

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XLI.

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No. 919.

Entered at the Post-Office at Boston as second-class matter.

AUGUST 5, 1893.



SUMMARY:—

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THE Convention of the American Institute of Architects opened on Monday, at Chicago, with an attendance somewhat larger than usual, but hardly what it should be on such an occasion. The Treasurer's report showed a balance on hand of some \$2,300, which is certainly gratifying, as nothing adds more to the dignity and influence of a professional body than a substantial cash surplus. Instead of the usual series of Chapter reports, which the audience is apt to find tedious, an abstract, prepared by the Secretary, was read, giving the most interesting points of each, and considerable time was thus gained for other business. This year, as usual, there was no report from the Committee on Foreign Correspondence. As the chairman of the Committee, Mr. Hunt, had just arrived from his trip to England, to receive the Queen's Medal, there was a certain excuse for the failure to present a report, but it seems to us that the duty of keeping up a correspondence between the Institute and the other great professional bodies of the world is a very important one, and that, if nothing more, the annual salutations of the Institute should be transmitted to the incorporated representatives of the profession in other parts of the world, and their replies, which are sure to be courteous and interesting, duly reported. The committee on Uniform Contracts, probably in consultation with the similar committee of the Master Builders' Association, reported in favor of omitting the ordinary clause in contracts fixing the time of completion and assigning a penalty for non-fulfilment, leaving the whole clause blank, to be filled in by individual architects at their discretion. We fear that this change will not recommend the Uniform Contract to the profession. Nothing is more disagreeable than to have to fill such blanks, and the omission of any stipulation of the kind from the printed form is sure to give the more unreasonable sort of builder the idea that he ought not to be subjected to any, and to become the excuse for wrangling and delay. The report of the Committee on Education was, as usual, conspicuous by its absence. We wonder whether any member of the Institute remembers such a thing as a report from the Committee on Education. Our experience of Conventions is a tolerably extended one, but we can recollect only very dimly the fact of their having been one or two, while the substance of the reports has left no impression whatever on our mind. The other reports resembled, as usual, that of the Committee on Education, except that a suggestion was made by the Committee on Schedule of Charges in regard to fees for alterations and additions. There is a somewhat threadbare quotation to the effect that a country is happy

which has no history. Applying this principle to professional bodies, the state of the Institute of Architects, to judge from the ordinary Convention proceedings, must be felicity indeed. However, we can console ourselves with the reflection that probably the principal use of Conventions, after all, is to bring architects together, and show them how amiable in disposition they all are, and in this respect the Chicago Conventions have at least, not been less successful than others.

IT was a foregone conclusion that to the many marks of deserved applause Mr. D. H. Burnham has won in the last two years would be added his election to the presidential chair of the American Institute of Architects. This election, admirably and wholly deserved, may be of some little use to him at the moment, as an indication to the public and judicial authorities that his professional brethren do not entirely agree with the coroner's jury in the matter of his responsibility for the cold-storage warehouse disaster.

THE other new officials of the Institute are: George B. Post, New York, *First Vice-president*; Levi T. Scofield, Cleveland, *Second Vice-president*; Alfred Stone, Providence, *Secretary*; S. A. Treat, Chicago, *Treasurer*; E. H. Kendall, New York, Cass Gilbert, St. Paul, Thomas Hastings, New York, A. Page Brown, San Francisco, C. F. Schweinfurth, Cleveland, Robert Stead, Washington, G. A. Frederick, Baltimore, and Jeremiah O'Rourke, Washington, *Directors for Three Years*.

A DISPUTE has arisen in New York on the important point whether electric wire-men, when they wish to run a wire through a brick wall, shall cut a hole for themselves, or send for a bricklayer to do it for them, and, until the question is settled, work on the new wing of the beautiful Mutual Life Insurance building has ceased. The building, which is to be fourteen stories high, has been carried up ten stories, and the electric-wiring is going on in it. So far, the wire-men have cut holes for themselves, eight men being constantly employed in the building for that purpose. It seems, however, that some bricklayers, who were out of work, saw them, or heard of them, and appealed to their union to get the wire-men turned out, and themselves put in. A deputation of bricklayers accordingly waited upon the superintendent of the building, and demanded that the work of cutting holes in the walls should be given to them. They informed the superintendent that, if this modest request was not complied with, all the bricklayers in the building would strike. While the superintendent was considering the matter, the walking-delegate of the Electric Wire-men's Union appeared on the scene, and gave notice that if bricklayers were employed to do the cutting, all the wire-men in the building would strike. As the building could not go on without both kinds of workmen, the superintendent concluded to do nothing, but let the two unions settle the dispute for themselves; and the bricklayers in the building, forty-eight in number, accordingly dropped their tools and departed. What action the Mutual Life Company, which is carrying on its work on its own account, will take is uncertain, but it is unlikely that the cool and clear-headed management of that great corporation will submit to dictation from walking-delegates. Unlike a contractor, who is tied by his contract as to the time of completing his building, an owner can wait, if he wishes, rather than be imposed upon, and, in this particular case, it is quite probable that prices of materials and labor may be enough lower in a few weeks to repay the loss of rent and interest incident to the delay. As an abstract matter, the question whether a bricklayer, who sees somebody doing work which he would like to do, has a right to conspire with the members of his union to get the other man's work away from him, is of some interest, and we hope that the Electric Wire-men's Union, if the bricklayers succeed in their plans, will bring the case before the courts.

AN extraordinary military spectacle is at present to be observed in Kansas. It seems that the miners employed in the region bordering on Missouri, being dissatisfied with some of the circumstances of their condition, struck. The owners of the mines, after waiting some time for the strikers to come to terms, engaged other men. As there is nothing like police protection in the wild mining region, the

mine-owners, fearing that their new men would be assaulted, built stockades around the openings of the mines, within which they promised to shelter the newcomers. The strikers then gathered in great numbers, under arms, and threatened to march upon the stockades, and the mine-owners, fearing a general massacre, called upon the Governor for State troops for protection. The Governor, who is a Populist, seemed to be in doubt as to what attitude he should assume toward citizens bent merely upon exterminating a few "capitalists" and their "hirelings," and discreetly turned the matter over to his chief military subordinate. The latter, who is also a Populist, being under the direct order of his commander-in-chief, could not dodge his duty, and summoned a force of militia, accompanying his call with a disquisition which reads much more like one of the harangues of Jack Cade at the head of his brutish rabble than a general order from the commander of civilized troops. After explaining, at considerable length, that the controversy which was expected at any moment to express itself in a massacre was "a distinction without a difference," an observation which must have been gratifying to the poor men who were working with rifles levelled at them, he went on, after some disparaging remarks about capitalists in general, to assert that "free men" had "an inborn right to employment," accompanying this information with a hint that people who made things disagreeable for "capitalists" who did not furnish them with employment would have his sympathy, if not his active support.

A MORE mischievous act than the promulgation of this anarchistic diatribe as a general order from the commander of a State military force it would be hard to conceive. To say nothing of the fact that an officer who makes speeches on any subject is a man very much out of place, the commander of troops sent to prevent a quarrel from becoming a fight is the last person in the world who should begin his efforts by applauding and cheering on one of the combatants. As to the merits of the case, while it appears to be hopeless to look for any sense of logic or probability among anarchists, the ordinary mind will wonder why, if all free men have an inborn right to employment, the people who were willing to work in the mines, and were trying to do so, had not just as much right as those who refused to work, and preferred, instead, to prowl around, trying to shoot those more industrious than themselves. Even the distinguished Major-General would probably admit that it was not the duty of the mine-owners to hire more men than their mines would hold, and that the surplus men should hunt up capitalists who had not hired their full complement, in preference to shooting those who had, or killing off the "brethren" already at work, in order to get their job; but it usually turns out in anarchists' proclamations, that the "free men," who have "an inborn right to employment," consists of a small number of the orator's friends or constituents, and the rest of the world ought not to object to the assassination, robbery, persecution and violence requisite for providing these favored persons with just the employment they like, and on terms satisfactory to them.

IT will puzzle some people to guess in what country the lighthouse of Eckmühl, which will have by far the most powerful light in the world, is to be built, and they will probably not get much assistance in their guesses from being told that it is to be erected on the promontory of Penmarch. Penmarch, however, is the extreme point of Cape Finisterre, which is the western termination of Brittany; and the very German name given to the lighthouse is derived from the title of the lady to whose munificence its erection is due.—Adelaide-Louise Davout d'Eckmühl, daughter of the great Marshal Davout, or Davoust, who was created Prince of Eckmühl by Napoleon, after winning a battle in the Bavarian town of that name.

THE Princess of Eckmühl, afterwards, by marriage, Marquise de Blocqueville, died a year or so ago, at a great age, leaving by will three hundred thousand francs, for the purpose of carrying out her "first and dearest wish, that there should be erected a lighthouse on some dangerous point of the coast of France, not undermined by the sea." The will goes on to say that the testatrix, having often been told that some portions of the Breton coast remained obscure and dangerous, desired to have the lighthouse built in that region, but on a solid ledge of granite, so that it might remain for a long time to recall the "noble name" of its founder, and to save from the tempest

lives to offset the bereavements of war. The care of carrying out the object intended by the testator, with the help of competent assistants, was entrusted by the will to M. Le Myre de Villers, formerly Governor of Cochin China, and at this moment, we believe, one of the most important representatives of the French Government in the East. Shortly after the death of Madame de Blocqueville, M. Le Myre de Villers had a conference with the Minister of Public Works, M. Viette, the result of which was that the point of Penmarch was assigned for the new lighthouse, and it was agreed that it should be made the most important in the world, having an electric light of forty million candles, or nearly double the power of the electric light of La Heve, which is much the largest at present existing. As the bequest would not be sufficient, generous as it was, to pay the whole cost of such a lighthouse, it was agreed that the construction should be assumed by the Government, and that the three hundred thousand francs given by the princess should be first expended, the Government paying the remainder of the cost, but carrying out the work according to the wishes of the testatrix, who directed among other things, that a bronze statue of Marshal Davoust, belonging to her, should be set up in the lower hall of the lighthouse, and that on its pedestal should be carved the names of the battles in which he had been engaged. The work is now in progress.

OUR German exchanges advertise something which seems to us to be worth the attention of architects and designers here, in the shape of direct-indirect radiators, formed, not of vertical tubes or castings, as is usual with us, but of horizontal coils. The idea is not new. We have ourselves employed the same arrangement, and have seen it used by others, but the fact that a manufacturing house finds it worth while to make and send out such coils in large quantities suggests the probability that, with a little study, coil radiators might be made with castings put together with bolts as vertical radiators now are, which would heat better, particularly for direct-indirect systems, and be more ornamental. It must be confessed that, so far, no beautiful objects in the shape of vertical radiators have made their appearance in the market. We do not say that they cannot be made, on the contrary, it is possible that a delicate colonnade design might be successfully adapted to such radiators; but the surface-ornamentation hitherto employed has only increased the desire of architects to conceal appliances of the sort as much as possible. With coils, it seems to us that much more might be done. In the German examples, the coil is a flattened spiral, the fresh air introduced from out of doors being brought up through the middle. This is a good shape for circulation, as well as for heating. It is well known that horizontal coils heat much more air, for a given surface, than vertical tubes, and it would be easy, in a cast radiator on this system, to arm the hollow interior of the coils with pins, which must increase their efficiency.

OUR readers will remember the curious observations of Professor Henrici on the way in which streets and squares should be planned to avoid a tiresome effect, and it is interesting to find that the same writer has been awarded a first prize in the competition for designs for the enlargement of the city of Munich. The *Deutsche Bauzeitung* of July 15, publishes his plan, which is worthy of close study. It is hardly necessary to say that he has followed in it his own principles of street-planning, but with a variety of picturesque effects which will charm artists and architects a good deal more than they will the city surveyors. Out of the hundreds of streets on the plan, only a few are straight, but the curvature of the others is generally extremely gentle, while the width of nearly all the streets, even of the straight ones, varies in different portions. The rule, where enlargements of the street are made, of making them on one side only, is adhered to except in a few instances, but in all these a building is planned in the axis of the space, or two buildings are so arranged in it as to lead the eye between them in lines continuing the street lines. We have before observed that, in laying out new suburbs in Germany, no attention whatever is paid to property-lines, and Professor Henrici's plan not only ignores private boundaries but discontinues and changes existing streets in a way which, in this country, would give rise to endless lawsuits. His plan includes also a *ringbahn*, or metropolitan railway, connecting all the railways entering the city, which looks as if it had been designed without consulting the directors of the present roads.

PORTALS.¹—II.

THE first half (1226-1248) of the reign of St. Louis marks the zenith of the mediæval portal. The triple portal of Notre-Dame, at Amiens (Fig. 6), and that of Notre-Dame of Rheims (of a much later date, but executed after designs

most imposing in this style [See "*Cathédrale*," Figs. 37, 44]; more imposing still, if possible, is the quintuple portal of the Cathedral of Bourges, notwithstanding the restoration which it underwent in the fifteenth and sixteenth centuries (Fig. 7).

The portal suffered sooner and more disastrously than any

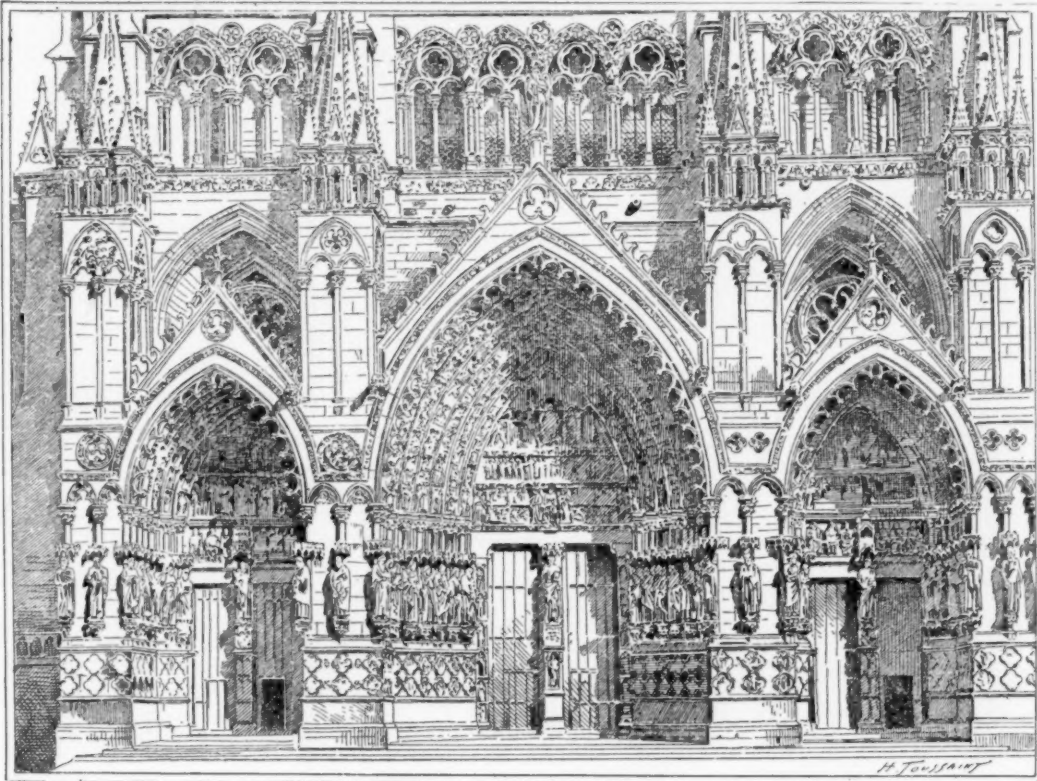


Fig. 6. Triple Portal of Notre Dame of Amiens.

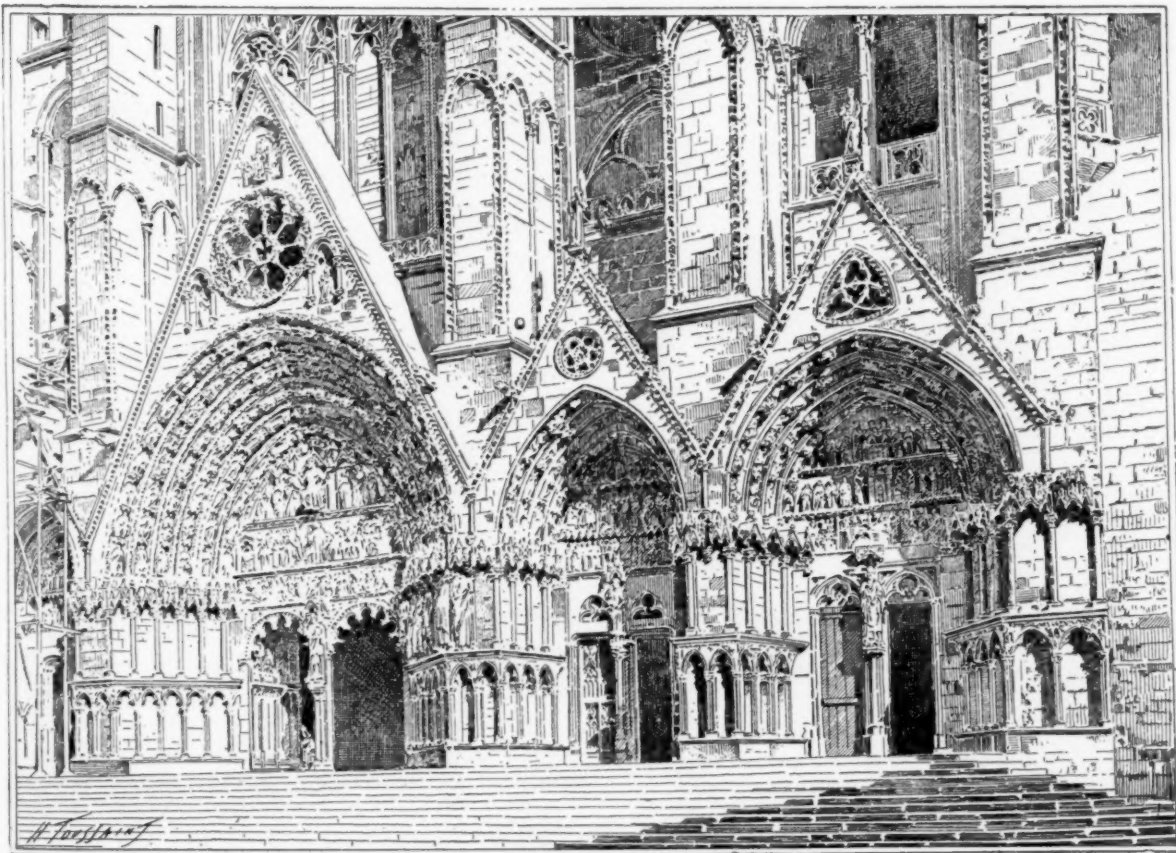


Fig. 7. Part of the Quintuple Portal of the Cathedral of Bourges.

made in the middle of the thirteenth century) are two of the

¹ From the French of A. Saint-Paul and H. Nodet, in Planat's *Encyclopédie de l'Architecture et de la Construction*. Continued from No. 918, page 64.

other part of the church from that abuse of logic and refinement which precipitated the decadence of Gothic architecture. In jambs with simple columns, the latter, which, until this

time, had been nearly always distinct and disengaged from the masonry, became so far a part of it as to be nothing more than vertical ribs or mouldings continuing the tori — themselves altered — of the archivols (Fig. 8). The archivolt, in its

their great canopies, which were at first an expansion of the capitals, but afterwards replaced them; the statuettes of the covings were also covered with canopies, which likewise separated them from one another; when the old columns had

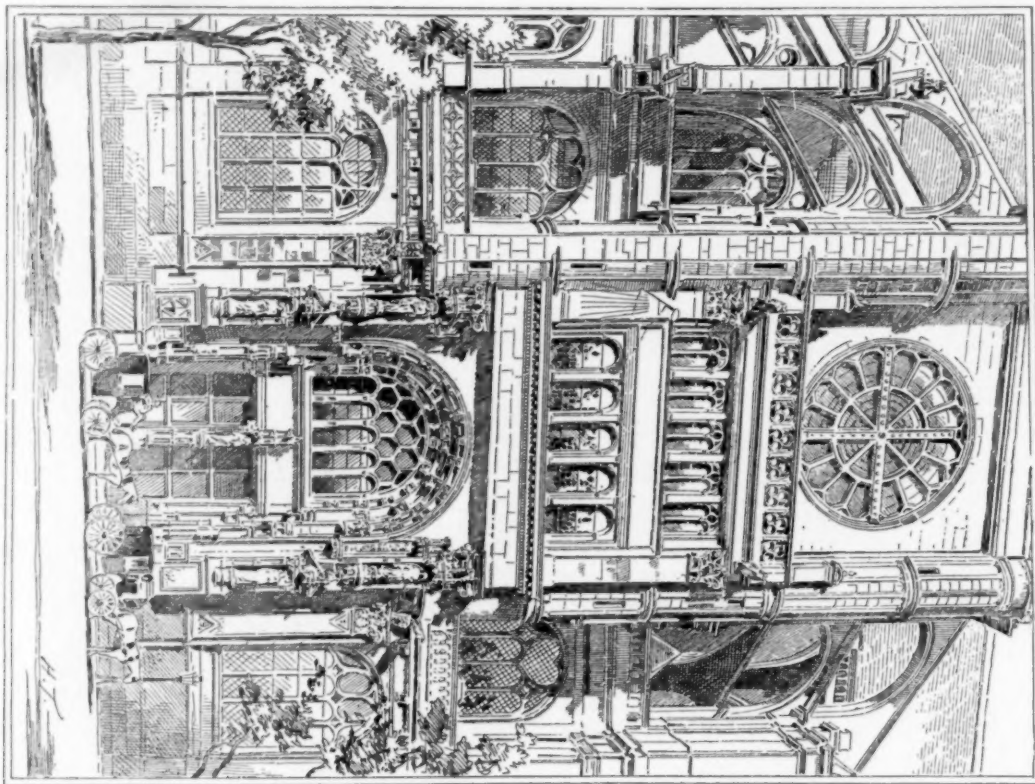


Fig. 8. South Portal of Saint-Fustache, Paris.

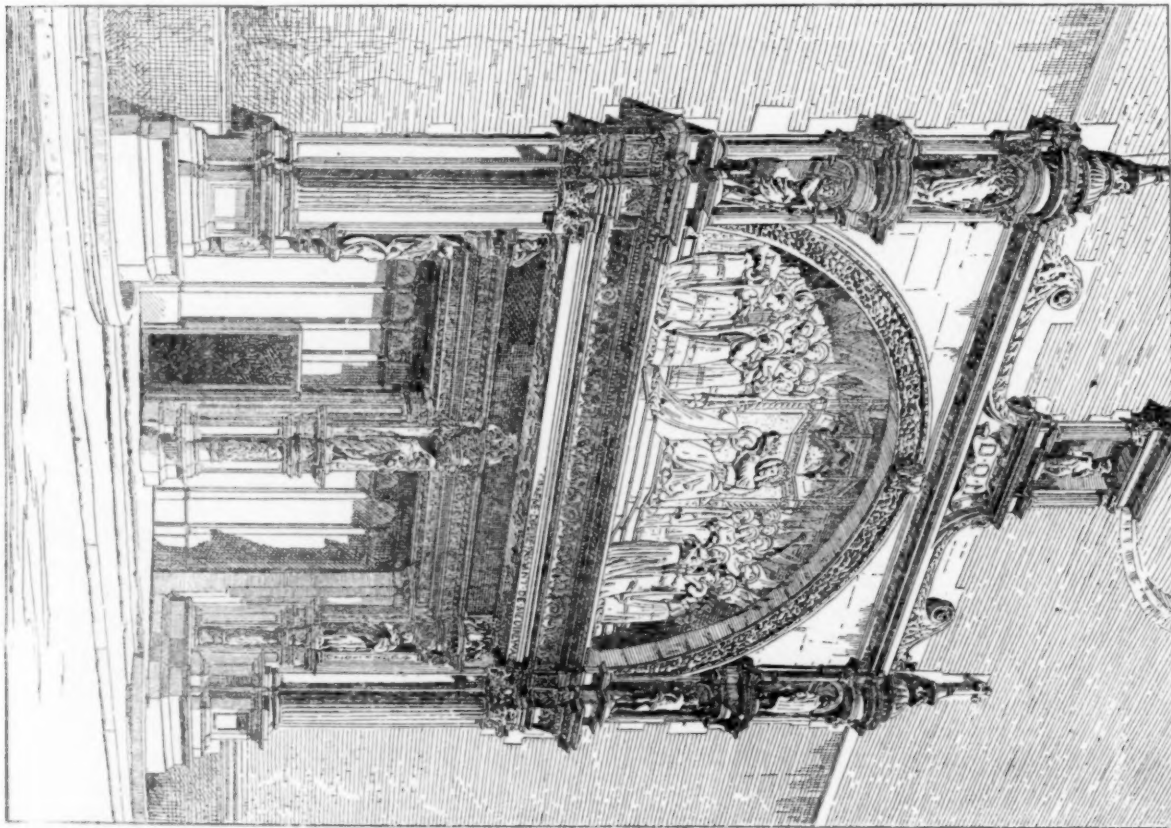


Fig. 9. Portal of Notre Dame de la Dalbade, Toulouse.

turn, lost the life and variety which had so happily distinguished it in the Romanesque period; it was now a monotonous repetition of uniform panels with a deplorable poverty of profiles. In embrasures with statues, the latter were placed between the panel-frames, isolated from one another beneath

become incorporated in the masonry, the statuettes and statues stood out from it, so that they had the appearance of movable objects that could be fixed anywhere at will by means of iron cramps. Therefore, as we approach the sixteenth century, we discover less unity in the subjects, and often in the proportions

of the different sculptures. As for the tympanum, we grow accustomed to considering it simply as a window skeleton — and this skeleton was sometimes not merely indicated, but was actually pierced — so that in the late Gothic period and in the

was not slow in gaining. At Rheims, it received the images that should have figured in the tympanum. Its angle was made so extremely acute that it seemed like a monumental structure over the door; it was flanked by pinnacles, and the

Fig. 10. Portal of St. Mark's at Venice.

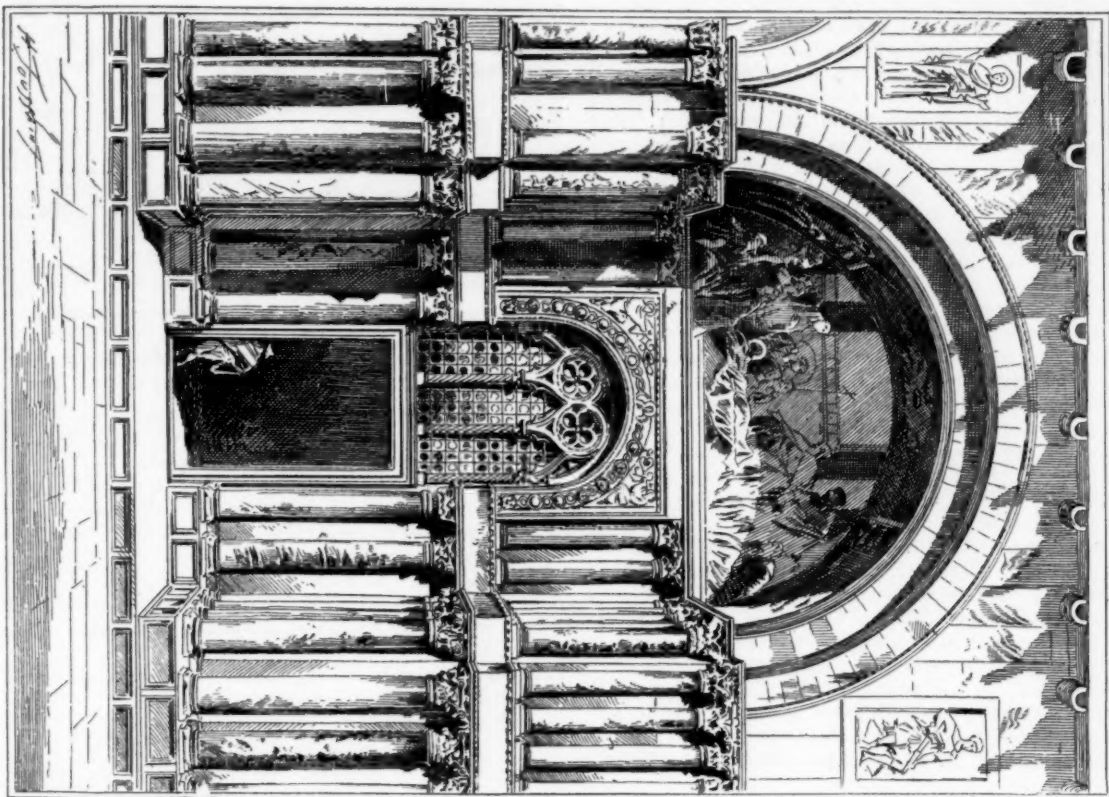
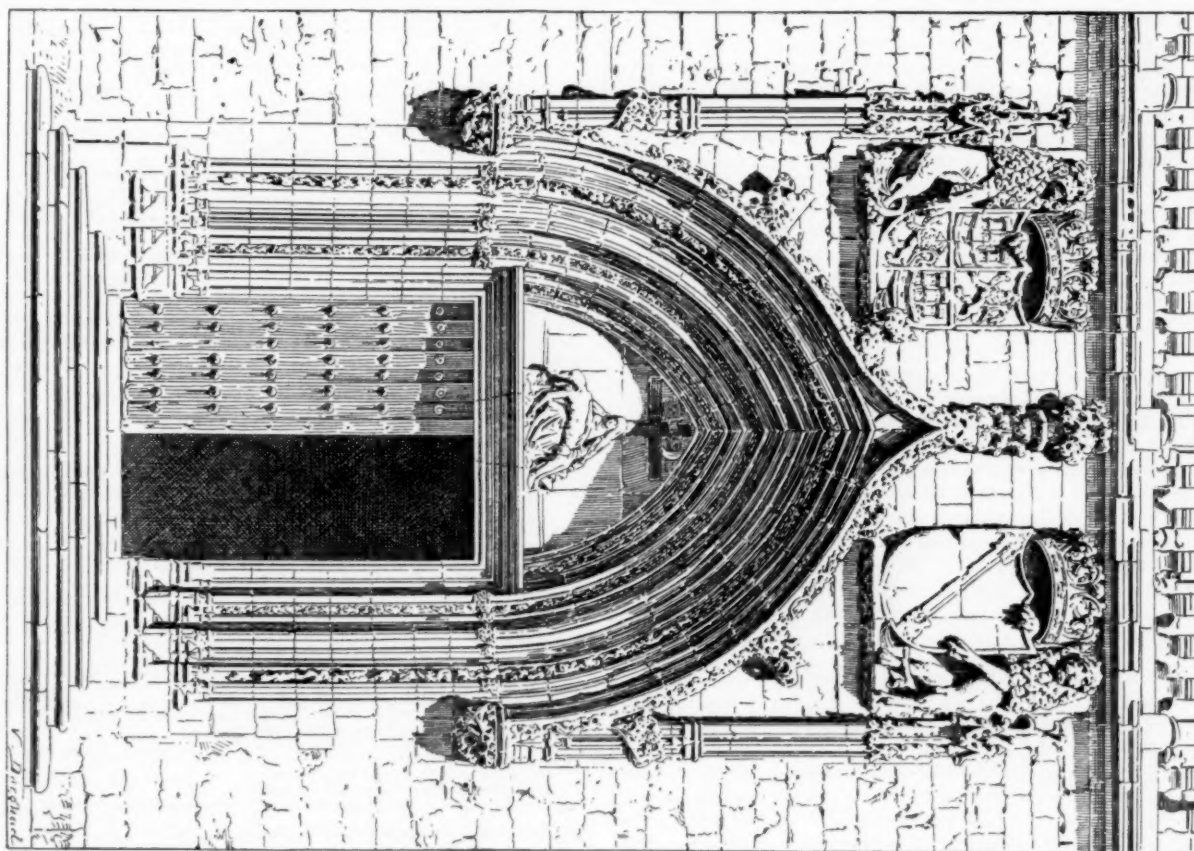


Fig. 11. Gothic Portal at Burgos.



Renaissance (Fig. 8), by an excessive elongation of the tympanum, the point was reached of making a genuine window between the covings and the lintel; this was especially the case in Champagne and Touraine.

What the embrasures lost in wealth and harmony the gable

surroundings of the entrance vied with the door itself in attracting the attention of the observer. But decadence began to appear in these accessories also, and the demand for elaborate contours, which characterizes the second half of the fifteenth century, did not spare this disposition; the gables were

TABLE XXI.
NORMAL EFFECT OF WIND-PRESSURE ON ROOFS
WHEN THE PRESSURE ON A VERTICAL SURFACE
EQUALS 40 POUNDS PER SQUARE FOOT.

Roof angle.	Pitch per ft.	Wind-pressure.	Roof angle.	Pitch per ft.	Wind-pressure.
5 degrees.	1"	5.2	35 degrees.	8 1/2"	30.1
10 "	2 1/4"	9.6	40 "	10"	33.4
15 "	3 3/4"	14.0	45 "	12"	36.1
20 "	4 3/4"	18.3	50 "	14 3/4"	38.1
25 "	5 1/2"	22.5	55 "	17 1/2"	39.6
30 "	6 1/2"	26.5	60 "	20 3/4"	40.0

The normal effect of the wind may be readily found as in § 194, as described for the method for framed ribs.

§ 235. Computations:—Write out all assumptions as to loading. Lay out a complete diagram of the truss in skeleton, scaling it as exactly as possible. Locate the fixed side of the truss on the side most easily braced against the wind-thrust. Letter the truss. Draw arrows representing the loads and write on them the amount of the load. Then draw first the static-load diagram, then the wind-left diagram and finally the wind-right diagram. Each diagram must be carefully drawn with a fine pencil with the intersection of all lines made as sharp as possible and following the lines of the truss exactly.

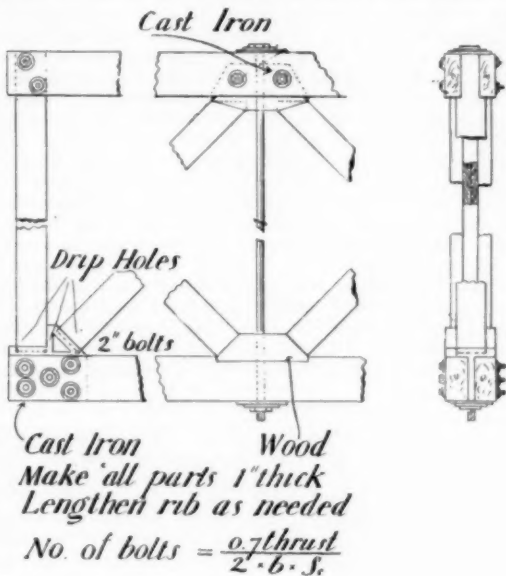


Fig. 61.

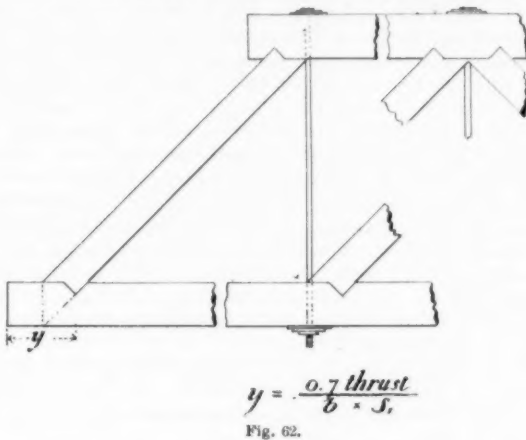
As fast as the lines are drawn the signs + for compression and — for tension must be drawn. The lettering of the diagrams must be done carefully also to avoid confusion. Then prepare a table with headings as follows, for the tabulation of results.

Name of piece	S. L.	W. L.	W. R.	Misc.	Max. +	Max. —
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Enter in the table under the proper headings the strains on the several pieces under their proper signs and carry out as a resultant the maximum algebraic sum of the strains on any piece as the strain that comes on the piece which must be provided for. Where there are both compression and tension at different times the connections must be made to provide for both and the piece must be made strong enough to carry that strain that will cause the greatest distortion of it. Where there is but one diagonal of a panel necessary for the analysis of a truss it should be drawn in and then one drawn in the other diagonal, but dotted. In a pin-connected truss, where the diagonals are meant to resist tension only, the diagonal which has a compressive strain on it, deflects and throws the strain to the other diagonal as tension. Having determined the strains due to the truss action, each rafter or tie must be examined for transverse strains. Should any be found that cannot be avoided conveniently, their effect must be provided for by increasing the bottom or top flanges as the case may require, to provide for the additional strain of the particular kind. That is, the top flanges of all compression-members and the bottom flanges of all tension-members must be increased. Finally every rafter

or tie, except for the very lightest truss, must be proportioned to carry the weight of two men on the centre so as to make it possible to paint or repair the roof or truss without a scaffold.

Spacing:—The spacing of trusses is very difficult to determine without using successive approximations. The writer



usually tries a spacing of from 12' 0" to 16' 0", c to c, of trusses and then a somewhat larger spacing, comparing the weights of both. This serves to indicate the most economical spacing to use and then a last truss is worked out for this spacing. If it does not give an advantage, another spacing should be tried so as to surely get the right distance. Generally the wider the span the wider the trusses can be spaced apart.

SECTION II.—WOODEN TRUSSES:

§ 236. Types:—Wooden trusses should be limited to simple king and queen post trusses, Howe trusses, lattice-girders, hammer-beam trusses or the trussed girders described in § 204.

§ 237. Proportioning:—Proportions should be adjusted in accordance with the principles of Chapter II and Section I of this chapter.

§ 238. Details:—The framing plans should be laid out in skeleton to a 1/4" scale and the details of the connections to a 3" scale with every part fully dimensioned.

The diagonals will be of wood and the posts of wood with tie-rods beside them to take care of the tensile strain. (Fig. 61). The abutting parts of the wood compression-pieces must rest against a cast-iron shoe with the area so made as to reduce the strain on the fibres to 500 pounds per square inch, or against oak blocks. If the strain is very light it may be safe

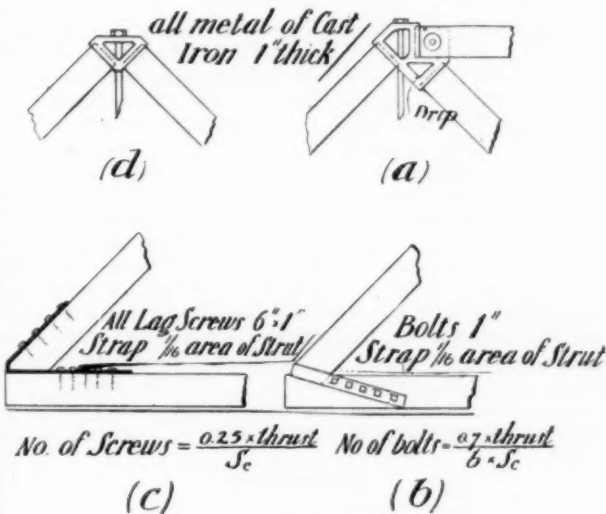


Fig. 63.

to leave off the cast-iron shoes. Where the inclined members join the end of the lower chord, the depth of the notch or area of abutting parts in a vertical plane must be proportioned to resist the pressures passed down the inclined piece, by resolving the strain into components perpendicular and parallel

to the lower chord and then allowing sufficient area to take up the strain in shear (Fig. 62).

When the shear is too great, requiring dimensions impracticable for wood, it may be provided for with iron straps or shoes (Fig. 63). At the apex of the king and queen post trusses the joint must be made with a cast-iron socket to take the thrust and distribute it over the fibres (Fig. 63).

Lattice-girders should be made with all of the connections made with oak treenails, about 1½" diameter, well driven in but not splitting the wood (Fig. 64). The shear between the different parts should be computed on the assumption that the latticing makes a solid web, and the number of treenails determined so as to reduce the pressure on them within the limits of shear for oak, or below the S_c for the materials of the chords. All trusses of wood must be covered from the weather but with a space left around for ventilation and the inspection of every part. None of the wooden parts should be painted, but all of the iron should be painted once a year. The housing of the trusses should be perfectly waterproof and should be carefully maintained.

The floors of all structures of the nature of bridges that are subjected to wind-strains should have the flooring so arranged as to afford a bracing in the nature of a horizontal truss. All

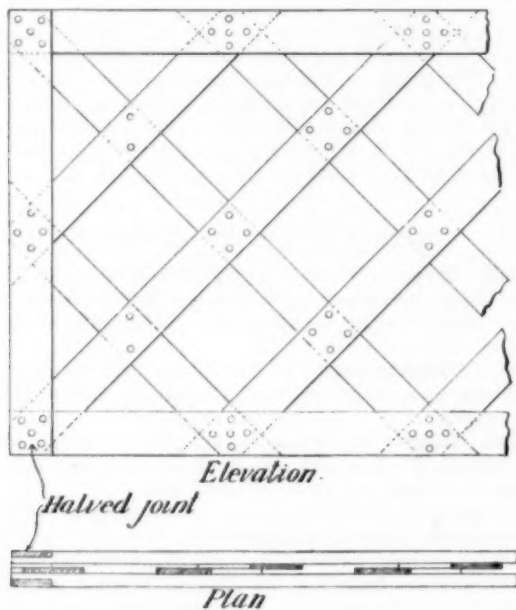


Fig. 64.

trusses should be made with regular stock and all sizes should be limited to a breadth of 4", and if a greater width is required to fill the conditions it should be gained by building up 4" pieces and spiking them together. Allow an additional 1" all around for provision against the weakening effects of fire. Make all of the members of a good working size even if the strains do not require it—wood must have size to look strong enough. When hammer-beam trusses are unavoidable they should be made with plenty of wood and with the connections made with great care and thoroughly bolted together. A good way to follow is to find the strains and then compare the sizes found necessary with the sizes of a truss of the same span actually built and increase the sizes as first found to agree with the example, if necessary, but do not decrease any of the sizes first decided on as the additional size will do no harm. If the roof is to be open-timbered, it should be made of good framing pine, mill-dressed, and then left for at least two years before being touched. For other cases of wood trusses see § 204.

[To be continued.]

THE DATE OF THE CHURCHES OF CENTRAL ITALY.—Prof. Frothingham of Princeton College returned not long since from an extended archaeological tour through Central Italy, and, according to the *College Bulletin*, one of the most interesting results of it is the proof he has adduced to the effect that many of the Christian churches, which have been supposed to date from the early centuries of our era, really belong much later, in fact, well into the Middle Ages.—*N. Y. Times*.

DESTRUCTION OF CITY REFUSE.



Capitals from the Church at Rasdorf. From *Zeitschrift für Bauwesen*.



I HAVE received at different times applications from the proper authorities of cities in the United States for particulars concerning the disposition of sewage in England, and I transmit herewith a report on that subject recently printed by William B. G. Bennett, the borough engineer and surveyor of Southampton. I have secured specifications from other cities, but, deeming the Southampton "destructor" the best in England, I waited for this report.

I desire to remark that the system of sewerage here is similar to that in American cities. The authorities have not yet adopted any systems of sewage-gas consumption, but it is their purpose to do so.

Since the introduction of this system of refuse destruction the vegetation usually seen on the shore immediately approximate to the city has disappeared or changed, and certain kinds of fish which feed upon sewage have become scarce in the adjoining waters.

JASPER P. BRADLEY, U. S. Consul.

SOUTHAMPTON, May 11, 1893.

SOUTHAMPTON SEWAGE-PRECIPITATION WORKS AND REFUSE DESTRUCTOR.

EARLY in 1885 the corporation of Southampton considered it expedient to introduce a more efficient system for the collection and disposal of house refuse; and about the same time they found it desirable also to clarify by precipitation the sewage of a particular district of the town, which was being discharged in its crude state direct into the Southampton water of the town quay. Having been instructed to devise a scheme for accomplishing these objects, the author proposed the adoption of a refuse-destructor for destroying the ash-bin contents and garbage of the town, and also that the sewage-sludge should be transmitted to the destructor from the two existing reservoirs in which it was deposited in the process of clarification. These reservoirs are each 100 feet long and sixty feet wide, and at the lowest end ten feet deep. Formerly the sewage of a district of the town, amounting to 500,000 gallons in twenty-four hours from a population of about 13,000, for the most part flowed by gravitation into these reservoirs, whence it was discharged into the tideway at low water; while a small portion, coming from a low-level sewer, passed direct into the tideway through iron pipes laid under the reservoirs. The reservoirs act alternately, one being left still for precipitation of the sewage while the other is being filled.

PNEUMATIC EJECTORS.

In order to render independent of the tide the discharge of the clarified effluent from the reservoirs, and to raise the low-level sewage into the reservoirs for treatment with the rest, two pneumatic ejectors were erected, both of which are worked by power obtained from the destructor. The smaller, of 360 gallons capacity, is placed in the east reservoir, below the invert of the low-level sewer, and serves for transmitting the sludge from the reservoirs to the destructor, as well as for raising the low-level sewage; and the larger, of 700 gallons' capacity, is placed in the east reservoir for discharging the clarified effluent into the Southampton water. There is also a third ejector, of 360 gallons' capacity, which deals with the sewage of another district of the town near the destructor works, and is likewise worked by power obtained from the destructor; with an air-pressure of twelve pounds per square inch it raises the sewage about eighteen feet from a low-level sewer to a higher one. This ejector was formerly worked by an independent steam-engine, costing for coal about £120 per annum, which is now saved since the adoption of the destructor.

The sewage gravitates from the sewers, through the inlet-pipe, into the ejector and gradually rises therein until it reaches the underside of the bell. The air at atmospheric pressure inside this bell is thus inclosed; and the sewage continuing to rise outside above the rim of the bell compresses the inclosed air sufficiently to lift the bell, the spindle of which then opens the compressed-air admission-valve. The compressed-air thus automatically admitted into the ejector presses on the surface of the sewage, driving the whole of the contents before it through the bell-mouthed opening at the bottom and through the outlet-pipe into the iron rising-main or into the high-level gravitating-sewer, as the case may be. The sewage can escape from the ejector by the outlet-pipe only, because the instant the air-pressure is admitted upon the surface of the sewage the non-return flap-valve on the inlet-pipe falls on its seat and prevents the sewage from escaping in that direction. As the sewage flows out of the ejector, its level therein falls to that of the cup; and still continuing to lower, it leaves the cup full until the weight of the stuff in the portion in the cup thus exposed and unsupported by the surrounding sewage is sufficient to pull down the bell and spindle, thereby shutting off the admission of compressed-air to the ejector. The compressed-air remaining within the ejector then exhausts through an air-escape valve in the top, which is opened by the fall of the cup and spindle; and the sewage-outlet non-return flap-valve falls on its seat, retaining the sewage in the rising-main. The sewage then flows once more

into the ejector through the inlet, driving the free air before it through the air-escape valve as the sewage rises; and so the action goes on as long as there is sewage to flow. The position of the bell-and-cup floats is so adjusted that the compressed-air is not admitted until the ejector is full of sewage, and is not allowed to exhaust until the ejector is emptied down to the discharge-level.

RESERVOIRS.

In each reservoir there is a floating sewage-inlet, consisting of a pipe hinged to the larger or effluent ejector and shackled to a buoy; the latter causes the free end of the pipe to rise and fall with the level of the liquid, keeping its mouth, which is covered with a perforated plate, a few inches below the surface of the liquid, in order to prevent the entrance of any floating solid matter. Directly the clarification by precipitation has been effected to a certain depth, a valve is opened, admitting the liquid into the larger ejector, whence it is at once discharged into the tideway. A supplementary sewage-outlet is also provided in each reservoir for discharging the liquid by gravitation when the tide is low enough. When the whole of the liquid has been thus drawn off, the buoy, resting now upon the floor of the reservoir, keeps the mouth of the inlet-pipe high enough to prevent the entrance of any sludge into the larger or effluent ejector; and by opening a valve the sludge is then admitted into the smaller or sludge ejector situated at the lower level and is transmitted by air-pressure through a line of four-inch cast-iron pipes, about a mile in length, to the destructor erected on the Chapel Wharf. An air-pressure of forty pounds per square inch is required for working the sludge-ejector and of ten pounds for the effluent-ejector.

PRECIPITATION.

Ferrozone is used for precipitating the sludge; it is mixed with just enough clean water to make the whole into a stiff paste, which is led through a shoot into a box with perforated sides placed in the sewer. The sewage flowing past washes the ferrozone gradually out of the box, and is thoroughly mixed with it by the time it discharges into the reservoirs at a man-hole 150 feet distant from the box. A small stream of water falling upon the ferrozone prevents it from consolidating. The box is filled three times in twenty-four hours, and this method of dosing the sewage has proved quite efficient and satisfactory.

MANURE-MIXING.

On arriving at the destructor the sludge is delivered into a cell, from which it is drawn as required through a valve-pipe; and after mixture with road-sweepings or sorted house-refuse it is turned out as a good manure, which from the commencement has all been readily bought up by agriculturists at 2s. per load delivered at the works. On an average, sixty-seven cart-loads of ash-bin contents are daily collected and disposed of, the ascertained weight of the load in each cart averaging a little under 17 cwt. The road-sweepings are never burnt; but, to keep pace with the demand, the sludge is run into bays made of the road-sweepings, and is also filled-in with them. The quantity of road-sweepings thus utilized amounts in twenty-four hours to about eight tons. Arrangements were provided at first for burning the sludge, for which purpose it was discharged into a tank on the floor of the destructor and drawn out through ports into the front, opposite the feed-openings of the firing-chambers, where its moisture was absorbed by the ash-bin contents, which were backed up against the ports with this object; and the mixture was then raked into the fires. Large quantities of sludge were thus destroyed; but the process has since been discontinued, owing to the ready sale of sludge when prepared for manure.

DESTRUCTION.

The refuse destructor has six chambers of furnaces, each capable of burning eight to eleven tons of garbage per day. The products of combustion pass through a thirty-horse-power multitubular steel boiler in the main flue into a furnace shaft, which is of circular brickwork, 160 feet in height from the ground line, six feet inside diameter at top, and seven feet at bottom. The shaft is constructed upon a pedestal fourteen and one-half feet square and twenty-four feet high, of brickwork three feet thick; and thence upward in four sections, of which the first is twenty-seven inches thick and thirty feet high, the second twenty-two-and-one-half inches thick and thirty feet high, the third eighteen inches thick and thirty-eight feet high, and the fourth fourteen inches thick and thirty-eight feet high. The first thirty feet (of this shaft) is lined with fire-brick, and behind the lining is a cavity four and one-half inches wide, which is ventilated by apertures to the outside of the shaft. The foundation is loamy clay, upon which is laid a bed of concrete thirty feet square and ten feet thick. The footings commence at twenty-three feet two inches square, and step off in regular courses upwards to fifteen feet square at a height of six feet. The concrete was filled-in continuously until completion. The pedestal was then run up and allowed to remain for nearly three months during the winter, after which the work was proceeded with until completion, occupying about six months more. The cap is white brick in cement, with a string-course about twenty feet below the top. Foot-irons are built inside in a winding lead up to the top. The shaft is provided with a copper-tape lightning-conductor, with iron rod and crows-foot seven feet above the cap; the tape is about 215 feet long, the

bottom end being carried into a well. In August, 1888, the shaft was damaged by lightning, but was easily repaired, owing to the provision of the foot-irons built inside it. At that time the shaft was plumbed, and was found to be quite vertical. The fires were only damped down during the repairs, which occupied about eight days. With the exception of this interval they have been constantly burning for nearly six years. The repairs have been almost nil. There is also a by-pass from the destructor to the shaft for enabling the burning process to be continued when the boiler in the main flue is not required or during cleaning and repairs. No obnoxious fumes from the combustion have been perceived.

STEAM-POWER.

The steam generated in the boiler is employed for driving a pair of engines of thirty-one-and-one-half indicated horse-power, which compress air into two large receivers at Chapel Wharf, whence it passes through a five-inch main to the town quay, where it is automatically supplied to the ejectors when required for working them. The air also serves for driving the precipitated sludge through the four-inch main from the reservoirs to the destructor, for which purpose the air is led by a pipe from the receiver at Chapel Wharf to the head of the main at the town quay. A six horse-power engine, used in connection with the machinery for the preparation of fodder for forty horses at the corporation stables, is also driven by steam from the same boiler that supplies the air-compressing engines.

UTILIZATION OF SLUDGE AND REFUSE.

All obnoxious matters are collected throughout the borough in covered iron tumbler-carts of two cubic yards' capacity, which go up the inclined-roadway approach to the destructor and discharge their contents into the firing-chambers. The road-sweepings are frequently discharged into a hopper over an incorporator driven by a small engine and are mixed with the sludge as required; this is generally done in wet weather. The residue from the continuous day-and-night combustion consists of about twenty per cent of good, hard clinkers and sharp, fine ashes. The clinkers are used for the foundation of roadways and the manufacture of paving-slabs; the latter have already been used in paving several footpaths of the town and the new public baths at a cost of 2s. 6d. per square yard. The fine ashes are also employed for making mortar, with which the stables and swimming-baths have been erected, and for many other purposes. The mortar is also sold to builders at 7s. 6d. per cubic yard.

ELECTRIC-LIGHTING.

The waste heat from the destructor is utilized for producing electricity. The air-compressing engines drive a dynamo of 150 volts. At the present time the works are lighted with two arc lamps of 3,000-candle power each and twelve incandescent lamps of 16-candle power each; and four streets in the vicinity of the works have been lighted experimentally for the information of the corporation, which from the successful results obtained, resolved to extend the installation to the municipal offices, a town clock, the Hartley Institution and the town-hall at the Bar Gate. For this purpose it was proposed to place accumulators in the basement of the municipal building and charge them through a cable from the works. Circumstances having led to the abandonment of the street-lighting, the public became financially the losers, and a private company is now supplying consumers.

OTHER USES.

The destructor is also employed in lending a helping hand to a neighboring authority by supplying to the local board of Shirley and Freemantle, about two and one-half miles from the works, sufficient compressed-air to work ejectors which they have erected in connection with the disposal of their precipitated sewage sludge from a population of 15,000. The compressed-air is conveyed through a four-inch main from the destructor works to their precipitation reservoirs, thus saving them the cost of a pumping-station and bringing to the corporation a return of £200 a year, which is received for the compressed-air. Thus the destructor works are now dealing with the sludge of nearly 30,000 inhabitants.

COST.

The initial cost of the complete destructor—including engine-house, inclined roadway, chimney-shaft, boilers and ironwork—was £3,723 (\$18,116.11), and the sewage-disposal works on the town quay cost about £3,000 (\$14,598). This is exclusive of the Shirley and Freemantle works, which consist of three reservoirs very similar in construction to those at the town quay.

The annual expense for burning refuse is as follows:

Description.	Amount.
Two stokers, one by day and one by night, at 25s.	£ 130 0 0
Two feeders, one by day and one by night, at 23s. 4d.	121 6 8
Total per annum	251 6 8
	1,222.97

VALUE OF REFUSE AS FUEL.

The quantity of refuse burned per day of twenty-four hours is a little over fifty tons, so that the cost of burning is about 3½d. per ton.

The minimum quantity burnt per day of twenty-four hours is about twenty-five tons, which has been sufficient to maintain steam for the engines of 31½ indicated horse-power. This is equivalent to 16 cwt. of refuse per indicated horse-power for twenty-four hours, or 75 pounds of refuse per indicated horse-power per hour.

The annual expenditure for the sewage clarification and disposal is as follows:

Description.	Amount.	
Precipitating material for 365 days, averaging about 5s. per day ..	£ 90	\$437.94
Engine-driver and laborers at reservoirs ..	128	622.84
Two men at wharf mixing manure ..	104	506.06
Total per annum ..	322	1,566.84

REVENUE.

The amount realized from the sale of manure and for the supply of compressed-air during last year (1891) was £600 (\$2,919.60). The products from the destructor — including concrete slabs, clinkers, used for concrete foundations, and fine ashes for mortar and for foundations of footwalks — represent about £300 (\$1,459.80). To these may also be added the saving of the coal which was required for working the engines previously to the establishment of the destructor.

In a dispatch subsequent to the foregoing Consul Bradley transmitted a printed report, prepared by the engineer-inspector of the local government board of London, from which the following extracts are taken:

BURNING SCREENED REFUSE.

The burning of screened or selected refuse under steam boilers is in practice at Manchester, Bolton, Glasgow and Birmingham. At the three first-named places large grate-area, a thin fire, and frequent clinkering and firing are depended on; but at Birmingham there are special arrangements which deserve notice. At the Montague Street wharf, where by far the larger part of the refuse is burned under boilers to raise steam for drying excreta, there are thirteen multitubular boilers, eleven of them 13 feet long and two 11 feet long, and all 6 feet 6 inches in diameter. They have fire-grates 5 feet wide and 5 feet 6 inches long, fitted with patent lifting and moving fire-bars, designed to break up the fire and prevent clinkers forming in large cakes and to keep the spaces between the bars clear. The play of the bars can be regulated to suit the kind of refuse burning, or it can be stopped entirely. The effect when in use is to work the clinker to the back, where it falls over the end of the fire-grate and is removed when cool from the ash-pit. The refuse burned under these boilers is that from which the fine ashes have been screened for mixing with excreta, and there is no difficulty in maintaining steam at sufficient pressure to be used for drying excreta. There are, besides, two Galloway boilers, 27 feet 6 inches long and 7 feet 6 inches in diameter, fed with cinders screened from the refuse and mixed with slack, which raise steam for two 25 horse-power engines which drive the machinery of the yard.

THE FIRE-DESTRUCTION SYSTEM.

The escape of dust and of smell from the chimney must be regarded as defects to be remedied, especially where the air is not already polluted by factory chimneys. Much in the way of prevention may be effected by careful and systematic firing and feeding, combined with large flues or dust chambers, frequent removal of dust, and proper regulation of the draught. When these precautions do not suffice, passing the products of combustion through or over a second fire appears to be the most promising means of destroying smoke or smell and preventing the escape of dust.

In other respects the burning of town refuse by furnaces already in use appears to be successfully carried out. There is no accumulation of any offensive material at the works, and very little smell. Everything combustible is burnt within a few hours of collection without nuisance and at a cost which compares favorably with the old system of carting the refuse to tips. A valuable means is at the same time provided for effectually disposing of infected bedding and clothing, condemned meat and provisions, and the carcasses of diseased animals. Further improvements may be expected, but the results already attained show that the destruction of the refuse of towns by fire is not only practicable but is the best and often the only way of dealing with it in a manner to satisfy sanitary requirements.

BURNING DISEASED ANIMALS AND CONDEMNED FOOD.

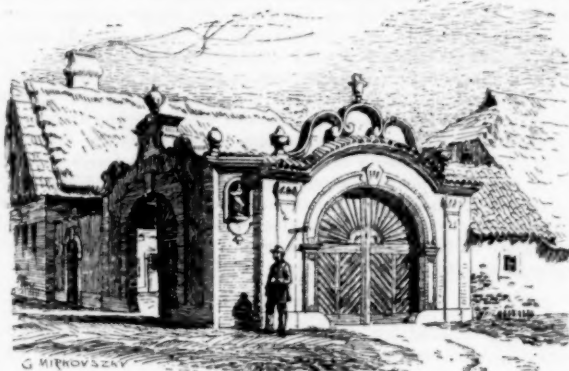
Considerable care is now taken in Leeds with the charging and clinkering of the furnaces. At first all the cells were clinkered and charged, one after the other, every two-and-a-half hours as quickly as the men chose to do it; but now a pair of cells are charged every twenty-five minutes regularly. The result is that the temperature in the main flue is more uniform, and there is less smoke from the chimney.

The fires are kept continuously alight, except when drawn for repairs. The furnaces are filled up and banked about 1 p. m. on Saturday, and the damper is closed at 7 p. m. till 12 on Sunday night. The amount burned in the year ended August 31, 1886, in twenty cells was 35,248 tons, giving an average of 34 tons per cell per week, consisting of refuse from ash-pits, with trade and market refuse. Mr. J. Newhouse furnished the following list of other things de-

stroyed during the same period: Eleven cows, 3 calves, 17 sheep, 4 goats, 298 hogs, 5 turkeys, 2 carcasses of beef, 28 quarters of beef, 9 cwt. of pork, 10 cwt. of pickled tongues, 12 cwt. of herrings, 218 cwt. of shellfish, 1 cwt. of sugar, 285 dogs, 109 cats, 13 foxes, 1 sea serpent; 147 mattresses, bed, pillows and bolsters; 7 blankets, quilts and sheets; 36 pieces of carpet, 7 hearth-rugs and mats, 33 pieces of wearing apparel, 1 bedstead, 1 sofa, 1 chair and 1 bundle of rags.

This is not an unusual year's work, and the destruction of diseased animals and condemned food is constantly effected without offence. On one occasion, on an outbreak of swine fever, 200 hogs were burned, and in one afternoon 50 were destroyed, 3 at once in a cell, only a faint odor of roast pork being perceptible on a hill to leeward of the chimney.

DEFENSIVE ASSOCIATION.¹



Gateway to a Bohemian Farmhouse. From *Architektonische Rundschau*.

ON the 21st of March, 1884, a law was signed by the President of the French Republic, designed to encourage certain professions and employments, by authorizing those engaged in them to form associations for the advancement of professional interests. This law is, in substance, as follows:

After repealing a former law, which forbade the association of more than twenty members of any trade or profession without special authority from the Government, it says:—(Sec. 2.) "Professional syndicates or associations, even of more than twenty members, exercising the same profession, similar trades, or allied professions, concerned together in the production of definite results, may be freely established, without the authorization of the Government." (Sec. 3.) The professional syndicates have for exclusive object the study and defence of economical, industrial, commercial and agricultural interests."

Section 4 provides that such syndicates must deposit copies of their constitution and by-laws, and lists of their officers, with the Government officials, but Section 5 says that "Professional syndicates regularly constituted, in accordance with the provisions of the present law, shall be allowed to consult freely for the study and defence of their economical, industrial, commercial and agricultural interests."

The rest of the law is not important to our purpose, but it may be remarked that no foreigners can become members of these syndicates, that they are not allowed to hold real estate and that any member may withdraw at any time, notwithstanding any rules or by-laws of the syndicate.

This law was probably intended more for the benefit of working-men than for that of the more highly trained classes of the community, but, even before it was signed, the members of various professions, recognizing the advantages which it offered, had made preparations to avail themselves of it. Among these were the men who have for many years conducted, with so much zeal and prudence, the affairs of the great French architectural association, the Société Centrale des Architectes de France. In February, 1884, an international congress of architects was held at Nice, and, as a result of the discussions before the Congress, the Société Centrale, which had borne a prominent part in it, appointed a Commission, to prepare a draft of a constitution and by-laws for a Mutual Defence Association, to be created among architects for the protection of their professional interests.

In May, two months after the passage of the law authorizing associations of the sort, the Commission reported to the general assembly of the Société Centrale a draft, which was, in principle, adopted by the Society, and received, two weeks later, the sanction of the Congress of French Architects, followed by the formal approval of several local professional societies. Five months afterward, the Mutual Defence Association was organized, with a large membership, which has ever since continued to increase, and the society is now an important factor in French professional life.

Although the Mutual Defence Association is distinct from the Société Centrale, which does not, under its charter, possess the special powers required, the new society is practically the child of the

¹ A paper, by T. M. Clark, F. A. I. A., read before the Twenty-seventh Annual Convention of the American Institute of Architects and the World's Congress of Architects, held at Chicago.

older one, which gives it the use of its rooms, and furnishes it with officers, the President of the Société Centrale being *ex officio* President of the Mutual Defence Association, while the other officers, although elected, are usually chosen from among the members of the older body.

As now constituted, the Mutual Defence Association consists of architects who must either be members in good standing of the Société Centrale, or of one of the great provincial societies, or must have their honorable character guaranteed by three members of the Association. Members of the great societies are only required to send notice of their wish to join the Association, but architects not belonging to any recognized society must, in addition to furnishing the guaranty of three members, receive a favorable vote from the Committee of Administration, after their names have been posted for two months in the rooms of the Association.

Upon election, each member pays an entrance-fee of thirty francs, and each year thereafter an assessment of twelve francs. The Association, in return for this, undertakes to intervene for the settlement of lawsuits or controversies in which the member may become engaged, where the dispute involves a question of professional interest, such as the extent of the architect's responsibility, the just amount of his fees, his rights in competition, or his artistic property in his work. If the controversy cannot be amicably settled, and the law has to be appealed to, the Association pays all the expenses of the suit, including counsel and court fees, besides such costs and expenses as the member may be condemned by the court to pay, if the suit should be decided wholly or partly against him. If the decision should be favorable to the member, and the opposing party should be condemned to reimburse him for the expenses of the suit, as is customary in French building cases, he is required to repay, out of the sum thus recovered, the advances that the Association may have made for his benefit. A Judiciary Council of eight lawyers, practising before different courts, is permanently attached to the Association, and advises the Committee of Administration on questions coming before it; but members are allowed, in their own cases, to select such counsel as they may wish, the Association paying the fees. On making application for aid, the applicant must submit a complete statement of the controversy, accompanied by the documents necessary to explain it. The Committee of Administration, with the help of the judiciary council, examines the papers, and decides whether the Association shall intervene in the affair. Where the dispute is purely personal, intervention is refused, but where it is partly personal and partly professional, assistance may be granted on the professional points. Usually, in French building cases, the first step is for the court to appoint one or more experts, according to the importance of the matter, to examine the work, and report to the court. French architects do not always have the highest opinion of the fairness of these official experts, especially in country districts, and where such an examination has been ordered, the Association will, at the request of a member, send one of its own members to be present at the examination, and make his own report as to matters of fact to the Committee of Administration, before the decision of the latter as to the propriety of intervention is given. Where the member is proved, or is considered by the court, to have been in fault, and is condemned to pay actual damages, besides costs, the costs and counsel fees only are defrayed by the Association. In case of the death of a member, his right to the aid of the Association, in regard to claims connected with his professional practice, passes to his heirs.

In addition to its special work, the Association, through a standing Commission, keeps and publishes a record of all cases involving matters of interest to the profession that are decided in the French courts.

It is hardly necessary to say that this beneficent association, notwithstanding the notorious indifference of architects to matters of common professional interest, has grown steadily and rapidly, and now includes several hundreds of the best and ablest architects in France. It has accumulated a large reserve fund, has intervened successfully in a great number of cases, and enjoys the benefit of advice from a standing council of perhaps the ablest lawyers, in regard to building matters, in France. How great an advantage this may be, those who have been concerned in building cases in this country, and have observed the usual incapacity of lawyers for comprehending any matter of construction, or of setting forth properly their clients' cases where such matters are concerned, can best understand.

With this account of the great French society the history of associations among architects for the defence of their interests before the courts must, unfortunately, end. In England, although the dignity and artistic advancement of the profession are well taken care of, mutual help in business matters is hardly known; and although the English architects sometimes speak with admiration of what their brethren in France have accomplished in this way, they do not seem to think of imitating their work in their own country.

In Germany, the ties of professional societies are far stronger than with us, stronger, perhaps than in any other country, and the rules of professional ethics, which include, to a certain extent, mutual support against injustice, are loyally observed among their members; but there seems to be among the German architects no specific fund for this purpose, and no association devoted exclusively to providing and administering such a fund; and it is quite possible that the resources obtained in this way would be less needed, as well as less

available, under the strict control which the German law exercises over building matters than under a republican system.

With us, it is hardly necessary to say that, although an immense advance has been made in what may be called the ethical culture of the profession within the last twenty years, nothing in the way of defensive association exists among architects. The subject has attracted a good deal of interest in the profession, for there is probably no country where architects are so much exposed to impositions of all sorts, and are so defenceless against the ignorant prejudices of lawyers, judges, juries and the public, as in our own, but nothing has been accomplished, for the reason, undoubtedly, that organization for such a purpose, is, under our laws, very difficult. The present writer has often been asked for suggestions in regard to the formation of defensive societies among architects, and, several years ago, some influential architects in and about New York took the first steps toward associating themselves with this object, but none of our States seem to have general laws under which such societies can be recognized, and without the protection of some statute, of the type of the French Law of Professional Syndicates, an association of members of any profession, formed for the purpose of helping each other to carry on lawsuits against persons outside, would be looked upon with extreme disfavor by the courts.

If, however, the present state of the law in this country would hardly admit of the formation of a society for the exclusive purpose of mutual defence, it does not follow that architects may not lend their moral support, and even pecuniary aid, to protect their brethren against injustice.

For example, there seems to be no reason why the American Institute of Architects, which has very extensive powers in promoting the good of the profession, should not have a standing Jurisprudence Committee, to examine cases submitted to it by architects, and, with the help of counsel, give opinions or advice, either directly, or through report to the Directors of the Institute. An admirable feature of the French system might be imitated by authorizing this committee, on application, to make expert examination of buildings in regard to which controversy had arisen, reporting to the Board of Directors, and, on the recommendation of the committee, an appropriation from the funds of the Institute might, it would seem, with propriety be made to cover counsel fees and court costs in cases in which the interests of the profession were involved. In the discussions which took place before the French Chamber of Deputies upon the law of Professional Syndicates, a point which was urged in its favor by the Government was that, under the existing laws, controversies involving technical points were enormously expensive to the litigants, as well as to the community, on account of the cost of the expert testimony which must be called in to determine them, and that as the professional syndicates would, if the passage of the measure permitted their establishment, appoint committees from their own body to determine technical disputes for their members, these expert committees would be of great service as referees in cases before the courts. In the same way, a committee of the Institute, of the kind suggested, would be very likely to have questions submitted to it by the public authority from time to time, and would thus assist in maintaining that relation between the public and the Institute which is acknowledged to be so desirable.



DULNESS IN BUILDING OPERATIONS.—
THE POST-OFFICE.—THE SCHOOL EX-
HIBITS AT THE FAIR.—TWO INDI-
VIDUAL ARCHITECTURAL EXHIBITS.

DURING these summer days all interests centre around the Fair. There might almost be said to be no interest in anything else.

This fact combined with that of hard times, has put as complete a stop to any building activity as if with the close of the Fair would come an end of life here in Chicago. To be sure, certain belated buildings that were to have been finished earlier in the season are having their final touches put to them, and this gives an air of building activity to the down-town districts which is somewhat deceptive. Such have been the new Art Institute and the Athletic Club now finished, while the new Marshall Field building, the Columbus, the Old Colony, the Monadnock and several others still continue to appropriate the streets to their own use. One or two large buildings are just being begun also, but the schemes for erecting them and in fact the architects' plans also were completed before the panicky times had actually begun. In the architects' offices a tranquil summer quiet prevails, which is unbroken save by an occasional murmured prophecy of what is or rather is not to be done next winter.

With all the varied interests at the Fair it is perfectly apparent that every one, no matter what his specialty, can find more than enough to occupy his thoughts and attention, leaving regular city matters till the time comes when all this passing show shall be with us no more.

Naturally, great interest has been felt here, as every where else,

over the decision of the coroner's jury in the cold-storage accident. In the verdict binding over to the grand jury, Fire-Marshal Murphy, Director-of-Works Burnham and the President and Secretary of the cold-storage warehouse, it seems a little as if it had been decided that some one must be guilty, and not being able to exactly tell whom, it would be safer to select every one in any way connected with the unfortunate affair. There seems to be the strongest feeling of injustice done towards the Fire-Marshal and the Director-of-Works. The architect of the building comes in for no share of the censure, as his plans were approved; he was not employed to superintend the work and his plans, as drawn, were not carried out.

Since the disaster at Washington at the old Ford's Theatre, it is a little amusing to see the attitude taken by Supervising Architect O'Rourke, in regard to the Federal Building here in the city. He has, after studying the matter a little in his own office at Washington, officially notified Secretary Carlisle of his belief that the building ought to be torn down, as being unsafe and jeopardizing the lives of those whose business brings them to the building. Notwithstanding this notification, the repairs go merrily on and the place grows daily more unsightly to the eye, by the addition which is being built around the building to the sidewalk's edge.

Next in interest to the architectural exhibit made by the profession at the Fair, ought to stand the display made by the different schools. It is surprising and to be regretted considering the size of the school exhibits how poor a display of architectural drawings is made by all the countries, our own being no exception to the rule. The school work is found chiefly in the gallery of the Manufactures Building, though there are a few exhibits in other places. The displays are in themselves very large. Among foreign nations Germany, here as in other departments, is conspicuous by her painstaking and conscientious exhibit. The chemical, scientific and engineering display as well as the manual-training for boys and girls is most thorough. The Karlsruhe Kunstgewerbe Bauschule is especially conspicuous for the high grade of its work from its applied-art department. This exhibit is not so large as some others, but the quality of the work is extremely good. The wood-carving here is perhaps better than any displayed by a school of any other nation, if we except Japan. The work in metal is equally excellent and the designs in water-color, for stained-glass, wall-decoration, etc., combine a great deal of technical excellence with a certain amount of artistic feeling. The architectural drawings are correspondingly good in execution, if one can judge from the very scattered examples that are given.

Russia with a comparatively good manual-school exhibit has no architectural drawings whatever, while England is sparingly represented in this class of work. Owing to the peculiar style of Russian architecture it is especially to be regretted that some examples of students' work are not here given.

England's school display comes from those institutions which are under the South Kensington management, and glanced at as a whole would impress one as a large and thorough display. In this department the architectural drawings are as unsatisfactory as the collections found elsewhere, as they are the work principally of the elementary classes, and give but little idea of the scope of the schools, or of the work done by all grades.

All the nations above mentioned have their displays in the gallery of the Manufactures Building, while the French schools make theirs in the little French Government Building down on the Lake Shore. On entering this structure one realizes that Paris is France, for all the work here comes from that city. It is entirely from the town schools, being, of course, work of children of younger years than did the work in other displays. The drawings themselves though only the preparatory steps for later courses in art schools are extremely good. It is to be regretted that this exhibit is at present in a somewhat dilapidated condition, owing to the fact that the shelter which houses them was built as a partially open pavilion, so the fine dust has blown over the protecting glass on dry days, and apparently torrents of rain on wet ones. Even in these early efforts, however, it is curious to note that delicate artistic feeling which in maturer hands results in such delightfully perfect specimens of all kinds of art-work in this especial nation. What few pieces of architectural drawing there are, from the École des Beaux-Arts, are in the French architectural section of the Art Palace. In the French Government Building a goodly number of architectural drawings are found beside the school work, as many of the plans for existing Paris schools are displayed as well as a number of the municipal buildings.

Japan's educational exhibit is found at the most western extremity of her main pavilion in the Manufactures Building. It is quite out of the way and unless told before where it was it would only be stumbled upon by accident, except by the few people who "do" the Fair systematically. The chief display is from the Government Fine Arts School at Tokio. Among this collection is some really charming wood-carving, and a most interesting series of studies in lacquer, showing the different stages such work must pass through. A small number of architectural drawings are shown, especially noticeable like all other Japanese work for their great dexterity of handling. It is curious to notice that the mere technical parts of both their engineering and architectural work are much like our own, but besides the essential work they introduce here and there an occasional bit of their own peculiar washes and stippling. Their most preten-

tious study is a plan for a penitentiary, which is not characterized by any very interesting features.

Occasionally in some of the foreign buildings there is an architectural display of some drawings of some public buildings, but generally speaking such displays do not contain enough of interest to make it worth one's time to give them any special attention. These drawings have most of them served a purpose at previous World's Fairs, as many of them, such as the Spanish, have tell-tale dates upon them often dating back among the seventies.

The bulk of the school exhibits of the United States is in the Manufactures-Building gallery, and here it is especially to be regretted that the architectural departments have made so poor a showing: Columbia and Cornell have absolutely nothing, which considering the circulars they sent out and the position they take amongst technical schools is, to say the least, surprising. They may be *hors de concours*, but it is usually customary to let judges other than the competitors for the first place in any kind of a competition decide such matters. The Massachusetts Institute of Technology is far from being thorough in its display; while the drawings, which are shown, being as good as they are, it becomes a foregone conclusion that a much more interesting exhibit might have been made by the school if any real interest had been taken in the matter. As a whole the display from the Pratt Institute in Brooklyn is one of the most satisfactory, though the architectural work is evidently done by more immature hands than that of the Institute of Technology, and consequently is of a lower grade of excellence. The work of the manual-training class at the Pratt Institute is especially good, and fairly puts to shame the display from our Chicago Manual-Training school. There is about as great a difference between the Eastern and Western work in this case, as there is generally between the foreign school work and that of our own schools.

A very excellent school display is made in the Illinois State Building by the University at Champaign, in fact is the only full display made by any college. This school's greatest reputation rests with its engineering class, but some good conscientious architectural work is displayed. As might be expected from the nature of the University the practical technical work receives the chief attention, while the artistic side is more lightly touched upon. The portfolios of drawings labelled "aesthetics" do not contain the highest kind of art compositions. The entire display, however, is deserving of much credit. In the architectural department, as elsewhere, each year is carefully represented and the faults as well as the virtues of the institution are honestly shown, so that a most thorough knowledge of the methods and scope of the University can be obtained from the exhibit. It is much to be deplored that some of the other large and larger institutions of the country did not see fit to make displays equally conscientious in character.

Our own Art Institute makes but a feeble effort at a display in its architectural department, while its classes in designs come out as strong as any in any of its other departments.

Two amusing little exhibits are in this same gallery. One is made by an architect from the interior of our State and consists of an entire and independent exhibit of drawings for school-houses, designed by this same person. Why this display should thus be placed by itself there seems to be only one way to explain. Surely the gentleman's ethical principles may suffer more by the act than his drawings, as being surrounded by — themselves there is not brought to bear on them that high grade of comparison, which might have been necessary had their originator joined with the rest of the profession in a general exhibit.

But a few steps away from this unique display, is one made by a fellow architect, but this time of the gentler sex. Her work is not all of it absolutely bad, but the curious combination of the exhibition of designs for first this, then that, is very amusing as coming from one person. This work certainly does not gain by its surroundings as before we are fairly off of some feminine bit of architecture or stained-glass, we find we are being harassed with a portion of some neighboring exhibit in the shape of a "crazy quilt" from Colorado or some productions similar in character.

The Board of Judges for Fine Arts have met and have completed the organization of the four sections which are to judge the painting, sculpture, architecture and printing in the Art Palace. The judges for architecture are W. W. P. Longfellow, United States, President; William Emerson, Great Britain, Secretary; Messrs. Paria, Spain; Spera, Italy, and Jaffé, Germany.

PILE FOUNDATIONS, CHICAGO.

THE use of deep-pile foundations has been strongly advocated as advantageous in Chicago by General William Sooy Smith, M. Am. Soc. C. E., and in a recent issue of the *Technograph* he describes the work done in this direction for the foundations of the new Public Library building in that city. The system consists in abandoning the spread foundation of steel and concrete resting on the unstable clay which underlies most of the business parts of the city, and employing instead a foundation of deep piles reaching down to the bed of compact clay and gravel about forty-five feet below the city datum. The reason advanced for this change by General Sooy Smith is that where independent spread foundations are used some of the largest

buildings have been observed to settle irregularly after completion. The deep piling is claimed to be much more stable.

In the new Public Library building trenches were dug on the lines of the walls sufficiently wide to permit the necessary shoring, and to include three rows of piles driven about three feet between centres. The character of the upper clay stratum at this place is shown by the fact that it crowded through the smallest crack in the sheet-piling almost as if it were quicksand. The depth of excavation permitted sawing and capping the piles to a point such that the highest level of timber used in the grillage is fourteen feet below the city datum which is about the level of Lake Michigan. From this grillage rubble masonry is carried up to the neat masonry courses of the basement. While the work was in progress, a test was made to determine the bearing-power of four of the piles of Norway pine, after they had been driven in the trench. The driving was done with a steam-hammer weighing in all 8,300 pounds, the hammer alone weighing 4,500 pounds, and delivering 54 blows per minute with a stroke of 42 inches. The last 20 feet of the driving was done by means of an oak follower. These piles were driven about two-and-one-half feet between centres.

The bearing-power of the four piles was tested by building a platform on top of them, which was loaded with pig-iron. Levels were carefully taken on each of the four. The piles stood four days with a loading of $5\frac{1}{2}$ tons per pile, eight days with a loading of 37.3 tons per pile, and ten days with a load of 50.6 tons, all without a settlement exceeding 0.01 foot. In discussing these tests General Scoysmith states that if 250 pounds per square inch be estimated for point resistance, the average frictional resistance will be about 3.2 pounds per square inch of side surface of pile, or about 432 pounds per square foot. For an ordinary pile, 7 inches through at the top and 14 inches at the butt, driven 45 feet, the frictional resistance he assumes to be 59,000 pounds and the point resistance 6,000 pounds. Hence he computes a total earth-resistance of 65,000 pounds with a factor-of-safety of from 5 to 6. The resistance of the pile considered as a column he estimates at 65,000 pounds, with a factor-of-safety of 3 to 4.

Another noticeable building on deep-piles is the new Illinois Central Railway passenger-station in Chicago, a structure 180 by 220 feet in plan and consisting of an office portion nine stories high, a tower thirteen stories high and a station three stories high, with which is connected an eight-track train-shed 680 feet long. According to a paper in the same magazine, written by C. J. Mitchell, an assistant civil engineer of the railroad borings taken on the site showed from 10 to 20 feet of rubbish which had been dumped there immediately after the great fire, below which were irregular strata of stiff blue clay and quicksand. Rock was more than 60 feet below the surface. This condition of things led to the adoption of deep-pile foundations. About 1,700 were driven in all, arranged in groups or clusters under each column. Under the head-house there were eight, thirteen and sixteen piles in the groups, under the office twenty to forty-two, and under the tower one of the corner pilasters had seventy-three piles. These piles were usually arranged on the square, lining both ways, but alternating in rows 18 inches apart, so that the distance between centres was $25\frac{1}{2}$ inches. This is said to be as close as they could be driven, and even when the points were spaced in this way the tops were sometimes considerably out of line after driving.

In size the piles were from 40 to 60 feet long, averaging 51 feet, and from 11 to 16 inches through at the butt end. Thirty-two per cent were black-gum, 22 per cent pine, 7 per cent basswood, 21 per cent oak, 15 per cent hickory, with a few maple and elm. A cast-iron cap was used in driving, but in spite of this 8 per cent of the heads were crushed or split. The pine piles had the poorest driving record, the heads of 12 per cent being crushed and 5 per cent broken. The gum had 7 per cent crushed and 0.6 per cent broken; the oak had 5 per cent crushed and 0.8 per cent broken; the hickory had 3 per cent crushed and none broken, and the basswood had 8 per cent of the heads crushed. In several of the oak piles the sap wood was separated from the heart, the cores being driven through the shells. All the piles were cut down to form a point 4 inches square.

Drop-hammer drivers were used on this work, the hammers weighing 2,800, 3,200 and 3,800 pounds respectively. The best record, 26 piles driven home to a depth of at least 60 feet, was made by the driver having the heaviest hammer, although there is some doubt in Mr. Mitchell's mind as to whether this result was due to the greater weight of the hammer or to the greater ability of the crew in charge. The last blow was generally given with a fall of 35 to 40 feet, though when driving close to a building a fall of 50 feet was used with about the same success. The penetration at the last blow averaged about 3 inches, though a number went less than $1\frac{1}{2}$ inches. The cap prevented much loss by brooming. The distance to which could be traced the vibration due to the driving varied with the fall, the character of the soil, and the spacing of the piles. It was easily felt at 400 feet, while the effect at 75 feet was quite marked. It is stated, however, that in doing instrumental work the vibration was sometimes less severe within 25 feet of the driver than at several times that distance.

The piles were usually driven in groups until the tops of all were below the leads when the driving was completed by means of a follower. Water was kept running around the pile at the surface while the driving was in progress, as this seemed to be of consider-

able aid. After the piles had been driven the tops were sawed off to a uniform height of 3 feet below datum, in order that all the timber should be below low water. As this was from 10 to 14 feet below the surface the trenches had to be sheathed and kept drained by continual pumping. After the piles were cut off and the earth excavated 18 inches below their tops, rich Portland-cement concrete was tamped in even with the tops. Oak caps 12 inches square were then drift-bolted to the centre of each pile, and the space between the timbers filled with concrete. It is believed that this piling will last many years, as pile trestles built twenty-one years ago on the same railway are stated to be perfectly sound now wherever they were below the permanent water level.

A rather interesting set of observations on the effect of pile-driving on adjacent objects is described by Mr. Mitchell. In one instance a group of sixteen piles was driven about 15 feet from a group of eight which had been sawed off to a uniform height and had waling-pieces drifted on. These waling-pieces were raised 4 inches on the side next the driver and one inch on the opposite side. Under similar conditions, when sixteen piles were driven about 15 feet from a finished pier consisting of eight 47-foot piles, $2\frac{1}{2}$ feet of grillage and concrete, and 12 feet of stone masonry, the pier rose five-eighths of an inch on the side next the driver, but on the further side it remained at the original elevation. Two weeks later this pier was again tested, and the high side was found only one-fourth of an inch too high, while the other side had not changed. Again, in a group of seventy-two piles a spike was placed in the head of the first pile driven, and elevations were taken daily. The first two days the pile sank one-half inch, then rose steadily until fifty piles had been driven, when it was three inches above the first height, the greatest rise in one day being three-fourths of an inch. This pile was 55 feet long, of which 45 feet were in the ground.

ALLAIRE, N. J.: A DEAD VILLAGE.



Triumphal Arch, Piazza del Commercio, Lisbon.

LESS than fifty miles from the bustle and turmoil of New York there is a quiet spot which, from its unlikeness to anything in this very new and very wideawake country, seems to have been transplanted from the Old World. Few people have heard of it, fewer still visit it, and yet, apart from its beauty of forest and stream, it has an historic interest. I allude to the ruined village of Allaire—a few miles from the seacoast—in Monmouth County, N. J.

Ruins of any kind have always exercised a strange fascination over my imagination, and

what I heard of this deserted village so excited my curiosity that I took an early opportunity of visiting it. It was a lovely May morning when, with a merry party, I set out for the drive to Allaire. The woods were aglow with the scarlet blossoms of the swamp-maple, the wild plum, and a brilliant yellow shrub which was quite unfamiliar to me. Everywhere were signs of the activity which spring brings with it—farmers were ploughing or sowing, fires of brush-wood sent their pungent smoke into the air, and signs of life were on all sides. A sudden turn in the road took us from the present into the past, from the energy and bustle of life into the silence and stillness of death.

We were in the midst of a village. Pretty little houses nestled under the shade of mighty trees. A quaint chapel stood by the brook which ran briskly down the slope, its branches carpeted with violets. A little square school-house, a counting room or office, barns and storehouses were on either side. The silence was almost oppressive. We looked in vain for a living creature. The only sign of life was the motionless figure of an eagle standing by his nest in the fork of a dead tree. As we came closer we saw that many of the houses were in a state of decay, the window-casements gone, and their vacant places seemed like sightless eyes. The shutters of the school-house flapped in the breeze. Through the window of the counting-room could be seen quantities of papers littering the floor, while the mouldering remains of ancient vehicles were plainly visible through the cracks of the weather-beaten barns. High above the rest loomed the crumbling walls of three huge brick buildings, whose pointed arches and vine-clad side gave them a weird picturesqueness. Inside one a slender tree had taken root, and taking a turn in its stem,

looked through one of the openings where once had been windows. In the distance was a large, comfortable-looking old-fashioned dwelling, which, with vegetable and flower garden and a brood of downy chickens near by, made a contrast to the rest of the scene.

A hundred years ago, had we visited Allaire, how different we would have found it. Those great, empty, crumbling buildings were filled with machinery and men, busy from dawn to dusk. Each house was the shelter of a family, the school-house rang with merry childish voices, grave discussions were held in the counting-room, and contracts involving fortunes were signed, and in the roomy manor-house the owner of all this lived and entertained in a style and magnificence befitting his fortune—in those days considered colossal.

In the early part of the century the Allaire Iron Foundry was at the height of its prosperity. A special line of wagons carried the finished goods to New York, and brought back needed supplies, and during the war of 1812 all the iron used by the Government came from Allaire. Those great chains which our forefathers stretched across rivers and deemed themselves safe behind, the quaint gun-carriages, parts of the guns themselves, and many other necessities of war were made in these now deserted and ruined buildings. What was the cause of the failure of the foundry I do not know, but about fifty years ago the iron-works closed forever. The present owner of all this beauty and desolation, Mr. Henry Allaire, was born the lord to a barren heritage. He lives with his mother in the old manor-house, now so quiet, once the scene of so much splendor and gaiety. He may be said to have realized the Biblical idea of turning the sword into a ploughshare, for he now farms the land from which for so long was drawn the material for warlike weapons.—H. S. in the *N. Y. Evening Post*.

THE ANNUAL CONVENTION A. I. A. AND THE WORLD'S CONGRESS OF ARCHITECTS.



Capitals from the Church at Rasdorf. From *Zeitschrift für Bauwesen*.

MONDAY, JULY 31, 10.00 A. M.

First Session.—The Twenty-seventh Annual Convention of the American Institute of Architects. President, Edward H. Kendall, New York. Secretary, Alfred Stone, Providence, R. I. (For details of convention see special programme issued by the American Institute of Architects.)

MONDAY EVENING, 8.00 P. M.

Formal opening of the Congresses in the Department of Art.

TUESDAY, AUGUST 1, 10.00 A. M.

Second Session.—The Twenty-seventh Annual Convention of the American Institute of Architects.

TUESDAY, AUGUST 1, 2.00 P. M.

Formal opening of the Congress of Architects. D. H. Burnham, Chairman.

Papers.—"The Organization of the World's Columbian Exposition." D. H. Burnham, Chicago.¹ "The General Schemes and Plans of the World's Columbian Exposition." Frederick Law Olmsted.¹ "The Construction of Buildings, Docks, Piers, Bridges, etc." E. C. Shankland, Chief Engineer, World's Columbian Exposition.¹

WEDNESDAY, AUGUST 2, 10.00 A. M.

Papers.—"Conditions of Architecture in Japan." Josiah Conder, F. R. I. B. A., Tokio, Japan. (Read by Tatsuzo Soné, Member of the Society of Japanese Architects.)² "Public Competitions." J. Gaudet, First Vice President of the Central Society of Architects of France, Paris.³ "On the Use, for Transportation, of the Lagoons, of Lake Michigan, of the Intramural Railway, of the Alley Railway, of the Great Trunk Lines, of the Terminal Facilities, of the Chair System, etc., of the World's Columbian Exposition." W. H. Holcomb, Chief of Transportation, World's Columbian Exposition.¹ "The Mechanical Power Plant of the World's Columbian Exposition." Charles F. Foster.¹ "The Electrical Plant, etc., of the World's Columbian Exposition." R. H. Pierce, Chief Electrical Engineer, World's Columbian Exposition.¹ "Acoustics in Relation to Architecture." Alex. F. Oakey, San Francisco, Cal.² "Comparison of Paris and Columbian Expositions." Bannister F. Fletcher, Honorable Secretary, Architectural Association of Great Britain, London.²

THURSDAY, AUGUST 3, 10.00 A. M.

Papers.—"Architecture in Apartment Buildings." F. Adolphe Bocage, Member of the Central Society of Architects of France, Paris.³ "Sculpture in its Relations to Architecture." William Emerson, Honorable Secretary, R. I. B. A., London.² "Economic Conditions of Architecture in America." Barr Ferree, New York.²

¹ Prepared for the American Institute of Architects and read before the Congress by their courtesy.

² Prepared for the Congress of Architects.

"Some Considerations Affecting the Development of Characteristic Style in the United States." Henry Van Brunt, F. A. I. A., Kansas City.¹ "Ethics in Architecture." A. J. Bloor, F. A. I. A., New York. "A Review of Recent Plumbing Practised in the United States." Glenn Brown, F. A. I. A., Washington, D. C.¹

FRIDAY, AUGUST 4, 10.00 A. M.

Papers.—"Government Practice." Jeremiah O'Rourke, F. A. I. A., Washington, D. C., Supervising Architect, U. S. Treasury.¹ "The Use of Color in Architecture." H. Langford Warren, F. A. I. A., Boston, Mass.¹ "Foundations of Buildings." William R. Hut-ton, F. A. I. A.¹ "Fireproof Construction and the Practice of American Architects." P. B. Wight, F. A. I. A., Chicago.¹ "Statutory Regulations." William Worth Carlin, F. A. I. A., Buffalo, N. Y. "The Aeration of Cities and their Buildings." Everett T. Potter, F. A. I. A., New York.¹ "Architectural Engineering." Thomas C. Clarke, F. A. I. A. "A Review of Chicago Architecture." Frederick Baumann, F. A. I. A., Chicago.¹

SATURDAY, AUGUST 5, 10.00 A. M.

Papers.—"Polychromatic Treatment of Architecture." Louis H. Sullivan, F. A. I. A., Chicago.² "Library Buildings." J. L. Smithmeyer, F. A. I. A., Washington, D. C.¹ "The Influence of Building Laws upon Architectural Development." Clarence H. Blackall, F. A. I. A., Boston.¹ "Association for Mutual Defence." T. M. Clark, F. A. I. A., Boston.¹ "Cohesive Construction, Past, Present and Future." R. Guastavino, Chicago. "Superintendence in Architecture." R. W. Gibson, F. A. I. A., New York.¹ "Engineering in Architecture." Louis de Coppet Berg, F. A. I. A., New York.¹

ANNUAL ADDRESS OF THE PRESIDENT OF THE AMERICAN INSTITUTE OF ARCHITECTS.

FELLOW MEMBERS:—

On the tenth day of January last, a meeting of your Executive Committee was called at Washington in order that, together with others especially invited, it might appear before the Senate Committee on Public Buildings and Grounds to urge its favorable report upon the Tarsney Bill which had passed the House of Representatives in the summer of 1892. The result of this hearing, which was attended by many of the most distinguished and zealous of our members, was the passage of an amended Bill which was duly signed by the President and now awaits enforcement by the Secretary of the Treasury.

An important subject for discussion at this convention will doubtless be the best method, if any, of producing good results under the existing law.

On March 22, previous to the appointment of one of our Fellows as Supervising Architect of the Treasury Department, a delegation of the Institute, which, by the request of Mr. Carlisle, was a very small one, was cordially received by the Secretary who requested, after listening to the arguments of Mr. Post, Mr. Price and your President, that a written statement be sent to him, setting forth the views of the Institute with regard to the new law relating to the selection of designs for Government buildings by limited competition.

To facilitate your understanding of the subject when called up for consideration, the following is a digest of the opinions set forth at the conference, approved by the Executive Committee, and forwarded to the Secretary of the Treasury:

In order to achieve the best results from such competitions no one should be invited as a competitor who is not known to possess the requisite education and experience to enable him to carry out his design with art, skill and economy, in case his scheme is adopted.

To secure the services of such men, in competition, it is necessary that the number of competitors should in no case be more than five, so that the chance of success for the individual may not be too small; that a definite programme of the requirements of each building should be supplied to each competitor; that it should be understood that the design of one of the competitors will be adopted; that he will be employed to prepare all necessary drawings and to superintend the work of construction, and that he will be paid for his services the fees usual in private work; that the clerk-of-the-works or deputy-superintendent, who is always at the building, should, as is usual, be appointed by the architect and be paid by the Government; that a Jury of Award should be appointed by the Secretary, in each case (to consist of two architects of recognized ability and experience, together with the Supervising Architect of the Treasury Department) whose duty would be to assist in preparing the scheme for competition and, with the concurrence of the Secretary, to award the work to the author of the best design.

Our profession so greatly desires to secure for the country the construction, in future, of public buildings which shall be examples of the best architectural art and economics, that its best men would doubtless esteem it an honor to be appointed, and would accept appointments to prepare designs in competition for any important work which it is impossible to postpone until the Bill can be amended, in the hope and confident belief that the Bill will be amended by the next Congress so that it shall provide for the payment of at least the expense of making competitive plans, and for such professional advice as the Secretary of the Treasury may require in preparing the necessary instructions and in selecting the best submitted plan.

The Secretary was also assured that, pending such amendments, the interest of the Institute is so great in the Government work, that its Executive Committee would willingly offer him its services to advise in any matters connected with these competitions in which he might desire to consult them; that it would nominate architects for the competitions, if he should so desire, and provide members for the Juries of Award; and that for the present, until the Bill can be amended, members of the Institute would make no charge for services whether as advisors or as jurors.

These views were approved by the Executive Committee and forwarded to Mr. Carlisle, who duly acknowledged their receipt from our Secretary, but has not, so far as is yet known, acted upon any of the suggestions.

An important step toward better public art has recently been taken in New York City in the formation of a Municipal Art Society, which proposes to foster the several decorative arts by instituting each year one or more paid competitions which will be modelled as nearly as possible upon the Paris competitions for the Prize of Rome. Occasionally an artist, whose work justifies the choice, will be selected to execute a work to fill some prescribed space or site; or an already existing work of art, executed by an American citizen, may be purchased by the Executive Committee.

These competitions will be open to any citizen of the United States without distinction as to age or sex, and the subject, whether architectural composition, statue, high or low relief, mural-painting, portrait, landscape, marine, mosaic, glass-work or other decoration, as well as the process and material used, whether stone, bronze, oil, wax, distemper or pastel will be determined by the Advisory Committee. The sketches submitted are to be in no case mere indications, but finished studies, clearly setting forth the entire scheme to be followed in the final work. A special jury, largely, if not entirely made up of professional men, will be appointed for each competition, which will, it is thought, be an inducement to compete to many who would not otherwise do so. The whole expense of the competitions and of executing the successful study, as well as that of purchasing an existing (or especially commissioned) work, will be defrayed by the annual contributions of the Society.

The project, which is certainly self-commending, has been enthusiastically indorsed by artists and laymen, and has received encouragement from those officially interested in the public monuments and decorations of the city. Our Chapters should at once take the initiative in forming similar societies in their respective cities, and so swell the tide of better art already splendidly risen, as the decorative success of this great national work in Chicago, as well as the development and increased appreciation of technics throughout the country so fully testify.

The public is in active and sympathetic touch with all that pertains to architecture and to its adjunct arts and sciences, and the profession reciprocally recognizes all that is being done to place it upon the highest possible plane.

On the one hand, the overflowing attendance upon the lectures on architectural and decorative subjects by Sturgis, Merriam, Rood, Ware and Hamlin, under the joint auspices of the Metropolitan Museum of Art and Columbia College, during the early months of the year; the throngs which delight to examine, not once only, but over and over again, the casts and models of the Willard Architectural Commission, which are now perhaps the greatest attraction at the Metropolitan Museum in New York; the splendid equipment of our technical schools; the founding of libraries (notably the Avery library) for the especial use of architectural students, all show great popular interest in our work.

On the other hand, the drawings last exhibited by the Art Students' League, vying as they did with the best Ecole work in Paris; the unusually good work shown at the recent Exhibition of Scholarship and class work at Columbia College; the remarkable increase in the number of students at the principal technical schools; the eager competition for the Travelling-scholarships, and the high average merit of the drawings submitted, all indicate growing professional zeal and attainment.

Viewed collectively, it is apparent that endeavor and accomplishment are keeping pace with means and opportunity.

Travelling-scholarships, so far as my experience goes, are too frequently awarded objectively — to hand-work and not to brain-work; to him who draws cleverly and aims at the stars, rather than to him who presents a thoughtful study and conscientiously endeavors to meet and keep within the requirements of his project. Envoy drawings are therefore of especial interest as draughtsmanship and not as studies of noteworthy plan, detail or construction, which latter might well be the case should the subjective element enter to a greater degree into the selection of the envoy.

Baron von Geymüller has so far matured his project, which was set before you last year, as to issue a Prospectus of his Archives, or "Thesaurus of Architecture and its Subsidiary Arts," as he now calls his work, together with preliminary plates, copies of which have been sent to each Chapter for approval and cooperation.

In the recent death of Richard T. Auchmuty (once a member of this Institute and for twenty years a partner of James Renwick) our profession loses an ardent supporter and helper, and the whole country a benefactor. He found organized labor in the hands of foreigners who protected their own interests to the virtual exclusion of native-born apprentices. Deeply impressed by the danger of the

situation to American youth, he established a trade-school in the city of New York, modelled after the best similar schools of Europe. This he did, not through State aid as is universally the case abroad, but by his own untiring energy, eagerly seconded by the wealth and sympathy of his wife. In 1881, the year of the organization of the school, he began with thirty scholars, while now the number of yearly graduates is over six hundred. The endowments of Mr. and Mrs. Auchmuty, together with that of Mr. Morgan, will enable this philanthropic and patriotic work to go splendidly on, giving skill and dignity to labor and independence of foreign dictation to the laborer.

We are soon to meet in Congress our professional brothers from other parts of the world. We rejoice in this opportunity to welcome them individually and to honor them as bringing to us, anew, the traditions of Jones, Wren, Pugin and Barry; of Leighton and Morris; of Delorme, Mansart and Viollet-le-Duc; of Flandrin, Baudry and Puvion de Chavannes; of the marvellous epoch of Saint Louis; of the scholarly achievements of Germany; of the romantic splendors of Spain, and the exquisite grace and beauty of the "new birth" in Italy.

REPORT OF THE BOARD OF DIRECTORS OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE meeting of the Institute in annual convention in midsummer, for the purpose of conforming to the date fixed for the Auxiliary Congress of Architects from all parts of the world, in connection with the World's Columbian Exposition, makes our year a very short one, and prevents as full an attendance of its members as could be desired.

At the first meeting of the Board of Directors, the resignation of our former Secretary, Mr. Dankmar Adler, who had brought to the work that energy and insight for which he is distinguished, made it necessary for the Board of Directors to elect some one in his place, and it was not until a month after the opening of the year that his successor was able to assume the duties of the office.

There has been during the year no marked event to chronicle, except that crowning event in the architectural history of this country, which has brought us to this city at this time, and which will be properly noticed in fitting terms at another stage of our proceedings. No new Chapters have been formed, and there has been no marked increase in the membership. In fact, the increase is less than we ought to look for, in view of the importance to every member of the profession of the work which the Institute has done in the thirty years of its existence, to promote the best interests of the profession and to elevate its tone and the standard of professional practice. Seven members have been elected and five names are to be at once balloted for, having been approved by the Board at its meeting held here in Chicago on July 30.

To what is it due that we do not attract a larger constituency? Why are so many of the strong men in the profession outside of our organization? Is it the independent spirit of Americans? Is it because of the not wholly satisfactory relation of the Chapters to the Institute? Or, is it simply the indifference which comes from absorption in a most engrossing profession, and which allows itself to reap the advantages of the conditions without any effort to shape them?

The question of the relation of the Chapters to the Institute requires your attention as well as that of the Board of Directors, but before any changes are made, great care should be taken to make sure that the changes proposed are likely to be beneficial or otherwise. It is undoubtedly true that the condition requiring a person to be a member of a Chapter before he can be a member of the Institute, has its drawbacks, but it is respectfully suggested that the matter of dues to the Chapters be so arranged that those who cannot partake of all its benefits should be required to pay less than those who do. It seems to the Board of Directors that the dues of the Institute are not burdensome, compared to the benefits which every member indirectly receives, even if he fails to see its direct value.

The matter of the Bill to regulate procuring designs for buildings to be erected under the Treasury Department of the United States Government, has been so fully treated by the President in his annual address, that it is unnecessary for the Board to say more than that it looks to the Secretary of the Treasury and the present incumbent of the office of Supervising Architect to see that the Bill is faithfully carried out; and from the assurances of the latter, we do not believe that we shall be disappointed, unless there is some radical defect in the law. If that is the case, the near approach of a session of Congress will give opportunity to amend it. In order to preserve a complete history of the Institute, it is recommended by the Board of Directors that its Executive Committee be empowered to arrange with Mr. A. J. Bloor, who was for so many years its secretary, and who is more familiar with its history than any other person, to compile and write the same and to pay him such sum of money as may be agreed upon, not exceeding \$1,500.

Since the last annual meeting the Institute has lost by death two of its active members and four of its honorary members. The deceased Fellows were: J. H. Kirby, who died January 28, 1893; and Pierce P. Furber, a member of the Board of Directors for three years and also a member of the St. Louis Chapter, who died April 6, 1893, within a few weeks of his fortieth birthday. Mr. Furber

brought to the practice of his profession a strong and active body, a well poised mind, a keen intellect and uprightness of purpose, and large professional attainments, which won for him many firm friends, the confidence of his partners and clients and the good-will of all who were brought in contact with him.

Of the Honorary Members, Henry Sargent Codman was so closely allied by his practice, his friendship and his connection with the architectural treatment of the grounds of the Columbian Exposition, that we all regarded him more as a fellow-member of our own profession than as one outside of it, and it was a delight and an honor to the American Institute of Architects at its last convention, to make him an Honorary Member. Young in years, mature in judgment, by his death the profession of landscape architects has lost one, whom, had he lived, would have been a fitting successor to his friend and business associate Frederick Law Olmsted.

Eugène Létang, Professor of Architecture in the Massachusetts Institute of Technology, and Richard Auchmuty, of New York, have left their indelible impress upon hundreds of men in two different walks in life; the former on the numerous graduates of an institution which has done so much for the profession of architecture throughout the country, and the latter on the graduates of the trade schools which were founded and maintained by his individual efforts. The fourth Honorary Member, Henry Whitestone, deceased but a few days ago, at the ripe old age of threescore years and fourteen, at his home in Louisville, Kentucky, where, forty years ago, in the prime of life he was in the active practice of his profession, erecting buildings in that perennial style of Italian Renaissance, of which he was a master, and from which he was never lured by passing fashion.

The number of Chapters of the A. I. A., is.....	23
Number of Fellows.....	475
“ “ Honorary Members.....	52
“ “ Corresponding Members.....	55

The Directors would respectfully nominate for Honorary Members of the American Institute of Architects, the following persons:

Halsey C. Ives, St. Louis, Mo.; Frank D. Millet, New York, N. Y.; Lyman J. Gage, Chicago, Ill.; and for Corresponding Members: Prof. F. W. Putnam, Curator Peabody Museum, Harvard College, Cambridge, Mass.; Professor Goode, Smithsonian Institute, Washington, D. C.; Theodore Cooper, New York, N. Y., and Latham Anderson, Cincinnati, Ohio.



[Contributors are requested to send with their drawings, plans and a full and adequate description of the buildings, including a statement of cost.]

A COURT-ROOM IN THE ALLEGHENY COUNTY COURT-HOUSE, PITTSBURGH, PA. H. H. RICHARDSON, ARCHITECT.

[Gelatin Print issued with the International and Imperial Editions only.]

"GRAY TOWERS." HOUSE FOR W. C. HASTINGS, ESQ., YONKERS, N. Y. MESSRS. DEHLI & CHAMBERLIN, ARCHITECTS, NEW YORK, N. Y.

HOTEL AND OFFICE-BUILDING FOR S. H. JAMES, ESQ., TORONTO, CANADA. MESSRS. ELLINGWOOD & PARISH, ARCHITECTS, NEW YORK, N. Y.

The basement and lower two stories are of gray limestone, while the upper portions are of light brick and terra-cotta. The columns, wall-linings, etc., of the main entrance are of marble.

PLANS OF THE SAME.

HOUSE FOR JOHN FITZGERALD, ESQ., MERCHANTVILLE, N. J. MESSRS. MOSES & KING, ARCHITECTS, PHILADELPHIA, PA.

SKETCHES FOR SUBURBAN HOUSES. MR. C. H. BLACKALL, ARCHITECT, BOSTON, MASS.

[Additional Illustrations in the International Edition.]

THE MAIN STAIRCASE OF THE ALLEGHENY COUNTY COURT-HOUSE, PITTSBURGH, PA. H. H. RICHARDSON, ARCHITECT.

[Gelatin Print.]

VESTIBULE AND MAIN STAIRCASE OF THE ALLEGHENY COUNTY COURT-HOUSE, PITTSBURGH, PA. H. H. RICHARDSON, ARCHITECT.

[Gelatin Print.]

WHITE LODGE, RICHMOND PARK, ENG.: GARDEN FRONT.

ENTRANCE-HALL OF THE SAME.

YORK COTTAGE, SANDRINGHAM, ENG.

The buildings we illustrate this week have gained additional interest by their association with a union which has gratified all the inhabitants of Great Britain. The readers of this journal are not behind their fellow-subjects in loyalty, and we are confident that the marriage of the Duke and Duchess of York, which was celebrated yesterday, afforded them an occasion on which they could rejoice and unite in the general desire for the happiness of the Prince and Princess.

Note:—Owing to custom-house delays, the issuance of the preceding three illustrations properly belonging to this number must be postponed to next week.



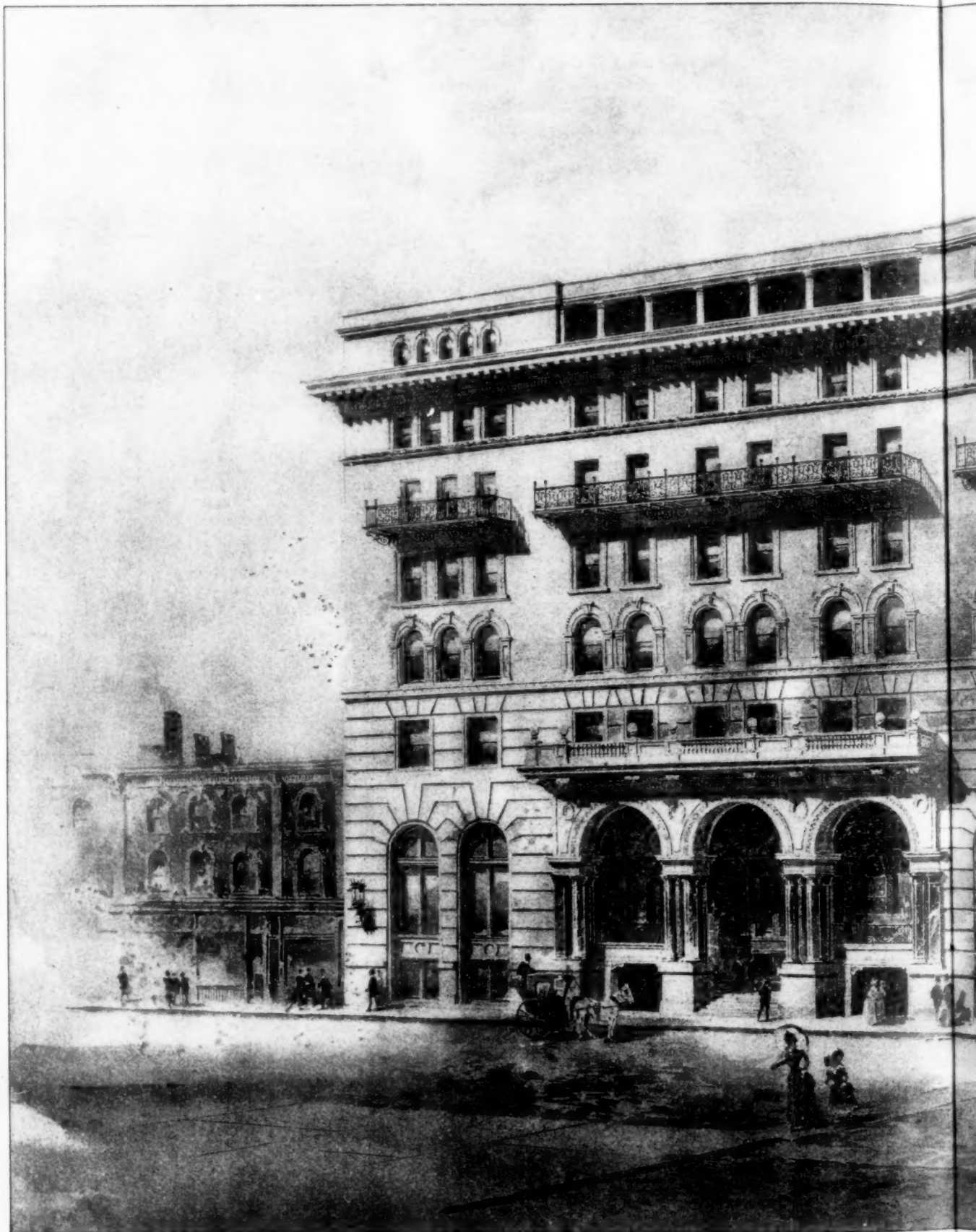
DANGEROUS CHURCH CEREMONIES.—Details of the panic in St. Stephen's Cathedral, Vienna, on Wednesday last, show it to have been by no means unjustified. The first account stated that a bunch of Alpine flowers which a pilgrim was carrying at the end of a stick caught fire at the candle placed upon an altar. This is literally true. But it seems that the altar was not fixed. Maidens and children clad in white—muslin, or some such airy stuff—were carrying it in procession, decked with paper flowers, among the throng, many of whom, doubtless, wore summer clothing. This was dangerous enough, seeing that the vast area was packed with hysteric devotees as close as they could stand. But, in addition, those excited worshippers thought fit to offer votive candles, fixing them round the altar as it passed by. No marvel that dried flowers at the end of a stick caught alight under such circumstances. Had the whole crowd burst into flames, as at Lima, it would have been a natural result. And then we should have beheld a scene compared with which the horrors of the Burg Theatre would have been trivial. For when the dense mass of people surged screaming towards the doors, all the streets and houses of the neighborhood emptied, and another mass ran to the doors from the outside, blocking them so completely that not a soul escaped till the firemen and police arrived. But is it not to be hoped that authorities in our time will recognize the necessity of forbidding dangerous performances in a place of worship as in a place of entertainment. — *London Standard*.

AMERICAN FIREMEN RIDICULOUS.—Nothing will have been more interesting at the show than the way the Portuguese regulars manoeuvre their apparatus or more ridiculous than the impractical circus-performance of the specially-trained Kansas U. S. A. athletes, with whose assistance Chief Hale is advertising his water-tower. — *The Builder*.

A LARGE CYLINDER OF WINDOW-GLASS.—George Grovlech, a Belgian glass-blower working at Jeannette, Pa., has blown a cylinder of window-glass that cut a sheet clear of blemishes 59 inches by 92 inches. This, it is claimed, is the largest cylinder of window-glass ever blown. — *Invention*.



Now that the financial depression has assumed threatening proportions, a great many far-looking business men are trying to calculate the probable extent of the damage already done, and likely to be done before the storm is over. There is nothing more elusive and difficult to weigh and measure, than the influence and momentum of a financial panic. But, using such knowledge as is within reach, some conclusions may be drawn, which may serve a good purpose at this time. In a general way, it can be said that much less harm will be done than is now generally apprehended,—the reason for such a statement being the fact that our constitutional conditions are now better than they have ever been; our policies and methods are fixed; our knowledge of the laws of trade and commerce are more thorough; and our control over the agencies of production and distribution more complete. Therefore it is, that less harm will result from unfavorable conditions, no matter how they may have been precipitated; and the present financial situation is one of these. It is not necessary to discuss the question as to whether the causes to which the present unrest are attributed are the correct ones or not; time will show this; but we can positively assert that the people of the country, from its bankers to its day-laborers will learn valuable lessons before the depression is passed. Already much has been done towards checking rash enterprise, preventing the too rapid accumulation of capacity of all kinds. The danger of the past two or three years has been in that direction; but the tendency has been pretty thoroughly corrected this year, and much of the complaint coming from trade-circles is, that production has been restricted so much, and sales also. This is an advantage in more ways than one. So far as can be learned, the falling-off in building operations is almost too trifling to note; the amount may not fall more than five per cent below what would have been undertaken had all gone on well. In the matter of machinery, good authorities assert that there has been no decline in the demand, and that the adding of new capacity is going on, without regard to the financial depression. Jobbers at New York state that a very conservative policy is being followed by purchasers of shop and mill goods everywhere, and this statement is borne out by the reports of wholesalers dealing in cotton, wool, iron, steel, lumber, leather and a score of other raw materials. Large bodies of laborers are being disemployed. The full effect of the stoppage of the silver mines has not yet been felt, and perhaps will not be for months. Thousands of miners are seeking a way eastward. Tens of thousands of Western shop workmen are now idle, without prospect of reemployment. The effect of this will be to stimulate labor organization, although there can be no prospect of immediate advantage from it. Conditions like these always stimulate labor agitations, with the result of increased membership in all labor organizations.

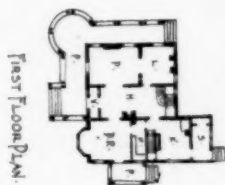


• HOTEL AND OFFICE BUILDING
• ELLINGWOOD & PARKER



HELIOTYPE PRINTING CO. BOSTON

BANK OF MONTREAL BUILDING, TORONTO.
F. F. & P. ARCHT'S.



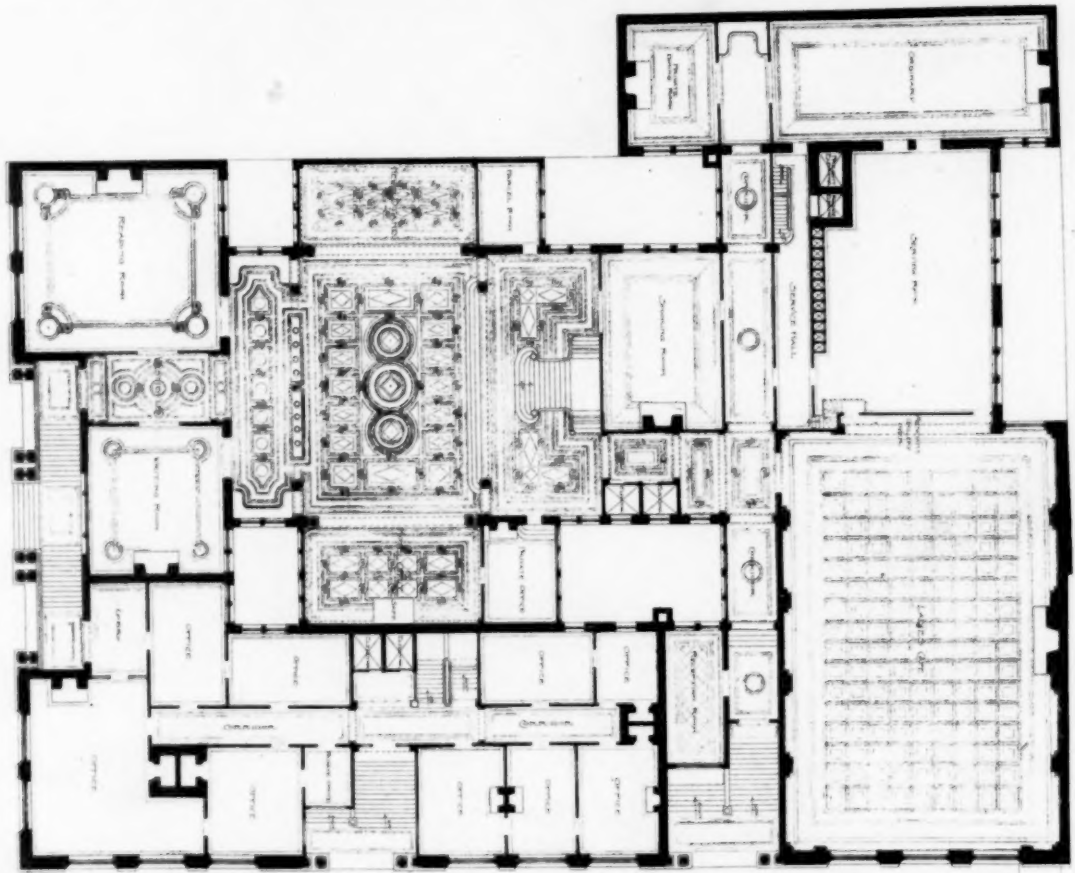
First Floor Plan.

HOUSE AT MERCANTVILLE, N.J. FOR
JOHN P. FITZGERALD, Esq.
MOORE & KYLE, ARCHITECTS & PHILADELPHIA, PENNA.



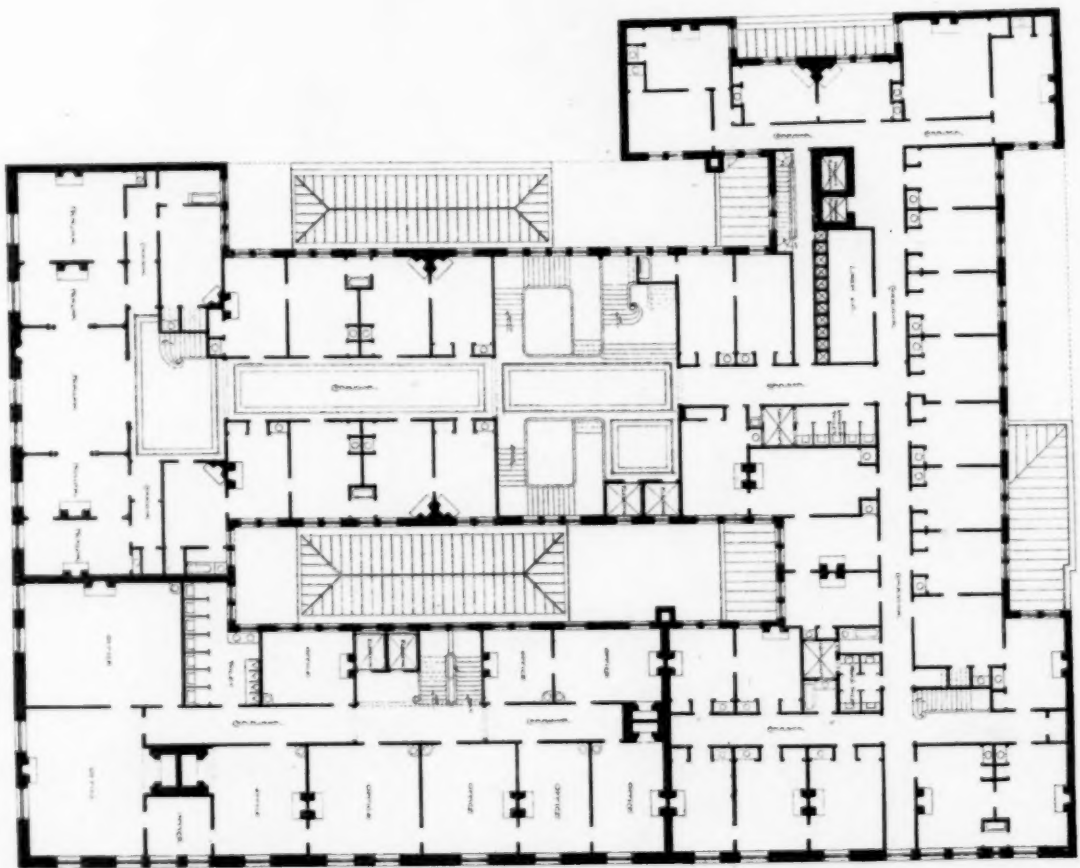
ILLUSTRATION DRAWING BY BOSTON

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GROUND FLOOR PLAN.

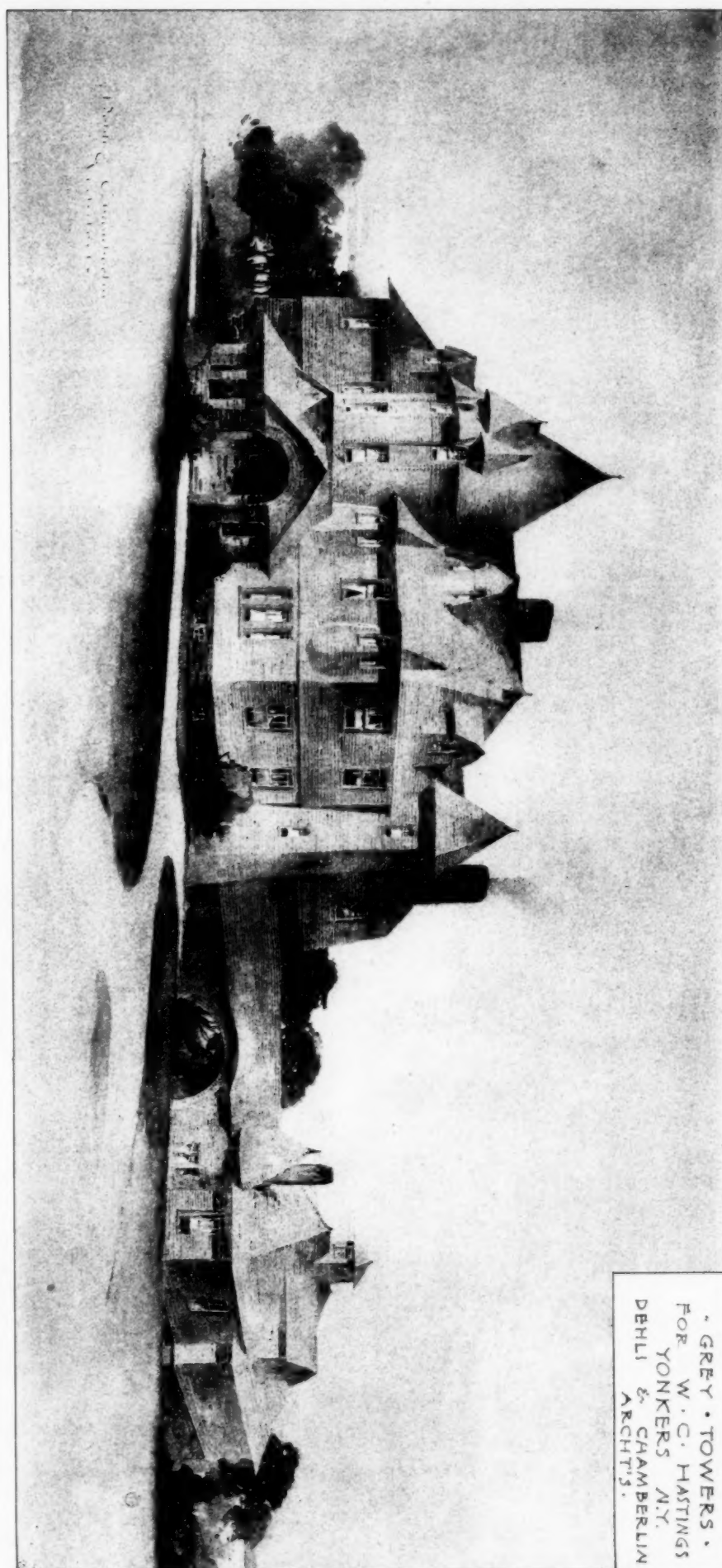
HOTEL & OFFICE BUILDING
KING & VICTORIA STREETS, TORONTO, CANADA.
ELLINGWOOD & PARISH, ARCHTS.



FIRST FLOOR PLAN.

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SKETCH DESIGNS FOR SUBURBAN HOUSES
C. H. BLACKALL ARCHT. - BOSTON

KANSAS CITY



SALEM

