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The AMERICAN ARCHITECT AND BUILDING NEWS

Regular Edition

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AUGUST 3, 1907.

No. 1649

SUMMARY:

Pages 33-34

Some Iniquities of the Five-per-cent. Rule—Architects, Tailors and Man-milliners—Death of William H. Russell, Architect—What shall be the Cost of St. Thomas's New York?—Boston's New Metropolitan Improvement Commission—Longevity and a Texan Portland Cement—The Lemon in Art.

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SOCIETIES, PERSONAL MENTION, BUILDING NEWS, ETC.

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Additional:—Entrance Porch: House of Mr. Nelson, Detroit, Mich.

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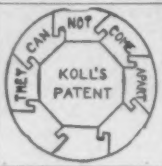
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Pages 957-961

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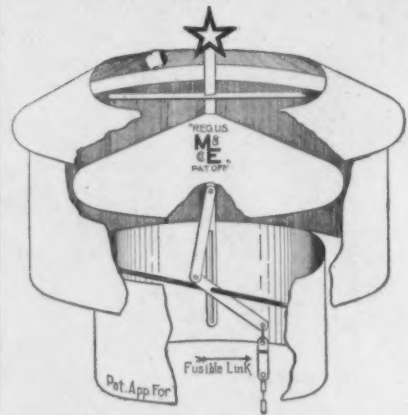
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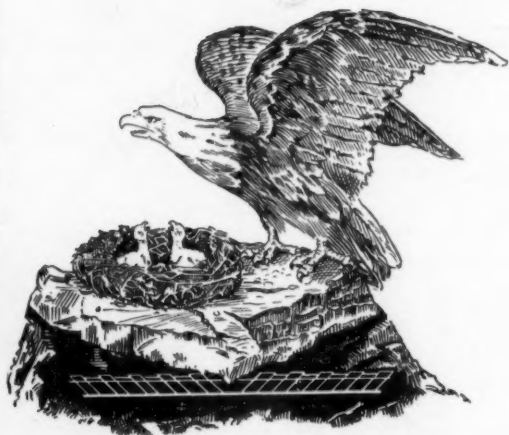
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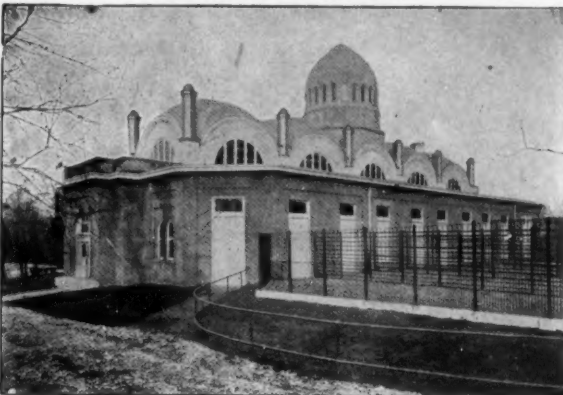
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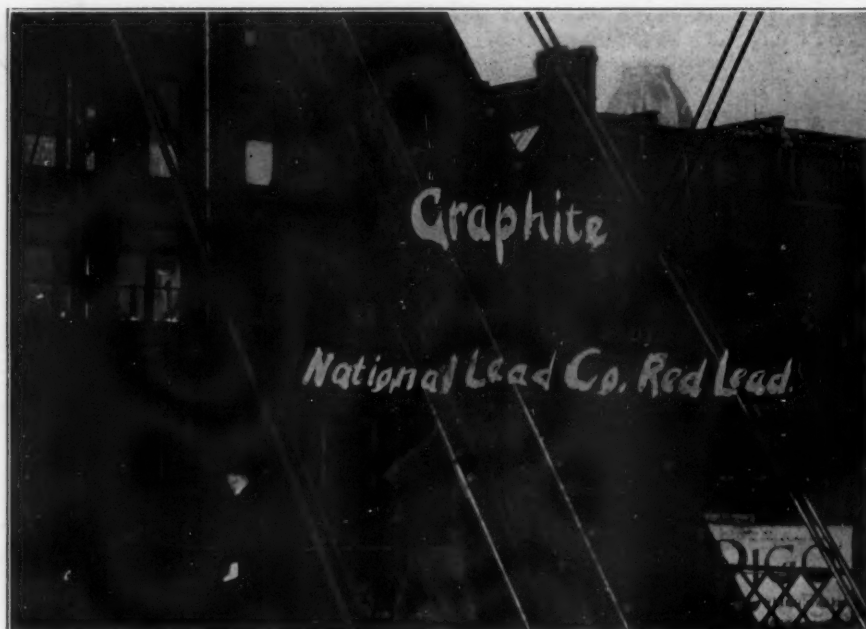
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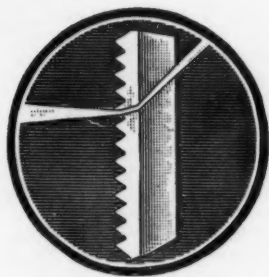
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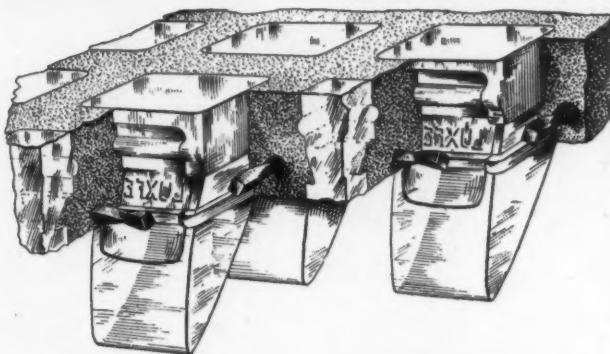
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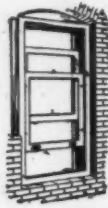
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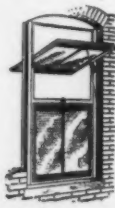
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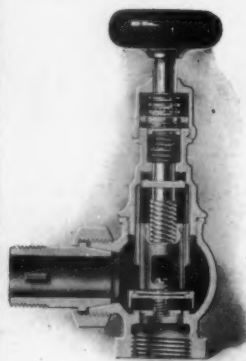
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THE unscientific character of the accepted method of computing an architect's commission, to which we referred last week, becomes very clear when it is shown that for doing absolutely nothing an architect may win or lose—the gambling terms are the right ones to use—considerable sums. Suppose a case where an insurance company, accustomed to build in a lavish manner and never condescending to cut down its outlays for the mere sake of saving money, has decided to build an immense fireproof storage warehouse, fifteen stories high and covering an entire New York block; suppose that, up to the last moment, the architect and the building-committee have assumed that the exterior was to be covered with "face bricks," but that, just before the specifications are given out to the contractors for figuring, the leading spirit of the committee should say: "No, I've been looking about town, and I don't like face-brick buildings, with their even tone and precise edges; we will use the common stock brick." The decision makes a saving of tens of thousands of dollars to the insurance company—which didn't at all care to make the saving—and it also causes a loss of thousands from the architect's commission. But he must accept the loss, just as he would have accepted the gain under the first conditions, and yet no one can show that in either one case or in the other he did anything at all which deserved either reward or punishment.

PERHAPS there are other callings where compensation is awarded to efforts that have no reality. The nearest approximation we can bring to mind is the case where a tailor—assuming that tailors figure their profits at an even rate in all cases—finds the actual sum of his profits affected by the choice his customer makes between one piece of cloth and another. But ought not architects to feel that the reward for their effort should be figured in another, a more "professional" way than that honored by the worthy handlers of the shears and goose? The attitude of the man-milliner is far more dignified; he charges practically as much for a "creation" in a print-stuff as for one based on crêpe de chine, and it is precisely because it is a "creation" that he makes his charge, and that charge is not the same to-day that it was yesterday; it is not the same for Mme. B. as for Mme. X.; the man-milliner on the Rue de la Paix charges more than he on the Boulevard des Italiens. The man-milliner bases his charges—as all painters do, as all artists should—on, to use a railroad term, "what the traffic will bear," and the determining factors are his own reputation as artist and the financial ability of his customers.

IT is not at all curious that some architects to-day have a phenomenal amount of work and an agreeably large income from it. Why should they not have, when the entire profession joins in helping them to it? Unquestionably they have talent and ability, but so have many other architects who have little business and less income. However foolish the architectural profession may be, the American man of affairs is not a fool, and when he can readily hire the best-known talent and experience there is at the rate of five per cent., why should he ever think of employing any other? What inducement is there that would lead him to entrust his work to unknown men and inexperienced hands? What is called "rate-cutting"—the action that causes so much rabid talk at the sessions of the architectural societies—is natural, is inevitable under the even five-per-cent. rule of current practice, and in very many cases it is not only defensible but even may be commendable—where starvation is the alternative. Properly considered, rate-cutting is not a wrong done to the profession by the rate-cutters, but rather the external evidence of a wrong done the less able, the young and the inexperienced through the cowardice of the best-known architects who do not dare to assert confidence in their own reputations and charge "as much as the traffic will bear."

MORE than any other class that can be named, more even than writers, since man may elect not to read while he must see, architects have the opportunity to excite pleasure in or inflict disgust on their fellow-men through the exercise of their creative faculties, and if architects gave more heed to this fact, possibly the architectural aspects of our cities and countryside might benefit. Conscientious and progressive architects, in their later years, must look with a good deal of regret at the enduring expression of their youthful efforts, but we fancy that when the late William H. Russell, who died

abroad a fortnight ago, reviewed the work he had accomplished he found pleasure in perceiving that so much of it was of a nature to give more pleasure than pain to his fellow-citizens. In their class, the buildings designed in late years by the firm of Clinton & Russell, the Hotel Astor, the Seventy-first Regiment Armory, the immense Hudson Terminal Building, the Atlantic Mutual Building and the great apartment-house on upper Broadway, are among the notable buildings of New York City, competently designed, although not exactly manifesting genius on the part of the designer, and admirably planned and built. Mr. Russell, who was born in 1856 and was a graduate of Columbia College, received his early architectural training in the office of his great-uncle, the late James Renwick, eventually becoming a partner in the firm of Renwick, Aspinwall & Russell. In 1894 he was taken into partnership by Mr. Charles W. Clinton, who for many years had enjoyed the friendship and confidence of an important group of owners of real estate in the commercial districts of the city. From that time forward his career was clear, though it demanded the mental and physical effort that often wears out too soon the man of artistic temperament.

IN view of the doubts we expressed a short time since as to the propriety and moral righteousness of the modern movement toward cathedral-building in this country, it is agreeable to learn that others entertain the same feeling, others who are just now in the position to give their feelings practical effect. It seems that there is division of opinion in the congregation or amongst the trustees of St. Thomas's Church in New York, one of the parties being in favor of spending at least one million dollars on an architecturally perfect church, erected on a new and sufficiently large site, while the other holds that it would be more becoming to expend but half as much money on rebuilding, in order that the ability of the parish to continue and enlarge the charitable undertakings for which it has always been famous might not be impaired. And yet, in the case of St. Thomas's, we would willingly see the larger sum expended, on the principle that it is not repulsive to see an always well-dressed man clad with even more than accustomed elegance, while the fine raiment of the *nouveau riche* would but excite scoffings. As long-time occupants of the most beautiful church, perhaps, in New York, the congregation would find themselves none too much at ease in the most expensive structure they could afford. Besides this, we would much like to see the church that Messrs. Cram, Goodhue & Ferguson would produce when they had one million dollars at command.

MOVED by interest in the subject, and influenced by the remarkably instructive report of the Boston Society of Architects as to ways and means of improving and embellishing the Metropolitan District of Boston, the Massachusetts Legislature, at its last session, enacted a law authorizing the appointment of a Metropolitan Improvement Commission who should study the matter further and report with recommendations. Governor Guild has just named the gentlemen who are to serve on this Commission, and his selections are excel-

lent. The two men whose opinions will probably have the most weight with the Legislature and with the public are Messrs. Robert S. Peabody and Desmond Fitzgerald, whose standing as, respectively, architect and engineer, is well known to all our readers. Mr. Henry B. Day, a banker, can advise competently upon financial matters, which are largely involved. Mr. Thomas J. Gargan, long a member of the Rapid Transit Commission, is already familiar with many of the conditions of the problem, while the chairman, Mr. Benjamin N. Johnson, is a lawyer of standing. It is interesting to find the Governor of Massachusetts giving evidence that he appreciates the value of years and experience, and does not feel that everything must be entrusted to energetic youth, untested and inexperienced.

SIDE issues and by-products are very curious, and pecuniary returns are in these days of the higher chemistry obtained from the most unexpected sources; but there surely was never a more fantastic tale developed than one that has its source in Clairemont, Tex., where there is a syndicate that has control of 145,000 acres of land on which there is "a great deposit of cement clay," which is to be converted into cement at the rate, at first, of twenty-five tons a day. At the head of the syndicate is a certain H. H. Bourne, said to be now upwards of ninety years of age, who proposes to live at least three hundred years longer by continuing his peculiar diet. It is said that Mr. Bourne "uses freely" a "mineral clay" which is found on his ranch, and though he does not insist that the other members of the syndicate, or its customers, shall adopt his diet, he is satisfied that the food is the same that was used by Methuselah, a number of years ago, with such beneficial effect. Clay-eating, which is practised in different parts of the Southern States and in Styria, has not usually conduced to longevity, but if Mr. Bourne has discovered a superior grade of the slippery stuff, and can guarantee that each barrel of cement turned out by the syndicate contains a package of the life-giving "mineral-clay," he should be able to drive all other cement-makers out of the market.

A NEW French weekly journal, *Le Connoisseur*, which devotes itself largely to the discovering and unveiling of forgeries in the field of art, tells one story which contains an amusing echo of a bit of slang now current in this country. A recent offering at public sale by M. Sedelmeyer of certain paintings was under consideration, and amongst them was a group of some thirty Dutch fruit-and-flower pieces of stated dates and schools, but by different artists. The critical observer chanced to notice a singular similarity in a large proportion of the canvases: prominent in the foreground of each was a lemon. Thinking this odd, the critic hastened to the Louvre, and there carefully examined all the many Dutch paintings, and was not surprised to find that in only three cases was a lemon dished up; he was, however, greatly amused to find that one of the three lemon-bearing canvases had been presented to the museum by M. Sedelmeyer! The inference plainly suggested is that the adept employed by M. Sedelmeyer to produce fruit-pieces in the style of different old masters had had furnished to him as models a certain amount of *natura!* fruits, and among them the tell-tale lemon, which appeared on all the canvases until it became withered and changed its tone.

Reinforced Concrete Building Construction¹—I

MR. CHESTER J. HOGUE.—When the writer was asked to take part in this meeting his first thought was that if he could say something to stir up the concrete experts he might himself take a very brief part and then turn the meeting to his own advantage, getting more information than he would give.

Reinforced concrete, of all methods of building construction, seems to be attracting the most attention just now, and the design of reinforced concrete at this time certainly furnishes the best field for discussion of any branch of structural engineering.

You are all interested in the developments of engineering knowledge, but you are not all in the fix of some of us who, regardless of what we really know or of what really is known of the design of reinforced concrete, have to assert for the peace of mind of the owners and their confidence in their own buildings that we have completely mastered the science. Amongst ourselves, however, we may speak a little more freely, and in a short description of a typical concrete factory-building the writer will mention briefly the principal points which must be decided to determine the design, and hopes you will see fit to discuss them very freely for the benefit of us all.

Reinforced-concrete factory construction, from its ease and economy of execution, rapidity of erection and "everything-proofness," seems to be the most distinctive development of this form of construction. On the side of economy the company with which the writer is connected has this year, by careful laying out of the work and study of the wood forms, proved beyond a doubt that a building of this construction can be built at the same cost as one with brick outside walls and wood-framed mill-construction interior, and sometimes for even less, if the building is high and the loads are great. In general, economy in design lies in using slabs of 8, 10 or 12 feet span supported by lines of beams in one direction only, these beams resting directly on columns, with no girders; but when a wider spacing of columns is required economy is gained by using a slab of minimum thickness, say three inches if the finished floor is to be of wood on top of the concrete, or four inches if the finished floor is to be of granolithic laid at the same time as and as part of the floor, spacing the beams as closely together as this slab will require and framing the beams into the girders at the third or quarter points. In construction the great point in saving of cost is in uniformity of detail and in making the wood forms carefully at first in units and then using the units over and over again as many times as possible. As for speed, we can safely guarantee to complete a building at from eight to ten days a story, and we have this year begun and completed buildings while others of equal size were waiting for their steel frames to be fabricated and erected. Everything-proof, it is shown beyond doubt that in recent fires and earthquakes buildings constructed wholly or in part of reinforced concrete gave the best account of themselves; if properly built, there is nothing to rot or rust; without hollow spaces, there are no retreats for dust, dirt or vermin.

One point, however, shown by a number of recent failures, sounds a note of warning quite independently of the feeling of those who have put years of study into this work, that they alone should be trusted to do it—that unless engineers and architects are themselves experts in reinforced-concrete design and construction and wish to give their work very careful supervision, they should be extremely careful that the men into whose hands they intrust the erection of their buildings should know how to design them, how to build them and should care to do them right; and both they and the owners should realize that first cost does not always mean ultimate economy.

There are two types of reinforced-concrete factory construction, the one with concrete outside bearing-walls, with few openings; the other the skeleton type of construction, the walls being simply filling in panels built afterwards. It is the latter type in which the writer is particularly interested because it is the easier to build and the more economical, and he would call your attention to the following distinctive points. The column

and pilaster footings only need go down to a solid bearing, unless an excavated basement is required. Where there is a basement, light walls reinforced horizontally from column to column or vertically from the basement floor to the first floor will retain the earth, the reactions being taken by the columns or by the basement and first floor, while the walls may be reinforced to carry themselves from footing to footing, requiring no foundations of their own. Where there is no basement the outside walls need only go far enough down to prevent frost working in under them, with possibly a shallow trench filled with cinders or gravel underneath, and can be reinforced to carry themselves from pier to pier and to support the walls above. By building the footings first and carefully filling, settling and leveling the earth and laying the floor on the ground, the shores to support the false-work can be cut of even lengths, and there will be a good level surface to shore from. Columns and floors are built first as in skeleton steel construction and the outside panel walls are self-supporting, but not weight-bearing, and are built in between the pilasters entirely independently of the floors at a later time, furnishing a convenient method of keeping the concrete gang busy while the concrete floors are setting or the wood forms are being shifted from floor to floor, or when the weather is too wet or too cold to safely permit the laying of the more important work of the floor construction.

Going back now to the question of design, the following list notes a number of important points which must be taken up for decision in designing any reinforced-concrete structure:

Footings.

1. Distribution of stresses over tension flange.
2. Proportion of diameter of rod to side of footing.
3. Shear.

Columns.

1. Rich concrete.
2. Longitudinal rods and spacing of ties.
3. Hooped columns.

Beams.

1. Economical proportion of depth to length of span.
2. Spacing of rods in stem.
3. Upper rods bent up where.
4. Length beyond edge of bearing.
5. Allowable width of and distribution of stresses over compression flange.
6. Proportion of thickness of slab to width of stem.
7. Allowable unit shear in concrete when shear is taken by steel in tension.
8. Can diagonally-bent rods, vertical stirrups and plain concrete in shear be utilized together at their working strengths to resist shear, or what combinations can be made?
9. Maximum spacing of shear stirrups.
10. Are round, square or flat stirrups best?
11. Proportion of size of stirrups to depth of beams.
12. Continuous beams.

It is on these points that the writer particularly wishes to start a discussion, and will take them up briefly, as follows:

Footings. (1) The footings are reinforced for tension with rods laid in two or more directions as close to the bottom of the footing as protection from rust, etc., will allow. There is no question but that the rods directly under the pier carry their full portion of the load, although the requisite number of rods to properly reinforce the footing may be spread over an area somewhat greater than the width of the pier with a fairly even distribution of stresses over the entire number of rods, but it would seem that as the spread of the rods increases in proportion to the width of the pier above, the stress in the outer rods must decrease, and the distance of the outer rods from the edge of the pier must be limited in some way, possibly by the line of shear of plain concrete, though probably it could be somewhat greater. It seems, though, that this is an important point and that for safe practice some limit should be determined which will avoid over-stressing the rods under the center.

(2) A point of importance in the design of a footing is the proportion of the diameter of the rod used to the length of the rod itself, to insure safe anchorage. In a footing rod the maximum tension is at the center, decreasing toward each end, and it may be assumed that the length of rod on one side of the center serves to anchor that part on the other, and it seems to the writer that there should be some definite limit for the proportion of the diameter of the rod to its length, depending on the allowable adhesive stress of steel and concrete. If thirty-six diameters were assumed as giving a safe anchorage to a rod, its

¹An informal discussion before the Boston Society of Civil Engineers at its meetings held September 19 and October 5, 1906, published in the "Journal" of the Association of Engineering Societies for June, 1907.

diameter should not be greater than one seventy-second of the length of the rod, or practically the length of the side of the footing.

(3) Shear in a cantilever beam differs from that in a beam supported at the ends in that in the cantilever beam, at the point of maximum tension in the rods, there is the maximum increase in stress on the rods and the maximum shear, while in the beam supported at the ends the point of maximum tension in the rods is the point of no increase in stress on the rods and the point of zero shear; that means that in the beams supported at the ends the maximum increase in the stress on the rods takes place at the end where there is no anchorage beyond, while in the cantilever beam the minimum increase is towards the end, and so the adhesive stress on the rod from shear decreases. In a beam supported at the ends it seems to be the adhesive stress on the rods near the end which causes the beam to fail, when there is no steel shear reinforcement, at what seems to be a low-unit shear on the concrete, and it seems for that reason that it is proper to use a higher shearing value on a cantilever beam than in a beam supported at the ends, even though there be no steel shear reinforcement.

Columns. (1) In columns there are three ways of getting the requisite strength. The one which the writer's company most commonly uses—because it has so far seemed to be the handiest and cheapest—is that of a rich mix of concrete. But that is inconvenient for various reasons, as, for instance, if you carry the rich mix up to the under side of the beams and then carry the mixture of the floor and beams over the column, there is a leaner and weaker concrete from the bottom of the beam to the top of the floor slab, and it would be difficult to carry the column mixture to the top of the slab and get the beam and slab concrete laid before the column concrete had begun to set, thus not giving a good bond between the two mixtures, while by building brackets from the column to the beam or by building a capital around the top of the column the increase in the cost of the centering would make it almost as cheap to build a large column all the way down. Then there is the further point that, in using two or three mixes of concrete in the same building, you can never be sure of getting the right mix in the right place. It is so difficult to get work done as you want it when you are on the ground, even, that it would seem to be useless to expect it to be always done right when you are away; and you cannot be there all the time and ought not, therefore, to take any more chances than you can possibly help, but try to design everything in the simplest possible way. Then again, even if you use a pretty good unit stress on rich concrete, you will find that when you get into a very tall building, or one with very heavy loads on the floors, the size is larger than the owner will ordinarily want to allow.

(2) The next way, perhaps, of getting strength is by using compression-rods. Here again are difficulties. The ends of the rods where they bear one on the other at the floor levels should have faced ends and be put into some sort of a socket or tied together in some way, or else have sufficient lap to distribute the stresses from the upper rod to the lower through adhesion to the concrete. Longitudinal rods, if you wish to have them take the same deformation as the concrete, must be stressed in proportion to the moduli of elasticity of the two materials, and that means that the steel can be used up to hardly half of its ordinary safe working strength, which is far from economical. Then again, if the distribution of stresses at the floor levels is taken care of by faced ends or by lapping enough to transfer the stresses by adhesion, there will still be a good deal higher stresses on the column at the footing than should be allowed, unless the rods are to rest on bearing plates. When plain rods are not large enough to give the additional strength required, or rods larger than it would be practical to use are necessary, structural shapes must be resorted to, but structural shapes are expensive and mean delay, they being the slow things to get out of the shops, and they are hard to frame to with concrete, as it is difficult to secure proper bearings for the ends of the beams and girders and to carry the tension rods of the beams through the column in order to get continuous ties through the building and take care of the stresses over the supports.

(3) It seems that the solution of the problem might lie in a hooped column. The writer has eagerly followed developments in that line, although they do not seem to have been carried far enough in the way of tests to know what will be the final results; that is, to know to what extent hooping may be carried and whether, as the result of repeated loadings and unloadings, the

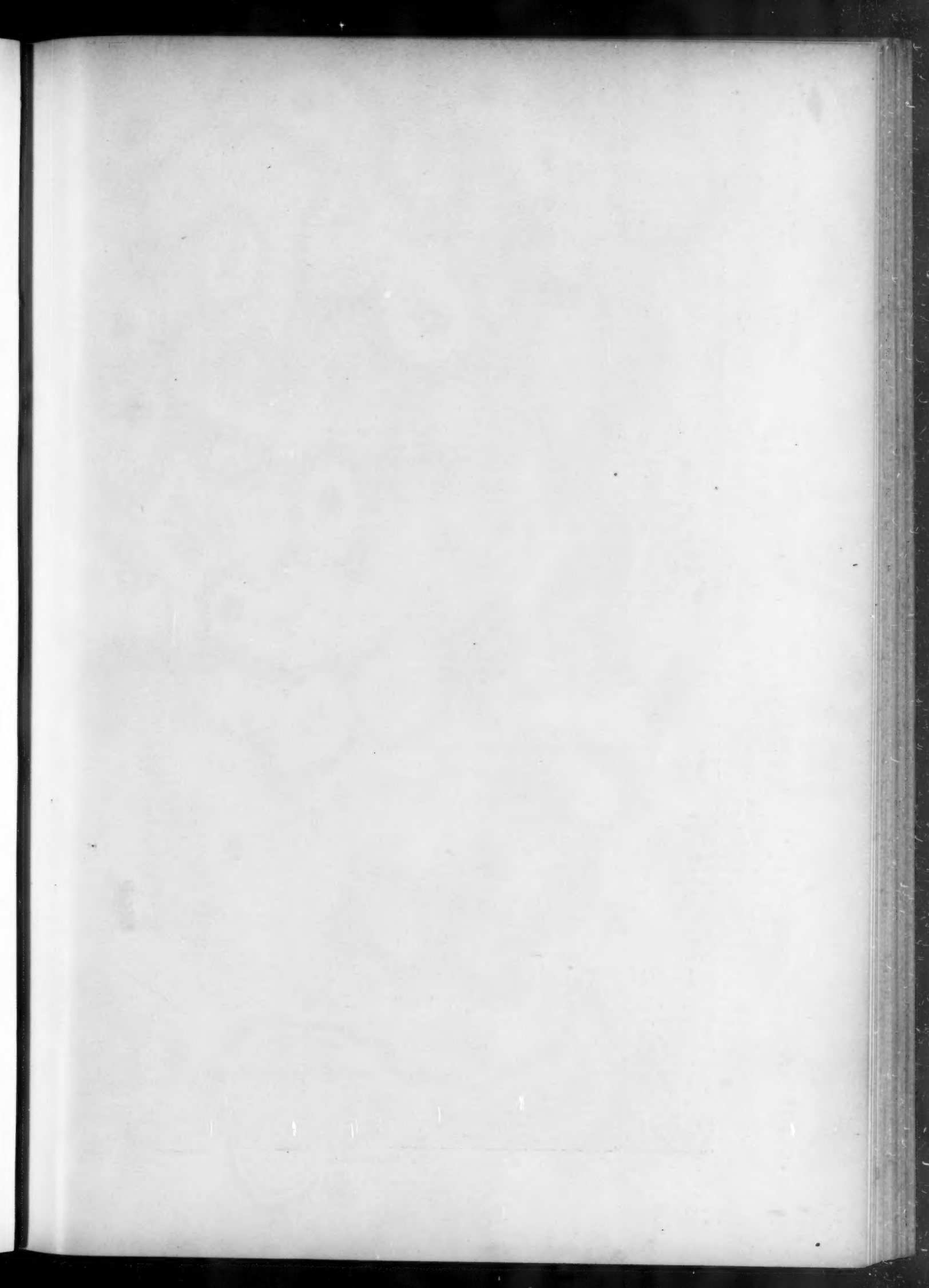
concrete will disintegrate and run out through the spaces between the hoops. In New York, hooped columns have been built where the concrete jackets were cast first and hooped columns built inside of them. It seems to the writer that there is a good point here and that the jackets might be reinforced to a certain extent both horizontally and vertically so that it would not matter whether the concrete inside the hooping disintegrated or not, while the jackets would act as fireproofing for the hooping. In connection with hooped columns there comes up the further questions as to what should be the maximum pitch of the hooping and whether it can be carried to an indefinite extent up to a complete inclosing steel shell, or whether there is a limit to its efficiency. In any kind of a concrete column, except one in which structural steel shapes carry practically all of the load, longitudinal rods should be put in to take care of flexure from eccentric loads and that sort of thing, and these longitudinal rods should be bound around horizontally at certain intervals by steel bands of some sort; this is especially important where the rods take part of the compression stresses, in order that they may not buckle and break out of the concrete. There are two limits which the writer does not ordinarily exceed in spacing these hoops, one perhaps a little less than the diameter of the column and the other not more than eighteen to twenty times the diameter of the rods.

Beams. (1) The first point to be determined in designing a beam is the depth, and it would seem to the writer that from one-tenth to one-fourteenth of the length of the span is a good proportion; that is, a depth in inches equal to the span in feet is usually satisfactory, both for stiffness and economy.

(2) The spacing of the rods in the stem is important, for the shear on the plane above the rods, for adhesion of the concrete to the rod, for providing sufficient concrete around the rods to thoroughly inclose them, for convenience in placing the concrete between the rods, and for the security of having the rods well protected from fire. If the rods are spaced by proportioning the adhesion of the rods to the shear on the plane above, the other conditions will probably be satisfied. A spacing of two and a half to three diameters is that most commonly used for rods in the same horizontal row, while if there are two rows, one above the other, the vertical spacing is usually about two diameters, although in a number of systems the two or sometimes three rows of rods are placed in direct contact, although this does not seem to the writer to be good or safe practice. If there are two rows of rods and the upper rods are bent up at their third or quarter points, the rods in both rows may probably be spaced as if there were only one row, as the upper rods will act as the tension rods of a belly-rod truss, carrying their stresses directly to the top of the beam; but if there are two rows of straight rods, it seems to the writer that the shear must cross the plane just above the rods and be distributed into the rods by adhesion of the concrete and steel and that the spacing should be twice that allowed above unless there are rigidly attached shear members to distribute the increase of stress in the rods into the concrete. For fireproofing, the rods should be spaced not less than two diameters up from the bottom and in from the side of the beam.

(3) When there are two rows of rods in a beam with the load uniformly distributed, the upper ones are usually bent up at their third or quarter point or sometimes even closer to the bearing. It seems to the writer that there are advantages in favor of the quarter point, as then the rods are not bent up until there begins to be a material reduction in the bending-moment, while they will still carry a good deal of the vertical shear. In beams with concentrated loads the upper rods would probably be bent up after passing the last concentration unless this would require them to be bent at an angle greater than 45 degrees. In some systems the rods bend up at different points when they are no longer needed at the bottom for tension, thus taking out shear for practically the full length of the beam, but from the standpoint of comparative economy it would not seem advisable to have to bend rods in so many different shapes, to say nothing of the difficulty of getting the rods properly sorted and placed. The writer is convinced that it is better to keep designs as simple as possible, for both economy and convenience, in addition to being surer of having the work done properly in the field.

(4) Rods bent to the top of the beam are supposed to carry their full tension stresses quite to the edge of the bearing, and they must be anchored in some way at or beyond this point. This can be done with plates, nuts and threaded ends when there





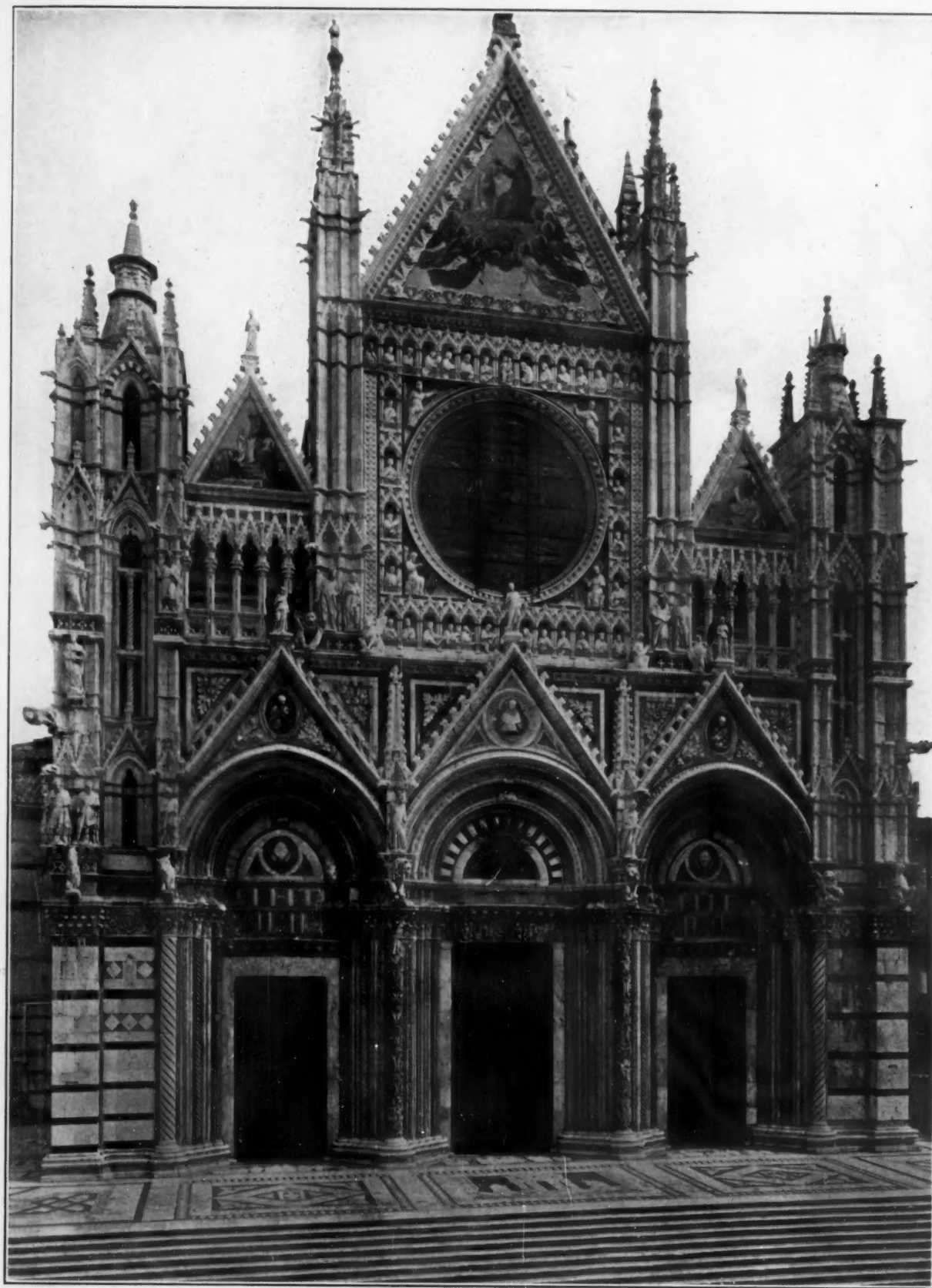
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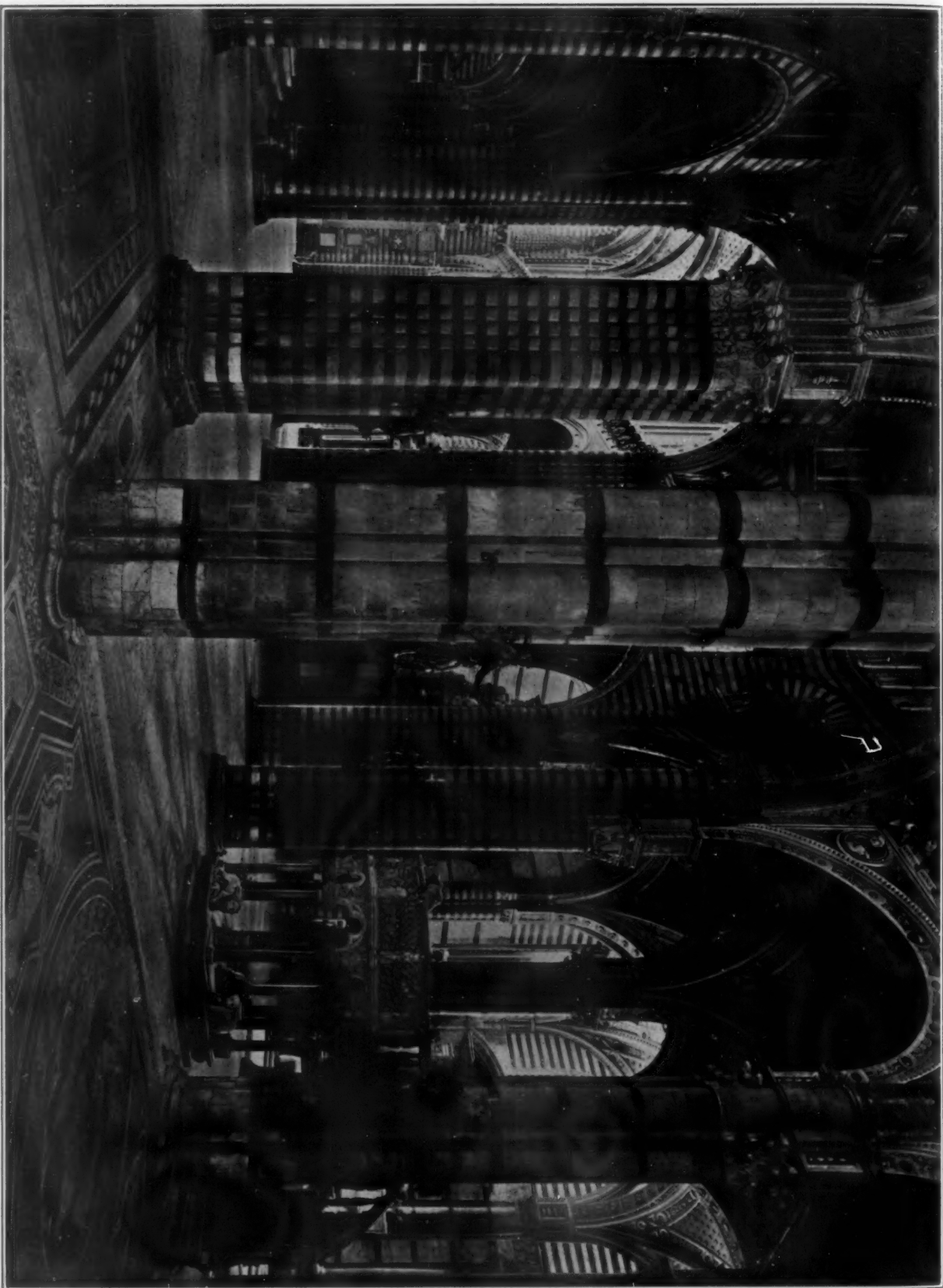


THE CATHEDRAL, SIENA, ITALY.

The American Architect and Building News.
Regular Edition.

Volume XCII., Number 1643.
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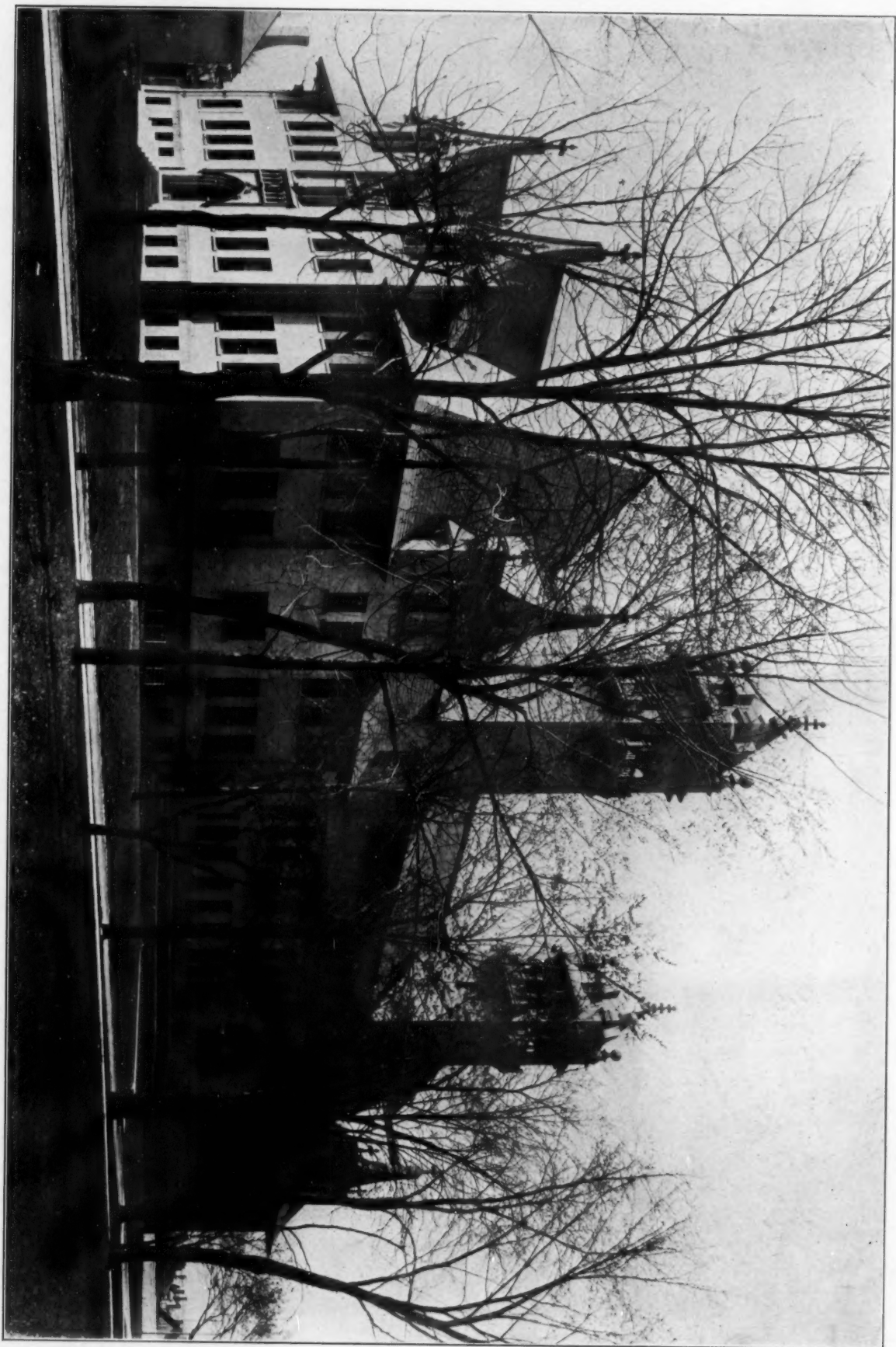
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INTERIOR VIEW OF THE CATHEDRAL, SIENA, ITALY.
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SCHOOL BUILDING: OHIO INSTITUTION FOR THE EDUCATION OF THE DEAF AND DUMB, COLUMBUS, O.

Richards, McCarty & Bulford, Architects.

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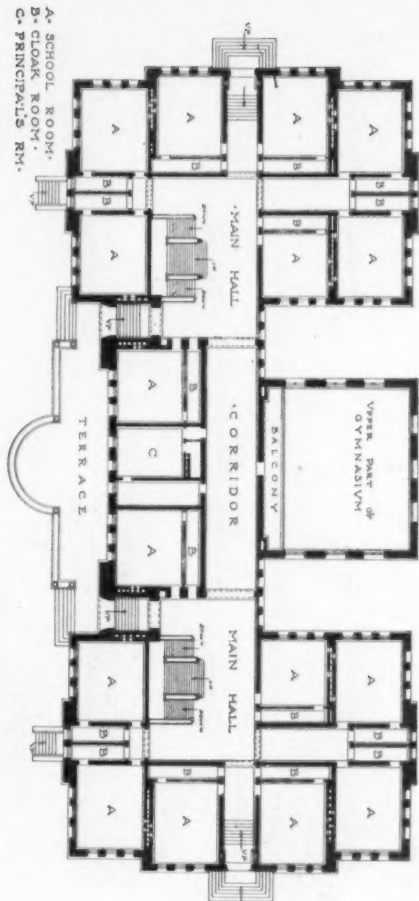
END VIEW: SCHOOL BUILDING: OHIO INSTITUTION FOR THE EDUCATION OF THE DEAF AND DUMB, COLUMBUS, O.

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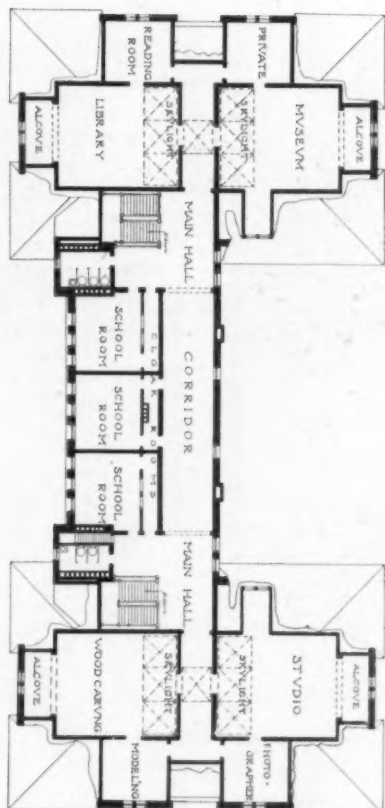
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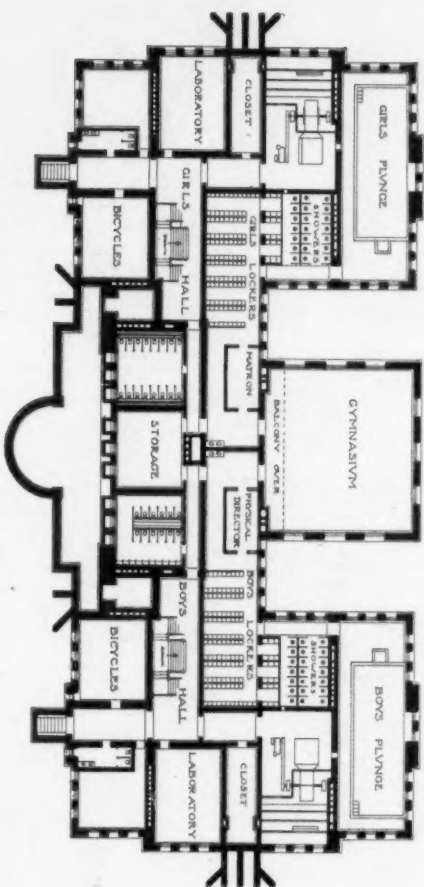
PLAN OF FIRST FLOOR.

SCALE 30 FT.



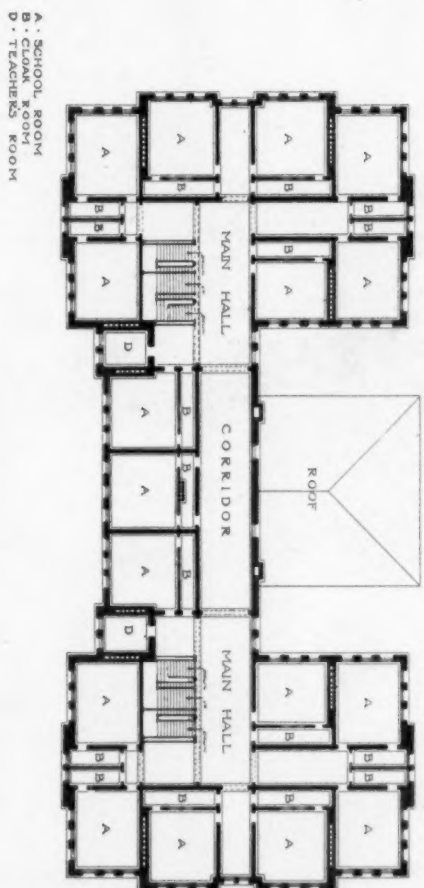
PLAN OF THIRD FLOOR

SCALE 30 FT.



PLAN OF BASEMENT.

SCALE 30 FT.



PLAN OF SECOND FLOOR.

SCALE 30 FT.

PLANS: SCHOOL BUILDING: OHIO INSTITUTION FOR EDUCATION OF THE DEAF AND DUMB, COLUMBUS, O.

Richards, McCarty & Bulford, Architects.

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Volume XCII, Number 1649.
August 3, 1907.



A HOUSE IN PITTSBURGH, PA.

H. D. Gilchrist, Architect.

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Volume XCII, Number 1649,
August 3, 1907.



HOUSE OF G. E. SMITH, ESQ., PHILLIPS BEACH, SWAMPSCOTT, MASS.

Guy Lowell, Architect.

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August 2, 1907.

is no beam beyond, but with an adjacent beam it is advisable to have a continuous tie over the support, so rods may be threaded and connected by means of turn-buckles or by lapping the rods from one beam by those of the other thirty to forty diameters, if the rods in both beams are of the same number and size, or by simply carrying the rods over each beam far enough beyond the edge of the bearing to anchor themselves in the concrete if they are not the same in both beams; in this case they should be lapped far enough in addition to their own anchorage to carry the strength of the bent-up rods of the lighter beam continuously over the supports. If the ends of the rods can be turned down, this bent end will safely enable the length of the anchorage to be reduced at least one-third. If a beam is not designed for full continuity it is still fixed at the ends to a certain extent by the nature and method of placing the material, and if there is no tensile reinforcement at the top of the beam over the support the deflection due to loading will probably cause a crack at the top near the bearing and this, being at the point of greatest cross shear, should by all means be prevented and sufficient reinforcement placed there to take care at least of the negative movement due to deflection, and it is a question whether a rod bent diagonally from the bottom of the beam to near the top at the edge of the bearing is sufficient or whether in this case cracks will still take place at some little distance out from the edge of the bearing, requiring tension rods near the top of the beam for some distance out from the edge of the bearing for their prevention.

(5) Leaving the rods now and coming to the compression flange of a T-section, the first point which must be determined is the distribution of the stresses above, vertically and horizontally. Of course, we must assume that the maximum compression stress is directly over the center of the stem, and it seems to the writer that there is no question but that the stresses diminish on each side of the center to limits fixed by some engineers at three to ten times the width of the stem and by others at from one-quarter to one-half of the length of the span, but it is a question whether this distribution is rectangular, parabolic or triangular in form. Vertically the stresses will increase from the neutral axis to the top of the slab, the stress diagram being an irregular curve which approaches a straight line at low stresses and a parabola as the stresses approach the ultimate strength of the concrete. It is necessary to assume the distribution in both directions and from this work out the allowable average stress over the compression flange, which will be a variable depending on the proportion of the thickness of the slab to the depth of the beam and the spacing of the beams in proportion to the length of the span.

(6) On the assumption that the compression stresses are distributed over a width of slab somewhat greater than the width of the stem in a T-section, there must be longitudinal shear on the vertical planes where the slab meets the concrete over the stem, and this must equal the shear on the horizontal plane between the slab and the stem, except for the amount of compression taken by the portion of the slab directly over the stem. The proportion of the total longitudinal shear which comes on these two vertical planes depends on the proportion of the width of the stem to the width of the slab assumed to be in compression, but as a general rule the stem should not be more than two and one-half to three times the depth of the slab; or perhaps it would be more proper to say that the thickness of the slab of a T-section at the planes over each side of the stem should not be less than from one-third to two-fifths of the width of the stem.

(7) In a concrete beam reinforced with straight rods at the bottom, the limit for shear is the vertical component of the diagonal tension stresses, and Professor Talbot has shown that in such a beam the vertical shear is equal to the diagonal tension, so that the safe vertical shear should not exceed, say, 50 pounds per square inch in good concrete. In a T-beam with steel shear reinforcement the conditions are somewhat different, and it seems to the writer that the vertical shearing limit should be the vertical component of the diagonal compression stresses, which would allow the vertical shear to be taken at about three times the value for a beam without shear reinforcement; but it must be remembered that this shearing value must be taken as the unit shear over an area equal to the width of the stem multiplied by the distance from the center of the compression stresses to the center of the tension stresses. It may yet be

shown that such distribution of the shear reinforcement can be made that it will be a question of direct cross shear only, and it is pretty well established that the direct cross-shearing strength of concrete is somewhat more than one-half its direct bearing strength.

(8) It is a question in the mind of the writer whether, in a T-beam with both diagonally-bent tension rods and vertical shear rods, the concrete and both sets of rods may be assumed to carry shear at their working strength. It would seem perfectly proper to use the shearing strength of concrete in combination with that of diagonally-bent tension rods, or of diagonally-bent tension rods in combination with vertical or diagonal shear rods, but it seems to the writer that when vertical or diagonal shear rods are used, the shearing strength of a plain concrete beam should not be allowed in addition, because by the time the shear rods are stressed up to their working strength the concrete would be stressed beyond its tensile strength and the rods would be carrying all the stresses, whether they were assumed to or not.

Mr. E. P. Goodrich has recently made some tests of beams which he reinforced with vertical shear rods, but not sufficiently to carry all the shear. Tested to destruction, the vertical shear rods were pulled apart, but at a considerably higher load than they could be expected to carry by themselves, showing apparently that the concrete acted in combination with the steel even up to the ultimate strength of the steel, and it may be that by these and further tests the value of concrete and shear rods in combination may be established.

(9) Having established the size of the shear rods to be used, the spacing at the ends of the beam depends on the shear, but when the shear has so decreased that one shear rod is sufficient, they could theoretically be placed at panel lengths apart. Mr. Goodrich, however, has made tests of beams in which, with the shear rods at panel lengths apart, there were diagonal cracks in the concrete at the failure of the beam, while with sufficient shear reinforcement at half-panel lengths the beams failed by direct cross-shear. This would indicate that with shear rods at panel lengths apart the shearing strength would be the vertical component of the diagonal compression stresses, or about one-third of the direct compression strength, while with shear rods at half-panel lengths the limit would be direct cross-shear, or more than one-half the compression strength.

(10 and 11) There are advantages and disadvantages in different kinds of shear rods. Round and square rods will hold better by adhesion in the concrete; but to hold properly, the ratio of diameter to length would have to be sufficient to anchor the rod in the concrete above the neutral axis, while a flat bar could be more depended on for a direct bearing both top and bottom.

(12) The question of continuous beams is very interesting and one which is being given more and more consideration.

Having established the fact that some reinforcement over the supports is desirable to prevent cracking near the bearings, it becomes a question as to whether the negative moment due to deflection should be determined and reinforcement be placed to care for this, or whether you should go farther and design the beam for full continuity. This in T-sections requires some provision for taking the negative compression and this may be done by deepening the beam next the column in the shape of a diagonal bracket, or by connecting the tension rods by turn-buckles, or by some contrivance which would give them a direct bearing on each other, while some engineers go so far as to design with simply continuous rectangular beams.

Except in a very simple building, beams are not always in a row or of the same length of span; bracketing, turn-buckles and threaded rods are expensive, and the writer hasn't found that a continuous rectangular beam is as cheap as a single T-beam, because it does not utilize the compression strength of the slab as a T-beam does. So, assuming that it is safe and proper to design a single T-beam, the writer has yet to be convinced that such a beam properly reinforced for the negative moment due to deflection is not the best and most economical. It is the opinion of the writer that, when concrete buildings are constructed according to the best method of design and not simply the cheapest, there will be rods placed at the top of beams for their entire length, as well as at the bottom, to prevent cracks from expansion and contraction and unequal settlements of the foundation and to better tie the building together.

Italian Cities—XIX

Siena—II

SCULPTURE differentiated itself slowly from architecture, with which it was at first confounded, and this differentiation declared itself only after the coming of the brothers Niccolo and Giovanni Pisano, who left splendid testimony of their passage in the Cathedral where they executed the marble pulpit that is held to be their most perfect work. Linking to their modern times the traditions of antique art, the Pisani taught the Sieneese the proper road to follow. The earliest of these sculptors, or at least the one to whom it is possible to attribute with certainty a known work, is Giovanni d'Agostino. By him there is a bas-relief, of slight dimensions, that represents the Madonna with the Infant Jesus on her knees, while at each side an angel holds out a vase of flowers. His contemporaries and successors who did not, as he did, sign their work have left only very vague traces of their labors. It is only in the fourteenth century that appeared the grand master, almost the only masterly Sieneese sculptor, Jacopo della Quercia. His is fully the equal of the grand names of Florentine art and he reaches their level not so much by the externals of his treatment, by the affectation of attitude or by mannerisms—from which Donatello himself was not exempt—as by the power of the emotion, the depth and intensity of the feeling that inspired him and the breadth of his style, quite peculiar to himself. The nature of his genius makes one think more than once of that Titan of sculptors, Michael Angelo, and for a long time, in fact, they have been named together. Of a surety Jacopo della Quercia heralds the coming of the author of the "Moses" and the tomb of Lorenzo de' Medici. He has not altogether laid aside the crudity that the Gothic period impressed on everything, but has comprehended what grace is and what a smile may be; he understands the harmonious movement of the figure and the beauty of the human form.

His chief work, one unfortunately almost destroyed by the attacks of weather and the carelessness of man, is the Fonte Gaia, a fountain which stood in the city's chief square in front of the Palazzo Pubblico. He labored on it during seven years, from 1412 to 1419. The regional retrospective exposition of 1904 afforded the opportunity for collecting all the fragments of the fountain and rebuilding this chef-d'œuvre, which, though mutilated, still has an undeniable grandeur. The same exposition enabled one to behold, side by side, four statues of Apostles and one of the Virgin, carved in wood, gilded and painted, which really endured comparison with the figures of the saints that fill the niches of Or San Michele at Florence. The Baptistery, in the Church of San Giovanni, also has some bronze bas-reliefs due to the cunning hand of Jacopo, who also competed for the doors of S. Giovanni at Florence.

The names of certain of his pupils have come down to us. The most notable, Pietro del Minella, worked with his master on the Cathedral and the Baptistery. He had great influence on the Turini family, who also shared the labor on the baptismal fonts. Antonio Federighi, the period of whose productivity includes the second half of the fifteenth century, resembled him in no way; he is even antipodal to Jacopo della Quercia and sacrifices truth to artificiality. Lorenzo di Pietro, called "Il Vecchieta," had a temperament that was far more sound. Donatello's work inspired him and the result is often seen in his own. Restless, always preoccupied with a desire for perfection and seeking the means to achieve it, a tireless, but impressionable worker, he tried every field and always succeeded in being interesting, even if at times his ideal seems open to discussion. With Giacomo Cozzarelli, better known as a wood-carver, and Lorenzo di Mariano, or Marrina, we reach the end of the glories of Sieneese sculpture; the artist last mentioned, in fact, belongs rather to the decadence of the school.

We must rank Siena amongst the cities where architecture held a chief place. As soon as he passes through one of the gateways and penetrates beyond the city's wall, the traveler experiences the sensation of having been suddenly and miraculously transported bodily back to the heart of the Middle Ages. In fact the city has suffered very little through the introduction of modern fashions. On narrow streets, bereft of sidewalks, the blackened walls of ancient palaces rear themselves. High

up above, the towers which used to serve for the defense of the houses, fortresses—massive and truncated, preserve still to these houses their original aggressive character. Often the streets are straddled by these houses, supported upon arches thrown from side to side as if for bridges; one has to pass beneath stone vaults and is oppressed with the sensation of living in times of long ago. Siena is the only city where one can discover the real character of the Italian Gothic. Only here and there does one come upon a piece of Romanesque work. One of the monuments that are purely Gothic is found nearby at San Galgano. The church, built by the Cistercian monks in the thirteenth century, is merely a heap of ruins, but enough of it is left to enable one to admire the purity of the lines and the audaciousness of the arches and colonnades. It is very interesting to compare this style deriving from the north with the Italian Gothic that is exemplified in the Cathedral. There is, nevertheless, still another phase of Gothic in the city, and this is represented by the palaces which used to serve and still do serve as habitations for the noble families. The individualistic spirit that divided the petty Italian principalities or republics one from another was paralleled in the cities themselves by the antagonisms of separate families. Siena did not escape the general fashion, but manifested it quite as much by a rivalry in luxury as by feats of arms. From this necessity for outshining one's neighbors, or foes, were born all these palaces, the external indications of power and opulence.

It must be remarked, however, that the Cathedral itself has preserved something of the Romanesque manner and that its campanile has absolutely nothing Gothic about it, unless it is the black and white marble marquetry with which its walls are faced. One municipal palace, the Palazzo Pubblico, is the prototype of all the other palaces. Here brick is married to stone and marble, and the building is surmounted by a tower, left intact, happily, whose elegant lines were a constant joy to Leonardo da Vinci.

A description of these buildings will permit me to go a little deeper into my subject. What was the exact value of and what rôle was played by Sieneese architects between 1200 and 1300 no one quite knows. In the following century we know a few names, as, for instance, Tino di Camaino and Lorenzo Maitani—who worked on the Cathedral at Orvieto. Angelo di Ventura built, amongst other things, three of the city's gateways, and, finally, Lando di Pietro, who had acquired a great name, was charged by his fellow-citizens with the task of directing the construction of the Cathedral.

The evolution which the Renaissance movement impressed on all forms of artistic creation was especially felt by architecture. Antonio Federighi was the propagator of these new forms, and to him we owe many gracious monuments, such as the Castello degli Diavoli, near the city. He died in 1490. His contemporary, Francesco di Giorgio Martini, was one of those all-round artists, such as were produced only in this epoch and of whom the grand Leonardo remains the most perfect exemplar. Savant, painter and sculptor, his activity was felt in every direction, and traces of his glorious work are found in many parts of the peninsula. To Giacomo Cozzarelli we owe the Palazzo Magnifico (the nickname of Pandolfo Petrucci) and the convent of the Osservanza, both of which, however, are lacking in originality. With Baldassare Peruzzi we fall into the false Classicism which clips the wings of every inspiration.

Finally, it is worth while to indicate the important place held by the Sieneese in what, perhaps wrongfully, are styled the minor arts, notably in goldsmith's work, where such masters as Turino di Sano and his son Giovanni executed chefs-d'œuvre of patience and splendor thoroughly in harmony with the mystic character of the people.

The characters of these different artists—painters, sculptors and architects—are found expressed in the monuments they created. In an archaic milieu the discordances that might, that really did, exist between their several ideals became attenuated, disappeared, and finally became united in an ensemble that was full of nobleness, grandeur, faith, mysticism and beauty in many forms. This is due to the fact that the Sieneese, from the

start, had for their city a profound veneration, a real love, which impelled them to strive together to accomplish that embellishing that the people desired. And the special veneration for the Virgin, as deep-seated in one of the old masters as in the others, served, in painting especially, to contribute to the discipline of individual talent and, by purifying it, gave it a refining and moving force that the new spirit of the Renaissance knew how to avail of.

Two buildings in particular symbolize the history of the city, its struggles and battles, and that restless agitation which urged it in every direction and finally cost it its liberty—the Cathedral and the Palazzo Pubblico. In one is condensed the entire religious and secular existence, and in the other is epitomized the civil existence of a people who are described by an ancient chronicler in these words: "The Sienese are a people much given to the ceremonial observances of the Christian religion; they are polished, forehanded and expend themselves in gracious customs."

The first Cathedral was not erected on the site where now stands one of the most beautiful of Italian churches, but actually some hundreds of meters distant, lower down, in the very center of the ancient engirdling walls, at the place now called Castelvécchio. As it grew, the city felt the need of replacing its metropolitan church, and it was then that was selected for the building of a church consecrated to the Virgin the site now occupied by the Cathedral. Between the years 1000 and 1200 this new building was enlarged, transformed, rebuilt, perhaps, from foundation to roof-tree. At any rate, in the first half of the thirteenth century they were still at work upon it. The dome was finished in 1262. But, still not content, the Sienese kept on enlarging the Cathedral during the first quarter of the following century, extending its length as far as San Giovanni. Yet, considering the difference in level which existed at different points on the hillside, the architects committed sundry mistakes, the center of the building being displaced, the dome was no longer found in the middle. Then, in a burst of patriotic pride and religious faith, the authorities decided to build a new temple in honor of the Virgin, but more beautiful and larger than any church then known. And so it was done. But the expense to be borne was enormous, for the old building was to be but one of the arms of the cross forming the new one.

The great architect of the day, Lando di Pietro, directed the work, which was already allowing people to appreciate the grandiose character of this audacious undertaking when the terrible epidemic of the plague broke out in 1348. At once work was suspended, but presently was resumed once more; then, owing to the constantly increasing burden of outlay, the execution of the splendid design which had had only a beginning in actual execution was totally renounced and abandoned. As mute witnesses to this colossal undertaking which the necessities of the times caused to be abandoned, there remain imposing ruins, columns and arches which give a strange air to that part of the piazza once imposing in another manner.

It was now decided to embellish the old Cathedral, and this work was completed in the fifteenth century. The Sienese Cathedral has many points of resemblance with the Cathedral of Orvieto, although it has not the latter's perfection. For a long time the design for the façade was attributed to Giovanni Pisano, but prolonged inquiries have shown that this was not so, and now opinion as to authorship inclines in favor of Giovanni di Cecco. The monument, like Sta. Maria del Fiore at Florence, presents itself to the eye as an enormous checker-board composed of white and black marbles, but the full-centered arch and the triangle are dominant. The pointed arch is introduced in a subordinate capacity and this is very singular. The façade in question is certainly later than 1370. Three doors of equal size give access to the church, each door being enclosed by full-centered archivolts, themselves crowned by triangular pediments. Above the central doorway blooms the great rose-window, reduced in form to a simple circular opening enclosed within a circumscribing square framing decorated with the carved figures of saints and pontiffs, all being crowned finally by the great triangular gable, flanked by two little turrets capped with pyramidal pinnacles, and all of the purest Gothic. Each of the lateral doors has above its crowning pediment a little gallery of six columns, the cusped arcadings recalling somewhat reminiscences of Arab architecture. Above these runs a string-course, and then comes the crowning triangular gable which is flanked on the outer side by a tower pierced with window openings and from which jut many gargoyles, and here, too, arch and triangle are repeated, while the niches in the

faces of its buttresses are filled with fine statues of saints, due to pupils of Giovanni Pisano, as, for example, Goro di Cinto. Some of the statues have had to be cut over in our own time, and so the absolutely antique character of the ensemble has been somewhat impaired. It is not known who was the designer of this façade, which was made over and transformed at the time when the scheme for the larger Cathedral was abandoned. The chief architect, as is said above, was in all probability Giovanni di Cecco. Certain statues of saints which, in the fifteenth century, had their place within in the nave and which are recognized as being the work of Antonio Federighi and Urbano da Cortona, have been brought outside and set up on the main cornice.

As to the six-story campanile, quite contrary to what is usually the case in such structures, it does not grow smaller and more pointed as it ascends; it preserves its lower dimensions throughout and this gives it a physiognomy all its own. The stained glass in the great rose-window is quite remarkable, having been executed in the middle of the sixteenth century by Pastorino Pastorini after the design of Perino del Vaga, who depicted the Last Supper with a knowledge of coloration that is really surprising.

The interior of the Cathedral demands of the visitor who is at all anxious to appreciate its beauty long hours of examination; it is, as Taine declares, a world wherein neighbor the most varied forms of art. It consists of three naves which continue to the choir and a transept divided into two aisles. An hexagonal dome crowns the crossing. At the first glance are discoverable traces of the several centuries which have made the whole such as it is now. Romanesque lines appear here, Gothic motives appear there, while the heads of the Popes ranged along the cornice below the clerestory windows are a device of Renaissance times. The grouped piers and columns have a bold effect.

HONORÉ MEREU.

(To be continued.)

Architeque¹?

LE Choix d'une carrière est le plus souvent difficile... On hésite,—le rêve serait peut-être d'hésiter toute sa vie—puis tout-à-coup on se détermine, et quelquefois pour des raisons que d'aucuns jugeraient futiles.

Ainsi, moi, je me suis fait architecte parce que ce mot me plaisait. Je trouvais qu'il n'y avait pas d'autre métier donnant un titre de même désinence:

Ce n'était pas un nom en *ier* comme courtier, serrurier, plâtrier, épicier; ni un nom en *eur* comme tailleur, ingénieur, vidangeur, procureur; ni un nom en *iste* comme ébéniste, chimiste, fumiste, lampiste; ni un nom en *in* comme médecin, pharmacien, marin, rapin; ni en *at* comme prélat, soldat, avocat, etc... bref j'étais enchanté de voir qu'aucune corporation n'exercerait en *ecte*!

C'était idiot, n'est-ce pas... mais j'étais content.

C'était du reste faux, car j'ai découvert depuis, à mes dépens et à ma confusion, — mais il était trop tard — que j'avais compté sans les contributions *directes* et même *indirectes* (hélas!).

J'avais encore d'autres raisons.

D'abord j'étais séduit par cette sorte de cousinerie que nous avons avec le Grand Architecte de l'Univers! — Ce n'est pas un privilège banal, en effet, que d'être assimilé au Créateur.

Et de fait nous créons! Nous mettons quelque chose là où il n'y avait rien. Chacun de nous peut dire à la pose de la première de son premier édifice:

«Tu es Pierre et sur cette Pierre j'assoierai ma renommée et ma fortune!...»

On est comme qui dirait des «surhommes!»

Et puis j'étais attiré par l'imprévu et la variété. On m'avait dit que dans notre métier on ne faisait jamais deux fois la même chose, qu'on passait sans transition du grave au doux, du plaisant au sévère...

On n'avait pas encore découvert le «modern style», c'est vrai; mais on avait malgré cela un stoc de styles permettant d'aborder tous les genres. Enfin chacun n'est-il pas libre d'avoir un style de plus en réserve: «le sien»? Tout cela était emballant.

Enfin, me disait-on encore, le commerce avec les clients est charmant, chacun d'eux devient notre ami; il n'est presque pas d'exemple qu'un Jeune architecte, un peu bien doué, n'ait pas épousé la fille de quelque cliente....

¹From "L'Architecture et la Construction dans le Nord."

Ah quel plaisir (ter)
d'être Architecte !...

Et voilà comment je devins architecte. J'en étais, et j'en suis encore fier !

Pourtant il y a eu un nuage.

C'était dans une petite ville, sous-préfecture de la Somme; j'explorais un jour un quartier ouvrier, lorsque mon attention fut attiré par une querelle entre deux mégères en furie.

La galerie riait. Toutes les saletés avaient été dites; il s'était fait un silence; et j'allais continuer mon chemin, lorsqu'après s'être recueillie comme pour lancer la suprême injure, l'une des femmes cria à l'autre :

«Eh, va donc ! graine d'architecte !»

La femme interpellée se retourna comme si une vipère l'avait mordue, et d'un ton d'indignation qui ne manquait pas de grandeur :

«Architecte ! Architecte ! s'exclama-t-elle, te sauras qui ny a mie jamais eu d'architecte din m' famill' !»

La foule déliait, moi pas.

J'ai jugé prudent de filer... songez donc si on m'avait reconnu... *Architecte !*
"RISOR."

ILLUSTRATIONS

SCHOOL BUILDING: OHIO INSTITUTION FOR THE EDUCATION OF THE DEAF AND DUMB, COLUMBUS, O. MESSRS. RICHARDS, M'CARTY & BULFORD, ARCHITECTS, COLUMBUS, O.: THREE PLATES.

THE CATHEDRAL, SIENA, ITALY: TWO PLATES.

For description see article, "Italian Cities," elsewhere in this issue.

A HOUSE IN PITTSBURGH, PA. MR. H. D. GILCHRIST, ARCHITECT, PITTSBURGH, PA.

HOUSE OF MR. NELSON, 1737 JEFFERSON AVE., DETROIT, MICH. MESSRS. CHITTENDEN & KOTTING, ARCHITECTS, DETROIT, MICH.

HOUSE OF G. E. SMITH, ESQ., PHILLIPS BEACH, SWAMPSCOTT, MASS. MR. GUY LOWELL, ARCHITECT, BOSTON, MASS.

Additional Illustrations in the International Edition.

ENTRANCE PORCH: HOUSE OF MR. NELSON, DETROIT, MICH.

NOTES AND CLIPPINGS

MILAN'S STABLE SPIRE.—Since the sudden fall of the great Campanile at Venice, a few years ago, scientific experiments have been made to afford assurance of the stability of other famous architectural piles in Italy. Among these is the unique Cathedral of Milan, built all of marble, with scores of slender pinnacles and a lofty main spire terminating in a great marble statue of the Virgin. The experiments of Professor Vincentini on this spire, while demonstrating its complete stability, show interesting effects of the wind and solar rays. As with other lofty towers, the point of the spire describes daily an elliptical curve, the size and precise form of which vary with atmospheric conditions. But the greatest displacement never amounts to more than a single minute of arc—in this case less than a third of an inch. A tempest of uncommon violence in July, 1905, displaced the top of the spire eight millimetres.—*Youth's Companion*.

STRIKES OF TWENTY-FIVE YEARS.—The Department of Commerce and Labor has issued a statistical report relating to strikes and their causes during the twenty-five-year period from 1881 to 1905.

During that period there were 36,757 strikes and 1,546 lockouts. The number of persons who went on strike was 6,728,048, and those locked out numbered 716,231. Because of the relations necessarily existing between enterprises of varied character, these strikes stopped work in many other places. The total number of people thrown out of work because of strikes and lockouts made a total of 9,529,434, and 90 per cent. of these were males on whom others were dependent.

The average strike lasted a little longer than twenty-five days, and the average lockout eighty-four days. The greatest number of strikes were in the building trades. Of the total number of strikes, labor organizations conducted nearly 67 per cent.

The strikers have succeeded more often than they have failed, only 32 per cent. of the establishments against whom the strikes were directed having been entirely successful.

About 4 per cent. of the strikes were of a sympathetic nature, the greater number of them being conducted for an increase of wages and a decrease of hours of work. Disputes arising out of a refusal on the part of employers to recognize the unions have caused about one-half of the lockouts.

Industry suffered less from these causes during 1905 than in any year since 1892. The report also shows that where arbitration has been resorted to by employers and strikers it has been uniformly successful.

THE AHMEDJIE MOSQUE, CONSTANTINOPLE.—Ahmed I., who ascended the throne in 1603, was, as became a boy of fourteen, emulous of the fame of Suleiman I., and desirous to erect a more noble mosque. Among all in Constantinople his alone has six minarets, and is therefore called Alty-Minareli-Djami. According to tradition, the Imam of Mecca was so horrified when he heard of the proposed irreverence—for the Kaaba he guarded had only six—he went to the Sultan to remonstrate with him. The young Ahmed could not deny his fault, but by a happy thought he proposed to add a seventh minaret to the Mecca shrine, towards which the thoughts of all true believers were then, as now, turned in devotional moods. In another feature we can perceive a desire to compete with the Suleimanic mosque. Sinan, the architect for that building, arranged eight piers for the dome, and made each a solid structure, in which the porphyry we have mentioned becomes only a partial facing. In the Ahmedjia, on the contrary, the dome and arches appear to have only the four massive columns, each about 20 feet in diameter, for support. They are the first objects which strike the visitor on entering, and from some positions near them the mosque appears larger than it is in reality.—*The Architect*.

AN IMPROVEMENT IN COLOR-PHOTOGRAPHY.—Messrs. Lumière, of Lyons, are stated to have at last solved the problem of color-photography. Since June 1 photographers have been able to produce from one plate results which hitherto have required three plates. On Lumière's new plate dots of red, green and blue are placed in regular proximity and so densely that 8,000 go to the square millimetre and eight milliards to a plate 9 by 12 cm. This colored plate, white to all appearance, is laid over the sensitized plate, the film on which is equally sensitive to red, green and blue.—*The Builder*.

THE CHARLEMAGNE STATUE, PARIS.—The equestrian monument to Charlemagne, by the Rochet brothers, on the Place du Parvis Notre Dame at Paris, is now to have a properly designed stone pedestal in place of the temporary one of wood and painted canvas which has long been there.

CONCRETE BRIDGES IN BAVARIA.—Without entering upon the relative merits of different structural materials, we refer here to three railway bridges with spans of 187 feet, 211 feet, and 211 feet, respectively, which have lately been erected in plain concrete on the three-hinged principle. All of these structures were designed by Mr. Beutel, Chief Engineer to the Bavarian State Railways. One of them, at Lautrach, crosses the River Iller, with a main arch span of 187 feet, and two smaller arches at the abutments. As the rise of the main arch is only about one-sixth of the span, the three-hinged system is particularly advantageous. The arch rib in this instance carries cross walls connected by small arches surmounted by the road upon which the permanent-way is laid. The two other bridges cross the River Iller close to Kempten station, where there is a network of several branch lines. One of these bridges carries four railway tracks, and the other only two, but their structural features are practically identical, the main arch of each bridge having the clear span of 211 feet, with the rise of about four-ninths of the span. We are glad to say that all three bridges were finished without the casing of stone or other veneer which some engineers seem to imagine is necessary for decorative effect. It is stated that the cost of the Lautrach bridge was 17 per cent. less and the cost of the two Kempten bridges was nearly 20 per cent. less than the estimated cost of steel bridges. The ultimate saving should be considerably more, owing to the fact that practically no maintenance is necessary in the case of concrete structures.—*The Builder*.

CURRENT NEWS SECTION

BUILDING NEWS.

(The editors greatly desire to receive information from the smaller and outlying towns as well as from the larger cities.)

ABERDEEN, S. D.—Reports state that bids will be received until August 12 by the Regents of Education (Irwin D. Aldrich, secretary), at Spearfish, for erecting a school on the grounds of the Northern Normal and Industrial School, at Aberdeen. W. M. Kenyon, architect, Minneapolis, Minn.

ALBANY, N. Y.—The new edifice for the Church of the Atonement, Reformed Episcopal, will be built during the coming fall and winter. Work will probably be started August 1. Several tentative plans have been drawn. The building will be situated at Quail and Spring Streets.

ALTON, ILL.—Plans have been prepared for a Catholic church, 58x140 feet, by Architect Martin Heer, Bell Block, Dubuque, Iowa. Cost, \$40,000.

ATHENS, O.—It is reported that bids will be received by the Board of Trustees of the Athens State Hospital (Dr. J. T. Hanson, secretary), until August 20 for furnishing material and erecting an addition and making alterations in the main building at the Athens State Hospital. F. L. Packard, architect, Columbus, O.

ATLANTA, GA.—A five-story building is to be erected by Governor Hoke Smith on the northeast corner of Auburn Avenue and Pryor Street. According to the plans of Architect Walker, the building will be of mill construction, finished with dark red pressed brick, trimmed with white enameled terra cotta. The building will be equipped with electric elevators, and will be built for the convenience of wholesale dry goods firms. The structure will be ready for occupancy by December 1.

AUGUSTA, GA.—Plans have been prepared for a City Hall, to cost \$200,000.

BAKERSVILLE, N. C.—Bids will be received until August 15 by Joseph Bowditch for labor and material for building a court house. Plans were prepared by Architect H. L. Lewman, 1008 Lincoln Bank Building, Louisville, Ky.

BALTIMORE, MD.—Board of Awards, City Hall, will receive bids for the construction of public-comfort station on Market Place; one story; 24x53 feet; brick with stone trimmings; electric wiring and fixtures; sanitary plumbing. Plans and specifications can be obtained from E. H. Glidden, architect, Glenn Building, 16 St. Paul Street.

Chas. B. Burdette, builder, Hoffman Building, 11 East Lexington Street, will erect forty two-story brick buildings with modern conveniences on Patterson Place, near Clifton Park, to cost \$40,000; George Clothier, Jr., architect, Hoffman Building.

BELOIT, WIS.—Plans are being prepared for a church for the First Congregation Society, to cost \$75,000, or the remodeling of the present building, at a cost of \$10,000.

BOSTON, MASS.—Bids are asked by School House Commission for building extension

to Mechanic Arts School House. Certified check for \$5,000 required with bid; contract bond for \$50,000 required. Bids will also be received at the same time for heating and ventilating, certified check for \$2,000 being required for this work.

BOVEY, MINN.—The Oliver Mining Co. is reported to be planning the erection of a \$150,000 office building.

BROOKLYN, N. Y.—T. Buchar, 1774 Pitkin Avenue, is preparing plans for a three-story store and flat, 24x67 feet, for five families, to be erected on Seventh Avenue, east side, 20 feet south of Forty-second Street, to cost \$65,000. A. Fuchs, 529 Forty-seventh Street, is the owner.

Silverland Improvement Co., 1216 Eighth Street, is soon to build a row of ten two-story brick dwellings, 20x50 feet, for two families, on the north side of Thirty-eighth Street, 100.11 feet west of New Utrecht Avenue, to cost \$60,000. Bennett & Ainsworth, Thirteenth Avenue and Fourteenth Street, are planning.

R. T. Rasmussen, 30 Graham Avenue, is preparing plans for a six-story flat with stores, for the Edgar Improvement Co., 12 Court Street, to be situated at the northwest corner of Bedford and Flushing Avenues, to cost \$40,000.

On the east side of Sackman Street, 80 feet north of Newport Avenue, A. Halpern, 1200 Park Place, will erect fifteen three-story brick flats, 20x60, six families each, from plans by Danmar & Co., Liberty and Thatford Avenues. The cost is estimated at \$90,000.

Samuel Sass, 23 Park Row, has completed plans for a five-story store and flat building, 48.6x81.6 feet, for S. Greenwald, 700 Willoughby Street, to be erected on the southwest corner of Metropolitan Avenue and Rodney Street, to cost \$45,000.

BUFFALO, N. Y.—The Y. M. C. A. filed plans with the Bureau of Building last week for its West Side branch at 327-333 West Ferry Street. The necessary funds for the building now are available and it is hoped it will be ready for occupancy before next spring. In the plans the estimate of cost is given at \$40,000. The building is to be a three-story, brick structure, 55 feet front by 100 feet deep. The basement will contain bowling alleys, a swimming tank, 20x33 feet, shower baths, a locker room and the office of the physical director. On the first floor will be reception and reading rooms, the office and spa and the gymnasium. The gymnasium section will be two stories high. Around it and about one story above the floor will be a running track, 32 laps to the mile. On the second floor of that portion of the building not over the gymnasium will be reception and class rooms and an assembly hall. The third floor will be occupied by dormitories. It is expected that permission to build will be given as soon as the plans are approved.

CAMBRIDGE, MASS.—The Boston Woven Hose & Rubber Co., Cambridge, Mass., will increase its plant by erection of a concrete and brick foundry building 75x160 feet, and a four-story brick hose building 60x326 feet.

CHICAGO, ILL.—Albert R. Boydell will erect a three-story apartment house at the southeast corner of Fifty-third Street and Monroe Avenue. It will be of pressed brick and stone, extending over 58x140 feet, and will contain twelve apartments. It will cost \$40,000.

William A. Magie will erect a store and flat building, 95x90 feet, at 6342 to 6350 South Halsted Street. It will be of brick and stone and will cost \$35,000.

The Chicago Junction Railways Company will build a large warehouse at 1005 Thirty-fifth Street, plans for which have been prepared by Architects Treat & Ahlschuler. It will cover an area of 80x250 feet and will cost \$50,000.

William H. Pruyn & Co., architects, 4217 Berkeley Avenue, Chicago, will build a three-story apartment house at the corner of Grand Boulevard and Forty-fourth Street. It will be 100x155 feet and will contain twenty-one apartments of five to nine rooms each. It will cost \$100,000.

It is reported that Frank G. Gustafson will erect two apartment-houses, one at Woodlawn Avenue and Forty-eighth Street and the other at Kenwood Avenue and Forty-eighth Street, the total cost to be \$100,000.

Mrs. W. H. Moorehouse will improve the property at the southwest corner of Sixty-third Street and Kimbark Avenue with a store, flat and office building to cost \$75,000. The plans are being prepared by Architects Nimmons & Fellows.

Architect Francis M. Barton, Royal Insurance Building, has been engaged to prepare plans for a theater to be built on Halsted Street, near Polk Street, for T. Nunderson. It will be four-story, 120x148 feet, entirely of reinforced concrete construction, have exterior of pressed brick, granite and heavy ornamental iron, interior finish of Carrara marble, with mosaic floors, steam heat, electric light, and all modern improvements and appliances. This will be the first theater in Chicago of reinforced concrete construction. It will cost about \$210,000.

Architects Marshall & Fox, First National Bank Building, 164 Dearborn Street, are preparing plans for a theatrical workshop to be built on Wabash Avenue for B. C. Whitney, represented by Sam T. Gerson, local manager of the Whitney Opera House, Steinway Hall Building, 17 Van Buren Street. It will be six-story, 100x180 feet, of fireproof steel construction, have probably pressed brick front, composition roof, hardwood finish, steam heat, electric light, the latest improvements, and cost about \$100,000.

Architect Henry L. Newhouse, 4630 Prairie Avenue, is making plans for a large apartment building to be built at the northwest corner of Michigan Boulevard and Fifty-first Street. It will be three-story, 100x161 feet, of pressed brick and stone, marble, mosaic and tile entrances and bathrooms, steam heat, electric light, contain twenty-seven apartments of four to seven rooms each, and cost about \$100,000. The building will have a large court in

the middle, so as to provide an abundance of natural light, with a lawn and fountain between the wings. The plans will be ready in a couple of weeks, and bids will then be received. The same architect is completing plans and will receive bids next week, excepting masonry, on an apartment building to be built at the northwest corner of Ingleside Avenue and Fiftieth Street.

Architects Schmidt, Garden & Martin, Teutonic Building, 172 Washington Street, are taking figures on St. Mary Hospital, to be built at Milwaukee, Wis., for the Sisters of Charity of St. Vincent de Paul, Emmetsburg, Md. The plans call for a four-story building, with a frontage of 240 feet, and a wing, probably reinforced concrete construction, with exterior of brick and terra-cotta, to have steam heat, electric light, marble and tile work, structural steel work, ice plant, and cost \$400,000 to \$500,000. Only a portion of the building will be built at first.

C. M. Cohn will build a three-story apartment house at 620 South Colorado Avenue. It will front 50 feet, with a depth of 110, and will cost \$35,000.

CLARKSBURG, W. VA.—Harvey W. Harmer, Secretary of the Building Committee, is taking bids for a church for the Goff M. E. congregation. Architects, Mills & Pruitt, Columbus, O.

CLEVELAND, O.—Andrew Carnegie is stated to have given to this city an additional \$123,000 with which it is proposed erecting two branch libraries.

Plans have been prepared by A. E. Skeel, architect, Rose Building, for a hospital for the Board of Public Service. Cost, \$60,000.

Bids will be received until August 9 for the erection of a new public school. L. W. Thomas, architect, 942 Prospect Avenue; J. O. Gordon, Clerk Board of Education.

Architect Paul Matzinger, The Arcade, is preparing plans for a church for the Oakland Calvary congregation. Cost, \$30,000.

Plans are being prepared by Architects Badgley & Nicklas, 1273 Euclid, for a church for the Wade Park Methodist Episcopal congregation. Address Chairman Building Committee. Cost, \$30,000.

COLERAINE, MINN.—The Oliver Iron Mining Co. will erect an office building, to cost \$150,000.

COLFAX, IND.—Bids are asked by Burr Bailey, Trustee of Perry Township, at Colfax, until 2 P. M., July 27, for the construction of a high school building at Colfax, including heating, ventilation and closets.

COLUMBUS, O.—Plans have been prepared by Architects Mills & Pruitt, McCune Block, for a two-story school building, 240x155 feet, for the Board of Education, Battle Creek, Mich. Cost, \$200,000.

Plans have been prepared by Architects Richards, McCarty & Bulford, Ruggerly Building, for a six-story bank and office building, 33x105 feet, at Maysville, Ky., for the First National Bank.

Construction work on a new business block at Gay and High Streets will soon begin. The plans for the new building are being drawn by Architect J. A. Jones and call for a six-story building, 40x187½ feet. The building will be of brick, with stone front, and will have two storerooms on the ground floor and offices above. The plans for the new building are almost completed, and it will not be long until the contracts are let.

CONNEAUT LAKE, PA.—The First National Bank are having plans prepared by G. W. Eckels, architect, for a new bank building.

CORDELE, GA.—David Browder will build hotel, as reported recently; structure to be of brick; no other materials have been selected, nor have plans and specifications been prepared; building to cost from \$30,000 to \$35,000.

COVINA, CAL.—A. Harvey Collins, Superv. Principal, writes that the citizens on July 1 voted to issue \$60,000 bonds for a high school. Dr. J. D. Reed, Clk. Bd. School Trus.

DALLAS, TEX.—Plans have been prepared for the erection of a new building on the north side of Elm Street for K. Shields and E. W. Rose. Cost, \$30,000.

DANBURY, CONN.—Plans are being prepared by Architects Howells & Stokes, 100 William Street, New York, N. Y., for a church.

DAVENPORT, IA.—Plans are being prepared for an addition, 80x44 feet, to St. Ambrose College. Cost, \$30,000.

DES MOINES, IA.—Plans are being considered by W. W. Moore and Z. Woolf for an eight-story building, 88x130, at Walnut and Fourth Streets, to cost \$250,000.

DETROIT, MICH.—Plans have been prepared for a hotel to be constructed by Dinan Bros. at Fort and Third Streets. The construction will be of pressed brick and terra-cotta and the building will be 70x70 feet, three stories high, with provision for additional floors, should they be needed.

Plans are being prepared by Architect W. E. N. Hunter, 1225 Chamber of Commerce Building, for a church, 70x100 feet, at Grand Rapids, Mich., for St. Paul's Methodist Episcopal society. Cost, \$30,000.

Architect George D. Mason has taken a permit for the new warehouse for D. M. Ferry & Co. to be erected on the south side of Monroe Avenue, between Brush and Beaubien. The structure will be eight stories high and will cost \$60,000. The building will be 52 feet front on Monroe and 138 feet long.

EL RENO, OKLA.—Plans have been prepared for a three-story brick Masonic Temple, 50x120 feet, to cost about \$40,000.

EVANSVILLE, IND.—The New York Dimension Co. will soon ask for bids for construction of a large factory on Bellview Avenue. The building will be 135x60 feet and 113x40 feet, with a dry-house 40x75 feet, an engine room 20x20 feet, and a boiler room 25x30 feet. F. J. Schlotter is architect.

FORT WAYNE, IND.—It is reported that bids will be asked for constructing an eight-story hotel here, which will cost about \$300,000. The building will be 120x150 feet, of reinforced concrete construction, and will be built by the Fort Wayne Hotel Co., Louis F. Curdes, Secretary. Charles Weatherhogg, Fort Wayne, is architect.

FORT WORTH, TEX.—Winfield Scott has decided to erect a large hotel opposite the Texas and Pacific Passenger Station in this city at a cost of \$140,000. The structure will be of brick, four stories high and will have 125 rooms, half of that number to have bathrooms in connection. The place will be known as the Terminal Hotel, and will be modern in every respect. The entire building will be heated with gas, and electric and gas lights will be used. The lobby

will be very large with tiling floors and marble wainscoting and a large cafe will be furnished in the same manner. The hotel will be ready for business the first of January.

GREENSBURG, PA.—It is reported that the Westmoreland National Bank will erect a \$200,000 banking house on Main Street, Greensburg, from plans made by Topp & Blair, of Pittsburg.

GROVE CITY, PA.—Plans have been prepared by Architect W. G. Eckles, Mills and Washington, New Castle, Pa., for a church at Grove City, for the United Presbyterian congregation. Cost, \$40,000.

HARTFORD CITY, IND.—The American Window Glass Co. is having plans prepared for erection of an addition to the company's present plant, sufficient to double present capacity. Estimated cost, \$40,000.

HOUGHTON, MICH.—It is stated that D. Fred. Charlton, of Marquette, has been engaged to prepare plans for the library and museum building to be erected at the Michigan School of Mines at a cost of \$75,000.

Charlton & Kuenzli, of Marquette, have been instructed by the Board of Control of the Michigan College of Mines to prepare plans for the library and museum building to be erected at that institution by the State. Building will cost \$75,000.

INDIANAPOLIS, IND.—It is proposed to construct a City Hall to cost about \$500,000, and to be built on the county square, north of the court house, fronting on Market Street. The Mayor has been authorized to have preliminary plans prepared. Blaine H. Miller is City Engr.

The Indianapolis Motor Car Co. will ask for bids for the erection of a factory 72x102 feet, three stories high, as soon as plans can be completed.

JAMESTOWN, N. D.—Bids will be received until August 5 for the construction of a City Hall Building. Plans were prepared by Architect A. J. O'Shea, Fargo, N. D.

JERSEY CITY, N. J.—Wm. R. Herve, of Far Rockaway, is stated to have accepted plans prepared by Edw. M. Patterson for a reinforced concrete factory 50x100 feet, which he will erect on Ninth Street near Henderson Street at a cost of about \$25,000.

KANSAS CITY, MO.—Herman Streicher will erect two apartment houses, each six stories, twelve apartments, of Carthage stone and ivory buff brick with freight and passenger elevators and to cost \$136,000. Plans are being prepared by Matt O'Connell, New Ridge Building, Kansas City.

Root & Siemens will prepare plans and specifications for fire station.

KNOXVILLE, TENN.—The Southern Extract Co. will rebuild its plant recently damaged by fire. Three buildings are to be erected, two each 175x45 feet, and one brick building 40x50 feet. Cost, about \$40,000.

LA CROSSE, WIS.—Plans have been prepared by McKim, Mead & White, New York, for a Y. M. C. A. building.

A \$50,000 factory building will be erected here by the Vote-Berger Company. Wells E. Bennett, architect, La Crosse.

LIVINGSTON, ALA.—Hon. John A. Rogers is reported to have donated 500 acres of land on the Trimble Place, near the city, as a site for an agricultural school; \$100,000 will be expended in buildings.

LOS ANGELES, CAL.—Morgan & Walls, 232 North Main Street, are reported to have prepared plans for the Gerhard-Eshman Building, which is to be erected at Seventh Street and St. Vincent Place, at an estimated cost of \$125,000.

A new hotel will be erected here at the corner of Prospect and Vermont Avenues. The Los Angeles Pacific Railway Co. is interested. Cost, \$1,000,000.

LOUISVILLE, KY.—John H. Sale is having plans prepared by Maury & Hillerich for erection of business and apartment house; ten stories; 50x204 feet; brick and stone; electricity; furnace heat; cost, \$350,000.

Fred Ehrhart, Norton Building, has prepared plans for erection of apartment building; six stories; 145x50 feet; brick and concrete; twelve apartments; electricity; cost, \$60,000.

The Louisville Public Warehouse Co. will erect fireproof warehouse.

Plans are being prepared by Fred Ehrhart, Norton Building, for erection of brick warehouse for the Glencoe Distillery.

Plans are being prepared for a business and apartment building on Fourth Street, between Walnut and Chestnut Streets, by Architects Maury & Hillerich, Board of Trade Building, for John H. Sale. Cost, \$350,000.

LUMBERTON, N. C.—Sealed bids will be received by Board of Commissioners of Robeson County until August 20 for erection of court house in Lumberton according to plans and specifications by Frank P. Milburn & Co., Washington, D. C. Plans on file in office of D. W. Bullock, Register of Deeds, of Robeson County, and copies can be obtained from architect. Each bid must be accompanied by certified check of \$1,000, payable to order of Commissioners; bond of 5 per cent. of contract price of work required. Bids may be filed with E. J. Britt, attorney for Commissioners, or with D. W. Bullock, Clerk of Board, both of Lumberton; usual rights reserved; J. W. Carter, chairman.

MARIETTA, O.—W. J. Speer, Chairman of Building Committee, Marietta, O., is taking bids on an eight-story brick and steel bank and office building for the German National Bank. Cost, \$100,000. Architects Mills & Pruitt, Columbus, O., drew the plans.

MARQUETTE, MICH.—Charlton & Kuenzli, architects, have been commissioned to prepare plans for an almshouse to be erected by Gogebic County at a cost of \$30,000.

MCALISTER, I. T.—Plans are being prepared by Smith & Parr, Peoria, for a four-story opera house, 75x138 feet, for William Busby. Cost, \$50,000.

MEMPHIS, TENN.—Plans are being prepared by Alsup & Woods, Randolph Building, for erection of building for Samuel Mosby, 5 South Main Street; structure will be six stories high; brick; fireproof; cost \$80,000.

Plans are being prepared by Architects Alsup & Woods, 562-564 Randolph Building, for a six-story building at South Second Street and Monroe Avenue, for Samuel Mosby, 5 South Main Street. Cost, \$80,000.

It is said that the Belvedere Improvement Co. will have Hanker & Cairnes as architects for proposed apartment house; structure to be fireproof and cost \$250,000.

MILWAUKEE, WIS.—Leenhouts & Guthrie, architects, 102 Wisconsin Street, are completing plans for the \$90,000 school building for the Eleventh District.

The York Ice Machine Co., New York, has completed plans which are now on file at the office of A. L. Richards, 217 W. Water Street, for a \$200,000 ice and refrigerating plant for People's Pure Ice Co., to be built at Juneau Avenue and River Street, using the ammonia refrigerating system.

H. Messmer & Son, architects, are making plans for a five-story addition to the Randolph Hotel, 134 Third Street, fireproof, of brick and steel, to cost about \$80,000.

The Sisters of St. Francis contemplate a \$150,000 additional building at St. Joseph's Convent, Twenty-second Street and Greenfield Avenue. Special attention will be given to the sanitarium project.

Architects Brust & Phillips will take bids on a \$35,000 church building for St. Augustine congregation, Howell Avenue, solid brick, 60x148 feet.

Plans are being prepared by Architects Buemming & Dick, 1107 Pabst Building, for a factory and warehouse to be erected at Florida and Grove Streets for the William Berger Bedding Company, to cost \$75,000.

Architects Charlton & Kuenzli, Milwaukee and Marquette, Mich., are completing plans for a \$40,000 high school for the city of Republic, Mich. Two-story, 76x122 feet, brick and stone construction, with fan heating system.

MINNEAPOLIS, MINN.—F. W. Kinney, architect, 912 New York Life Building, is at work on plans for a hotel building to be erected in the Midway district. It will be 34x100, two-story and basement, of pressed brick and cut stone, gravel roof, galvanized iron cornice and skylight, plumbing, electric wiring, gas fitting and steam heat.

Bertrand & Chamberlin, architects, are preparing plans for a building to be erected on Fourth Street and Fifth Avenue S., by the Augsburg Publishing House. It will be 60x100, four-story and basement, of pressed brick and cut stone, reinforced concrete fireproofing interior work, with electric conduits, gas, and steam heating. Plans will be ready for excavating and foundation work within two weeks and contract will be let before September 1 to complete this portion of the work this fall. Estimated cost, complete, \$75,000.

C. E. Bell, architect, 905 Northwestern Building, is at work on plans for the auditorium part of the Bethlehem Presbyterian Church, at Twenty-sixth Street and Pleasant Avenue. It will be of red sandstone exterior, with slate roof. The interior will be fitted up with hardwood interior finish, and pews for seating 1,000, including gallery, leaded glass, steam and hot air heating, electric lights and gas fittings. Cost, \$50,000.

MOBILE, ALA.—James A. Lewis and associates will erect apartment building; ten stories; steel and mill construction, with ornamental brick, stone and terra-cotta; cost, \$200,000.

Knights of Columbus will erect building three stories high, 50x100 feet; brick and cement construction; steam heating equipment; electric lighting fixtures; cost, \$35,000; architects, Hutchison & Gorville; contractors, S. E. Dupre & Co.

MONTEVALLO, ALA.—Bids are asked by Building Committee Alabama Girls' Indus-

trial School until August 20, for erection of new building and additions to the dormitory in accordance with plans and specifications furnished by William Ernst Spink, architect, 812-813 Title Guarantee Building, Birmingham, Ala.

MONTGOMERY, ALA.—N. J. Bell has had plans prepared by Ausfelt & Blount for erection of proposed office building; ten stories; brick and stone; plate glass, marble, mosaic and tile work; gas and electricity; cost, \$200,000.

MUSCATINE, IA.—Miss M. Hershey will erect a six-story building, 80x120, reinforced concrete, to cost \$160,000.

NEWARK, N. J.—Newark is to have another big office building. It will be situated at the southeast corner of Clinton and Beaver Streets, twelve stories, and will cover a ground space of 107x119 feet. Union Building Company will erect the structure. The frame will be of skeleton steel construction, and the materials to be used in the facade will be yellow brick and Indiana limestone trimmings. The plans and working drawings are being prepared by Architect Peter Charles, of 15 Clinton Street, Newark. The project is estimated to cost \$500,000.

NEW ORLEANS, LA.—Theodore Brune, 404 United Cotton Building, has prepared plans for edifice to be erected by the Mater Dolorosa Church. Structure will be constructed of brick and terra-cotta, occupy site 60x170 feet and cost about \$150,000.

NORTH CHICAGO, ILL.—Bids are asked by Bureau of Navigation, Navy Department, Washington, D. C., until noon, August 15, for the construction of twelve additional buildings at naval training station, Great Lakes, North Chicago, in accordance with revised plans and specifications which may be obtained at actual cost of blue prints upon application to Architect Jarvis Hunt, Monadnock Building, Chicago, or to the Commandant, Naval Training Station, Great Lakes, North Chicago.

NEW YORK, N. Y.—Plans will be prepared by Parish & Schroeder for a geological museum and laboratory building at Princeton, N. J., for the University of Princeton. Cost, \$400,000.

Plans have been prepared by Architects Schwarz & Gross, 35 West Twenty-first Street, for a store and loft building at Lafayette and Walker Streets, for the Lafayette Building Company, 149 Church Street. Cost, \$280,000.

Bernstein & Bernstein, 24 East Twenty-third Street, are making plans for a six-story flat building for Jacob Katz, 8 East 110th Street, to be erected at 164-166 Waverly Place, at a cost of \$70,000.

Henry G. Harris, 3 East Seventeenth Street, is making plans for a six-story flat for S. Wandenzas & Sons, 230 Grand Street, to be erected on Thirteenth Street, south side, 134 feet east of First Avenue, to cost \$50,000.

Henry C. Pelton, 1133 Broadway, is preparing plans for an apartment building for Joseph Freedman, 686 Willoughby Avenue, Brooklyn, to be erected on Riverside Drive, northeast corner of Ninety-eighth Street, same to cost about \$125,000.

Messrs. Buchman & Fox, 11 East Fifty-ninth Street, are preparing plans for the erection of a twelve-story and basement office building which the Fleischmann

Realty & Construction Co., owners and general contractors, will immediately erect at 507 Fifth Avenue, on a plot 36x132 feet, with an alley running to Forty-third Street. The building will be of best fireproof steel frame construction, with a facade of granite, limestone and light brick, electric elevators, steam heating plant, marble, mosaic and tile work. The owners will perform the general contract, subletting all usual branches of the construction. The estimated cost of the building is \$300,000, and the site is on the east side of the Avenue, the third north of Forty-second Street.

J. M. Robinson, 15 Broad Street, is preparing plans for a six-story flat for D. O. Mills, to be erected at 183-183½ Thompson Street, to cost \$55,000.

Joseph Walkenberg, 96 Avenue C, will soon erect on Thirteenth Street, south side, 70 feet west of Avenue C, a six-story flat, same to cost \$75,000. Geo. Fred Pelham, 503 Fifth Avenue, is making the plans.

Messrs. Radcliffe & Kelley, 3 West Twenty-ninth Street, are preparing plans for three six-story tenements for Wm. Bradley, 329 West Sixty-eighth Street, same to be situated at 322 to 332 Third Avenue, at a cost of \$125,000.

Abraham Silverson, 391 Central Park West, will build two six-story flat buildings on Amsterdam Avenue, northwest corner 156th Street, to cost \$130,000. Geo. Fred Pelham, 503 Fifth Avenue, will make the plans.

W. J. Casey, 1953 Seventh Avenue, will soon begin the erection of a six-story apartment house at St. Nicholas Avenue, northwest corner of 184th Street, same to cost \$175,000. Neville & Bagge, 217 West 125th Street, are making plans.

Jacob H. Amsler, 1058 Jackson Avenue, is preparing plans for a six-story tenement to be erected at the northeast corner of Delancey and Mott Streets, same to cost \$40,000.

Messrs. Neville & Bagge, 217 West 125th Street, are now preparing plans for the construction of two high-class apartment houses for Emanuel M. Krulewitch, 145th Street and St. Nicholas Avenue, to be situated on the south side of 148th Street, 75 feet east of Convent Avenue, to cost in the neighborhood of \$300,000. Steam heat, electric lighting, marble, mosaic and hardwood finish.

Messrs. Schwartz & Gross, 35 West Twenty-first Street, are now preparing plans for the construction of an apartment house for Mr. T. J. McLaughlin, of 39 East Forty-second Street, to be situated on the northwest corner of Broadway and 143d Street, to cost about \$250,000; steam heat, electric lights, marble, mosaic and hardwood finish.

General contract has been awarded to Wm. J. Taylor, 5-7 East Forty-second Street, for twelve-story elevator apartment house, 51.2x90 feet, which the Eight Hundred and Sixty-Three Park Avenue Co., of which P. McL. Merrill, 259 Fifth Avenue, is secretary, will erect at 863 Park Avenue at an estimated cost of \$350,000. The building will be fireproof, with an exterior of light brick and limestone, tar and gravel roof. Messrs. Pollard & Steinam, 234 Fifth Avenue, are the architects. The same architects are also planning a twelve-story similar structure for the same company to

be erected in East Fifty-seventh Street, to cost about \$500,000.

Architects Rouse & Sloan, 11 East Forty-third Street, have been commissioned to prepare plans for the immediate erection of a twelve-story steel frame office and loft building, to be erected on a plot 34x100 feet at 12 to 14 West Thirty-second Street, at a cost of about \$200,000. The Pacific Realty Company, of 907 Broadway, will be the owners. The entire exterior will be of Indiana limestone, with a roof of tile and copper. There will be two electric elevators, steam heating system, and an electric plant. The architects will receive all estimates.

Architect Maximilian Zipkes, 147 Fourth Avenue, will soon have plans ready for another high office and loft building to be erected on a plot 40x98.9 feet, at 5 to 7 West Thirty-ninth Street. The structure is to be erected by the Fleischman Building and Construction Co., of 1 Madison Avenue. The frame will be of steel skeleton construction, with reinforced concrete floors, steam heating, limestone, brick and copper front, prismatic vault lights, electric elevators, an electric lighting plant. The cost is estimated at about \$300,000.

Plans for the New York Law School building, to be erected at 172 and 174 Fulton Street, call for an eleven-story structure, with an exterior of classic design. The upper and lower stories will be of limestone, while the intermediate stories will be of Harvard brick, with limestone trimmings. The ornamentation of the upper part of the building will consist of limestone columns and pilasters and window balconies. There will be one basement. The vestibule and main entrance hall will be wainscoted in marble with pilasters of the same material. The main floor will be equipped for banking purposes, and the second floor to the seventh inclusive will be furnished as offices for renting purposes. The part reserved for the law school begins at the eighth floor, where there will be a lecture hall, and private offices for the professors, the secretary and assistant secretary. The library will occupy the ninth floor and large lecture halls, the tenth and eleventh floors. The building will be equipped with its own steam heating apparatus and ventilating system. There will be four elevators, each provided with a new safety locking device. C. P. H. Gilbert, Twenty-fifth Street and Broadway, is architect.

Plans have been filed for a seven-story residence to be built for Mrs. James Roosevelt, at 47 and 49 East Sixty-fifth Street. It will have a frontage of 35 feet and a depth of 77.9 feet and will be of Colonial design, the facade being of limestone at the first story and ornamental brick above, with a central entrance and a decorative cartouche in the center at the fourth story. The interior will be modeled as twin dwellings, with a fireproof wall separating them, and having individual entrance halls and apartments of like design for each dwelling. The building is to cost \$125,000. Charles A. Platt, 36 East Twentieth Street, is architect.

NORWICH, CONN.—The Board of Trustees of the Connecticut Agricultural College propose erecting new buildings for the Department of Horticulture. In all there are five buildings to be erected.

OAKLAND, CAL.—The Atchison, Topeka & Santa Fe Ry. Coast Line (E. F. Hender-

son, Ch. Eng., Oakland) is stated to have had plans prepared for a freight depot over 600 feet long to cost \$75,000.

OMAHA, NEB.—Fisher & Lawrie are preparing plans for the new Fairbanks, Morse & Co., building. The building will be six stories in height, 66 feet in width by 132 feet in length, and will cost approximately \$70,000. It will be at the northwest corner of Ninth and Harney, with Union Pacific trackage on the east and Burlington trackage on the north. It will be built of vitrified paving brick of dark blue color. A peculiarity will be in the floor, which for strength will be made of planks laid on edge and spiked against each other, the whole covered with maple flooring, laid in the ordinary way. Plans will be completed as rapidly as possible and it is expected to ask for bids within a few weeks.

The County Commissioners are considering the erection of a court house to cost \$1,000,000.

John Latenser, architect, has completed plans for the Clarkson Memorial Hospital to be erected at Twenty-first and Howard Streets, at a cost of \$75,000.

Plans have been prepared for a new bank which will soon be erected by The Packers' National Bank at Twenty-fourth and Ohio Streets. Cost, \$75,000.

Mr. Homan will erect an apartment building, 103x187 feet, at Thirty-fifth and Farnam Streets, at a cost of \$50,000.

Bids are being received by the Omaha Packing Company for a new five-story building, 113x132 feet, to cost \$100,000.

OPELOUSAS, LA.—Jno. W. Lewis will build a new hotel. Cost, \$60,000.

OSWEGO.—Citizens voted on June 27 to purchase property of the Country Club upon which to erect a power house in connection with relocation of high dam; the new power house will cost about \$75,000.

OTTAWA, ONT.—It is stated that plans have been filed for the station and hotel to be erected by the Grand Trunk Ry. J. H. Johnston, Res. Engr., Ottawa. The station alone, it is reported, will cost \$250,000.

PENSACOLA, FLA.—American National Bank has adopted plans by Carpenter, Blair & Gould, 475 Fifth Avenue, New York, for erection of proposed bank building; fireproof; steam heat; electric and gas fixtures; high-speed electric direct-connected elevators; cost, \$175,000 to \$200,000.

PEORIA, ILL.—Arrangements are being made to enlarge the plant of the Keystone Fence Co., South Bartonville, Peoria, Ill. Cost, about \$100,000.

The Liederkrantz took title yesterday to four Columbia Avenue properties on the corner of Marston Street, where a handsome new society home will be erected in time to be dedicated on the fifty-third anniversary of the society in February. The new Liederkrantz Hall will cost \$40,000, and will be constructed of brick, stone and terra-cotta, according to plans prepared by Carl P. Berger, the architect. Work on the new building will be started within a month. It will be a three-story building, with basement. On the first floor there will be three stores, facing Columbia Avenue, with main entrances for members both on Columbia Avenue and on Marston Street, in addition to rear exits. Back of the stores on the first floor there will be a general meeting room, 40x52 feet; commit-

tee rooms, bar room, wardrobes and lavatories. The basement will contain a rathskeller. The auditorium, with a seating capacity of 1,000, will be on the second floor, and will have a gallery on the third floor. On the second floor there will also be a stage and a banquet room.

Bids will be received until August 5 for the erection of a new high school building, 40x100 feet, to cost \$30,000.

PHILADELPHIA, PA.—William Steel & Sons Co., 1600 Arch Street, Philadelphia, are preparing plans for a six-story slow-burning factory, 50x110, to be erected at Noble and Darien Streets, for S. Rosenau & Co. Cost, \$100,000.

John R. Wiggins & Co. have been granted a permit and will start work on the erection of a transformer station for the Philadelphia Electric Company, at 1113 Arch Street. The building, which will be one of the most complete of its kind in the city, will be erected at a cost of \$85,000. It will be two stories high and will measure 30x108 feet. The front will be of stone and brick and the interior will be constructed to stand the weight of the heavy transformers used to transfer the electrical power generated into the wires for the many purposes supplied by the company. Plans for the building were drawn by John T. Windrim, architect.

Plans have been prepared for a church at Fifty-fourth and Masters Street for the Fletcher Methodist Episcopal congregation, care R. H. Crawford, 1427 North Fifty-fourth Street. Cost, \$50,000.

PILLSTON, PA.—Architect G. W. Eckels has prepared plans for a Baptist church to be erected at a cost of \$50,000. Building is to be of brownstone.

PITTSBURG, PA.—Architects MacClure & Spahr are preparing plans for an eight-story business structure to be erected on the property at Oliver and Liberty Avenues, owned by the H. W. Oliver estate. The building will be of brick and terra-cotta and will comprise about 5,600 square feet on each floor or a total of nearly 50,000 square feet.

The Henry W. Oliver estate, Wood Street and Oliver Avenue, are having preliminary plans made for an eight-story mercantile building near Liberty and Oliver Avenues. Cost, \$200,000.

Plans have been prepared by Architects Milligan & Miller, 700 Wood Street, Wilkesburg, Pa., for the South Avenue Methodist Episcopal congregation. Cost, \$100,000.

PUEBLO, COL.—F. W. Cooper, of Pueblo, is said to be preparing plans for a two-story woman's department building to be erected at the State Insane Asylum at a cost of \$50,000. It is stated that bids for the construction will be asked soon.

PULASKI, TENN.—The Court House Building Commission want plans for construction of the proposed court house, estimated to cost \$65,000 to \$70,000. Three stories, two court rooms and ten offices, fireproof. Address G. H. McMillion, County Judge.

QUINCY, MASS.—Bids will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until September 4 for the construction, complete, of United States Postoffice at Quincy, as advertised in the AMERICAN ARCHITECT.

St. LOUIS, Mo.—Lilburn Realty Co., L. G. McNair, president, is having plans prepared by Mauran, Russell & Garden for erection of office building; 87x127 feet; eighteen stories; first two stories of polished white granite with bronzed iron filling; remainder faced with white glazed terra-cotta and mottled glazed brick; six traction-driven electric elevators; cost, \$850,000.

Dr. F. T. Varney, O'Fallon, Ill., and associates, have secured option on site, 66x86 feet, from William G. Willard. Plans are being prepared by a New York architect for erection of commercial building; eighteen stories; steel frame and concrete; fireproof; cost, \$300,000.

Claude & Vrooman will have plans prepared by George H. Kennerly, Benoist Building, for erection of apartment house; three stories; brick and stone; marble, mosaic and tile work; reinforced concrete; gas and electricity; cost, \$200,000.

Bids are being received by Barnett, Haynes & Barnett for erection of apartment house; three stories; 180x130 feet; brick and stone; marble and tile work; fireproof windows and steam heat; cost, \$100,000.

Board of Education is having plans prepared by Wm. B. Ittner for erection of high school building; 289x250 feet; brick and stone; marble, mosaic and tile work; gas and electricity; cost, \$700,000. Bids are being received by architects.

Bids are being received by Sanguinett & Taussig Architectural and Building Company, Victoria Building, for erection of apartment-house in the West End; three stories; 100x150 feet; brick and stone; gas and electric fixtures; steam heat; cost \$100,000.

Shisler-Bidwell Building Co. is having plans prepared by Charles H. Deitering, Missouri Trust Building, for erection of apartment-building; four stories; 200x74 feet; brick and Carthage stone; marble, mosaic and tile work; steam heat; cost \$200,000.

Aaron Fuller, vice-president of the Fuller Goods Co., is reported to be having plans prepared for a \$50,000 residence.

The Condie-Niele Glass Company, Nineteenth and Pine Streets, is having plans prepared by Mauran, Russell & Garden, Chemical Building, for erection of mercantile building.

McNair & Harris Realty Company, Eighth and Locust Streets, is having plans prepared by W. A. Swasey, Missouri Trust Building, for erection of theater to be four stories, 100x150 feet, of brick and stone and fitted with gas and electricity. Cost, \$200,000. Bids will be received at once.

The building to be erected by Lindell Gordon, 112 North Eighth Street, on the south side of Washington Avenue, west of Twelfth Street, will be seven stories high and will have a glazed terra-cotta and plate-glass front for the first two stories. The building is 50x150 feet, extending through to St. Charles Street. It is to be finished April 1, and the contracts will be let next month. Estimated cost, \$120,000.

The Building Commissioner has issued a building permit to the Washington University Corporation for construction of a seven-story slow-combustion building at the corner of Eleventh and Spruce Streets. The building, according to the estimate in the

permit, will cost \$289,000. The plans for it have been prepared by Eames & Young, architects, Wright Building.

Plans have been prepared by Architects Mauran, Russell & Garden, 721 Olive, for the erection of four new mercantile buildings. Cost, \$600,000.

One hundred and fifty thousand dollars has been given to the Washington University to erect a chapel on the grounds.

St. JOSEPH, Mo.—Buchanan Hotel Co. will erect hotel; eight stories; brick and Carthage stone; gas and electricity; cost \$300,000. Eames & Young, architects, Wright Building, are receiving bids.

Martin Isele, president of Cordova Hotel, Memphis, Tenn., is considering plans for erection of ten-story hotel in St. Joseph, costing \$500,000.

St. PAUL, MINN.—The City Council will pass a \$645,000 bond issue for erection of four modern high schools in this city, exclusive of site and equipment. George T. Redington is City Clerk.

Plans have been drawn for an eight-story addition to the twelve-story Metropolitan Life Building, commonly known as the "Guaranty Loan" Building, at Second Avenue South and Third Street, Minneapolis. Officials of the insurance company will inspect the Minneapolis property in September and if deemed advisable the building will be increased to a twenty-story building, the first real skyscraper in the Northwest. The plans have been drawn by Ward of New York, the architect for the insurance company, which owns office buildings in several large cities. The cost of the addition will be nearly \$300,000. A new elevator system to cost \$50,000 will also be required.

SALEM, MASS.—Plans have been prepared for a high school by Architects Kilham & Hopkins, 9 Park Street, Boston. Cost, \$350,000.

SAN ANGELO, TEXAS.—San Angelo Opera House Company has not selected architect for proposed opera house; no details have been decided. Cost will be about \$50,000. Charles W. Hobbs, President.

SAN ANTONIO, TEXAS.—The Woods National Bank of this city has secured a lease of ninety-nine years on the lot at the corner of Houston and Losoya Streets, now occupied by the Kalteyer Drug Company, and proposes to erect a modern steel ten-story office building.

San Antonio Lodge, No. 11, I. O. O. F., has had plans prepared by J. Flood Walker for erection of building; reinforced concrete; fireproof; floors of asbestoth. Cost, about \$40,000.

SAN FRANCISCO, CAL.—The Vonder Horst Bros. have contract and will begin erection soon of a large six-story and basement reinforced-concrete building on Mission Street, near Fourth Street. It will be known as the Heuter Building and will be fireproof throughout. The ground floor of this building will contain one large store, which will extend the entire depth of the building to Jessie Street. The upper floor will be converted into lofts for storage purposes. The estimated cost of constructing this building is \$150,000. Charles F. Whitteley, 536 Polk Street, San Francisco, is architect.

The Babcock Estate Company has applied for a permit to construct a two-story

brick building at the corner of California and Battery Streets, to cost \$102,000.

The Gore Improvement Company has applied for a permit to erect a \$100,000 three-story structure on Market, Pine and Front Streets of reinforced concrete with steel frames, and O. N. Nordwell to erect a six-story brick warehouse to cost \$90,000 on Battery Street, and the Babcock Estate Co. to construct a two-story brick building at California and Battery Streets, to cost \$102,000.

Application was made yesterday by D. O. Mills for a permit to erect a ten-story office building of steel and concrete construction adjoining the Mills Building in Bush Street, near Montgomery, at a cost of \$340,000.

Other applications were filed by Mrs. Sarah Rosenstock, Bush Street near Montgomery, \$65,000; San Francisco Brewing Company, Hawthorne Street near Folsom, \$30,000; C. H. Evans, Fremont Street near Howard, \$20,000, and S. Nathan, Jones Street near Pacific, \$12,000.

Plans have been prepared by Kenneth MacDonald, Jr., for a store building of monolithic reinforced concrete, to be erected by the Davis-Schönwässer Company at Grant Avenue and Sutter Streets.

Plans are being prepared by Architects Meyers & Ward, 532 Market Street, San Francisco, for a three-story building to be erected for the Samuels Lace House, at Stockton and O'Farrell Streets, at a cost of \$300,000.

A five-story building will be erected on Folsom and Hawthorne Streets for John A. Roebeling Sons at a cost of \$200,000.

SCHENECTADY, N. Y.—The Schenectady Illuminating Company and the Mohawk Gas Co., it is reported, have completed plans for their new office building, which will be located in Clinton Street, and for the gas house that will be built in Villa Road. Estimated cost, \$100,000.

SEATTLE, WASH.—Plans have been filed by the Independent Brewing Co. for a four-story brick office building, 60x108 feet, to be built at 1518 Second Avenue, at an estimated cost of \$52,000. R. Robertson, Dexter H. Bank Building, is architect.

W. P. White, Washington Building, is stated to be preparing plans for a five-story family hotel to be erected on Oliver Street and Seventh Avenue by Forester & Co. at an estimated cost of \$80,000.

SHARPSBURG, N. C.—It is reported that a cotton mill of 10,000 spindles will be erected here by A. N. Wood, J. Edward Jefferies, W. C. Hamrick and others of Gaffney, S. C., who propose organizing a company with a capital stock of \$200,000.

SHELBY, N. C.—Bids will be received until August 6 by the Board of County Commissioners (J. F. Roberts, chairman) at Shelby for furnishing material and erecting a Court-house. H. L. Lewman, architect, 1008 Lincoln Bank Building, Louisville, Ky.

SPRING CITY, PA.—Bids will be received until August 9 by the Commission appointed (J. F. Sherwood, Secretary), care of the Governor, Harrisburg, for erecting an institution near Spring City for feeble-minded and epileptics. Plans and specifications may be obtained from Philip N. Johnson, architect, 1825 Land Title Building, Philadelphia, upon a deposit of \$200, of which \$195 will be refunded upon return of plans.

SPRINGFIELD, MO.—The Arnold Co., architects and engineers, Borland Block, is completing plans for a plant for the manufacture of cars and locomotives, to be built at Springfield, Mo., for the St. Louis and San Francisco Railroad Company. J. F. Hinckley, chief engineer, St. Louis, Mo. It will comprise several large one-story and other buildings, with concrete foundations, superstructures of brick and steel, gravel roofs, steam heat, electric light and the latest equipment and appliances. About 3,000 tons of steel will be required. The cost is estimated at \$5,000,000.

SPOKANE, WASH.—The Marshall-Wells Hardware Company of Duluth, Minn., will build on Main Avenue near Market Street a six-story reinforced-concrete structure, 300x142, with full basement, to cost \$400,000. Work on the structure is to begin next fall.

The Spokane and Eastern Trust Co. has begun work on the first section of the new home to cost \$150,000. This section will be 15x80, four-story, costing \$35,000. The main building will be 40x60, stone and terra-cotta.

The permit for the August Paulsen Building at Riverside Avenue and Stevens Street, to cost \$600,000, was taken out by John K. Dow, architect. The structure will be eleven stories, built of brick, with fireproof steel frame.

Van Ryn & De Gelleke, architects, 54 Merrill Building, Milwaukee, are making plans for a \$50,000 addition to the Superior State Normal School, in Superior, to be three stories, 45x84, solid brick.

Plans have been prepared for a new home, 15x80 feet, to be erected for the Spokane and Eastern Trust Company. Cost, \$150,000.

STEUERENVILLE, O.—The La Belle Iron Co. and the Carnegie Steel Co. propose to build a hospital. Cost, \$50,000. Address Superintendent Carnegie Steel Co.

TACOMA, WASH.—The Northern Pacific Railway Company will construct a passenger station here at once, it is stated. The depot will occupy the site of the present old station, and will be constructed of pressed brick, trimmed with stone. The approximate cost will be \$500,000. The plans are being completed.

The Pantages Theatre Company will erect a theatre here to cost \$100,000.

C. E. Danaher will make improvements to his mill at a cost of \$650,000.

TERRE HAUTE, IND.—It is reported that bids will be received until August 5 by the Board of Trustees of the Indiana State Normal School for erecting a library for said school. J. F. Alexander & Son, architects, Lafayette.

Bids are asked by trustees of Indiana State Normal School, Terre Haute, until 9 A.M., August 25, for the construction of a fireproof library building.

TORONTO, ONT.—Henry Simpson, architect, of Toronto, it is stated, will build a \$50,000 factory on the site of the old Parliament Street School for the Aluminum and Crown Stopper Company. The building will be of mill construction and five stories high.

The Canadian General Electric Co., it is stated, intends erecting at King and Simcoe Streets a five-story fireproof, gray brick and terra-cotta office building. Darling & Pearson, Mail Building, are the architects.

TRAVERSE CITY, MICH.—Two new wings with a capacity of one hundred patients each will be added to the main building of the Northern Michigan Asylum, and other additions, repairs and alterations aggregating \$105,000 will be made.

TRENTON, N. J.—Bids are asked by James Knox Taylor, Supervising Architect, Washington, until 3 P.M., August 27, for construction (including heating apparatus, electric wiring and conduits) of the extension to the United States Postoffice and Court-house at Trenton.

TROY, N. Y.—Bids are about to be received for a new building for the Rensselaer Polytechnic Institute and for a new county hospital.

UNION CITY, PA.—G. W. Eckels, architect, is preparing plans for a stone and brick office building for the Home National Bank.

UTICA, N. Y.—Architect Linn Kinne has finished plans for the new Church of the Reconciliation, 95x45, brick and terra-cotta, steel-frame roof, Gothic architecture.

VIRGINIA, MINN.—Plans have been prepared by Architect J. J. Wangenstein, 401 Providence Building, Duluth, Minn., for a foundry building 40x130 feet for the Virginia Machine and Foundry Company.

WASHINGTON, D. C.—Milton Dana Morrill and Oscar G. Vogt, associate architects, room 405 Corcoran Building, Washington, D. C., have prepared plans for an apartment-house at the corner of King and Columbus Streets, Alexandria, Va., to cost \$40,000; colonial brick.

WATERLOO, IA.—Plans have been prepared by Architect Clinton Shockley for a church for the Walnut Street Baptist congregation, Rev. Hulbert G. Beeman, pastor. Cost, \$40,000.

WILLARD, N. Y.—The Lunacy Commission and the Board of Trustees of the Willard State Hospital have decided to erect a new building at the hospital for tuberculosis cases.

PROPOSALS.

Treasury Department, Office of the Supervising Architect, Washington, D. C., July 18, 1907.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 27th day of August, 1907, and then opened, for the construction (including heating apparatus, electric wiring and conduits) of the extension to the U. S. Post Office and Court House at Trenton, N. J., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Custodian at Trenton, N. J., at the discretion of the Supervising Architect.—James Knox Taylor, Supervising Architect. (1648-1649)

Treasury Department, Office of the Supervising Architect, Washington, D. C., July 22, 1907.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 4th day of September, 1907, and then opened, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring) of the U. S. Post Office and Custom House at Quincy, Mass., in accordance with drawings and specifications, copies of which may be had at the office of the custodian of the site, or at this office, at the discretion of the Supervising Architect.—James Knox Taylor, Supervising Architect. (1648-1649)

Treasury Department, Office of the Supervising Architect, Washington, D. C., July 20, 1907.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 14th day of August, 1907, and then opened, for the construction of a new breakwater wall at the U. S. Marine Hospital, Key West, Florida, in accordance with the drawing and specification, copies of which may be had at this office or at the office of the Custodian of the Hospital, at the discretion of the Supervising Architect.—James Knox Taylor, Supervising Architect. (1648-1649)

(Proposals continued on p. xv.)

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WANTED—A competent architectural draughtsman for all around office work; one with experience in good offices preferred, or graduate from technical school. Address A. A. Ritcher, Architect, Lebanon, Pa. (1648-1650)

WANTED—Experienced draughtsman on architectural and building work in New York City; state technical training; experience, and salary expected. Address 5-D, care American Architect. (1649)

POSITIONS WANTED.

STRUCTURAL STEEL and reinforced-concrete engineer, at present chief engineer for prominent engineering firm, desires position in charge of engineering department of architectural firm, or would form partnership with architect. Address 3-B, care American Architect. (1647-1650)

ARCHITECT and superintendent of twenty-five years active experience wishes either association or engagement with firm handling large buildings; perfectly competent to manage large office or superintend work; present engagement terminates in sixty days. Address 4-B, care American Architect. (1648-1650)

POSITION WANTED by an architectural draughtsman, in an office in the Middle West or Central States. Address 5-B, care American Architect. (1649)

DRAUGHTSMAN—Six years' experience, technical training, and best references, wishes position with architect of standing. Address F. R., 104 Cutler Bldg., Rochester, N. Y. (1649-1650)

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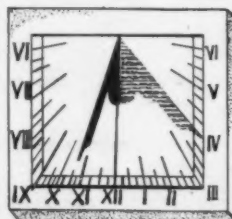
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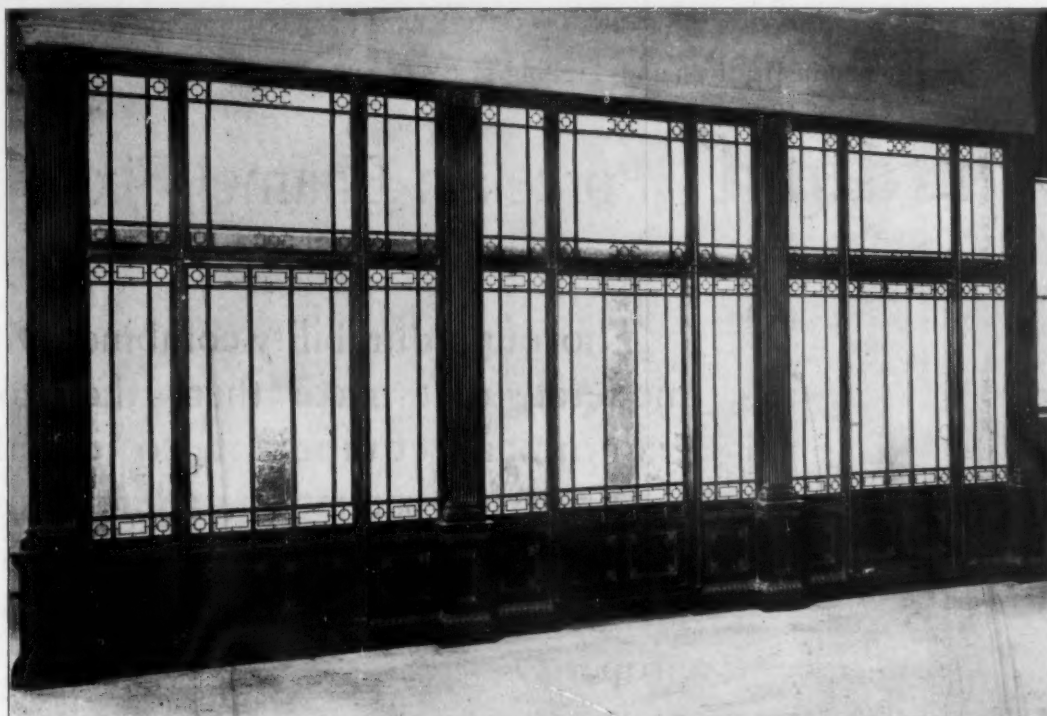
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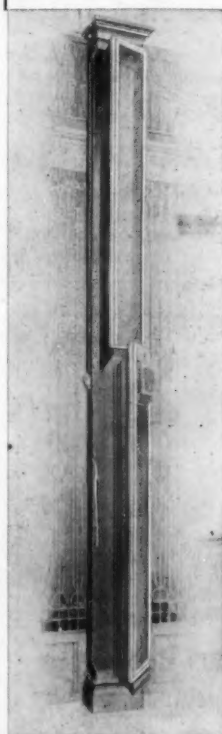
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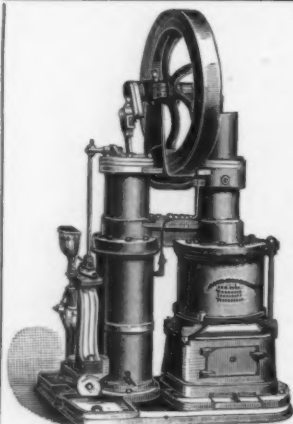


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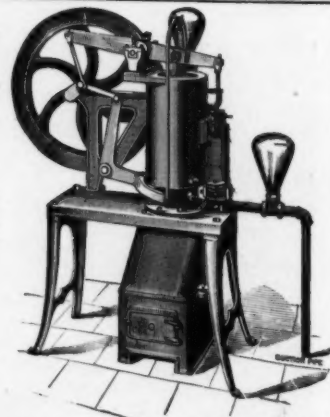
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