. Hammond, of Frankfort, reports: For Methodist Episcopal Church, brick building, 70 by 96 feet, trimmed with ornamental brick, slate roof; cost \$15,000; under way; Chas. H. Hoffman, of Indianapolis, contractor.

Salem, Ind.—Architects McDonald Bros., of Louisville, Ky., report: For Washington County Court House, three-stories and tower, 90 by 72 feet; to be built of limestone, fireproofed; cost \$60,000; Crambaugh & Metchn, contractors.

Salem, Iowa.—Architect I. C. Wykoff, of Keokuk, reports: For John Bickster, stone and brick store and bank building, 42 by 60 feet; cost \$4,000; under way. For J. C. Reeves, one-story brick store building, 20 by 80 feet; cost \$1,500; under way.

Savannah, Ga.—Architects McDonald Bros., of Louisville, Ky., report: Three-story brick, stone and iron jail building, 75 by 150 feet; cost \$60,000; Wm. F. Bowe, contractor; work under way.

Sioux City, Iowa.—Architect G. G. Baldwin reports: For E. Higman, three-story brick block, 50 by 150 feet, stone trimmings, tin roof, iron girders and pillars; cost \$28,000; under way; Andrew Peterson and Steven Johnson, builders. For Independent School District, brick school house, 65 by 90 feet, shingle roof, steam heat; cost \$15,000; just started; Jenkinson Bros. and D. M. Killian builders. For F. F. Beck, two-story brick store, 25 by 70 feet, tin roof, stone trimmings; cost \$3,000; under way; F. F. Beck and Jenkinson Bros., builders. For W. P. Manly, frame dwelling, 33 by 40 feet, furnace heat; cost \$2,800; projected. For Mrs. Marion, frame dwelling, 32 by 40 feet; cost \$2,300; under way; C. K. Poor, builder.

Architect J. W. Martin has in hand a brick school building; cost, \$15,000; D. M. Killian, builder. For W. E. Higman, three-story brick and stone building; cost, \$26,000.

Springfield, Mo.—Architect S. B. Abbott, of North Springfield, reports: For Wm. Marshall, one and one-half story frame cottage, 24 by 40 feet, with wing 24 by 20 feet, tower; cost \$2,200; under way.

Architect W. E. Foley reports: For Mrs. M. G. Weaver, one-story frame, 48 by 60 feet; cost \$6,000; under way. For John M. Lisenby, two-story frame, 40 by 54

feet; cost \$4,500; under way; Everett, Smith & Anderson, builders. For L. W. Hubbell, alterations in two-story frame, 38 by 60 feet; cost \$4,000; under way; Jarrett & Hutton, builders. For W. G. Porter, Jr., alterations in two-story frame, 32 by 40 feet; cost \$2,000; under way; Jarrett & Hutton, builders. For Board of Trade, three-story brick building, 45 by 90 feet; cost \$12,000; contracts not let. Catholic church, 47 by 106 feet, brick, slate roof; cost \$20,000; under way; Thos. Conlon, builder.

Stafford, Kan.—Architect N. A. Collins reports: About forty frame buildings are being erected here, ranging in cost from \$500 to \$1,800.

St. Paul, Minn.—Architect C. A. Wallingford reports: For Allen Brown, frame residence; cost, \$4,000; projected. For Sarah Ward, brick veneered residence; cost, \$4,000; projected. For Clark-Bryant Syndicate, brick stores; cost, \$12,000; Wm. Hodgins, builder. For same, brick factory; cost, \$4,000; Taylor & Craig, builders. For C. A. Wallingford, frame residence; cost, \$5,000; J. Le Duc, builder. For Lovering & Backus, brick veneered store building; cost, \$20,000; Dowling & Ruse, builders. The following are among the most important building permits issued recently: M. J. Miller, two-story brick veneered store and dwelling; cost, \$5,000. Benson & Hackett, block of one-story brick stores; cost, \$5,000. T. B. Campbell, two-story frame dwelling; cost, \$6,000. Theodore Hamm, two-story brick veneered dwelling; cost, 20,000. Bass & Gulenberg, dwelling; cost, \$5,000. Anton Roessler, store and dwelling; cost, \$8,950. Mrs. A. B. Murphy, alterations to brick dwelling; cost, \$5,000. S. Dearing, two-story brick veneered dwelling; cost, \$6,000. St. Paul Real Estate and Improvement Association, one-story addition to brick store, Sixth street, between Jackson and Roberts; cost, \$5,000. Penner & Becht, two-story frame dwelling, Wilkin, between Smith and Ramsey streets, \$7,000. Oakland Cemetery Association, one and one-half-story stone dwelling, Sycamore, between Gate and Courtland streets, cost, \$7,500. Minnesota Transfer Railroad Co., one-story brick engine house, Union, near University; cost, \$3,000. W. Thauwald, two-story brick double store and dwelling, \$6,000.

Superior City, Wis.—Architect E. S. Radcliff, of St. Paul, Minn., reports: For James Barden, two-story brick office building, 24 by 48 feet, brick; cost \$8,000; plans under way.

Temple, Tex.—Architects Cook & Manning, of Waco, Texas, have prepared plans for the Temple Hotel Co., for a three-story brick hotel building; cost, \$15,000; Ben. Lee, of Belton, Texas, general contractor; to be commenced at once.

Toledo, O.—Architect N. B. Bacon has prepared plans for J. B. Bell for a \$20,000 residence. Also prepared plans for the new Third Baptist Church building; cost, \$19,000.

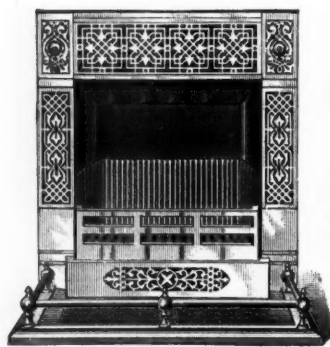
Van Wert, Ohio.—Architects Wing & Mahurin, of Fort Wayne, Ind., report: For G. W. McGovern: Two-story frame dwelling, 30 by 35 feet; cost \$2,500; under way.

West Plains, Mo.—Architect W. E. Foley, of Springfield, reports: Presbyterian church, brick building, 36 by 54 feet; cost \$3,500; projected.

Wyandotte, Mich.—Architects Hess & Raseman, of Detroit, report: For city of Wyandotte, one-story school building, 65 by 40 feet; brick, stone trimmings, slate roof; cost \$5,000.

Youngstown, Ohio.—Architect C. H. Owsley has prepared plans for a gymnasium building for this city.

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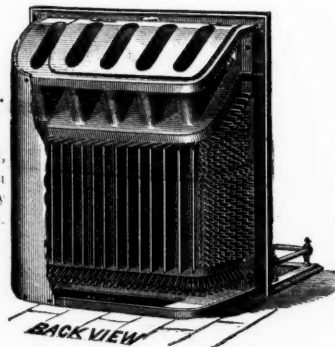
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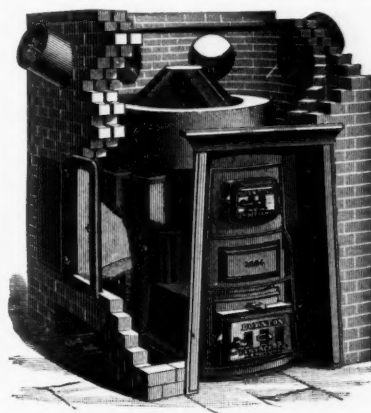
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Blue Bedford 65

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" buff " 50

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1 1/4 and up 80 00 @ 100 00

Walnut, counter top 15 @ 20

Ash, 1 1/4 & 1 in. 30 00 @ 32 00

1 1/4 & up 33 00 @ 36 00

Ash Steps 40 00 @ 45 00

Maple, 1st & 2d, 1 in. 25 00 @ 35 00

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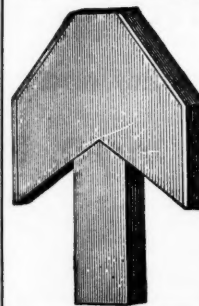
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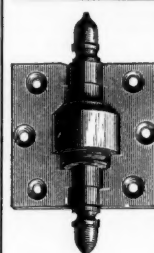
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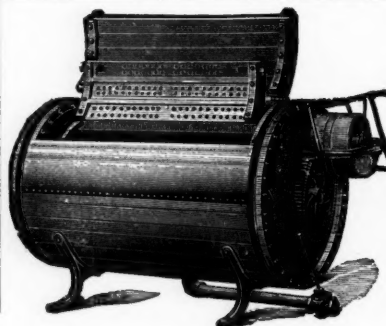
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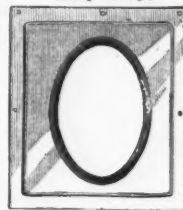
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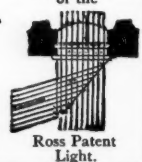
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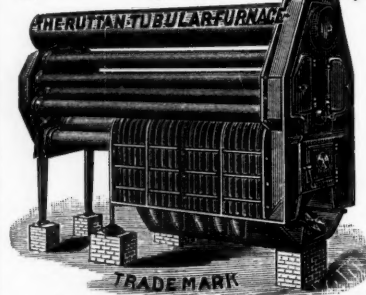
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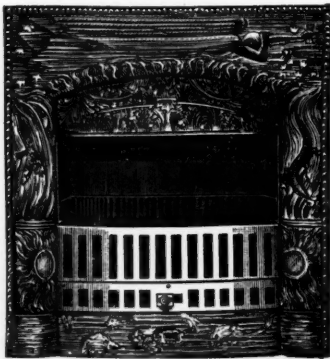
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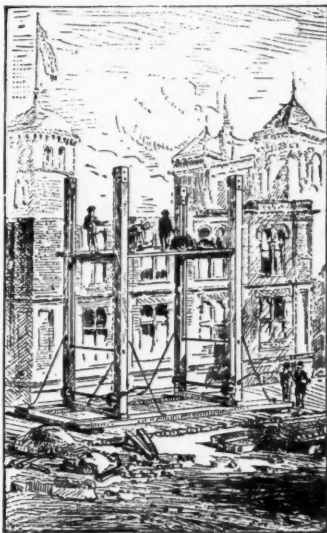
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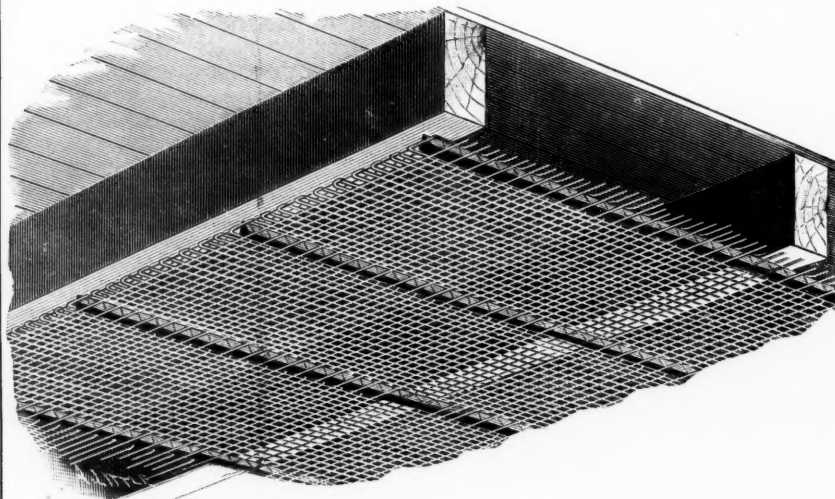
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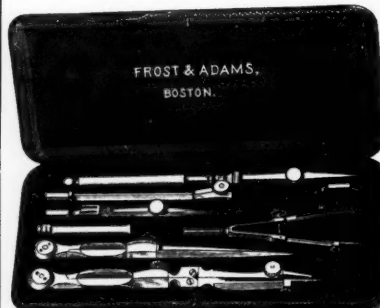
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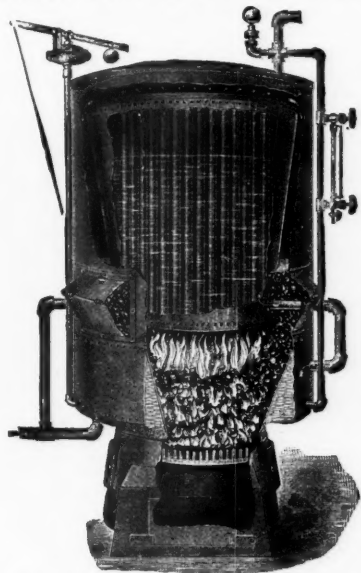
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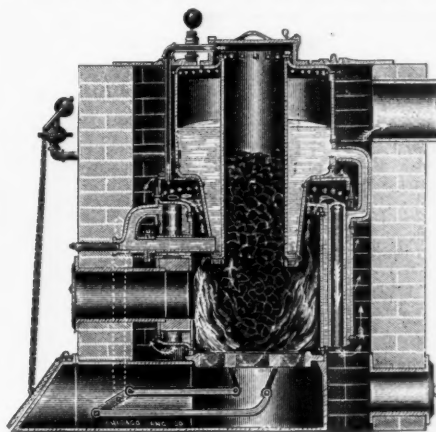
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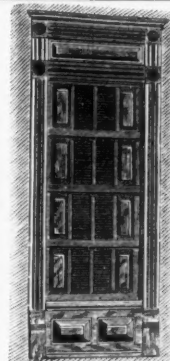
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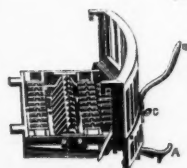
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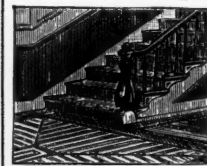
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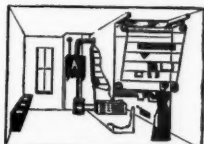
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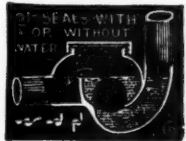
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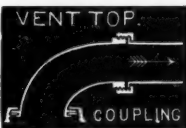


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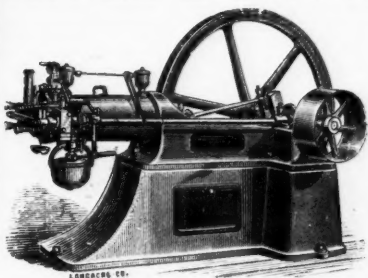
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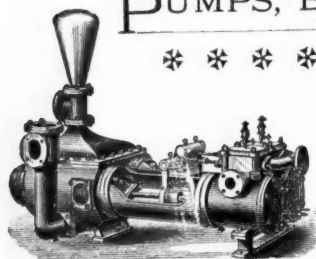


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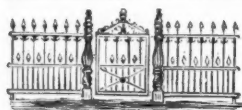
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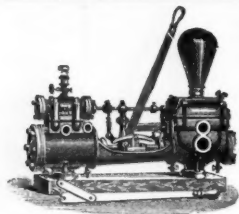
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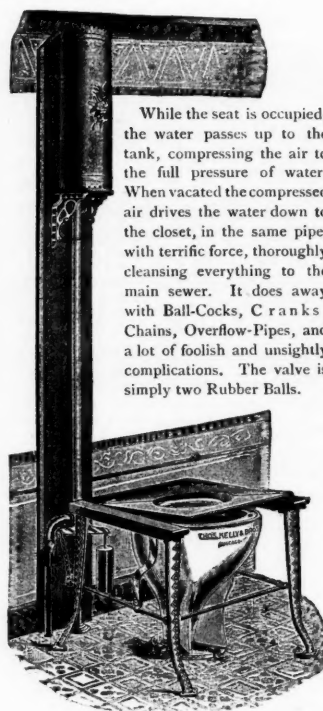


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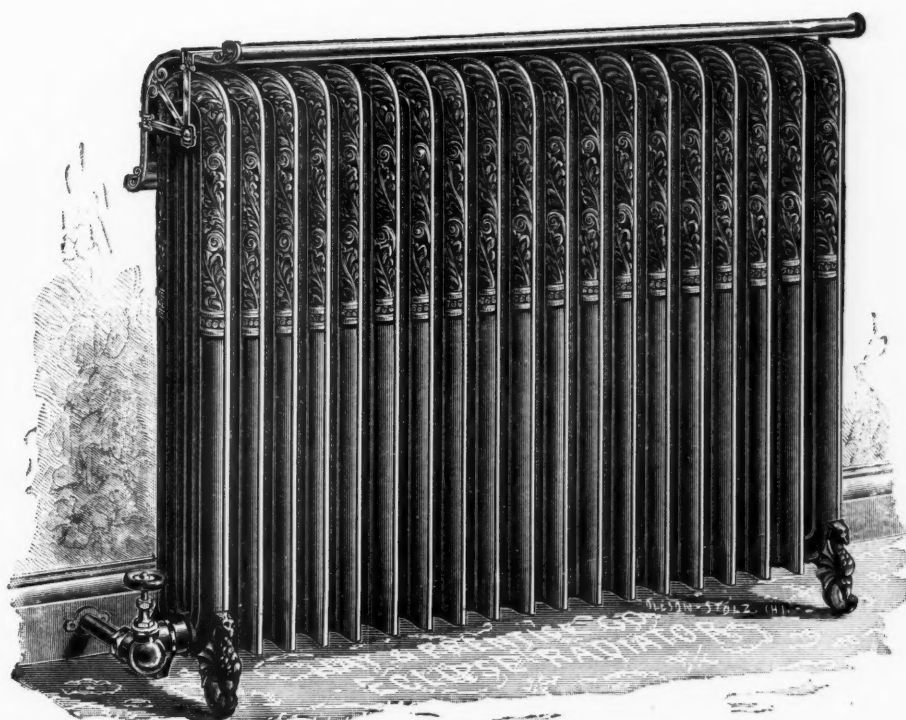
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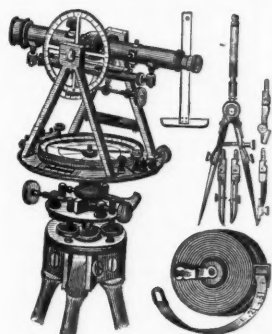
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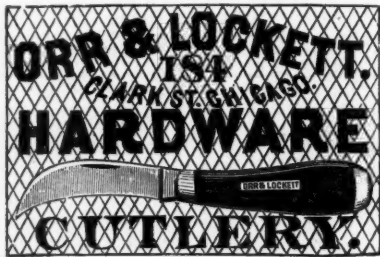
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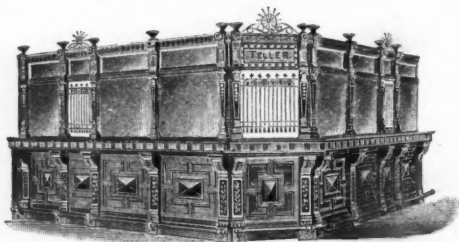
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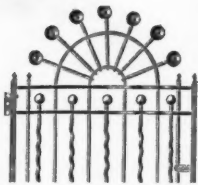
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