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VOL. XL.

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APRIL 8, 1893.



SUMMARY:—

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THINKING that a synopsis of the most important rules in regard to the construction of buildings laid down in the new insurance schedule just adopted by the Boston underwriters for mercantile buildings in Boston may be of use to architects and owners, who, in consulting in regard to the details of construction for a proposed store or warehouse, will find it very convenient to know just how much any given detail will modify the rates of insurance on the building and the goods stored in it, we reproduce in full in another column the description given in the schedule of a standard city, and a standard building, with the additions and deductions applicable to the regular rate under specified circumstances. Both the building schedule and the stock schedule are given, so that the architect or owner can determine at a glance just what he and his tenants will have to pay for insurance, so far as can be determined by the character of the construction. A further modification of the rate is made in accordance with the nature of the occupancy, before the exact premium can be ascertained, but the architect has, of course, no control over this. The question of insurance rates is getting to be a serious one for Boston real-estate owners. The premiums on buildings of certain classes have recently been advanced to more than two per cent a year, and it is hardly necessary to say that, if a building is adequately insured, such rates make a large hole in the rental, and many improvements and safeguards, which it would not have paid to introduce a year or two ago, will now be found profitable. As the purpose of erecting mercantile buildings is not to provide æsthetic enjoyment for the public, or to enrich the underwriters, but to make money for the owners, and as the owners of such buildings always depend very much upon the advice of their architects in regard to their investment, we may suggest to the architects that, if the schedule should be permanently established in Boston, as seems likely to be the case, a thorough acquaintance with it will greatly promote their usefulness to their clients who have in mind the erection of mercantile buildings.

WHAT seems likely to be an important artistic movement has been inaugurated in the formation of the Metropolitan Art Club, in New York, which has been established for the purpose of paying for, and putting into public buildings, pictures and statues. The entrance fee is five dollars, and the annual dues one dollar, so that the income of the club does not promise to be very large, but its purpose is excellent, and its membership, which includes such devoted lovers and practitioners of the fine arts as Mr. Thomas W. Wood, the President of the National Academy of Design, Messrs. Wil-

liam A. Coffin, Howard Russell Butler and Hubert Denman, the devoted officers of the Fine Arts Society, Messrs. Augustus St. Gaudens, R. Swain Gifford, William M. Chase, Kenyon Cox, Edwin Blashfield, Frederic Crowninshield, John La Farge and many others, among professional artists, promises wonders. For a time, however, we imagine that it will need all its resources of energy and intelligence to persuade the public into thinking as it does in regard to the decoration of buildings. To the average American, the idea of any decoration in a post-office, for instance, or a city-council room, beyond an ornamental spittoon, is quite incomprehensible. There are plenty of tests to be found in this country, but it does not abide with the governing majority; and where a French conseil municipal, after endless consideration and careful examination of every franc, easily procures such wonders of decorative painting as at the Panthéon, or the Hôtel de Ville, or the Sorbonne, the supreme artistic effort of our legislators, with boundless resources, spent—not to say squandered—with lavish hand, is to be found in the collection of paintings in the Capitol, about which the less said the better. For the present, the Club proposes, on obtaining permission to fresco a public building of some sort, to institute a friendly competition, the prize of which shall be the execution of the work; and, while waiting for opportunities for real decoration, it is intended to keep alive the interest of the members in decorative work by annual competitions within the Club. We trust sincerely that the Club will grow and prosper, notwithstanding the discouragements which it is sure to meet. The duty of the lovers of art in this country is a most serious one, but the reward of carrying it out faithfully will be great. Never before, in the history of the world, has a community existed, so rich, so intelligent and sympathetic, with so little comprehension of anything relating to art, except the name. The name, indeed, is familiar enough. Every shop-window is full of things labelled “art needlework,” “artotypes,” “art” crockery, and, for anything we know, “art sausages,” but for all this, ninety-nine Americans out of a hundred go through life without ever having felt that a painted or carved object was really beautiful, or true, or anything else except, perhaps, fashionable. When the awakening from this catalepsy of the imagination will occur, it is impossible to say. We think sometimes that it may come to this nation, as it has to others, and as it often does to individuals, as the result of some great calamity, such as a disastrous war, or a widespread pestilence, which will open the heart of the community to the consolation which true art can bestow; but whatever may bring it about, it is certain to come sooner or later, and the little band of artists who are laboring now so faithfully to hasten its arrival will then probably receive the honor that they deserve.

ALL who love and believe in American art will hear with regret of the death of Mr. John Taylor Johnston, whose name has been so closely connected for more than thirty years with everything that could promote and encourage the fine arts in New York. Mr. Johnston was born in New York, of Scotch parents. His father was a wealthy man, and young Johnston was sent to school in Edinburgh, returning to this country to finish his education at the New York University and at Yale. He was admitted to the New York bar in 1843, but five years later was made president of the Somerville and Easton Railroad. Under his management, this unimportant line was developed into the New Jersey Central Railroad system. Almost from the first he had devoted a considerable part of his income to the purchase of pictures, and he was one of the most active promoters of the movement which resulted in the foundation of the Metropolitan Museum of Art. After the establishment of the Museum, he was elected its president, and held the office until 1889, when failing health compelled him to resign it. In 1876, when all the coal-carrying railroads met with severe reverses, he lost a large part of his fortune, and was obliged to sell at auction his private collection of pictures, at that time probably the best in the country. In this memorable sale, three hundred and twenty-seven pictures were disposed of, bringing nearly three hundred and fifty thousand dollars. To the multitude of friends, however, whom his kindness and sincerity had won for him, his reverses of fortune only endeared him, and the latter years of his life were spent in quiet but honored retirement.

A GREAT deal of discussion is going on just now in Boston on the subject of rapid transit, and it seems likely that some scheme of an elevated railway, or, at least, of a tunnel under Beacon Hill, to connect the north with the south portions of the city, may be carried out. It is a little curious that, in all the discussion, it seems to be forgotten that routes of rapid communication already exist, with all land-damages paid for, grades arranged, tracks laid, and equipment provided, connecting Beacon Hill with every other part of the city and suburbs. The people who talk seriously of building an elevated railroad from Charlestown to Milton, at a cost of ten or twelve million dollars, appear never to have heard of the fact that there are already three railways from Milton to Boston, any one of which will land passengers within a hundred rods of Summer Street; and that four other railways connect Charlestown and Somerville with Causeway Street. By a tunnel a mile-and-a-half in length, under Beacon Hill, the northern and southern railway systems could readily be connected, and then the Milton citizen would have the choice of several routes for reaching Charlestown, without anybody's having to build elevated railroads for him. In the same way, the people of Jamaica Plain have, already built, a three-track railway nearly parallel with Washington Street, and, on average, less than a hundred rods away from it, upon which they can now reach the Common, and might, with the help of a tunnel under Beacon Hill, continue their journey, by existing railways, to Somerville, Charlestown, Chelsea, Cambridge, and all the northern suburbs. Brookline, Newton and Watertown are similarly favored; and, with a tunnel a mile-and-a-half long, judiciously located, passengers from every suburb within twenty miles of the State House could be transferred to any other, or set down within a hundred rods of any portion of the business part of the city, without the construction of a foot of elevated road, or the expenditure of a dollar, apart from the cost of the tunnel line, or anything beyond the proper utilization of the existing facilities for communication.

IT is strange that these should not have been so utilized before. The Boston and Albany trains pass continually under Broadway, Harrison Avenue, Washington Street, Shawmut Avenue, Tremont Street, Columbus and Huntington avenues, Berkeley and Dartmouth streets, and Chester Park, without stopping regularly at any of them, although each one is encumbered with lines of street-cars crowded with passengers, who are compelled to spend from twenty minutes to half an hour in reaching a point to which a train on the Boston and Albany road could take them in three minutes. The case is the same with the Providence Railroad, over which, with the tunnel, trains could easily run from Roxbury Crossing to the northern stations, or to any intermediate point, in four or five minutes, by a route nearly parallel with the Tremont and Washington Street electric lines, over which the cars toil for about three-quarters of an hour to perform the same journey. Of course, the reason why all these miles of existing track running through the heart of the city are not utilized for local travel is that their owners, the railroad companies, think it for their interest not to have them; but, in case of necessity, it is, we presume, just as lawful to expropriate the property of a railway company for public use as that of a private citizen, and the railroads within the city limits of Boston, which have had the free use, for many years, of several miles of the city streets, for the purpose of transferring freight cars over the Union tracks, might, certainly, without impropriety, be called upon in return to help in solving the question of local passenger traffic, which has now become a very serious one in Boston.

THE Cathedral of Valladolid, one of the richest ecclesiastical buildings in Spain, was totally destroyed by fire a few weeks ago. The *Deutsche Bauzeitung*, in speaking of this conflagration, calls to mind the rapidity with which the great architectural monuments of Spain have disappeared within the last two or three years. The example seems to have been set by the falling of the central tower of the Cathedral of Seville, which carried with it into ruin a considerable part of the church. Next came the conflagration in the Alhambra, at Granada, which greatly injured the most beautiful portion of the building; and this was soon followed by the total destruc-

tion of the Armeria at Toledo. Now, after a brief interval, the Valladolid Cathedral is added to the list. As the present Government of Spain is too prudent to spend money recklessly on mere aesthetics, it is doubtful whether any of these structures will ever be adequately restored.

A NEW sort of public urinal has come into use in Vienna, where it has given so much satisfaction that a commission was sent last year from Berlin to examine it, with a view to its adoption by the German municipalities. The most striking peculiarity about the apparatus is that it uses no water for flushing. Nevertheless, it is said to be perfectly inodorous, and the saving, in expense of maintenance, over the ordinary public urinal, with a constant water-supply, is enormous. In fact, Herr Beetz, the inventor and patentee of the new system, has formally proposed to the magistrates of Vienna to replace, at his own expense, all the public urinals of the old type with those of his invention, and to keep them clean and disinfect them, on the sole condition that the city pays him annually what it saves in the cost of water for flushing. The mystery is, of course, easily solved. Instead of washing away the putrescible liquids with a strong flow of water, Herr Beetz simply covers them with a stratum of oil, or, as he calls it, an "oleaginous composition," with which some disinfectant is mixed. In form the new apparatus consists of the ordinary basin, in the bottom of which is fixed a strainer, with a very deep bell-trap. The oil floats on the surface of the liquid in the cup containing the trap, remaining always at a level slightly above that of the top of the outlet-pipe under the bell. Any liquid heavier than oil which is poured into the basin falls through the strainer into the cup, where it sinks beneath the oil, and the surplus overflows into the outlet-pipe, and thence into the sewer. All parts of the basin, strainer, etc. are washed with the oil every day, and, while the evaporation of the disinfecting ingredient purifies the air of what faint effluvia there might be from the exposed surfaces, the oiling of these surfaces, which causes them to repel water, prevents them from contracting anything more than a very slight contamination. Although the idea is rather a startling one to sanitarians, who have so long been accustomed to think that every particle of corruptible matter should be immediately washed away into the sewer, it certainly has its merits. The liability of bell-traps to siphonage, and to forcing by pressure of gas in the sewer, would be objections in many cases; but proper venting would obviate these, and an arrangement of the sort, using coal-oil, would be very useful for exposed situations in cold weather, when water-flushing is impracticable, while, even with the water-flush, an oil-seal, particularly if it were made disinfecting, would often greatly improve the atmosphere of public urinals.

HE who would invite the public to celebrate historical events in France must proceed with extraordinary circumspection. The authorities of the Cathedral of Orleans want colored glass for ten windows in the aisles of their church, and have announced a competition of designs, open to all French glass-stainers. In deference to popular feeling, probably, the administration has decided that the subject to be illustrated in the windows shall be the life of Joan of Arc. As Orleans is connected very closely with the history of Joan of Arc, their choice seems appropriate enough; but it is not the Church which shines most in that history, and there are certain passages which the ecclesiastics of Orleans do not care to have illustrated in their windows. As a precaution against embarrassments from this cause, therefore, the Bishop of Orleans has drawn up a long list of subjects, among which the competitors may choose, but the list does not mention the trial before the Inquisition, the sale of Joan to the English by the Bishop of Beauvais, or several other points in which the relations of Joan to the spiritual estate do not appear to the best advantage. Of course, it is natural enough for the persons interested in upholding the infallibility of the Church to avoid mentioning these misunderstandings, but it seems hardly fair to dress up an ecclesiastical building for the admiration of the faithful with pictures representing Joan of Arc inspired by her angelic voices without some accompanying apology for the fact that the Church contemporary with the Maid of Orleans held that her voices were utterances of the devil.

ARCHITECTURE OF THE LOW COUNTRIES.¹—V.

THE MODERN PERIOD.

THE Low Countries did not escape the artistic decadence which spread over Europe in the eighteenth century. The fatal wars of the Empire, by which these lands were for a time annexed to France, could not but aggravate the evil still further.

An examination of the architectural designs executed later in Belgium, during its union with Holland, shows that at that time art had yet made but little advance there, and that the architects had confined their efforts to arranging various motives borrowed from Roman edifices; among the principal constructions, this fact appears in the Ducal Palace and the Palais Royale at Brussels, and in the University at Ghent. As for private residences, nothing of interest can be said of any of these until after the revolution of 1830, which laid the foundation of Belgian nationality, and secured to the people that political independence and peace which had long been unknown to them. Although the political union of the Low Countries ceased in 1830 we shall continue to discuss the revival of art there, in Belgium as well as in Holland, and shall follow the

Church of Saint George, while the work of restoring the finest monuments of the country was in progress everywhere.

The independence of the Belgian provinces, proclaimed in 1830, soon insured their prosperity; the cities extended their territory one after another, some owing to their being dismantled and all, later, in consequence of the *octrois* voted by the two Chambers, in 1860.

The lack of documents, which led to a study of the edifices of the Middle Ages, also led to an interpretation of other architectural productions. The Louis XVI period had left many remarkable decorative monuments in Belgium; it is not surprising then, to see its style obtaining a certain vogue in private constructions, many of which were erected at this period, as well as in monumental edifices. Thenceforth, the influence of French architecture also made itself felt at intervals. However, the art of the Second Empire did not in any way become acclimated in Belgium, its tendency toward flatness and against projections of every kind having always been antipathetic to the artistic instincts of the Flemish.

Between the two interesting periods, the study of whose art had been undertaken,—the art of the Middle Ages and that, more easy to interpret, of the end of the eighteenth century,—



Fig. 27. Central Station at Amsterdam.

considerable progress made in both divisions down to the present time; especial attention will be given to the Belgian provinces where, from the outset, and as the new institutions developed, important works were decreed at the same time that care was bestowed upon the preservation of the numerous monuments inherited from former generations. Although architects clung for some time longer to the architectural combinations referred to above, it is interesting to note that from the formation of the kingdom of Belgium a study of Pointed architecture was begun and a Royal Commission was instituted, especially charged to direct the restoration of the edifices which time, indifference and war had so ruined.

The study of the principles of Mediæval art had already been carried so far by certain artists that they were enabled to erect in several localities churches of some importance; thus in 1841 Berckmans constructed at Borgerhout, at the gates of Antwerp, the first Pointed church; the Church of St. Boniface, at Ixelles-lez-Bruxelles, was built by Dumont in 1847; and shortly after the city of Antwerp ordered the erection of the

there remained much valuable and attractive architectural matter; the sixteenth century especially, with its original and picturesque combinations, faithfully embodying the national art, soon tempted the most experienced architects, who were more ably seconded than their predecessors had been; and it was the more rational architecture, taking advantage of the materials at hand and adapting the principles of the art of Floris, Vredemans and Keldermans to industrial progress and modern needs, which prevailed; as circumstances demanded, it abandoned the principles of severe symmetry, combining bays and loggie of different proportions, introducing gables with varied *silhouettes*, and breaking up the masses with turrets and spirelets.

In Holland, the early part of the modern period offers very few subjects for study. Before 1830, even drawing had ceased to be taught, and no attempt whatever was made to apply it to the manufacturing industries. In government circles, the point had been reached of admitting that all the living forces of the nation should henceforth be concentrated and directed in favor of commerce, and that art was no longer deserving of attention from the administrative authorities. It is easy to

¹From the French of J. van Ysendyck, in Planat's *Encyclopédie de l'Architecture et de la Construction*. Continued from No. 901, page 4.

understand what the condition of architecture must have been after this formal abandonment: it sank into a state of deplorable mediocrity. It was not until about 1874 that a reaction finally took place and a special department of the Fine Arts was reestablished among the government offices. A commission, charged to oversee the restoration of ancient monuments, was then instituted. The study of Mediæval edifices was gradually resumed and investigations in the art of the sixteenth and seventeenth centuries came into favor once more. The architects Cuypers and Hezenmans undertook to restore the most notable structures, among which may be cited the town-halls of Gouda, Middelbourg and the Hague, the cathedrals of Utrecht and Bois-le-Duc, the beautiful churches of Maestricht and Roermond, etc. The architecture of the sixteenth century has been, in recent times, interpreted in a very complete and successful fashion in the construction of the new museum, at Amsterdam, involving an expenditure of four million florins, and in the new central station of Amsterdam (Fig. 27), two of the noblest of Cuypers's many productions. His pupil, Poeters, has just successfully completed, in the same general style, the office of the Ministry of Justice at the Hague. Aside from the numerous churches erected, for the most part in Holland, after Cuypers's plans, in the ancient quarters of the principal cities, scarcely any large edifices have been erected in these sections; but in the vicinity of great centres new quarters of some extent have grown up where private houses, villas and establishments of various kinds have been built in large numbers amid gardens and along avenues, forming, for instance, around Dordrecht, Haarlem, the Hague, Arnhem and Nymegen, new towns of the most smiling and varied aspect.

[To be continued.]

ARCHITECT, OWNER & BUILDER BEFORE THE LAW.¹—XXIX.



Throne designed for Napoleon I, by Percier & Fontaine. From Havard's "Dictionnaire de l'Ameublement et de la Decoration."

"COMMENCEMENT."

SOMETIMES courts have to decide upon the meaning of single words or phrases, and their definition is of importance as a precedent. Thus it is often necessary to know what point in the construction of a building shall be considered the commencement—whether this shall be held to be the setting of the batter-boards, the beginning of the digging, or the laying of the first stone. The New Jersey Supreme Court seems to be the only one which has had this word called to its attention, and it has in two cases decided that the "commencement" of a building is the beginning of the excavation.

"ERECTION."

In a similar way, there is sometimes a controversy over what should be understood by the "erection" of a building, some persons claiming that it means the completion of the structure, while others suppose it to mean something else. A

man in Illinois² once subscribed \$400 toward a building for a university, on condition that a building worth a specified sum should be erected within a certain time. At the expiration of the allotted time the walls were up, excepting the chimney and one gable; but the roof was not on, nor were the floors laid, although the materials for the roof and floors, as well as windows, and some other work, were on the ground. The intending benefactor of the university refused to pay his subscription, on the ground that the building had not been erected within the specified time; but the Supreme Court held that erection did not mean completion, and that a building was erected when the walls were up and materials were on the ground to finish it, and that he must pay the money. Similar decisions³ have been given in Indiana, where a house was held to be "erected" which was not plastered, and had not all its windows in; and in Massachusetts; and in the last State, where there was a controversy whether "erecting" a house included also repairing, altering and extending it, the Court held that it did.

"AS DIRECTED."

Where the common expression is used in a specification—that certain work shall be done "as directed"—there has been a dispute as to whose "directions" were intended, and it has been decided by the Missouri Supreme Court⁴ that the "directions" meant are those of the owner.

A question as to what is meant by a clause describing the mode of delivering stone has been decided by the United States courts.⁵ A contract once specified that granite for building should be delivered "on and around the site." The contractor delivered it at one corner of the site, and the Court held that this was not a compliance with the agreement.

EARTH EXCAVATION.

In another case,⁶ a contract was made for some "earth excavation." The contractor found, after the work had proceeded a little way, that the material to be removed was "hard-pan," this being the name given by laborers to a compact, clayey gravel, which is generally so hard as to require breaking out with a pick before it can be removed with a shovel. The contractor sued for extra payment for the work, on the ground that hard-pan was not earth, and was not included in his contract; but the New York Court of Appeals decided that the term "earth excavation" included hard-pan.

In a very similar case,⁷ a man agreed to excavate a ditch for seven cents per cubic yard, "in full compensation for the excavation, back-filling, etc." This would have been a low price if the excavation had been all in earth, but, in fact, a large part of it had to be made in hard-pan and rock, and this part was worth from seventy-five cents to one dollar per yard, instead of seven cents. The contractor sued for an extra price for this part of the work, but the Court held that he could recover nothing beyond the contract-price, and that he could not be permitted even to introduce evidence outside of the contract to prove the value of excavation in hard-pan and rock. The Court said: "It was the duty of the contractor to have ascertained the nature of the soil before entering into the contract. Ordinary diligence would have enabled him to do so."

In a Missouri case,⁸ the contract provided that "all the exterior walls" should be faced with selected face-brick. The owner claimed that this included the fire-walls above the roof; but the Supreme Court decided that these were not included in the term "exterior walls" as used in the contract.

"NOT LESS."

There is often trouble in deciding what is meant by the common expression in contracts, that a given dimension shall be "not less" than a given number of feet or inches. In all cases a Court would look sharply at the wording of the contract, to see whether a contractor really meant to bind himself to make the dimension greater, without extra charge, if the architect, or some one else, should so direct, or if circumstances should render it advisable; but if it should not appear that he intended so to bind himself, its decision would probably follow

² Johnston vs. Ewing, etc. 35 Ill. 518.

³ McLaughlin vs. Child, 62 Ind. 412. Commonwealth vs. Squire, 1 Met. 258. Hastings vs. Aiken, 1 Gray, 163.

⁴ Lancaster vs. Conn. 92 Mo. 460.

⁵ McGowan vs. U. S., 21 Ct. of U. 476.

⁶ Dickinson vs. Poole, 75 N. Y. 65, 77.

⁷ Sherman vs. Mayor of N. Y., 1 N. Y. 516.

⁸ Ittner vs. St. Louis Exp., 97 Mo. 562.

¹ Continued from No. 894, page 88.

that given in a New York case,¹ where the contract provided that the builder should excavate the cellar to a depth of "not less than ten feet." It appeared, after the excavation was commenced, that it would be necessary, on account of the nature of the soil, to carry it to a greater depth than ten feet, in order to secure a proper foundation. The builder claimed that the excavation below the ten-foot level and the additional stonework required to bring the foundation-walls up from the deepened trenches were extra work, and was sustained by the Supreme Court, which decided that he was entitled to additional pay for them.

WHAT IS IMPLIED IN REGARD TO MATERIALS.

An important rule, as defining the general implied understanding in building-contracts, was laid down by a New York court,² and reported in the *Albany Law Journal* as follows:

"In every contract for the furnishing of materials and the performance of the work, in the absence of special provisions, there is an implied agreement on the part of the party who is to perform the work and furnish the materials that they shall not be of an insufficient and inferior description and value, and that the work shall not be totally inadequate to answer the purpose for which it was undertaken to be performed; and, though the agreement was that a specific sum should be paid for the work and materials, the claim may be reduced by showing that the work and materials were of an insufficient description and value, or it may be wholly defeated by showing that they were totally inadequate to answer the purpose for which they were to be furnished."

If, however, the law is strict in this respect, it is also reasonable. A specification once provided that "the best lumber" should be used in a certain building. As not unfrequently happens in such cases, the builder and the owner thought differently as to what "the best lumber" meant, and the Supreme Court³ of Colorado had to be called upon to decide the question, which it did by saying that "the best lumber" must be construed to mean the best lumber of which buildings are ordinarily constructed at that place.

It may sometimes happen that the builder is obliged by circumstances to use certain materials, and he may save himself from responsibility for them by giving proper notice. In a Mississippi case,⁴ a man contracted to build a wall, using certain materials. He told the owner that the materials were bad, but said that he would do as well as he could with them. The owner was often present while the wall was being built, and saw the work and materials. Six months after the completion of the wall, it was found to have been so much affected by the weather as to be worthless. The owner refused to pay the price agreed upon, but the Supreme Court held that the contractor was entitled to recover.

SAND.

In a similar case⁵ in New York, where the contract required the builder to use in the masonry sand taken from the premises, and the work turned out to be defective, on account of the bad quality of the sand, it was held that the owner could not claim damages for these defects. Whether the builder gave notice to the owner, before using the sand, that it was unsuitable, does not appear from the report, but it would, at least, be the part of prudence to do so in similar cases.

OLD MATERIALS.

Before leaving the subject of what the law assumes in matters relating to materials, it may be well to mention two other cases where different points are covered. In one of these the ownership of old materials was the point involved, and the Court⁶ held that, "If the owner of land covered by houses enters into a contract for the erection of other buildings on the same land, and does not provide for the use of the materials of the old buildings in the new, or does not remove them before the contractor takes possession under his contract, he will waive the right to them, and they will belong to the contractor."

In the other case,⁷ a contract was made for the erection of a stone church. The contract said, in one place, "stone for front and footings to be furnished by the owners," but stipulated, in another place, that the contractor was to furnish "all

materials." The agreement further provided that the work should be fully and faithfully performed in a skilful and workmanlike manner, to the full and complete satisfaction of the architect or his assistant superintendent.

NATURAL BED.

The architect did not visit the work while in progress, but, after the building was done and occupied, he came to see it, and refused to accept it, ordering that a large portion of the stonework of the front should be taken down, and rebuilt with larger stones. The church people also refused to make the final payment, alleging, not only that the work had not been executed to the satisfaction of the architect, as the contract required, but that the work was bad, inasmuch as the stones of the facing had not been laid on their natural bed, and, moreover, that the contractor owed them money for the stone which they had furnished for the front and footings.

The Supreme Court held that the two apparently inconsistent clauses in the contract relating to the furnishing of stone should be construed that the owners were to furnish the stone for the front and footings without cost to the contractor. The church people claimed that they only meant that the owners should furnish stone, to be paid for by the contractor; but, as it was proved that they had furnished the stone without asking for any pay, and had said nothing about expecting to be paid for it until after the building was completed, the Court considered that this was good evidence that such payment was not really contemplated in the contract.

As to the claim that the work was not done to the satisfaction of the architect, the Court held that the contract did not require that it should be done to the satisfaction of both the architect and the superintendent, but only to that of either, and, as the superintendent had seen the work going on, and had made no objections, his approval was implied. The contract provided that payment should only be made on the certificate of the architect or superintendent, and on their estimate of the value of the work done, but, as the superintendent had never given any certificate, or made any estimate, yet instalments of the contract price had been paid without them, the Court held that this amounted to a waiver of the condition made by the contract precedent to payment, and that no certificate of satisfaction need be shown, either from the architect or superintendent. The contractor had applied to the superintendent for a final certificate, but the superintendent put him off, telling him to wait until the church was dedicated, and he should be paid. This was brought up to show that the contractor had not complied with the contract provision as to certificates, but the Court held that the action of the superintendent raised the presumption that the work had been done to his satisfaction, and decided that recovery could be had without further certificate.

The claim of the church — that the stone should have been laid on its natural bed — was supported by the testimony of experts, who gave evidence that good workmanship, such as was demanded by the contract, required that it should be so laid; but it was proved that the stone furnished by the owners could not well have been laid on the natural bed, and that the superintendent directed that it should be laid with the bed vertical. It does not appear that the specification required the stone to be laid on the natural bed, and the Court, influenced, probably, by evidence that the work was in other respects good, decided that it was not necessary under the contract.

"MORE OR LESS."

A contract⁸ once provided that materials should be furnished to a certain amount, "more or less," according to specifications and requirements. A controversy arose as to the quantity of materials which must be furnished under this stipulation, and it was held in New York that it required delivery and acceptance of only what was needed and not of any definite quantity.

"PLASTERING."

The courts of the United States have been called upon to define the meaning of the word "Plastering," about which there is often some uncertainty. A contract⁹ was made requiring certain "plastering" to be done for a fixed price. The specification, under the general head of "Plastering," mentioned "Deafening," "Lathing," including wire-lathing, and "Plastering." The contractor claimed that his agreement did not require him to do the work described under the titles of

¹ Anderson vs. Meislahn, 12 Daly, 149.

² Van Hovenburgh vs. Lindsay, 1 Alb. L. J. 122.

³ McIntire vs. Barnes, 4 Col. 285.

⁴ Collins vs. Money, 4 Miss. 11.

⁵ McLane vs. De Leyer, 56 N. Y. 619.

⁶ Morgan vs. Stevens, 6 Abb. N. C. (N. Y.), 356.

⁷ Vermont St. M. E. Church vs. Brose, 104 Ill. 206.

⁸ Callmeyer vs. Mayer, 83 N. Y. 116.

⁹ Mellen vs. Ford, 28 Fed. Rep. 639.

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proper building-methods than any municipal or State regulation which is simply mandatory.

26. *Electrical Trolley* (or other dangerous) system of street-railway, add 2 "

27. *Conflagration Hazard*. — Danger of sweeping fires from outlying exposures, such as extensive frame or lumber districts, aggregations of special hazards, especially woodworkers, about a common water-power, or along a water-front near enough to endanger city, not less than 5 "

Note.—This charge should be very carefully considered. The Schedule is based upon the ordinary conflagration hazard of the average city. Where mercantile and other buildings are abnormally high, especially in the class of towns known as "six-story towns with two-story fire-departments," water-mains small and general construction poor, by reason of incorrect building-methods, defective bricks and mortar, etc., a liberal charge should be made under this item. The "lay of the land," also, should be taken into account, and an extra charge should be made for cities built upon a hill or mountain-side, such as Quebec, St. John's, N. F., Lynchburg, Va., etc. Such conditions minimize the separating effect even of wide streets. Where cities are located in cañons, also, a charge should be made, as in the case of Hot Springs, Ark., Virginia City, etc. (The latter town was destroyed in 1875.) In Astoria, Ore., the business section is built on spires, with an air-space below, and is therefore more liable to a sweeping fire by reason of this fact.

28. *Natural Gas or Oil for Fuel*, add 2 "

29. *High Winds*. — If city subject to high winds, add, according to hazard, say 5 "

30. *Previous Fire-record*. — This Schedule is based on the supposition of a normal fire-record of the city or town to be rated. If, however, the previous fire-record of the place has been abnormal and disastrous, a higher basis-rate for a Standard Building in such place should be made in accordance with such record. An average annual loss for the previous period of five years of not exceeding \$5.00 for each \$1,000 of insurance, as shown by the books of the principal insurance agents or companies, may be regarded as normal. For each dollar of loss, or part thereof, in excess of \$5.00 per \$1,000 of insurance on mercantile business, 20% should be added to the basis-rate of a Standard Building in the city to be rated.

For example, if the average annual fire-loss for the previous five years has been at the rate of \$7.00 per each \$1,000 of insurance, and the rate of a Standard Building in such city has been ascertained to be 40 cents, 40% thereof, or 16 cents, should be added, making 56 cents as the basis-rate of a Standard Building.¹

Note.—Twenty per cent of the key-rate shall be the maximum increase or addition for any one sweeping fire or conflagration.

31. *Exceptional Features of City*. — If the city or town has unfavorable features (not provided for in the Schedule) which are exceptional, and which should be provided for in the general city charge as affecting all structures in the compact portion, charge according to danger

Note.—The only supply water-main for an important Southern city, for example, crosses a wooden railroad bridge, the locomotives using wood for fuel. An important Western city was dependent, at one time, upon the working of a telephone to secure water for fires. It did not work, and a conflagration was the result. Such faults should be roundly charged for.

TOTAL,

DEDUCTIONS.

32. *Chemical Engines on Wheels*. — For each, deduct (not exceeding 5% in all) from above total 3%

33. *Auxiliary Steamers*. — Where a city has gravity water-works, with head sufficient to throw over highest building, or direct-pressure system, and sufficient hose for six streams, if one or more steam-engines, maintained in good condition, are also provided, deduct 5 "

34. *Hook-and-Ladder Trucks*, one to every four steamers, 5 "

Result. — The Basis or "Key Rate" for a Standard Building in said city

This basis-rate, once obtained in this manner, will be the "Key" Rate for rating all buildings in the city, and, so ascertained, it is only necessary thereafter to use the following schedule for rating all structures:

¹ By way of illustration, let us suppose a town whose insurance on mercantile values—buildings and stocks—amounts to \$20,000,000. If its average losses amount to \$100,000 per annum, they would be at the rate of \$5.00 per \$1,000 of insurance, or normal. If the average rate be 1%, the premiums would be \$200,000 and the loss ratio 50%. But let us suppose that, instead of \$100,000 losses per annum, the annual loss is \$140,000, this would be at the rate of \$7.00 per \$1,000, or \$2.00 per \$1,000 in excess of normal, and 70% of the premiums. The Schedule would increase the rate 20% for each dollar in excess of five, or 40%, and, at 140 rate, the premiums would be \$280,000, on which the \$140,000 of losses would be 50%. Mercantile values of a city and the annual fire-loss can be estimated with approximate correctness by an intelligent expert, assisted by the local agents or by the companies. Even where not possible to get accurate figures, however, anything gained under this item of the Schedule will be a practical improvement on present methods, which ignore this feature of previous fire-record altogether.

SCHEDULE TO ASCERTAIN RATE OF ANY BUILDING IN SUCH CITY.

CHARGE.

Having ascertained the Key or Basis Rate for a Standard Building in the city to be 25 cts.
Add thereto for deficiencies from a "Standard Building" as follows:

38. *Walls* (other than "Party," for which see No. 40). — If the two side or bearing walls (or either of them) vary in thickness and ledges from standard construction, add according to deficiencies;

This may be computed by charging for variation of the wall from the standard by estimating the average thickness of standard required for a building of equal height and charging at the rate of 2 cents for each deficiency of 4 inches of average thickness or fraction thereof. (If building over four stories high, double the charge.) For example, the average thickness of a four-story wall, according to standard, would be $12 + 16 + 20 + 24 = 72$ inches, averaging 18 inches throughout; if the wall should be 12 inches average thickness, 4 cents should be added. If two independent walls adjoin, 4 inches may be deducted from the average of these requirements.

39. "On buildings over three stories high, if average thickness less than 12 inches (no portion to be less than 8 inches), charge, according to danger and adjoining buildings, not less than 8 "

(This in addition to No. 38.)

40. *Party-walls*. — Should average 4 inches thicker than independent walls, and should be 16 inches for the top story, increasing 4 inches for each story to the foundation; no portion to be less than 12 inches. For each inch of deficiency of the average thickness of the wall to be rated from the average thickness of a standard wall, charge 1 "

For example, a standard four-story party-wall would be $16 + 20 + 24 + 28 = 88$, or average 22 inches, and if risk is 18 inches average thickness, 4 cents should be charged.

41. "If party-wall be less than 12 inches thick for any portion thereof, charge, according to danger and adjoining buildings, not less than 10 "

(This in addition to No. 40.)

Note.—In buildings where wooden beams or girders are used, the ends of beams should be protected by iron anchor-boxes or tin, to prevent charring if in proximity to flames. The timbers should also be chamfered off or cut on a bevel of 3 inches, so as to be self-releasing in case they are burned through, permitting them to fall without tearing out the walls. At least one beam in five, however, should be tied to the walls, to strengthen the building. This may be accomplished by a projecting tongue or lug on the bearing corresponding with a groove in the lower side of the beam, which would lift off the lug in case the beam should fall. If these provisions are made a deduction may be made. (See item No. 178.)

42. "If walls not parapet through roof at least 12 inches, and coped, add for each exposed side 5 "

Note.—If the building be higher or lower than the adjoining building by a difference of 12 inches or more, without openings in excess height, — unless openings be protected with approved tin-covered wood shutters, — and without wooden cornices or exposed woodwork, no charge need be made for absence of parapet. If parapet exceeds 12 inches, see deduction No. 126.

43. "If the brick are not hard burned and of good quality, or if the mortar be of poor quality for want of sharp sand, etc., an additional charge should be made of not less than 20 "

(This charge very necessary in a large portion of the South and West.)

Veneered Walls. — See Frame Schedule.

44. *Iron Fronts*. — If iron front is not backed-up solidly with bricks and mortar, charge 5 "

45. "If so backed-up, charge 2 "

46. "If building adjoins other iron fronts, making one continuous iron frontage, add for each iron front in the continuous line 2 "

Note.—Buildings having a continuous iron frontage are liable to be ignited by the raised temperature of the iron front of the one on fire, and the connection between the division-walls and the iron front is not always thoroughly cut off where the front connects with brick side-walls; nor can defects always be discovered, which is one reason for the extra charge.

47. *Roof*. — If approved composition covered with gravel, add 1 "

48. "If slate roof, add 2 "

49. "If shingled, add 15 "

50. "If mansard roof with wooden frame, even though covered with slate or metal, for three or four story building, add for mansard one side 15 "

For each additional side 5 "

51. "For mansard, as above, on a building of five stories or more, add for one side 20 "

For each additional side 10 "

(This in addition to height-charge.)

52. *Roof-spaces, Blind-attics, Cock-lofts, etc.* — If hollow air-space left next roof, plastered or ceiled below, add for each vertical foot 3 "

If pitch-roof or slanting roof charge for maximum height (not exceeding a total of 10 cents).

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52. *Roof-spaces, Blind-attics, Cock-lofts, etc.*—If said air-space communicates with elevator or other shafts, connecting it by air-draughts with the main building, see No. 153.
53. *Floors.*—If not standard, but of two thicknesses of floor-plank, add 3 "
- Note.*—If the two courses of floor-plank cross each other diagonally, which would prevent coincidence of cracks or joints, the floor would be more fire-resisting and waterproof.
54. "If with only one course of floor-plank, charge 5 "
55. "If floor-beams or joist be less than 3 inches (say 3 x 10) thick, charge, in addition to 53 or 54, 3 "
- Note.*—This charge is an important one and in some cities should be larger, not only on account of the small carrying capacity of the floor, but also on account of the brief resistance to flame which smaller floor-beams than 3 x 10 (practically two-inch plank on edge) present. In some sections, this plan of construction is so common that it is safe to assume and charge for the fault in the absence of knowledge, if investigation or inquiry fails to determine the facts.
- "If first floor "fireproof or fire-resisting," according to standard, see deductions.
56. *Wooden Ceiling.*—If ceiling of wood or strawboard or other combustible material, add, according to hazard, not less than 5 cents for one story, and 3 cents for each additional story (If cloth, charge 10 cents each story.)
57. "If side-walls ceiled with wood or other combustible material from floor to ceiling (no charge for dados), charge for one story 5 cents and 3 cents for each additional story (If cloth, charge 10 cents each story.)
58. *Area.*—If ground-floor area in excess of 2,500 square feet and not exceeding 5,000 square feet, add for each 1,000 square feet in excess of 2,500 square feet 1 "
59. "If ground-floor exceeds 5,000 square feet, add for each 1,000 in excess of 2,500 up to 10,000, in buildings not over three stories high 2 "
- In buildings over three stories and not over six 3 "
60. "If ground-floor exceeds 10,000 square feet, add for each 1,000 or fraction thereof in excess of 2,500, on buildings not over three stories high 2 1/2 "
61. "In buildings over three stories and not over 6 5 "
- (Not exceeding a total of 200 cents.)
62. "If building exceeds six stories in height and 10,000 square feet of ground-floor area, double the area-charge (Not exceeding a total of 300 cents.)
- If building of standard fire-resisting construction throughout, one-half the area-charge only should be made.
- One-story building,* one-half the charge for three-story.
- Two-story building,* two-thirds the charge for three-story.
- If curtain or cross or division walls, subdividing and strengthening the building, even though with arched openings, deduct 10% of area-charge for each wall so dividing the risk, not exceeding a total deduction of 40% of the area-charge. Communications with adjoining buildings unprotected, charge for area both buildings and allow for the division-walls.
- Single Occupancy.*—If only one tenant (outside of dwelling and office tenants), twenty per cent (20%) of the area-charge may be deducted.
63. *Height.*—For fifth story, add 5 "
64. "For sixth story, add 10 "
65. "For seventh story, add 25 "
66. "For each story in excess of seven add 40 "
- These charges cumulative; for example: a seven-story building would have 40 cents added. If any story double height, charge for two. Those who think larger height charges than the above should be made must not overlook the fact that the provisions of Nos. 38, 39, 40 and 41, as to wall requirements, together with the area-charges 62, etc., will make the charges sufficiently high for tall buildings, especially unless exceptionally well constructed.
- Note.*—A building standard throughout may be constructed seven stories high without extra charge, in a fire-department town whose key-rate does not exceed 30 cents.
67. *Elevators.*—If not in shaft, according to the standard, but in hallway or enclosed in lath-and-plaster partitions, or with self-closing traps at each floor, charge 5 "
68. "If open from floor to floor and varying from above, charge 12 "
69. "If shaft is sheathed or lined with wood (unless covered with tin or galvanized-iron, or enclosed as above), charge 15 "
- If elevator and stairway are combined and contained in the same shaft or opening, make only one charge for the two. If more than one elevator, add one-fourth charge for each in excess of one. Bottom of elevator-shaft used for closets, see No. 141.
70. "One-half the above charges for elevators in buildings otherwise standard throughout, or in buildings occupied exclusively for offices.
- Note.*—Nothing so weakens the fire-resisting properties of a building as unprotected openings from cellar to roof, such as unenclosed stairways, open elevator-shafts, well-holes, etc. They insure the rapid progress of fire throughout the structure on the same principle that a stovepipe promotes combustion in a stove; and there is no excuse for such faults in mercantile buildings. Even when enclosed in ordinary lath-and-plaster partitions, with wooden doors at each floor, combustion may be retarded sufficiently to enable the fire-department to arrive in time to save the building. Every minute

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- gained when a fire starts increases the probability of extinction. In this view, it is a grave question if the protection of these communications from floor to floor be not more important than the structural composition of the floors themselves. It is possible to protect elevator-shafts, even after the erection of building, by metallic lath and plaster.
71. *Stairways.*—If not enclosed according to the standard, but in separate hallway or shaft enclosed by lath-and-plaster partitions, with self-closing spring-doors at each floor, or trap-doors in floors, charge 7 "
- (If charge has been made for 67, 68 or 69, one-half charge.)
72. "If the enclosure is of wooden partitions instead of lath and plaster, with self-closing doors at each floor, charge 10 "
- (If charge has been made for 67, 68 or 69, one-half charge.)
73. "If open staircases from floor to floor throughout building, not cut off by partitions and doors, charge, according to hazard, not less than 15 "
- (If charge has been made for 67, 68 or 69, one-half charge.) If more than one stairway, one-fourth charge for each additional.
- No charge under these stairway items for buildings occupied exclusively for offices or dwellings above first story when stairway does not open into store.
74. *Well-holes, Hatchways, etc.*—If not provided with self-closing traps, add, according to size, for each floor pierced, not less than 3 "
75. *Wooden Chutes, Dumb-waiters* (unless enclosed in brick, with standard doors), *Ventilating-shafts, Belt-holes* and openings through floors for steam and water pipes, etc., tend to the rapid spread of fire throughout the building, and should be charged for according to size, not less in any case, for each floor pierced, than 1 "
- Note.*—No charge need be made for openings for steam and water pipes if the space around the pipes is filled-in with mineral-wool, asbestos or other incombustible material, or otherwise arranged to prevent draughts and leakage of water to floor below.
76. *Skylights.*—If more than three feet square (nine square feet), add for each nine square feet, or fraction thereof, in excess (not exceeding a total of 25 cents) 2 "
- If metallic frames and heavy deck or prismatic glass, no charge. Glass should be 1/2 inch, if through roof, and 3/4 inch if through floor.
77. "If covered with strong wire netting, one-half charge.
78. "If skylight is monitor style, i. e., box form with raised sides, charge for square feet in sides as well as top
79. *Cornices.*—For wooden cornices, wooden dormer-windows, cupolas, monitor-roofs, large wooden signs, or other exceptional features, add according to hazard, taking into account height of building and nature of exposures, not less, however, in any case, than 3 "
80. *Wooden Awnings.*—If building has wooden awnings, and is only one story high, so that awning would endanger roof, add 10 "
81. "If in non-fire-department town charge from 10 to 20 "
82. "If building is two stories or more high (in which case there would be less danger to roof-timbers), add 1 ct.
83. "If in non-fire-department town charge from 5 to 10 cts.
84. *Lighting.*—If by electricity, with system and installation in compliance with Board rules and specifications, add 2 "
85. "If by electricity, with system and installation not in compliance with Board rules, or in unsafe condition, see No. 154.
- For swinging gas-brackets, etc., see No. 142.
86. "If by kerosene, add 2 "
- (No charge, if charge of 2 cents or more has been made for electric light.)
87. *Heating.*—If by furnace, add 3 "
88. " " " " with metallic cold-air box and hot-air pipes through brick walls, and one register fastened open, add (instead of No. 87), 2 "
- All vertical hot-air pipes should be enclosed in the brick walls whenever possible; if passing horizontally between floor and ceiling below, or vertically in lath-and-plaster partition between studs, they should be double, with an inch space between the two pipes, and the studs should be sheathed with tin. Inasmuch as it is impossible to ascertain these facts some charge should be made for all hot-air pipes of this character, and not less than 2 cents should be added.
- (A metallic cold-air box or duct of tin or galvanized-iron is essential for health as well as for safety from fire. A wooden box soon opens joints and cracks from seasoning, and takes the foul air of the cellar, from damp coal, decaying vegetables, etc., which is forced throughout the living and sleeping rooms of the house by the operation of the furnace. If property-owners could be made to realize this, all cold-air boxes would be of metal.)
89. "If by stoves, add 2 "
90. "If stovepipes through floors or hollow partitions with double thimbles, or safely protected, charge for each passage from 2 cents to 10 "
91. "If through partition not protected, charge as in No. 140.

Brought Forward..... Charge 25 cts. + — cts.

92. *Heating.* — Stovepipes through windows, roofs, etc., protected by double metal chimneys, etc., No. 140.
93. " Stovepipes through windows, roofs, etc., not protected by double metal chimneys, etc., No. 140.
94. " If stovepipe enters bottom of flue vertically, charge at 140.
95. " If stovepipe enters chimney in attic or unused room, charge at 140.
96. " Natural-gas or oil-fuel, with approved pressure-regulating appliances, add 5 "
97. *Chimneys.* — If not built from ground but resting on beams or brackets, charge for each 5 "
(Note. — There should be not less than six courses of brick at the bottom, or three courses with a flagstone.)
98. " If inadequate for service required, or with flue-walls less than 8 inches thick, — "one-brick chimneys," — unless latter are lined with pipe or burnt clay or cast-iron, charge from 5 cents to 50 "
99. " If chimney rests on attic-floor-beam or roof-joint, charge (in addition to No. 97) 25 "
100. " If constructed of poor bricks or mortar, charge not less than (this is in addition to No. 43) 20 "
101. " If cement or terra-cotta chimneys, add 50 "
102. *Street.* — If street on which building fronts is unpaved, or otherwise inaccessible, especially during wet seasons, for fire-department, add, according to hazard, not less than 10 "
(If no fire-department, no charge for this.)
103. " If less than 60 feet wide from building to building (i. e., including sidewalks), but not less than 50, add (unless opposite side of street is vacant) 2 "
104. " For each 5 feet less than 50 in width, unless opposite side of street is vacant, add 2 "
Note. — This charge for narrowness of street on which the building is located is necessary in addition to any charge that may have been made in the basis-rate in a city of narrow streets, which charge is intended to cover the conflagration hazard; the charge on each building for inaccessibility of street to fire-department is necessary even where the extra city charge has been made. For example, in St. Jo., Mo., or Mobile, where the majority of the streets are from 40 to 50 feet in width, the rate of a risk, even on a street 120 feet wide, by reason of the exposure of all buildings behind it, rendering it more liable to burn by a sweeping conflagration, should be greater than that of a building which fronts on a narrow street lying between two 120-foot streets, in a city like Washington, where only the charge for the risk itself is necessary.
105. *Overhead Wires, Telegraph, etc.,* on poles in front of building in sufficient number to interfere with operations of fire-department, charge according to quantity not less than 2 "
106. *Number of Tenants* (other than office and dwelling tenants). — For each tenant in excess of one, add 2 "
Note. — This is intended as a personal charge, only, to cover the average moral hazard, carelessness, negligence, etc., which increase in proportion to the number of tenants. The physical hazard of additional tenants, by reason of extra quantity or cubic feet of material, stock, etc., will be provided for by other charges, area, height, etc., and the charge for stocks above or below the grade floor, and area charge, where, as will be seen, discrimination is made in favor of single occupancy buildings.
107. *Age of Building.* — If over 20 years, add 2 "
108. *Frame Rearrs, Extensions, etc.* — According to danger and number in block, not less than 10 "
Note. — This is very important, as entire brick blocks are frequently destroyed by reason of small frame rearrs and extensions.
109. *Stone Piers, Stone Columns, Pillars,* or brick piers with bond-stones, carrying important weights, especially if supporting beams or girders in basements, cellars, etc., charge according to number not less than 5 "

(Stone columns subjected to fire and water are certain to disintegrate and wreck the building.)

TOTAL,

DEDUCTIONS FOR EXCEPTIONAL CONSTRUCTION, ETC.

118. *Small Risks.* — If building is not over 1,500 square feet of ground-floor area, say 25 x 60, and not over three stories high, deduct 10% of above total.
119. *Floors.* — For tin or sheet-iron between floors, deduct from schedule-rate obtained an amount equal to 5% " "
120. " If waterproof-paper between, deduct 2% " "
121. " If waterproof, arranged with waste-ways and scuppers and inclined to carry off surplus water thrown by department to sewer or street, deduct 5% " "
122. " If the grade floor be fireproof, protecting the upper portion of the building from fires in the basement or cellar, and the communicating stairway to main building thoroughly cut off, deduct 10% " "

Brought Forward..... Charge 25 cts. + — cts.

123. *Floors.* — For each fireproof floor above the grade floor, deduct 5% of above total.
(Not exceeding 40% in all.)
124. *Ceilings and Partitions.* — Of incombustible material throughout or plastered on metallic studs and lathing, the lathing to have good key for plaster (no deduction for this in fireproof construction), deduct 10% " "
125. If metallic lathing on wooden studs, deduct 5% " "
Note. — If the main "fore and aft" partition separating halls containing stairs and elevators from the stores be of brick or metallic lathing, etc., with protected openings, it would save building from charges, 67, 68, 69, 70, etc., as to elevators and stairways.
126. *Parapet-walls.* — If carried more than 12 inches above roof, and coped or covered, deduct for each foot in excess of one (not exceeding 3% in all) 1% " "
Note. — Parapet-walls which are three feet or more in height are improved if pierced for use of hose.
127. *RESULT.* — Rate of building *unoccupied*.....
Occupancy, add the figure named for the occupancy in the first column of the alphabetical table of occupancy, page —, selecting, in case there be more than one occupancy, the highest rated one for such addition, to get the occupied rate of building (retail drugs, for example, add 10 cents, while cigars and tobacco add only 5 cents; the 10 cent charge, therefore, should be selected).
128. *RESULT.* — Rate of building *occupied*.....
Subject to any deductions to which the risk may be entitled in the list.
129. *RESULT.* — *Net rate of building occupied, unexposed.*
130. *Exposure,* add according to hazard.¹
131. *RESULT.* — *Net rate building occupied and exposed.*
Deduct for % coinsurance. — (See rule, page —.)
On blds. in fire-dept. towns, for 80% . . . 15% of above total.
On blds. in non-fire-dept. towns . . . 7½% " "
132. *RESULT.* — Rate of bldg. occupied, with coinsurance.
Note. — To secure deduction for coinsurance the percentage coinsurance clause, page —, must be attached to policy.
- Add for Adverse Legislation, taxation, etc., 136, etc.
- " " Faults of Management, if any, No. 140 to No. 154.
- Final Rate of Building*.....

RATE ON STOCKS.

To obtain rate on stocks or other contents, add to rate of building unoccupied, No. 127.....
the rate named in the second column of the occupancy table for the stock to be rated, first deducting therefrom 25% of the deficiencies of the building from standard construction (viz: the above rate of building unoccupied No. 127, less rate of standard building 25 cents), in accordance with rule on page —.

To which add, in case there be any other occupancy of building which increases the rate of the building by a greater amount named for the first column of the occupancy table than the risk to be rated, the difference between such higher figure and that named for the risk (for example, retail drugs adding 10 cents to building, and a cigar-store adding 5 cents, the difference, 5 cents, should be added to the stock rate on cigars)

Add if entire stock is above or below grade floor, see rule, p. —.

133. Subject to any deductions to which the risk may be entitled in the list, pages 28, 29, 30.

134. *RESULT.* — *Net rate on stock in unexposed building.*

134a. *Exposures,* see note page —, add according to hazard.

Deduct for % coinsurance (see rule p. —.)

135. *RESULT,* rate of stock with % coinsurance.

Note. — To secure deduction for coinsurance the percentage coinsurance clause, page —, must be attached to policy.

¹ Note. — This will involve careful consideration of many facts and conditions, the distance of the risk from the exposure, the relative area, size and height of the two buildings, the thickness of walls and the number and protection of openings, the character of roofs and other features of construction, as well as the nature of contents (a building containing oils or a stock of furniture, for example, being a much worse exposure at the same distance from a risk than one containing millinery goods), and also upon the provisions, public and private, for extinguishing fire. It should be borne in mind that by the extent a risk exposed would be damaged, even in paint or glass, the company insuring it is carrying the risk of the exposing hazard. If, for example, a building worth \$50,000, whose unexposed rate would be 50 cents, is exposed by a planing-mill worth 10%, whose burning would probably damage the risk, in the opinion of the rating expert, to the extent of \$500, the insurance companies are clearly running the additional risk of having \$500 involved in the burning of the 10% mill, and ought, therefore, to receive \$50 additional premium for it. To collect this on the \$50,000 risk would require an addition to its rate of 10 cents per \$100, which would increase its rate from 50 cents to 60 cents. No charge need be made for danger of exposure by reason of openings on an exposed side, if they are protected by standard shutters; otherwise, a charge should be made of 5 cents and upwards, according to danger. While a building of standard construction ought not only to protect its own contents from outside exposure, and also prove a safe oven for the cremation of its own contents without damage to adjacent property, in all cities where there are continuous blocks of ordinary buildings an exposure charge should invariably be applied. Exposure charges are generally inadequate, especially where the exposing risk is of large area and inflammable contents, or where it is of greater height so as to endanger the risk if its walls should fall.

² In non-fire-department towns, not exceeding one-half the exposure charges to a weak building badly exposed should be added to the rate of a movable grade-floor stock contained in it.

Brought Forward Charge 25 cts. + — cts.

Add for Adverse Legislation, taxation, etc., No. 136, etc.

" " Faults of Management, if any, Nos. 140 to 154.

Final Rate of Stock.

CHARGES FOR ADVERSE LEGISLATION.

136. *Valued-Policy Law.* — If law applies to personal property as well as buildings, add from 50 cts. to 100 "
137. " If law applies to buildings only, add to building rate, according to effect of law, from 10 cts. to 50 "
- " If law applies to buildings only, add, on stocks and other personal property therein, according to effect of law, from 5 cts. to 25 "
- Note.* — In those States, like Texas, where the provisions of the valued-policy law as construed by the courts are especially dangerous, these charges may be too small; while in such of the remaining valued-policy law States (Ohio, Wis., Mo., N. H., Ark., Del., Neb.) where the observed effect of the laws as construed by the courts is less expensive, the charge may be modified.
138. *Anti-compact* or other laws prohibiting agreements among companies, add, according to increased expense of transacting business, from 2 cts. to 10 "
- Note.* — Equitable and discriminating rating by schedule is only possible by cooperation of Insurance Companies for comparing their experience, and sharing and lessening the expense, and is in the interest of all property-owners.
139. *Taxation and Licenses, State and Municipal.* — If taxation other than on net results to company after deducting losses and expenses, and not exceeding 2% thereon, add according to amount, say double the excess tax.

TOTAL,

FAULTS OF MANAGEMENT, NEGLIGENCE, ETC.

The following charges, being for faults which would naturally and probably be corrected to escape the penalty, have been arranged as a final addition after the net rate with co-insurance has been computed, in order that the computation will not have to be reopened and deductions again calculated when the fault is corrected.

140. *Stovepipes.* — If through floors or hollow partitions unprotected, charge 50 cts. If through windows or roofs protected by double metal chimneys, 50 cts (if unprotected, 100 cts). If pipe enters bottom of flue vertically, 25 cts. If pipe enters flue in attic or unused room 25 cts.
141. If bottom of elevator-shaft is used for store-room, coat-closets or lamp and oil closets, charge 50 "
142. Swinging gas-brackets unprovided with stops, or within 36 inches of woodwork overhead, or otherwise unsafe (ditto as to bracket lamps), for one, add not less than 5 "
- For each additional one, add one cent.*
143. Charge for untidiness as to rubbish, ashes, etc., especially in cellar, not less than 25 "
144. Broken plastering, exposing lathing, broken windows, especially on lower floors, etc., 10 to 25 "
145. Empty boxes, barrels and rubbish in rear yards or alleys or in the recess for windows below grade, or in area or cellar openings under sidewalk gratings 10 "
146. Lights in show-windows, open or unprotected, 25 "
147. Sawdust spittoons, or sawdust on floors, especially in drug and oil stores 25 "
148. If kerosene is used on floors when sweeping 25 "
149. *Ash and Waste Cans* to be of metal. If not, charge 10 "
150. *Hot-air Furnaces.* — The top of a brick furnace should be not less than four inches below wooden beams or plastered ceiling above, with a hanging shield. If portable furnace, not less than twelve inches, with shield; charge for deficiency from 10 cents to 25 "
151. *Fireplaces.* — Wooden floors should be trimmed at least sixteen inches from the front of chimney-breast or fireplace, with a hearth of stone, brick or tile, supported by trimmer arch, which should be at least sixteen inches in width, measuring from the face of the chimney-breast. If not so trimmed, or if hearth rests on wooden beams, or if wooden fire-boards or summer-pieces are used, or if wooden mantels are not protected with brickwork, or if stovepipe holes are not provided with metal stoppers, charge from 5 cts. to 25 "
152. *Steam-pipes.* — In contact with woodwork, charge not less than 1 "
153. *Roof-spaces, Blind-attics, Cock-lofts, etc.* — If elevator-shaft, ventilating or other shafts communicate with roof-space, connecting it by air draughts with the building, add not less than 25 "
154. Electric lighting system and installation not in compliance with Underwriters' Rules; or arc-lights unprotected by tight globes or screens 25 "

TOTAL,

DEDUCTIONS FOR EXCEPTIONAL FEATURES OF CONSTRUCTION, FIRE-APPLIANCES, ETC.

The following deductions are separated so as to apply, some of them to buildings and some of them to stocks. Certain features of construction and extinction may be of advantage to the one and of none whatever to the other.

The deduction for self-releasing floor-beams, arranged to prevent their tearing-out the walls in case they should burn through and fall, No. 178, for example, has not been credited to stocks, because at the point where such provision would insure salvage on the walls the stock would have been destroyed. In like manner, fire-patrols or salvage-corps for saving merchandise by tarpaulin covers, etc., are credited to stocks, being of little value to the building.

No system of schedule rating can be correct which first builds-up the rate of a building, taking into account all features of extinction and construction, and then adds to the final building-rate so obtained a fixed sum intended to measure the additional cost of insuring the stock. Even a charge for exposure to a building ought to be considered and treated separately from the stock. An exposure which would damage the building might not in any way endanger a stock contained in it.

If an ideal or perfect standard should be employed for rating each risk, necessitating charges for variations or deficiencies, unnecessary labor would be entailed for the large majority of risks to be rated. The treatment of exceptional features of construction by making deductions not only saves labor on the large majority of risks which are deficient, but also insures that in case any feature is overlooked, the insurance company will not be the loser, as would be the case if recognition of the exceptional feature should be provided for by charges for its absence. Omissions would be especially frequent in the case of such features as self-releasing floor-beams, waterproof paper between floors, metallic lathing, etc., which are not always easily ascertained. If the property-owner is entitled to them he is not likely to overlook them.

DEDUCTIONS FROM RATE OF BUILDINGS.

The following deductions for exceptional features may be made from the occupied rate of buildings, after the occupancy charge has been added, by the following percentages of such occupied or gross rates (No. 128):

155. *Hydrants, etc.* — If building within 300 feet of one post or flush hydrant supplied by 8-inch or larger water-pipe, deduct 5% of bld'g rate (No. 128).
(If 6-inch pipe, one-half deduction.)
156. " If within 300 feet of two or more hydrants supplied by 8-inch or larger water-pipe, deduct 10% " "
- (If 6-inch pipe, one-half deduction.)
157. " If said water-pipe be fed at both ends by mains or sub-mains, deduct an additional 5% " "
- (If 6-inch pipe, deduct one-half.)
- Note.* — Hydrants form the connecting-link with the fire-department of the city, and on their proximity depend the availability and value of steamers, etc. For this reason, risks in the suburbs of a city which are unprovided with hydrant service ought not to receive the full credit of the fire-department.
158. For approved automatic fire-alarm telegraph-signal to a central station, or fire-department station with thermostats, deduct 5% " "
159. *Chemical Engines on Wheels.* — If one or more chemical engines are available in case of fire, deduct 5% " "
160. *Fire-escapes.* — If iron fire-escapes are provided on the outside of building, with landings at each floor, deduct 2% " "
- Note.* — These are of advantage, and are relied upon by firemen for fighting a fire, enabling them to hold advantageous positions to the last moment.
161. *Casks of Water* or filled water-pails on each floor, deduct, if no public hydrants within 300 feet, 10%; if hydrants within 300 feet, 5% " "
- Note.* — To receive above deduction, there must be at least six filled pails for each 2,500 square feet of floor-area. If one-half the number of pails be filled with sand, especially in oil-stores, sand being better than water for oil-fires, or where water would be likely to freeze, it would be an improvement.
162. *Stand-pipes.* — *Internal*, supplied from tank, with hydrants and hose attached at each floor at landings, deduct 2% " "
163. " If stand-pipes without tank, but under pressure to insure water on highest floor, 1% " "
164. *Stand-pipes.* — *External*, for use of fire-department, with Siamese connections, deduct 1% " "
165. *Accessibility to Fire-department.* — If building is on a corner, or extends through to rear street or wide alley, affording access to fire-department for fire-extinction or removal of goods, deduct for each side or rear so accessible (none for front) 3% " "

Brought Forward.....			
166. Proximity to Fire-engine House, etc. — If risk to be rated is within 300 feet of a fire-department house, engine or hose house, which would insure prompt response of skilled men to any fire-alarm, deduct	2%	of bld'g rate (No. 128).	"
If next door or opposite side street,	5%	"	"
167. Basement and Sub-cellar Sprinklers. — If perforated 2½-inch pipe be provided in basement and sub-cellar with attachment at street-grade for fire-department, standard size of thread and coupling and standard butt, and with waste-ways to sewer, deduct	2½%	"	"
<i>Note.</i> —Aside from the fact that fires are most likely to start in basements and sub-cellars, where accumulated rubbish, etc., cause them, it is difficult for the firemen to reach them. A system of piping, therefore, which would enable them to make hose-connections at the street-level would be of great advantage.			
168. Automatic-sprinklers in Basement and Sub-cellars. — If approved installation (unless deduction has been made for sprinklers throughout building, in which case no allowance for this), deduct	5%	"	"
169. Dwelling Occupancy. — If the occupancy of the building above the grade-floor is for a family dwelling exclusively, 20% may be deducted from the rate of the building	20%	"	"
<i>(If one floor only so occupied, deduct 10%).</i>			
170. " If occupied by two families,	15%	"	"
171. " If occupied by more than two families,	10%	"	"
172. " If occupied as a tenement-house above the grade-floor, with the grade-floor hall-door open night and day, deduct only	5%	"	"
173. Office Occupancy. — If building occupied throughout exclusively for offices, or office and dwelling, deduct	25%	"	"
174. " If building occupied above grade-floor exclusively for offices, or offices and dwelling, deduct	10%	"	"
175. Watchman. — If watchman (on premises), but no watch-clock, deduct	5%	"	"
176. " If watchman (on premises), with watch-clock or electric detector, deduct	10%	"	"
<i>(N. B. — If automatics, No. 158, only one-half deduction for watchman.)</i>			
177. Roof-hydrants, protected from freezing, deduct	2%	"	"
178. If floor-beams and girders are arranged so as to be self-releasing in case of fire, by means of metallic anchor-boxes or other provisions, deduct	1%	"	"
<i>(See note 41.)</i>			
179	TOTAL,		

EXCEPTIONAL CITY FIRE-DEPARTMENTS.

(The following deductions to be made from net rate of building, No. 129, after above deductions have been made.)

184. Extra Steamers. — If exceeding five steam fire-engines can be supplied with water and assembled at a fire, deduct for each engine in excess of five (one-half of one per cent), not exceeding total of 20%	½%	of net rate (129).	"
<i>Note.</i> —The immense advantage in the cumulative effect of a large number of steam fire-engines which can be assembled at a fire, to the number of fifty or more, in cities like New York, Chicago, Boston, etc., even though there be no more than two to each square mile of compact portion, is not overestimated in the above percentages.			
185. Water-tower. — If one, deduct	2½%	"	"
" " If two, deduct	5%	"	"
<i>Note.</i> —To secure this, risk must be within reach of tower.			
186. Fire-boats. — For risks near water-front, say within 500 feet, where protection of fire-boats can be secured, deduct	5%	"	"
TOTAL,			

DEDUCTIONS FROM STOCK RATES.

The following deductions for exceptional features may be made from the rate on stocks obtained by the rule explained later. The percentage to be deducted is the percentage of the said total stock rate (No. 133):

190. Hydrants, etc. — If building within 300 feet

of one post or flush hydrant supplied by 8-inch or larger water-pipe, deduct	4%	of final stock rate (133).	"
<i>(If 6-inch pipe, one-half deduction.)</i>			
191. Hydrants, etc. — If within 300 feet of two or more hydrants supplied by 8-inch or larger water-pipe, deduct	6%	"	"
<i>(If 6-inch pipe, one-half deduction.)</i>			
192. " If said water-pipe is fed at both ends by mains or sub-mains, deduct an additional	4%	"	"
<i>(If 6-inch pipe, one-half deduction.)</i>			
<i>Note.</i> —The same percentage of deduction is not allowed as in the case of building, for two reasons: first, the water-throwing of a fire-department is not as beneficial to stocks as to buildings; and, second, the stock rate, being the larger rate of the two, would, on the lower percentage of deduction, get the full measure of credit.			
193. For approved automatic fire-alarm telegraph signal to a central station, or fire-department station with thermostats, deduct	5%	"	"
194. Chemical Engines on Wheels. — If one or more chemical engines are available in case of fire, deduct	5%	"	"
195. Fire-escapes. — If iron fire-escapes are provided on the outside of building, with landings at each floor, deduct	2%	"	"
<i>Note.</i> —These are of advantage, and are relied upon by firemen for fighting a fire, enabling them to hold advantageous positions.			
196. Casks of Water or filled pails on each floor, deduct, if no public hydrants within 300 feet, 10%; if hydrants 300 feet	5%	"	"
<i>Note.</i> —To receive above deduction there must be at least six filled pails for each 2,500 square feet of floor-area. If one-half the number of pails be filled with sand, especially in oil-stores, sand being better than water for oil-fires, or where water would be likely to freeze, it would be an improvement.			
197. Stand-pipes, — Internal, supplied from tank, with hydrants and hose attached at each floor at landings, deduct	2%	"	"
198. Stand-pipes, — External, for use of fire-department, with Siamese connections, deduct	1%	"	"
199. Accessibility to Fire-department. — If building is on a corner or extends through to rear street or wide alley, affording access to fire-department for fire extinction or removal of goods, deduct for each side or rear so accessible (no deduction for front)	3%	"	"
200. Proximity to Fire-engine House, etc. — If risk to be rated is within 300 feet of a fire-engine house or hose-house, which should insure prompt response of skilled men to any fire-alarm, deduct	2%	"	"
If next door or opposite side street	5%	"	"
201. Basement and Sub-cellar Sprinklers. — If perforated 2½ inch-pipe be provided in basement and sub-cellar with attachment at street-grade for fire-department, with standard size of thread and coupling, and standard butt, and with water-ways to sewer, and merchandise be on skids, deduct	2%	"	"
202. Automatic-sprinklers in Basement and Sub-cellars. — If approved installation, deduct	5%	"	"
<i>(Unless deduction has been made for sprinklers throughout building, in which case no allowance for this.)</i>			
203. Dwelling Occupancy. — If the occupancy of the building above the ground-floor is for a family dwelling exclusively, deduct	20%	"	"
204. " If occupied by two families	15%	"	"
205. " If occupied by more than two families	10%	"	"
206. " If occupied as a tenement-house above the grade-floor, with the grade-floor hall-door open night and day, deduct only	5%	"	"
207. Office Occupancy. — If building above grade-floor is occupied entirely for offices, deduct	5%	"	"
" If offices and dwelling	10%	"	"
209. Watchman. — If watchman on premises, and no watch-clock, deduct	5%	"	"
210. " If watchman on premises, with watch-clock or electric detector, deduct	15%	"	"
<i>Note.</i> —One-half deduction if automatic alarm, No. 193.			

Brought Forward.....

211. *Roof Hydrants.*—Protected from freezing, deduct 1% of final stock rate (133).
212. *Fire-patrol.*—For salvage-corps or fire-patrol, if supported by city, deduct 3% " "
- If supported by the insurance companies, deduct nothing. (Having paid for it, they are entitled to it.)
213. *Covers, Tarpaulins.*—If merchandise covered by tarpaulins or other waterproof covers each night, deduct 5% " "
- (These covers may be made fire-resisting by fireproofing processes.)
214. *Tin-covered Cases.*—If merchandise be kept in tin-covered wooden side-wall and other cases, deduct 5% " "
- Note.*—These cases may be economically made of ordinary white pine, covered with tin, in the same manner that tin-covered doors and shutters are made (see specifications on these points) and may be grained to resemble woods, or may be veneered with real woods—mahogany, cherry, or others—without impairing their fire-resisting qualities. Especially should the top and back of the case be covered with tin, to shed water, the top being inclined to throw the water beyond the line of frontage. If tin-covered sliding doors to these cases would prevent display of stock, glass doors may be used, which would save such stocks as hats, millinery, silks, cutlery, etc., from water damage.
215. *Skids.*—If merchandise on skids or platforms 6 inches high, deduct 2% " "
216. *Grade-floor Stocks.*—Deduct for a stock entirely on grade-floor, in non-fire-department town, 10%; in fire department town 5% " "
- If the stock extends over only one additional floor, viz. the second or basement, deduct 3%. If stock extends over grade-floor, basement and second floor, no deduction or charge (see charge for stocks above grade-floor, page 35).

TOTAL.

EXCEPTIONAL CITY FIRE-DEPARTMENTS.

(These deductions to be made from net rate 134, after above deductions have been made.)

Note.—There are two reasons for making a separate deduction for exceptional fire-departments: one is Note No. 184; and the other, that it saves charges for deficiencies on the large majority of cities and towns unprovided with such exceptional appliances.

219. *Extra Steamers.*—If exceeding five steam fire-engines can be supplied with water and assembled at a fire deduct for each engine exceeding five one quarter of one per cent ($\frac{1}{4}$ of 1%) of final rate (134), (not exceeding total 15%) $\frac{1}{4}$ % of net rate. (134.)
220. *Water-tower.*—If one, deduct $2\frac{1}{2}$ % " "
- " If two, deduct 5% " "
- Note.*—To secure this, risk must be within reach of tower.
221. *Fire-boats.*—If risk near water front, say within 500 feet, where protection of fire-boats can be secured, deduct 5% " "

TOTAL.

CO-INSURANCE.

Co-insurance being most valuable where risks are under the protection of fire-departments, which tend to insure partial instead of total losses, and least valuable under conditions which result in total losses, the following rule should be observed:

A co-insurance clause for some stated percentage to be in every policy, and the rate graded according to the percentage named.

Rule.—Deduct (with the following percentage co-insurance clause in policy) for co-insurance on risks under the protection of fire-departments:

On Buildings.— $\frac{1}{4}$ of 1% of rate for each per cent of stipulated co-insurance in excess of 50%, not exceeding 15% in all.

On Stocks.— $\frac{1}{4}$ of 1% of rate for each per cent of co-insurance in excess of 50%, not exceeding $7\frac{1}{2}$ % in all.

On Risks not under Protection of Fire departments.—Deduct $\frac{1}{4}$ of 1% of rate for each per cent of co-insurance in excess of 50% on both buildings and stocks, not exceeding $7\frac{1}{2}$ % in all.

N. B.—To secure these deductions the following percentage co-insurance clause must be indorsed on the policy.

PERCENTAGE CO-INSURANCE CLAUSE.

If, at the time of fire, the whole amount of insurance on the property covered by this policy shall be less than — per cent of the actual cash value thereof, this company shall, in case of loss or damage, be liable for only such portion of such loss or damage as the amount insured by this policy shall bear to the said — per cent of the actual cash value of such property.

Attached to and forming part of Policy No. . . .

¹This deduction may result, in the case of a building of poor construction, especially if an exposed risk in a non-fire-department town, in a lower rate on stock than on building, but under such circumstances the discrimination would be proper.

Example.—In the case of a risk in a fire-department town carrying 80% insurance, or 30% in excess of 50%, deduct 15% of rate on building and $7\frac{1}{2}$ % ($\frac{1}{4}$ of 30%) on stocks. On a risk carrying 80% insurance in a non-fire-department town deduct $7\frac{1}{2}$ % ($\frac{1}{4}$ of 30%) on building and the same percentage on stock.

(No deduction for co-insurance where allowance has been made for sprinklers, or goods kept in fireproof safes, deductions for which require co-insurance.)

Note.—Deductions for co-insurance must not be made until all other deductions have been made and final rate obtained. (See Nos. 132 and 135.)

If insurance is less than 50% of value add 1% of rate for each per cent that insurance is less than 50% of value.

For Example.—If insurance is 40% add 10% of rate; if 30% add 20% of rate.

Automatic-sprinklers.—Approved sprinkler-head and installation, two sources of supply, connections for fire-departments, etc., with 90% co-insurance clause, deduct $33\frac{1}{3}$ % of gross final rate after all deductions (except for co-insurance) have been made on building, and 25% on contents. (The deductions of 25% and $33\frac{1}{3}$ % include co-insurance.)

Note.—If building is "open finish," without plaster or wood ceiling, with unfurred walls, and stock so disposed or piled as not to interfere with operation of sprinkler, deduct 40% on building and $33\frac{1}{3}$ % on stock.

If without 90% co-insurance clause, deduct only 5% on building and stock.

The following clause must be attached to policy to secure deduction:

An allowance having been made in the premium otherwise due upon this policy, for the presence of an approved Automatic-sprinkler System, the assured guarantees that said sprinkler system shall at all times be maintained in working order during the continuance of this policy; and in the event of said system not being so maintained, the assured agrees to forthwith notify the company, and to pay back to this company the whole of said allowance. The failure of said Automatic-sprinkler System to act at any time shall not vitiate this policy.

Goods in Fireproof Safes.—If in building of ordinary floor construction, with specific amount in safes, with co-insurance clause, deduct $33\frac{1}{3}$ % of final rate on non-combustible goods, jewelry, etc., and 20% on combustible goods, silks, etc.

(If in fireproof building, see 333.)

Term Policies.—No policy shall be written for more than one year on building, lease or rents of any risk, except on the basis of adding three-fourths of the annual rate for each year in excess of one.² For fractional parts of a year in excess of one year a pro-rata proportion of the annual rate shall be added. No term policy to be written on stocks or other contents.

Rent Rates.—If building of standard size, 25 x 100, four stories high, charge one-half of building rate, provided form contains full co-insurance clause. Increase rate ten (10) % for each additional 50,000 cubic feet of contents, which obtain by multiplying ground-floor area by height.

(The larger the building the longer the time required to rebuild and the greater the loss of rents.)

If no co-insurance clause, rate should be same as that of building.

LOWEST MINIMUM RATE.

No building, no matter how constructed or no matter what be the deduction to which it is entitled (even though sprinkled, co-insurance, etc., etc.), shall be rated below 12 cents, nor shall its contents, merchandise stored therein in original packages, be rated at less than 25 cents. If merchandise not in original packages, net rate shall not be less than 30 cents.

[To be continued.]



THE SKETCH-CLUB OF NEW YORK.

THE April meeting of the club was held in the club-room on Saturday the 1st. Mr. Parfitt of Brooklyn and Mr. Warren R. Briggs, treasurer of the Architectural League, were the guests of the evening. Mr. Parfitt gave a lecture, illustrated by stereopticon, on the architecture of four European cities—Oxford, Rouen, Nuremberg and Venice. Mr. Briggs addressed the club on the much-discussed subject of Amalgamation with the League, but at the close of the discussion it was decided to drop the matter for the present. A decision on the March competition was submitted in writing by Mr. Richard M. Upjohn, awarding first mention to Edgar A. Josselyn, second to Geo. S. Melendy. A prestidigitateur entertained the members during the last hour of the meeting, which did not adjourn until about midnight.

ATLANTA ARCHITECTURAL SKETCH-CLUB.

THE Atlanta, Ga., Architectural Sketch-club held its third annual meeting in the new rooms of the club at 80 S. Pryor St., March 27th.

²This would yield 2½ annals for 3 years and 4 annals for 5 years.

The officers for the year are W. C. Frederic, *President*; C. R. Ward, *Vice-president*; W. F. Denny, *Secretary*; W. L. Stoddard, *Treasurer*; and R. C. Wilson, *Press Correspondent*.

The club is in a very flourishing condition, with an active membership of thirty, non-resident, ten, honorary, two. A good programme has been mapped out for the competitions, sketching-tours, etc., for the year.

R. C. WILSON, P. C.



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

HOUSE OF MRS. WIRT DEXTER, PRAIRIE AVE., CHICAGO, ILL. MESSRS. LITTLE, BROWNE & MOORE, ARCHITECTS, BOSTON, MASS.

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

"SALVENDALE": BLOCK OF HOUSES ON BEACON ST., BROOKLINE, MASS., FOR ASA H. CATON, ESQ. MESSRS. LEWIS & PAINE, ARCHITECTS, BOSTON, MASS.

BUILDING OF terra-cotta underpinning and fancy bricks of Fiske & Homes; olive slate roof, copper and wood trimmings. Each building is 25' x 80'.

HOUSE AT RYE, N. Y. MESSRS. LAMB & RICH, ARCHITECTS, NEW YORK, N. Y.

ST. MARK'S EVANGELICAL CHURCH, YORK, PA. MR. J. A. DEMP-WOLF, ARCHITECT, YORK, PA.

LANCASHIRE INN. MR. E. G. W. DIETRICH, ARCHITECT, NEW YORK, N. Y.

"THE JEFFERSON," RICHMOND, VA. MESSRS. CARRÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.

"THE JEFFERSON" is to be situated facing on Franklin Street, the main residence street, on Main Street, the main business street, and on Jefferson Street, which is a side street running from Jefferson to Main. The perspective shows the Main Street front. The hotel will have three hundred and twenty-five rooms, and is being built by Major Lewis Ginter, of Allen & Ginter, who has associated with him in this enterprise Mr. John Pope and Mr. Arents, his partners. This was the result of a limited competition, in which there were twelve competitors. The interesting and unusual feature of the competition was that the hotel faced on three streets, one of them being the principal residence street, and the other the principal business street of the town, — and that the business street was 17' 0" lower than the residence street, — allowing a plan which would bring the social and the business elements not only on different ends but on different levels. It is surprising how many of the architects competing ignored this advantage entirely.

[Additional Illustrations in the International Edition.]

INTERIOR COURT OF THE PALAIS DE JUSTICE, LIÈGE, BELGIUM. [Copper-plate Etching.]

ONE is not a little overcome with surprise on entering the courtyard of the Palais de Justice at Liège. This magnificent structure offers not only a remarkable architectural effect, but also a very instructive lesson. In virtue of the old laws which controlled the planning of the dwellings of our fathers, the architect of this fine building placed in its centre the grand court-yard of honor surrounded with porticos, in which the dwellers might take the air and enjoy light and amusement without going outside their own walls. The court — atrium or peristyle in the old Gallo-Roman language, — was either under glass, when it was of small dimensions, or uncovered, when, like this, it was the centre of a large structure in which there were other courts similarly arranged, which, being smaller, were covered. In either case, they were decorated with fountains, big or little, exedras, wells with superb curbs, rostral columns and gardens, — taking the place of our wretched winter-gardens, — in such a fashion that these court-yards were real centres of attraction, which drew thither not only the occupants of the building, but also all their friends and acquaintances.

How many charming fêtes, which we may call, if you are willing, "five-o'clock-teas," how many frolics have taken place in these fair courts, adorned with architectural richness and fine furniture. For it must not be forgotten that in the surrounding galleries were proudly arrayed superb pieces of furniture, and that fixed to the window-sills and the balustrades, under pretext of protecting the elbow, were magnificent embroidered stuffs, or cloths of gold, which brought into the field of vision notes brilliant and rich in color. In those old cities, where there still exists the tradition of conducting a procession through the streets at Corpus Christi, notably at Angers, you will find this custom still remaining from former times, which requires that from all the windows and balconies overlooking the streets traversed by the procession should be flung abroad all the remains of embroideries and ancient tapestries which still belong to the old families.

The porticos or galleries which surround this court-yard, in the nature of their decoration, present a surprising richness, where architectural science contends with fecundity of imagination. All these shafts, finely carved, all these curious ribs of the vaulting, whose generally gray tone is relieved by the gay colors of the brick-work filling, are so many motives for the complementary development of the decorating furniture of these galleries, of which we only appreciate to-day the rather depressing grandeur, as ruins which speak another language than ours, having themselves lived for other people and other customs. It is necessary for the imagination to refurnish these naked galleries with carpets, with credences finely carved and laden with faience, with bric-à-brac, gleaming with light and the richness of superb coloring, to give one's self an idea of the real monumental aspect of these fine promenades, which the architect took the trouble to construct with so great a breadth, in order to protect from the inclemencies of a northern winter those who made use of them; so that the promenader might always be sheltered somewhat from the rain or snow which some gale was sure to drive beyond the limits of the court. And since, to span this great breadth, he was unable to use straight beams, he had recourse to elliptical arches, which at once gave more elegance and greater richness, and allowed him to use material of small bulk, which is always the cheapest way of building. Then, as was right, our ancient *confrère* lowered the height of the ground-story to protect it from the climate; while, on the other hand, he elevated the windows of his principal story, and, the better to signalize his purpose, he, like a wise artist, raised the belts or lintels of his windows by arches which still more augmented the vertical expression of his openings. Then, to break up the monotony of his great steep roofs, covered with slate, necessitated by the rainy climate, — for the purpose of increasing the monumentality of this story, every-other window has been run up into the roof, where they present a succession of dormers, which receive the windows of the stories built in the roof. To heighten this story, and also to correct the painful expression one experiences on thinking of the peril of the roofers who might be called upon to repair these almost vertical roofs, he has bound these dormers together by a vast and high balustrade of pierced stonework, which forms the crowning feature of the structure, and protects the court from snow-slides.

On looking at this marvellous monument, and adding to it in the imagination that which it lacks, — the furniture, the brilliant stuffs, flowers in the court-yard, water in the fountains, the motion of children at play, the inhabitants promenading and gossiping in the galleries, — one catches a real impression of a grandeur and richness which have no counterpart in our poor modern structures.

VILLA AT JUILLY, FRANCE: FRONT AND SIDE. M. E. SAINTIER, ARCHITECT.

[Photogravures.]

STANMORE HALL, MIDDLESEX, ENG.

This building is an example of what can be done in remodelling — a more difficult process than the construction of a new building. The works were carried out under the direction of Mr. Brightwen Binyon, of Ipswich.

MERTON COLLEGE LIBRARY, OXFORD, ENG.: TWO SHEETS.

THIS is said to be the oldest building in England which has been in continual use as a library from the time of erection until the present day. The date of its foundation is about 1350. The dormers, without which very little light could have entered, were added in the sixteenth century. The woodwork was the gift of Bodley, the founder of the Bodleian, somewhere about 1600. It is all of oak, and, except the stair-head and balusters, is unpolished. The plaster-work above the panelling at each end of the library was no doubt added at the same time. The roof, which was part of the original building, was renewed some years ago, but without alteration, and many of the original bosses were kept in position. With this exception, everything in the library has remained untouched. The illustrations are from measured drawings by Mr. H. M. Fletcher.



[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

"THE PROBLEM OF HEATING HOUSES."

NEW YORK, N. Y., March 14, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — In reading "The Problem of Heating Houses," on page 155, Vol. XXXIX, we see stated, "a thousand cubic feet of fresh air enter the house every day." This is 400 cubic feet of air per hour, or about one-eighth of that which one person requires. And of course the whole household is to be supplied. Should it not, from "C. M.'s" figures, read "one million"?

He states that in one room 5.85 cubic feet enter each second, which is nearly eight hundred thousand cubic feet per day. This, with the doors opened to the outside sixty times per hour, would make fully a million cubic feet.

But does not the author take an extravagant view of the question? No room has a square foot of surface constantly open to the outdoors, unless it be in a shanty. No room has its door opened to the outside, direct, sixty times an hour, unless it be unfastened, and is blown by the wind. Does not "C. M." assume conditions that are impossible—that he may emphasize his ideas?

Yours etc., EDWIN A. JACKSON & BRO.

SPRINGFIELD, MASS., March 31, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—In the article "The Problem of Heating Houses," by me ("C. M."), several slips occurred:

1st, on line 32, it ought to be "per week" instead of "per month."

2d, page 155, line 27, instead of "a thousand" it should have read "thousands"; hence, the criticism was unnecessary.

The critic says "no room has a square foot of surface constantly open to the outdoors, unless it be in a shanty." That shows how little he appreciates the complexity of the problem. Take wood: its specific gravity is 0.7; the S. G. of its substance, minus pores, is 1.2; hence it follows that 42% of the wood is holes, or pores.

The S. G. of brick is about 2; that of its material about 2.6; hence 23% are holes or pores. The same with plaster—in fact, everything excepting glass and metals. Taking an average, 20% pores in the walls of a room would be a mild estimate. The square surface of our 10,000 cubic feet room being about 3,300 square feet, it follows that at least 660 square feet are holes or pores; a thirty-second-of-an-inch crack around a window-casing is, on the average, very little; we supposed in the room, say, ten windows, with a circumference of 20 feet each, giving in all 2,400 inches, or 80 square inches, opening around the casings of windows; giving 20 more for the doors, we have for the cracks alone $\frac{1}{3}$ of a square foot opening; hence it doesn't need a shanty to give a square-foot opening; but even a well-built excellent room of 10,000 cubic feet has over 600 square feet openings.

These natural openings are too little considered by ventilation "cranks." They think because they don't see them that they don't exist: they ought to be familiar with the experiments of blowing-out a candle through three lengths of brick, and they would believe there were holes in the brick. The rain of mercury through wood under the air-pump shows the pores. The diffusion of gases through plaster, paper even, shows large pores.

The critic says, furthermore, that "No room has its door opened to the outside, direct, sixty times an hour, unless it be unfastened, and so blown by the wind." Do they realize that a room of 10,000 cubic feet is very large? and, supposing it to be a ticket-office or saloon, they would not dare to say that the door would not be opened sixty times an hour. I think it is not a very fair average for a room of that size in actual business use. No need of artificial ventilation with such an immense amount of natural ventilation. I am even prepared to defend the proposition that with proper structure there need not be artificial ventilation anywhere. The ventilation enthusiasts have created various artificial so-called "public opinions": 1st, as to how much air a person ought to have per hour; 2d, as to the necessity of a complicated apparatus for ventilating purposes; 3d, confounding stink with air unfit to breathe. The stink is a matter of cleanliness, habits and hygiene, and not of ventilation.

Yours very truly, CHAS. MAYR.

UNITED STATES TIMBER-TEST WORK.

WASHINGTON, D. C., March 29, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—May I ask you to make note in your paper of the information contained in the accompanying sheet? Many hundred letters from persons, no doubt constituents of your paper, have exerted their influence in securing adequate appropriations and the writers would like to know the result of their efforts.

Trusting that there is sufficient general interest in the information to justify your inserting it, Yours truly, B. E. FERNOW.

Although all the leading railroad-engineers, architects, professors of engineering and others interested in the timber tests had flooded with hundreds of letters their Representatives and Senators and the Committee on Manufacturing, in whose hands the special appropriation for the work was pigeon-holed, neither the Committee nor the House paid any attention to this expression of public interest. The Senate, however, realized that there was value in the work and sincerity in its indorsers and increased the appropriations for the Forestry Division by \$8,000, that is twenty per cent of the amount asked and considered by those in charge as necessary to continue the work on a proper business basis.

Under the circumstances, the testing will be discontinued until after July, when the new appropriations become available, and then proceed at the slow pace which Congress has set.

Although the result of the efforts of those who took active interest in securing appropriations for the work were not crowned with

that success which they deserved, this is the only proper method of influencing legislation, and those interested in the investigation should not fail to move again when the new Congress assembles.

The first compilation of test results is now in the hands of the printer, and will probably be issued within six or eight weeks as "Bulletin 8, Timber Physics, Part II." It will contain the results obtained on long-leaf pine and will especially discuss in detail the results of tests and examinations of bled and unbled timber, results which in themselves justify the expenditure, by the Government, of money on such work.

The Forestry Division will exhibit the methods pursued in this work at the World's Fair, which will be of interest, since nowhere in the world has such comprehensive and systematic investigation of timbers ever been devised. The working-plans for a similar undertaking by the Prussian Government have only just been perfected.

Another exhibit of interest to railroad-engineers and those interested in reducing forest waste will be a collection of the most approved types of metal railroad ties.

THE NON-ADAPTABILITY OF SLOW-BURNING CONSTRUCTION TO COMMERCIAL BUILDINGS.

BOSTON, MASS., April 1, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Many thanks for your kind word in to-day's *American Architect*, but we are not so far apart after all, for I have always held that slow-burning construction was not feasible for commercial buildings in cities. There must be opportunities for display and for free communication to an extent wholly inconsistent with conditions of safety. However, when it comes to the conflagration-hazard,—almost unknown in mill practice,—it must be controlled, rather than the individual hazard.

I note your surprise at the fires from spontaneous ignition, and have searched for, and obtained a copy of, an old report which serves for your personal curiosity rather than any public use, because the dyeing materials and processes have changed so much that the present methods have brought new names, but the same and, for the most part, greater financial hazards of fire loss. The rapidity of chemical action in some of the driers in developing the oxidation of new dyes is very intense, and unless great care is taken fire is inevitable.

Yours truly, C. J. H. WOODBURY.

BRICK-VENEERED BUILDINGS.

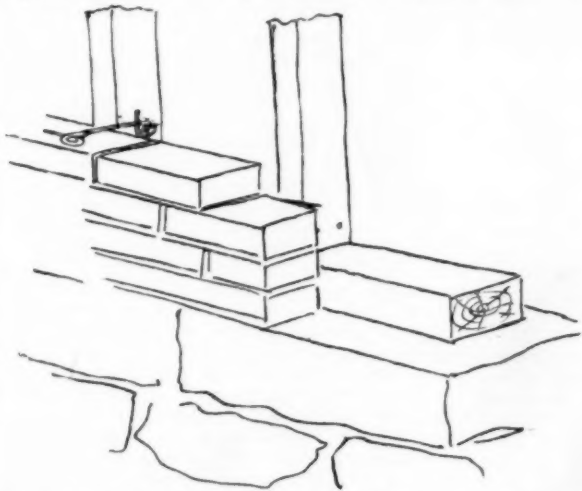
PORTLAND, ORE., March 25, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—An answer to your correspondent's inquiry under the above heading, which was printed in your issue of March 18th, can be given in a few words:

Brick-veneered buildings are still not uncommon in the Middle and Northwestern States. In Kansas, where high winds prevail, they are considered better able to withstand the devastating force of a cyclone than the less elastic solid brick structures.

The construction is simple. An ordinary stone foundation-wall of sufficient thickness carries both framing and brick-facing, the latter being tied every six courses by means of galvanized-iron-wire anchors



about six inches in length which are nailed to the sides of the studs and project into the joints of the brickwork. These anchors are of a form commonly used and are probably well known to your correspondent. The studs are usually two inches by six inches, built in the ordinary manner on a wooden sill, and the brickwork, which is but four inches in thickness, is placed directly against them. The interval between the studs forms a valuable air-space, and it is claimed that a wall so constructed is dry, warm and economical. The studs, of course, are lathed and plastered on the inside as ordinarily. I am, sirs,

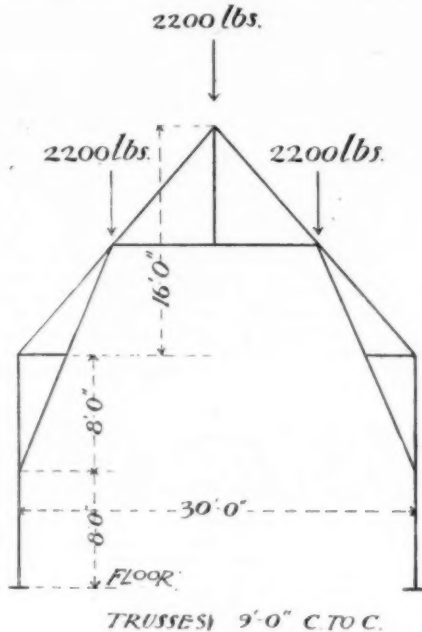
Very truly yours, NORMAN ST. CLAIR.

THE ANALYSIS OF A TRUSS.

CHICAGO, ILL., March 24, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I ran across a structure (I would not call it a truss) the other day and, by your kindness, would like to get your readers'



opinions of how the strains in its members should be found. It was designed for a truss in a small church. Yours truly,

E. S. B.

THE POHICK CHURCH.

CHICAGO, ILL., March 28, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I was interested in an article in a recent issue of the *American Architect* in reference to Pohick Church, in Virginia, because my first picket-service in the army, in winter of '61 and '62, was on the line including Pohick Church, and our headquarters was at the church. I well remember it at that time. It was in quite good order then, most of the pews were in position and intact, the pulpit was in order and some of the boys would occasionally "hold forth." The tradition as to which particular pew was Washington's was passed on from relief to relief, so that at the time mentioned, it had been much cut-up and sent home by the boys. Each one felt that while it was going some should be secured, and the writer was no exception.

I presume that when that particular pew was gone, the tradition extended to other pews, until they were all cleaned out.

Long-forgotten memories come up in connection with those three long years of war when one sees items referring to the "long ago." I was but a boy then, fresh from home and easily impressed.

The boys are slowly answering to the last "roll-call," and it will not be long before "taps" for the last will be heard, and then the "Army of the Potomac" will itself be a memory of the past.

Yours truly, H. C. JOHNSON.

ARCHITECTURAL PROSPECTS IN CALIFORNIA.

LOS ANGELES, CAL., March 25, 1893.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Enclosed please find a newspaper cutting (local) stating how busy are architects.

I shall state, for the information of those who may be casting long-glances Westward, that there are ten so-called architects here where one would do.

During the past three weeks I have relieved three draughtsmen who were utterly unable to find anything to do. One of them declared he had not tasted food for two days, and his appearance indicated he spoke the truth.

It ought to be made a criminal offence for newspapers to publish such lies, when many are led to act on their statements,—to find them utterly without foundation.

Please publish this, so that those interested in building may not be misled and come here, to find nothing to do.

The old boomers are "on deck" here. "JUSTICE."

[As it is not at all probable that the "bearing" of the architectural market can be an object of our correspondent, we trust that our readers will hold it, as we do, a philanthropic warning pure and simple.—Eds. AMERICAN ARCHITECT.]

ADDRESS WANTED.

APPLETON, WIS.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Could you perhaps give me the address of the agent of H. Siebel, Patent Blei-Isolir-Platten, in Düsseldorf, Germany, if so, please let me know at your earliest convenience? Thanking you for your trouble. Yours respectfully,

HERMAN WILLHAGEN.

NOTES AND CLIPPINGS

AUTOMATA NEW AND OLD.—The discourse which Mr. Conrad Cooke delivered at a meeting of the members of y^e Sette of Odde Volumes some time ago has now appeared as a charming little book. In it we find a most complete and painstaking account of all the chief automata known to history, or now hawked in the streets of London. After reading it, we are divided between admiration of the skill of the ancient mechanics and wonder at the mendacity of the historians who followed them. Marvellous as were the apparatus of which we have authentic information, they were but poor affairs compared with others whose performances have been handed down by rumor. Mr. Cooke commenced by noting the automata attributed to Vulcan, but he did not get to firm ground until the time of Hero, who was not only a most able mechanic, but also managed to get his inventions well reviewed in the technical press of the day. Hence it comes that we not only know what effects he produced, but how he arrived at them. He was the inventor of the piping bulfinch, of the first penny-in-the-slot machine, and of many other pieces of mechanism which have since been brought out as complete novelties. After the time of Hero there was an interval of nearly 1,000 years, during which no record of automata is to be found. This carries the chronicle down to the time of Charlemagne, to whom a most elaborate water-clock was presented by the Khalif Haroun al Raschid. Speaking-heads came into vogue about this time, and an automaton of clay, over which Albertus Magnus spent thirty years, is said not only to have spoken, but to have walked, answered questions and solved problems. This was destroyed by St. Thomas Aquinas as the work of the devil. The great period for the construction of automata began at the close of the fourteenth century. The list of the principal examples is too long to follow, and many of the accounts are evidently gross exaggerations. Among the more interesting are a number of clocks, such as those at Strasburg and Lyons. It was in the middle of the seventeenth century that magnetism began to be utilized in automata to form an invisible connection between the works and the moving figures. After this date we come to a period from which more reliable accounts have descended to us. Among the well-authenticated automata are the musicians and the duck of Vaucanson, the writing-man of Von Knaus and the figures of Le Dror. The chess-player of Baron Wolfgang von Kempelen would need to be included, had it not contained a man to direct its movements. Mr. Cooke tells the real story of the fraud. There were several exhibitions of automata in London at the end of the last century, and they must have found fashionable audiences, seeing that the entrance-fee, to one at least, was half a guinea. Robert Houdin was the next great constructor of automata, and after him there were none others until Mr. Maskelyne, who is still puzzling the world with his wonderful productions. For other examples of this kind of mechanism we have to look to the toy-shops, and to the street hawkers who sell "walking-postmen" and the like. Every mechanic will put down Mr. Conrad Cooke's book with regret that there is not more of it. We fear, however, that we have done our readers an ill-turn by awakening their curiosity, for unless they are Odde Volumes they are not likely to see the book. The edition is limited to 255 copies, and is privately printed for the use of members and their friends.—*Engineering*.

THE WHITE HOUSE, WASHINGTON, D. C.—It is said that the White House at Washington has cost \$2,332,000 down to the present time. To start with, the State of Virginia contributed \$120,000 and the State of Maryland \$72,000 to build it. A prize of \$500 had been offered for the finest design, and this was awarded to a young Charleston Irishman named James Hoban, who followed closely the Duke of Leinster's palace at Dublin. The plan contemplated a three-story building, but Congress refused to appropriate the money for anything so extravagant, and the District Commissioners cut down the design to one for two stories and a basement, with a length of 170 and a depth of 68 feet. Washington finally induced Congress to add to the sums contributed by Maryland and Virginia enough to finish the work of construction. The corner-stone was laid, in the presence of President Washington, October 13, 1792, and President John Adams took his family into it in November, 1800, though Mrs. Adams complained of the discomforts to which she was subjected in its unfinished condition. Congress had appropriated \$15,000 to furnish the building, but its expenditure was strung along for four years. At the beginning of the first administration of Jefferson and each of the administrations of Madison, \$14,000 were appropriated, but in 1814, at the taking of Washington, the mansion was burned by the British soldiers. A heavy rain saved it from entire destruction, and in 1817 \$20,000 were expended in its reconstruction. The red sandstone was painted white to remove the traces of fire, and the building has since been known as the "White House" in consequence. In Jackson's first term, the front Ionic portico was added, at a cost of \$19,000, and when Harrison came in the foreign mahogany furniture was replaced with American, at a cost of \$6,000. During Lincoln's first term \$29,000 were laid out in repairs. In 1865 the house was thoroughly overhauled and refurnished, at an expense of \$76,000, and two years later \$59,000 were spent for similar purposes. In Grant's first term \$135,000 and in his second \$110,000 were spent; in Hayes's

\$90,000, and during the Garfield-Arthur administration \$110,000. In the last-mentioned sum is included the cost of refitting the mansion with modern conveniences and substituting a jewelled glass screen in the vestibule for a former wooden partition. During Cleveland's term there was an expenditure of \$74,000, and during Harrison's one of \$90,000, the average annual outlay of recent years having been \$25,000. The President's family has at its disposal five bed-rooms, a dining-room, a sitting-room and the red room for a parlor; the east room, the green room, the blue room and the state dining-room being reserved by tradition for public purposes. Mrs. Harrison urged that wings should be added to the building for the comfort of her successors. It has also been proposed that another building should be erected near at hand for the President's family, and that the White House should be given up to official use. — *Southern Architect*.

THE DEADLY ALKALI TRADE. — The alkali works go on all the year round, day and night, Sundays and week-days; and St. Helen's and Widnes are the chief seats of the manufacture. If you have a fancy for knowing how that part of the world lives which serves the industry that Lord Beaconsfield used as his trade-barometer, you will do well to gain admittance to the strange and lurid scene where the prodigious processes are carried on. By the glow of furnaces and the wavering light of an occasional gas-jet, you make out, bit by bit, a rough picture of uncouth buildings, gaunt frameworks of timber, ominous-looking lead chambers looming overhead, and a general confusion of towers, platforms, revolving and stationary furnaces, great caldrons, where the caustic glows a sullen red; threatening-looking tanks full of corrosive liquids, and other strange half-animate monsters which beset you as you pick your way along narrow planks or up stairs half eaten away with acid. There are figures moving about the place, wheeling barrows up the planks, standing at the furnace-mouth, taming the white-hot mass within, wielding huge ladles at the caustic pots, raking, straining and laboring in a terrific heat and glare and amid sickening fumes. A man steps back from the furnace now and again and lowers the muffler from his mouth to gasp more freely in the chill air, and you can see his face, arms and chest shining with the sweat. Figures are to be seen by day which are scarcely recognizable as men, with great goggles over their eyes and huge protuberances of flannel corded over their mouths and necks. These are the men who pack the bleaching-powder. The powder-packer, his feet incased in thick wooden clogs and his legs in brown-paper gaiters, steps into the chlorine-chamber, shovels the bleaching-powder into the cask, and presently shuffles out again and unlashes his swathings, gasping as though at death's-door. There are some 15,000 men in the employ of the United Alkali Company, including special "process-men" and laborers. The story of their daily and nightly toil is told by the faces and forms of the worn, dejected men who pass you in the streets, by the deaths from respiratory diseases which carry off the strongest men before their time, by the evidence of horrible sufferings from constant contact with the biting lime, by teeth rotted away by the salt-cake fumes, by scars and sometimes blindness from caustic burning, by vitriol burns, and by the deadly nausea from the gas inhaled, and the recurring exhaustion brought on by fearfully-protracted toil. — *The Fortnightly Review*.

MORTGAGES IN ANCIENT GREECE. — Many odd things come to light in these excavations. For example, on the lower course of stones in one ancient house I saw this afternoon three mortgages of the same house, chiselled in the stone, in full sight from the public street. These name the amount of the mortgage, which may have been that of the builder, given to protect the workmen, or may be an indication of what the ground-rent was of the land on which the house stood. When the debt was paid, it seems to have been the custom to chisel out the inscription on the marble. Not far from this house was the great fountain, one of the facing-stones of which was found with the groove in it, down which the water ran, and with holes near by in which the "shank" of the earthen water-pot rested until the bearer was ready to take it up and carry it away. Hundreds of these broken pots and bits of cistern and earthen pipe lay about in the ground, and several great cisterns of pottery were found sunk in the ground, at the top of some of which would be a marble well curb, with the grooves worn by the rope in drawing. A portion of this work was of the Roman period — perhaps no more than 1,700 years old — but the lower pipes and aqueducts and the great fountains were unquestionably before the time of Pericles and Socrates, who no doubt drank from this fountain, which has been covered up for perhaps 1,400 years. It seems there is a copious literature of jug-handles, which were so stamped in the soft clay as to give many historical facts about the city where they were made — and of which there are many collectors, as there are of coins and vases and busts. Who would expect to learn the history and commerce of Rhodes from a collection of jug-handles? — yet this is what an Englishman, John Stoddart, did at Alexandria nearly fifty years ago, where he collected more than 400 such bits of broken pottery. Even a shell has been found here on which some Athenian had recorded his ostracism of a public man. There is nothing, it seems, which will not shed light on man's history — even the stones cry out on the past. — *Springfield Republican*.

HOUSE-BUILDING IN THE BERMUDAS. — Bermudians have very little trouble in building an ordinary house. A man scrapes enough lucre together to buy a little piece of land and then borrows or begs a cross-cut saw, a hand-saw and an ice-chisel. He takes off the thin surface of soil and gouges into the coral rock with his chisel. Then he commences to saw into the porous limestone and presently has a collection of white blocks about two feet long, eighteen inches wide and twelve inches thick. When he has taken out enough of them he has a cellar ready, and he uses the blocks for walls. Not much timber is required and the process is very simple. But only a Bermudian or an English-

man can do all this, for no foreigner is permitted to own real estate on these islands. — *N. Y. Press*.

PARIS EXPOSITION OF 1900. — The question relative to a site for the exhibition of 1900 seems to be on the road to a settlement. The sub-committee of Municipal Councillors appointed to report upon the matter has given an opinion in favor of again utilizing the Champ de Mars. Not a tree of the Bois de Boulogne would, therefore, be touched, and not a blade of grass would be removed from Lady Wallace's property at Bagatelle. The members of the sub-committee have also expressed themselves in favor of organizing a kind of central exhibition of machinery and agriculture at Vincennes, in order to give the inhabitants of that rather neglected portion of the metropolitan zone a chance of turning a few honest pennies. — *London Daily Telegraph*.

A QUICK DECISION. — Every factory is liable to have a break-down, which may be anything from the slipping of a belt off from the pulley to a total wreck of the engine. How a man will come out in such a wreck depends very much upon his resources and how quickly he can think. In one case where the stationary engine in a railroad-shop broke down, a locomotive was in the shop, and repairs had been begun within twenty minutes of the time when the engine stopped, and this breakage was the entire wreck of the driving mechanism, and involved the jacking-up of the locomotive and the bolting of pulleys upon its driving wheels. Somebody in that twenty minutes had to do a deal of quick, pointed thinking. It is this thinking to the point, and thinking rapidly, which very often makes the difference between a disaster and an accident. — *Metal*.



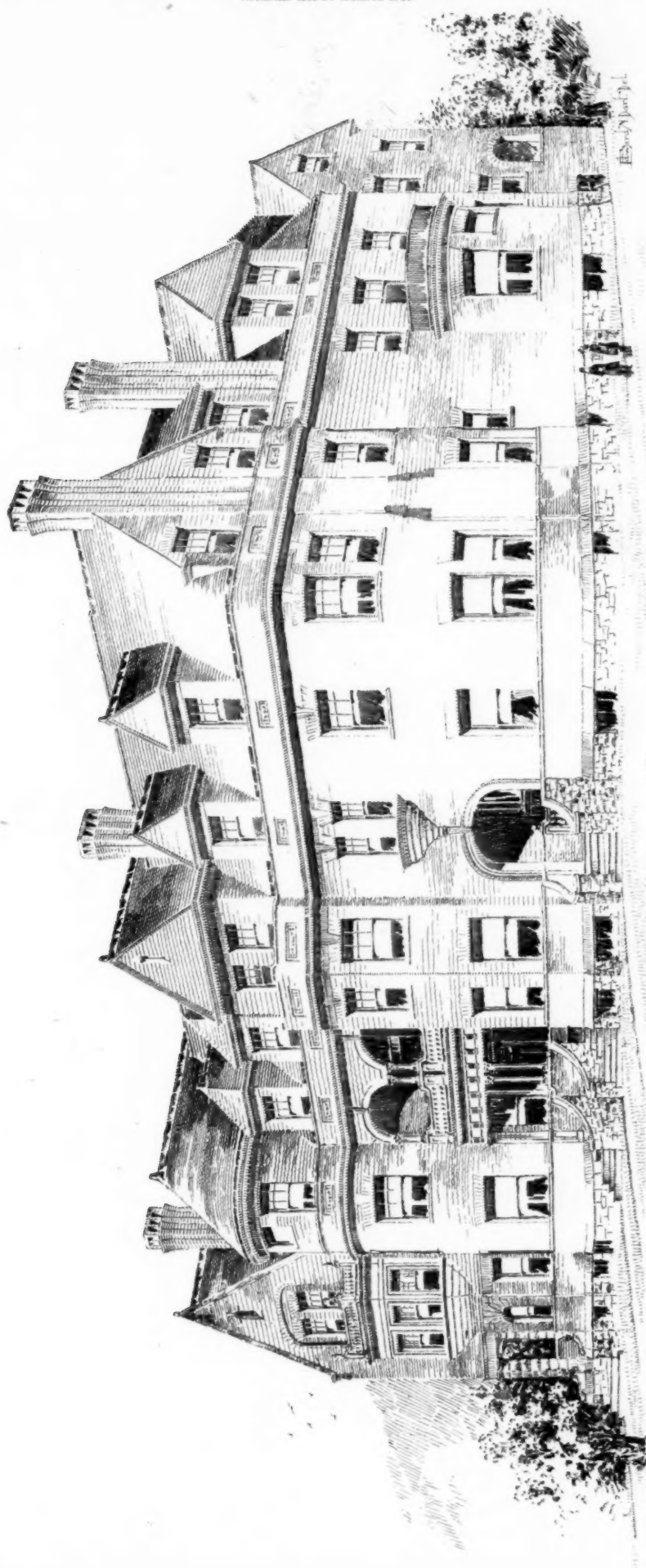
THE unusual stringency in the money-centres of the United States continues unabated, to the annoyance and distress of large numbers in the business community. The repeated assurances in the daily press that the financial outlook steadily improves is not accepted at par. The inflow of money from the interior during the past week has helped some; so has decreased gold exports. Stock-centres are doing more business; railroad earnings are increasing; more confidence prevails. Manufacturers are gathering up late spring and summer business. Stocks are light. Restrictive policies prevail in nearly all channels of production. Buyers act cautiously. Producing interests recognize the danger of accumulating stocks. Within a few days, representatives of several branches of industry have met, and agreed upon curtailment. These agreements are much more respected than formerly. Builders are crowding ahead. This week's reports from Western cities show a rush in building-operations. Bricks are high in price, and lumber is stronger than a year ago. Most other kinds of building-material are low. Laths, shingles, cements, nails, paints, sheet-iron and tin-plate all continue low. In real-estate channels activity prevails, but land and lots for building purposes are not, as a rule, advancing in price. A great many changes of location continue to be made for various reasons. Incidents are not infrequent of changes of location of five hundred or one thousand miles. A general settling-down process is at work. Fixed freight-rates are quite essential in these industrial calculations, and railway officials are more earnest as well as more successful in their efforts to maintain uniform and fair rates than they have been for years. The careful reading and observation of railway literature and management show that the country is steadily emerging from the feudalism in railway management that has been so hurtful in the past. There is a steady growth of new towns in the West, in which manufacturing interests predominate, and it is evident that this tendency will lead to the building-up of numerous large manufacturing centres in the region of country heretofore almost exclusively agricultural. Latest reports from the Southern States show, for the past three months, a greater number of manufacturing establishments started or projected than for same three months last year. Among the interests especially prosperous are cotton goods, saw and planing mill, and pig-iron interests. The statistics of these three branches of industry afford much encouragement to other promoters. These branches are almost exempt from commercial failure, but, it must be said, much of their success is due to the trained managers, most of whom, especially in cotton and iron, have come from the North. Much capital is still being invested in cotton-mills, and, according to good authorities, there is much room for enterprise. Within two weeks, announcement has been made of the intended construction of seven mills. Late statements show, also, that manufacturers are turning more generally to water-power, and a larger number of industries are being located where that power can be utilized. Increased interest is manifested in the expansion of canal-capacity, and it seems probable that the efforts being made in proposed enlargements and in the construction of new canals will result in actual outlays on a large scale within the next twelve or eighteen months. For years, canal-expansion has been thought, written and talked about, but not until recently has the subject taken deep root among influential interests. When once canal-building sets in, it is probable it will be pushed to greater lengths than now appears probable. Half the traffic of Europe is disposed of that way, while with us the percentage is trifling, and is confined to three or four canals. A certain class of necessities is arising which will make canal-transportation a necessity. Another rapidly-developing necessity is rapid transit within short distances, and that promises to be supplied by the trolley system. The projected mileage is fourfold what it ever has been; in fact, tenfold might be within correct limits. Iron-mills are at present filled-up with orders for skelp-iron to be made into trolley-poles. Steel-rail mills are securing orders on a large scale for light steel girder rails for new roads, and this demand is also reflected in the activity for steel billets. For wire of all kinds, and for light steam-engines, wind-mills and motive-power on a small scale, there is a rapidly-growing demand. So far as the Eastern jobbing interests are concerned, there has been a most satisfactory season thus far. Advances are all uniform. Retail distributors order freely. Larger retail stocks are now being carried. Collections of late are slow, but the earning-capacity of the toilers has not declined. Savings-banks make a good showing. Whatever is wrong is not with the workers or business-men. The industries are being wisely and safely managed. Merchandise and material are wanted and needed, and if obstructed or delayed payments exist the evil or fault is to be sought for in influences remote from the acts of the actual producers and handlers of the wealth of the country.

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Residence at Rye, N.Y.
Lamb and Rich, Architects.

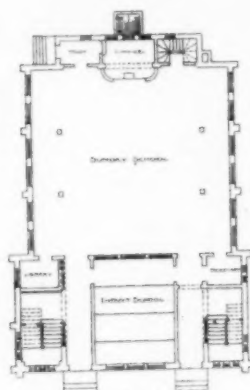


"SALVENDALE"
... BROAD STREET, BROOKLINE ...
LEWIS & PAINE ARCHTS

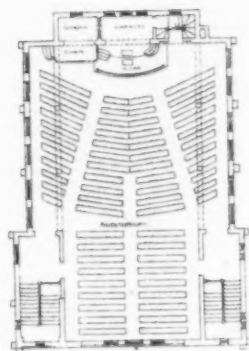
ST. MARKS EVANGELICAL LUTHERAN CHURCH.

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FIRST FLOOR PLAN

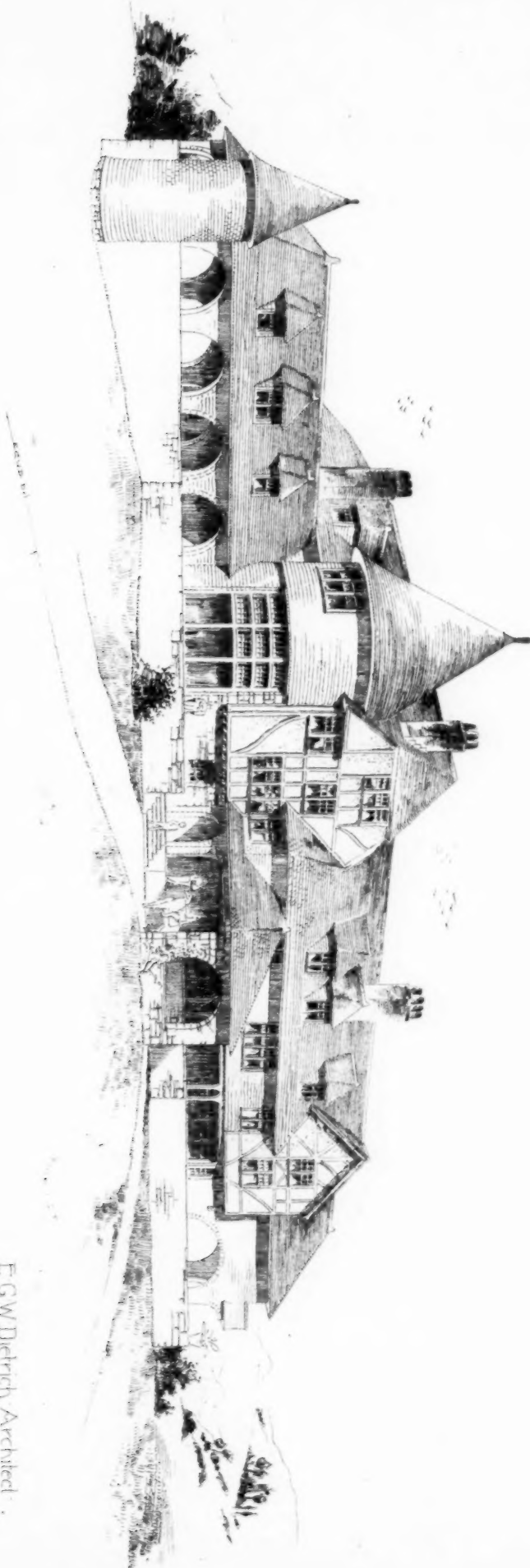


SECOND FLOOR PLAN



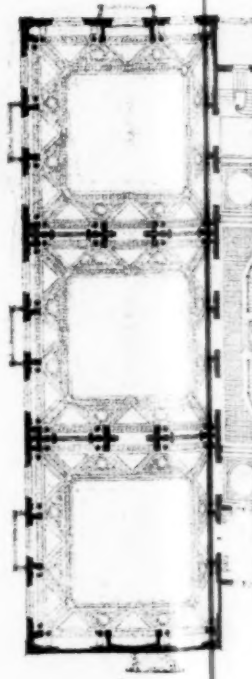
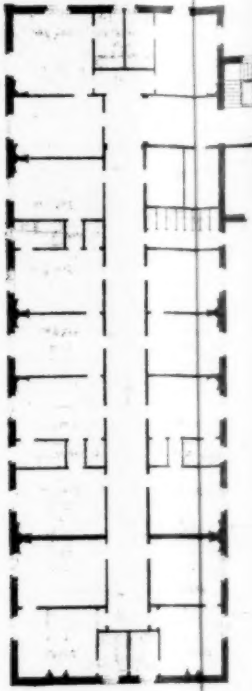
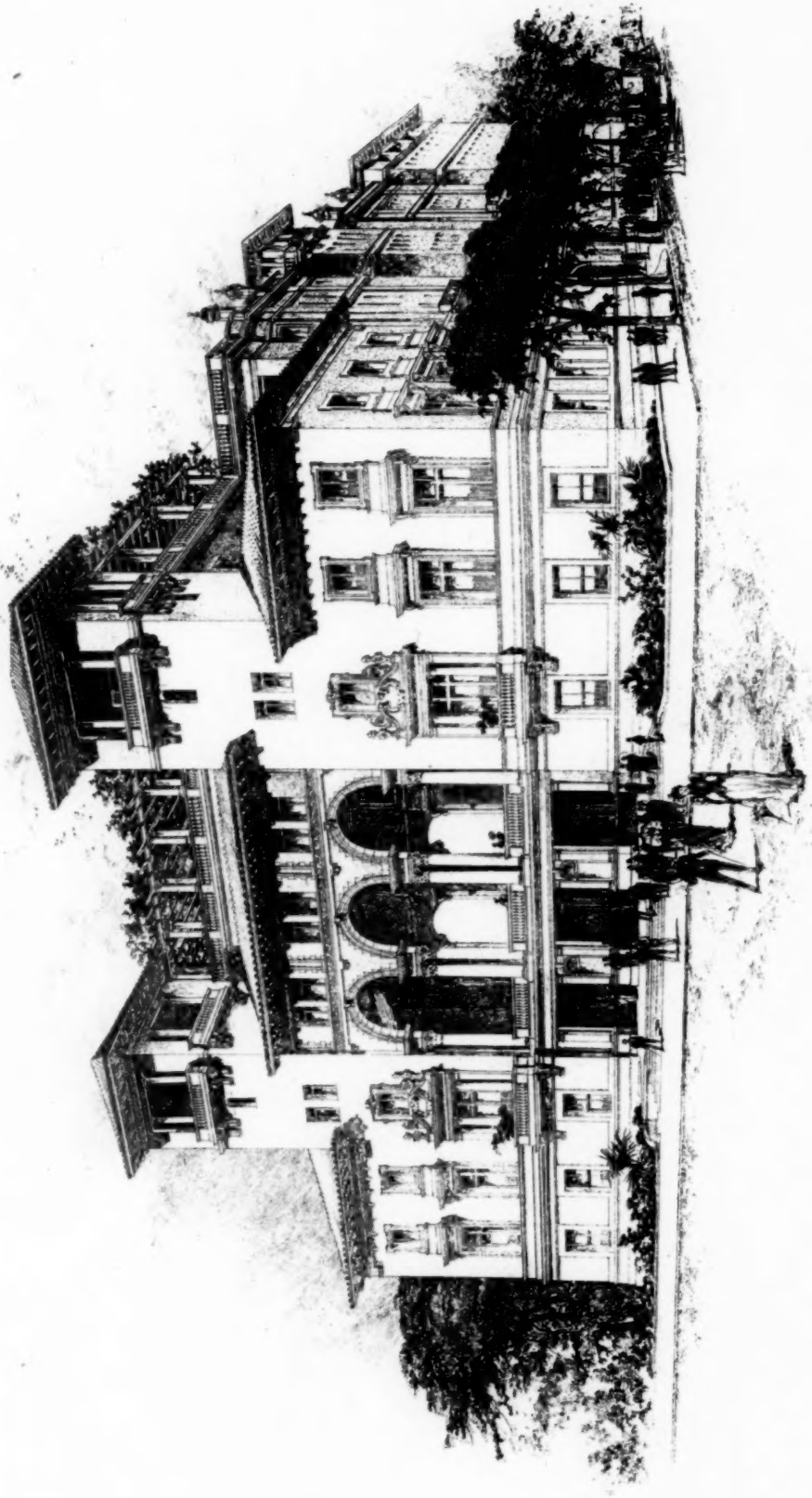
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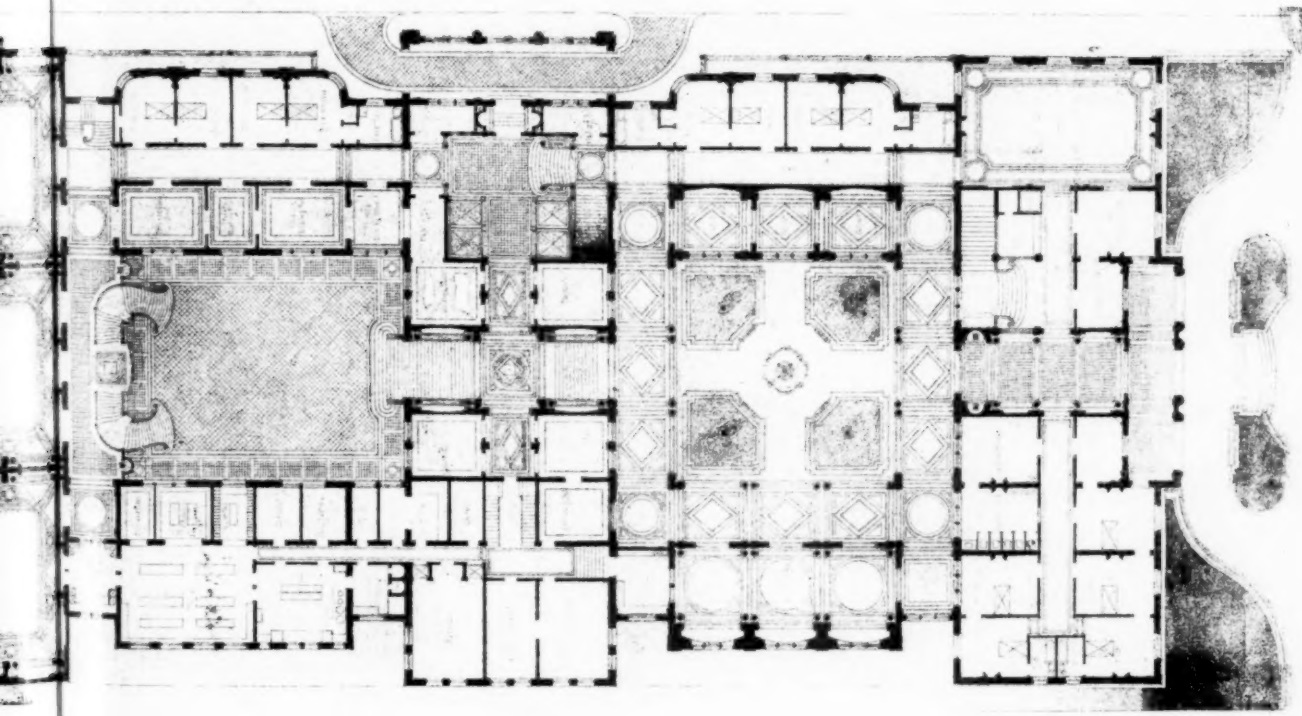
Lancashire Inn



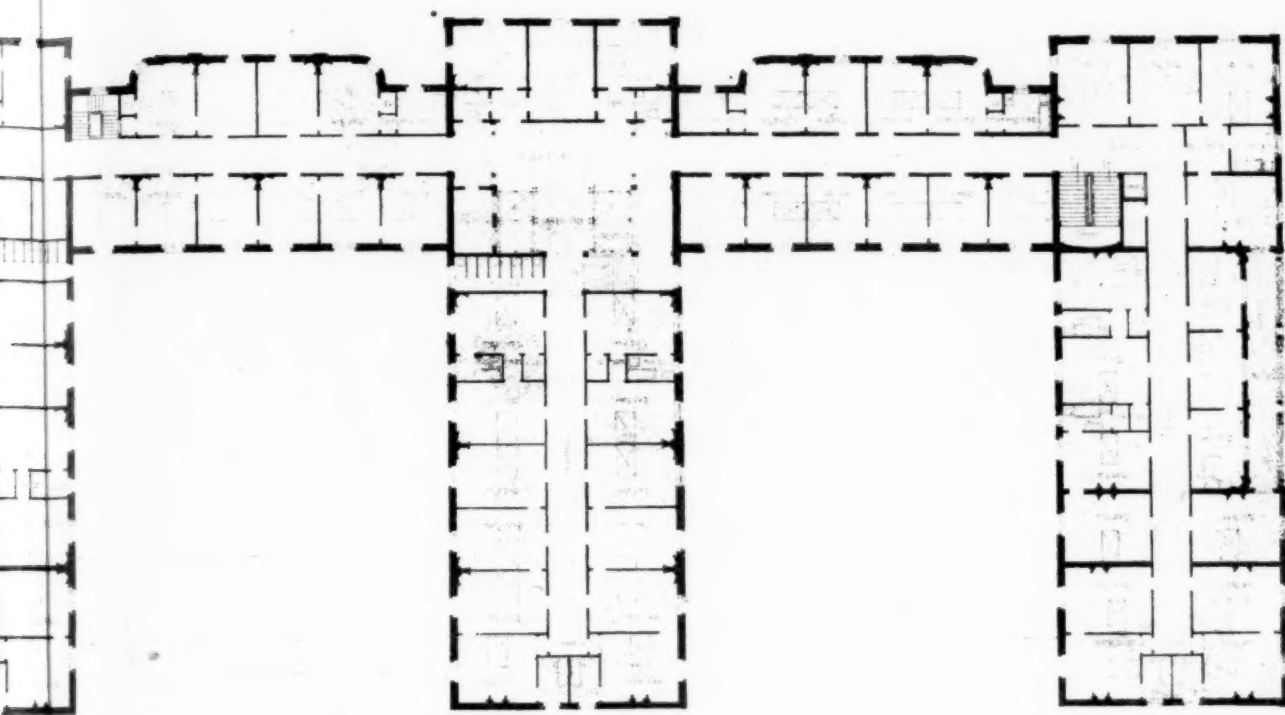
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