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THE New York Department of Buildings still continues to carry on its functions, although Judge Potter has rendered a decision affirming the constitutionality of the law by which the Department was abolished, and its duties transferred to the Fire Commissioners. It is supposed that an appeal will be taken from Judge Potter's decision, so that the Department, with its large force of employes, will continue its precarious existence for the present. Meanwhile, the Fire Commissioners are fully authorized by the decision to appoint a Superintendent of Buildings of their own, as the new law directs them to do, and we shall probably soon see two rival appointees, each at the head of a small body of subordinates, exercising the functions of that office. The Fire Commissioners may possibly have the wisdom to wait awhile before turning a debated principle into a serious conflict; if so, the citizens will have reason to be grateful to them. As we predicted, the movement which was begun with the help of the public indignation at the criminal carelessness which caused the fall of the Madison Garden, has degenerated into a mere struggle for the benefit of local politicians of the lowest class, and the cry, "Who is responsible for the death of the innocent victims of that catastrophe?" has been converted into "How shall we get rid of Dudley?" In all this there is no presage of increased safety or convenience for the public, but the reverse. If Dudley is "got rid of," and the matter dropped there, every incompetent architect and engineer in New York will breathe more freely, noting, for the future, the ease with which a similar scapegoat can be found to bear the consequences of ignorant construction; while, with all the vast responsibility which it is sought to throw upon the Building Department, no guaranty whatever is given that Dudley's successor will be more skilful, disinterested or competent than himself.

It is said that a limited number of competitive plans will be invited for the great Barnum Museum on the site of the Madison Square Garden in New York. Six architects will be designated, who will be paid for their trouble and expense. As the directors say, they intend to conduct the competition on "business principles," and consider that those principles dictate a careful selection of the professional men to whom they are willing to entrust the planning of so important a structure, and a suitable outlay for the privilege of choosing among several designs. This way of thinking has become quite general among responsible and experienced men. Unlike the architects themselves, who suffer most from unrestricted and unscrupulous competition, yet keep up the practice through their own weakness, not to say unscrupulousness, the public is, if not beginning to find out, at least ready to believe, that it is less profitable to allow themselves to be confused by a mass of drawings, many of them intentionally misleading, sent in by competitors as a mere speculation, which they are tempted to further still more by any available means, than to pay a few trustworthy men a fair price for their various opinions, in the same way that they would, if they were very ill, pay a number of skilful physicians a proper consultation fee, instead of opening the doors for all the medical and empirical world to offer doses and advice,

"without other compensation than the usual fee if the patient should be cured by means of their medicines."

THE sad accident in the Hudson River tunnel last week, whether we consider it due to circumstances which might have been with reasonable care foreseen and guarded against, or not, is full of interest and instruction for engineers and architects, and it is only fair to remember that, although the engineers in charge might not have made all the calculations, and provided all the safeguards possible, they were working under extraordinary conditions; exploring in a manner a new and unknown course, and that any lack of perfect prevision under such circumstances is far more excusable than the disregard of plain and long-established rules of ordinary construction, to which most accidents are due. The tunnel, by far the greatest enterprise of the kind yet attempted, was in process of excavation in a manner at once daring and scientific, the force of compressed air being utilized to an extent never known before. Not only was the pneumatic pressure relied upon to resist the weight of the water and soil around the tunnel, but even at the heading no other shield was employed, the workmen digging forward into the ground just as if they had been above the surface, the increased capacity of the dense atmosphere for absorbing moisture serving also to keep the fresh surfaces of mud dry enough for easy excavation, while a further application of the same force was contrived in employing it to carry off the earth dug out, which was simply thrown into tubes communicating with the outer air in the shaft at the entrance and so sucked out of the tunnel. As fast as the excavation proceeded, the plate-iron lining was put together, and the brick arches built inside. Naturally there was a certain amount of escape of the air through the joints, and where such escape was noticed, a handful of mud was daubed over the place as a temporary luting, so that by incessant care the whole was kept practically tight. It seems however, that at the most difficult point to keep closed, the junction of the tunnel with the vertical shaft, some neglect must have allowed such an escape of air to take place as to reduce the interior pressure at that point, and allow the weight above to bend in the iron lining-plates so far as to prevent opening the door of the air-lock, which swung toward the tunnel, and the water entering as the air escaped, filled the tunnel before effectual aid could be rendered.

A SINGULAR accident took place in Brooklyn last week. Two four-story houses, with brown-stone fronts, suddenly gave way, it is supposed on account of the sliding of the foundation on a stratum of clay beneath it, which had been softened by recent heavy rains. Fortunately, no one was injured. The houses were built for sale, and undoubtedly no great care or science was shown in their construction. Still, such accidents are not uncommon, nor are they easily guarded against. Many a good bed of gravel rests upon a sharply sloping clay stratum far beneath, along which water runs after every storm, softening the upper portion into slippery mud, and the weight of a building may easily induce a movement of the upper stratum. It is indeed for such cases that the theoretical knowledge of the skilled architect is of the most service. To him, the existence of a neighboring hill always suggests the possibility of springs and sloping strata, and indications which are lost upon the ordinary builder he will seize at once, and by modifying his plans, or by a little work in drainage, will avert a subsequent catastrophe. No architect needs to be told that a clay subsoil is one of the worst troubles which are found in ordinary building, and a successful treatment of it, although no evidence of the thought expended may appear upon the surface, is a creditable, and not very common affair.

THE New York obelisk is awaiting a decision as to the spot on which it shall be erected, not quite patiently, for Commander Goringe is unwilling to stay long enough for an exhaustive discussion of the matter. It is, however, understood that the site upon the knoll near the Art Museum is abandoned, and probably the open space at the Fifth Avenue entrance, or, as it is rather unnecessarily called, the "Scholars' Gate," will be the position finally decided upon. This is perhaps as good a situation as any in or about the Park, if care is taken to keep the stone out of the way of the trees, whose superior size will

very much dwarf its effect, while the drip from their leaves would soon induce an injurious growth of lichens upon the granite. This "Plaza," to give it as the New York reporters do, a name already appropriated by usage to a sort of place as utterly different from the area in front of the "Scholars' Gate" as can well be imagined, would be an admirable site for sculpture. A group of civic memorials, dominated by the obelisk, would form a very interesting and important feature of the city, and the statues serving as a transition between the exceptional formality of the neighboring streets and the picturesque freedom of the Park, would gain much in artistic charm. Neither the generosity of her citizens nor her magnificent situation have yet succeeded in making New York a beautiful city, simply by reason of the hap-hazard, random way in which her adornment has been managed. A municipal improvement society, like those which flourish in New England villages, but on a larger scale, might do much to direct and control the efforts of liberal or ambitious citizens.

COLONEL GEO. E. WARING, JR., writes us in regard to the comments which we made in our last number upon the resolutions reported to have been passed at a meeting called in New York by the Board of Health, and in his letter, which is printed in another column, takes us to task, as well as architects in general, for discouraging the reforms which sanitarians try to promote. In this, we venture to say that Colonel Waring does us injustice. We yield to no one in our anxiety to spread information upon sanitary matters, and forward sanitary reform, and it is for this very reason that we deprecate attempts at radical measures by incompetent authority, which are sure to fail, and in their failure embarrass the very cause they were intended to advance. That such failure would attend the efforts of a Board of Health to enforce such radical changes as those which were discussed we think certain. The difficulty which such boards encounter in the suppression of the most flagrant public nuisances is nothing to the task of entering a man's private house and compelling him to incur a heavy expense for the sake of his own bodily comfort, even if they were endowed with special authority *ad hoc*, which at present is by no means the case; and until they have acquired, not only the unquestioned right to enforce the rules they adopt, but a more authoritative and detailed acquaintance with the subject than was shown by the report of the meeting in question, we think that their discussions as to what they might do if they had the power would be better kept private.

THEIR resolution, for instance, that "no pan-closets be used, but either hoppers or improved apparatus," we criticised, not because, as Colonel Waring thinks, we do not think quite as badly of pan-closets as he does, but for the reason that the authority of the Board is far too feeble to contend with the difficulties in the way of superseding it. Undoubtedly, the "simple hopper with an abundant sudden flush" is far superior; but how, we are compelled to ask, is the "abundant flush," which is essential to its proper working, to be insured? In the upper stories of New York tenements nothing resembling a proper flush can be obtained for such closets except by the intervention of a cistern and valve, and not always then, even if the landlord could be depended upon to furnish an "abundant" supply of water, and until these pre-requisites are assured we should seriously doubt whether the indiscriminate substitution of hoppers for pan-closets would be by any means a sanitary advantage. On the contrary, our experience is that in such places they are, *as ordinarily put in*, usually worse than the worst pan-closets, and we believe that the reason why they are not now, as formerly, in general use, is that they have come to be regarded as intolerable in such places. As to the "improved apparatus," any expert can point to specimens which are more defective in principle than the worst pan-closet, and no Board could safely undertake the responsibility of adopting one or two kinds only. To our mind, the regulation of plumbing, desirable as it is, must be accomplished in a very different way, by putting it in the hands of experts in that business, who know what they want and have power to enforce their directions by the simple act of turning off the water from buildings where they are not complied with; and not by holding public meetings and adopting rules which no one has any authority to enforce, and which sound like the deliberations of the congress of ladies which once met and passed a resolution that there should be no more wars.

LABOR troubles of a peculiar kind threaten to interfere seriously with the completion of the huge hotel at Rockaway Beach, Long Island, which has been the subject of so many paragraphs, more or less apocryphal, in the daily papers. As often happens with such enterprises, money seems to be wanting at the very moment that time most presses, and some fifteen hundred men, whose wages were in arrears a week or more, on being tendered twenty per cent of their dues in cash, with certificates of indebtedness for the balance, struck work lately, demanding full payment in cash. Negotiations are in progress for a new loan to the company, and the president offers, if necessary, to pay the wages due, only about sixty thousand dollars, out of his own pocket, so that it is probable that matters will be arranged without any loss to the workmen, but a very serious one to the owners, to whom every day's delay, so late in the season, means the sacrifice of many thousand dollars. Indeed, it is asserted, with great appearance of probability, that the strike was instigated at this particular moment by some professional agitators, who saw an opportunity for doing great mischief without advantage to any one except themselves, such as they seldom fail to seize. It is said that some of the workmen were terrified by speculators into selling such due-bills as they accepted for half their face value, an operation which must prove very profitable to the purchasers. Of all the creditors of the company, the workmen employed on the building and grounds hold the best position. With a total claim of less than ten per cent of the cost of the work thus far, they have the power, by filing liens, to seize upon all the property of the company, to the exclusion of other creditors, to satisfy their debt, with interest and costs, and by accepting evidences of indebtedness they reduce the expense of litigation, if any should be necessary, to the smallest possible amount. Under such circumstances, the due-bills of the company to the workmen ought to pass by assignment at their full value, and the whole demonstration, so far as the men are concerned, is foolish and useless. It is much to the honor of President Smith that he refused to allow the bar and restaurant, which were ready for business, to be opened. We have known contractors to set up grog-shops of their own, giving their workmen credit, for the express purpose of rapidly reducing their indebtedness to them, and as the company lost a large general business which was waiting for them, their reluctance to add fuel to the flames of discord by the sale of liquors is the more praiseworthy.

PARAGRAPHS have found their way lately into the daily papers concerning a collection of pictures which was said to have remained almost unknown in the store-rooms of Bowdoin College, at Brunswick, Maine, for more than half a century, and had only recently attracted attention. The description of the paintings, though rather vague, conveyed the idea that a number of works by the most renowned masters were included in the collection, but a correspondent of the *Boston Advertiser* now gives some particulars which may calm the enthusiasm of those who supposed that a mine of Titians and Raphaels had been discovered in the quiet Eastern town. It seems that the Hon. James Bowdoin, resident in Paris from 1805 to 1808, gathered in those three years a number of works of art, which he left by will to the college, and which constitute the collection referred to. The names attached to the pictures in the catalogue are at first sight imposing, but the impression which they produce is moderated by the qualifying statement that a large picture "which represents Titian" for instance, "is either a duplicate or a copy" of a certain well-known one in Florence. In the same way, another important work is "either an original or a first-rate copy from Nicholas Poussin," and a third is "an original Raphael or a copy from him," while a fourth is "without doubt an original or fine copy from Rubens." One work, which is, we are glad to see, "characterized by grace, naturalness and good coloring," has been "recognized as an original portrait of the Governor of Gibraltar, by Vandyke." Our chronology fails us in endeavoring to explain how this functionary could possibly have had his portrait painted by Sir Anthony, but we can well believe that the picture is "worth a large sum." One of the Raphaels, also, is a work "of fine coloring and grace," so that it would seem that the artists must have made special exertions in the preparation of the paintings comprised in the collection. Of this collection we will only remark that those who are ambitious to endow college museums with the works of "old masters," can see pictures which are "either original Raphaels or fine copies" sold by auction every day on Broadway.

THE GILBERT STUART LOAN COLLECTION AT THE BOSTON MUSEUM OF FINE ARTS.

In the autumn of 1828, a few months after the death of Gilbert Stuart, an exhibition of his works, numbering over two hundred portraits, was held in Boston. Since that time no attempt has been made, I believe, until the present summer, to collect his pictures in any considerable number, that the new generation which has grown up in the interval might gain some adequate notion of his powers. So many of his finest portraits are in private hands, in Boston itself or its immediate vicinity, that there, at least, the true merit of the man can hardly have been forgotten; but outside of Boston he is, I fear, to very many even of our sincerest picture-lovers, little more than a name whose importance is vouched for by the verdict of our forefathers; and these, highly as we may esteem their judgment in other things, are not apt to be deferred to by us as very capable critics in matters of art. Some fine canvases in the keeping of the New York Historical Society should have convinced the metropolis at least that in their praise of Stuart—however it may have been with other artists—our ancestors did him less, not more, than justice; but the society in question secludes its treasures so carefully and successfully, that they have come to be all but ignored by even the best-informed New Yorkers. So, as I have said, the most of us have known but little of Gilbert Stuart, except as the presumed author of multitudes of "Washingtons," many of which support in no way his reputation as a great painter. I know of no other case where the immortalization of his greatest sitter has injured, instead of enhancing an artist's fame as such. No Washington I have ever seen of Stuart's is equal to the best of his other portraits. When we think of the numerous duplicates of his own originals which he himself acknowledges to have turned off "whenever he was in want of a hundred-dollar bill," and when we add thereto the countless copies which were made by others and sold, even in his life-time, as his work, it does not seem wonderful that a student who had been used to testing him by their standard could not have suspected the power and beauty of his handiwork as displayed in the present exhibition at Boston.

To any one interested in the early history of our century and the great personalities, political and social, which distinguish it, the collection will prove both fascinating and instructive. A portrait of any kind which gives us even a trustworthy hint as to the physical appearance of the men we study, is of great value as helping us to realize, not merely to be intellectually convinced of, the fact of their existence. But such portraits as these of Stuart's are more than hints—more, too, than mere records of feature and outward shape; They are actual revelations of the man himself—not, of course, to be understood without the key afforded by our previous knowledge of life and character, but of incalculable value as increasing and defining that knowledge. From a man's actual countenance in life we can anticipate little of his inner self, except in regard to generalities; but how much we can gather from it when the man himself has become known to us! So it is with these sitters of Stuart's, in looking at whom we are sure we can decipher as much of their personality from the canvas as their contemporaries could have done from their actual flesh and blood. This is something more, of course, than to say that the pictures seem to have been good likenesses, in the conventional sense of the term. They are renderings, very subtle and masterly in many cases, of moods and sentiments and dispositions—of the very breath and essence of the man. To painters of externals only, the clear-cut forms and simple tints of youthful faces offer most attraction, and in treating such their brush is sure to do its most successful work; but with Stuart the case is opposite. His subjects of preilection, we are told, were faces in which the trace of character went for more than the original mould of feature; and the complexions which he loved to paint were those whose strong and varied tints had been laid on by the hands of many years, of many weathers, and of many mental moods. Whether this be true or not, it is certain that his greatest successes were in this line. His beauties are sometimes insipid, sometimes hard and woody-looking, sometimes slurred, as if the comparative simplicity of the problem had rather bored than pleased him. But when we see him put a strong, manly head on the canvas, there is no want of interest to be noted; and when the head is not only strong, but full of the subtle lines and tints of age, sanctified by extreme length of days, as in the later "John Adams," full of placid power, as in the "Paul Revere," or brimming over with the genial spirit we see in so many of his pictures, Stuart is evidently in the best of humors with his model, and the resultant work is the best of witnesses to his extraordinary power.

But apart from their historical and psychological value, these pictures have a very great artistic interest, which is heightened, perhaps, but is in no way dependent upon, the artist's position as the greatest name among the pioneers of American art. Dating from a full flood of artistic production in any period and in any place, they would lose no whit of their power to charm us; nay, more than this, their technical excellence is such that I do not hesitate to say that to any young artist it would be worth a visit to Boston—and from no inconsiderable distance—to get the chance of profiting by the lessons of Stuart's brush. Be it understood, however, before I begin at all to speak of Stuart's work in detail, that in all I have said thus far, I have referred almost exclusively to the way in which he gives the human head.

It has been asserted, and contradicted, that Stuart never had the

patience to acquire that knowledge of the entire figure which academic training or severe and lengthened private study can alone supply. It has also been said, on the other hand, that while his power was equal to all things, his love for the human countenance and his estimate of its transcendent value in art were such that he could not bring himself to paint other things with corresponding care. He was a copyist of the works of God, according to his own reported saying, and not of the work of tailor or mantua-maker; but such a sentiment as this, whatever we may think of its wisdom, could not, of course, excuse a neglect of such things as the arms and hands of those who sat to him. A partial explanation of this neglect, as well as of his usual, though not invariable contempt for all texture in accessories, may perhaps be found in the haste with which he worked, constantly pressed as he was by financial needs brought about by his ceaseless extravagance. There are many anecdotes which tell of the speed with which he despatched his commissions when his necessities were importunate; as, for instance, when we are told how he made a resolution at one time not to give appointments to fewer than six sitters every day. There are some portraits unquestionably from his brush where even the faces are slurred and unworthy of his power; but these are a small minority, and imperfect work has not been turned out by this artist alone. What seems more characteristic of him are the innumerable portraits where it is evident that his first enthusiasm was cooled by the completed rendering of the head. The rest he appears to have brushed in in a most perfunctory and unworkmanlike, and so, of course, inartistic manner. Of course, by such words as these I mean more than that the subordinate work is slight. It is in many cases bad, and of a badness which it is difficult to reconcile with any latent ability to do much better. It is hard, perhaps, to believe that he who could so accurately define the features could not draw the naked arm except as an uninteresting wooden appendage; but thus he draws it most often, as in the otherwise lovely portrait of Mrs. Morton (No. 232 of the present catalogue), where it is not slighted, but hardly and disagreeably done. It is difficult, too, to believe, perhaps, that the brush which was equal to the color and texture of the most complexly-tinted face should not have been able to render either the modelling or the local color of the flesh of hands and arms. We are forced to believe that it was so, however, at least in as far as the evidence of the present collection may be taken as conclusive. And to explain its being so, we must conclude that these things never interested the artist sufficiently for him to care to master their problems. Haste explains much in such a case, but it can hardly explain how an artist who really revered all the works of God, even if he excluded the works of man from his admiration, could, when painting from such a model as the first President, find no impulse to study and record the hands, which so often are scarcely less expressive than the features. Those who agree that such is the case, need never look to a picture by Stuart for the conformation of the hand of Washington. Even of the great full-length known as the "Lansdowne" portrait it is on record that another person stood for the figure, and that the hands are due to a third source—probably to a cast of Stuart's own. The full-length of Mr. Grant skating, which has been so highly praised in England, is said to be well-drawn and executed throughout; but there are few large canvases of which nearly as much can be said. That he disliked to paint the full figure is well known. Even half-lengths are a minority in this collection of over a hundred portraits. Judged from it, Stuart's preference was very decidedly for a mere head, or a bust from which the hands are excluded.

In addition to this similarity of size, we must remark the uniform way in which a direct gaze is given to his sitters. I do not think there is a picture in the room except the "Boy and Butterfly" (No. 248), in which the eyes fail to meet our own. I do not say that such a gaze is not the favorite one with almost all painters, but can recollect no other artist who has exclusively made use of it. The pose of Stuart's heads is so diverse, however, that no monotony results; only a sort of family air of great directness. Nor does the diversity of pose appear sought-for or calculated; "posing," in the cant meaning of the word is never apparent, and the various carriages of the head seem each as natural to, and characteristic of the individual sitter, as they are greatly different among themselves.

There is nothing in Stuart's pictures that can lay him open to a charge of mannerism, either in style or technique. Indeed, one will always hesitate in future, I think, to say with confidence that such and such a picture is positively *not* by Stuart, so various are the degrees of his excellence, and so unlike each other even his very best works. There is, perhaps, nothing in which it is so easy for an artist to become mannered as in tone. If he values it at all in his work, he is apt to seek it in certain stereotyped ways, and this is, perhaps, why to some critics it appears the lowest of all excellencies—little more, sometimes, than a mere trick. For their tone the best works of Stuart are especially remarkable; yet there is nothing in which they show so much variety. It is entirely absent as a valuable quality from some of the works which are *not* his best; though perhaps extreme instances of this are to be laid to the account of some unskilful cleaner. One is fain to believe that such is the case with No. 230, for instance, the portrait of Mrs. S. K. Williams. It is crude and disagreeable in color, and hard in effect; the ugly reds and blues may have once shown softer under a glaze, though even that could scarcely have reduced them to harmony. Stuart, one may as well grant at once, was not a colorist who controlled the brilliancy of positive tints. He is magnificent so long only as he keeps to a sombre

key in drapery and all accessories; though no possible carnation the face can show was beyond his power to harmonize and beautify. The picture which shows the nearest approach to brightness of color, without losing in beauty of tone, is the portrait (No. 295) of Mr. William Constable in a blue coat. Those which are most conspicuously deficient in the same line are perhaps the two large portraits of Josiah Quincy and Bishop Cheverus. There is no unity, still less any positive beauty of tone in these works, and their color is positively disagreeable. One turns with relief from them to the many works which are remarkable for the greatest charm and richness of tone. Among even these, as I have said, there is much diversity; no one key is exclusively used, or predominates, even. One is at a loss to say which is most delightful — the wonderful golden light of the "Paul Revere," the simple daylight of the later "John Adams," the sombre richness that enwraps the beautiful head of Counsellor Dunn, or the vivid carnations of the "Judge Stephen Jones." Each of these magnificent heads is worthy of a monograph to itself. Each of them singly — still more, all of them together — may well refute the critics to whom I have referred, when they say that "tone" may be a valuable accident of time, but is not a legitimate quality to be sought to-day, and the sneers of others who have said that it is the cheapest of all excellences, "*rien que du bitume*." Nothing could be less like the "tone" given in auction-rooms very often, we are told, by a brush-full of brown varnish, in the faith that thus all crudeness is subdued and all harmony obtained, than the quality, for instance, of the "Paul Revere," which is as clear and limpid and golden as a bath's flesh in a sunlit brook. Nothing could be more simple than the scale of the "John Adams." Time has apparently not altered in the least the wonderfully strong "Judge Jones," which is as fresh, as bright and definite as it could have been when it left the artist's easel. This is the picture to which I especially referred when I said that the most vivid carnations were not too much for Stuart to bring into harmony. The florid, full, strongly-tinted face of the old man looks at us with as much frankness of color, as well as of expression, as if we saw him in a full light in life. The carnations are very strong and very boldly laid on, and yet the tone is one of the chief attractions in this picture, where everything is perfect. For marvelous realism of effect and painting of character, there is no portrait in the room that can outrank it. The "John Adams" is its equal, perhaps, though on a very different line. Here we have extreme age portrayed in a way which, without palliating it in the least, yet lets one see beneath it the spirit and the power of the man as he was in the prime of his days. I must note once more the marvelous geniality which Stuart infuses into his heads, especially those of the aged, and the smilingness of expression which he imparts, without descending by one iota toward the affectation of an actual smile, which on canvas is so apt to be little less than a grimace. The Adams portrait is a half-length, and the most successful one I remember to have seen from Stuart's hand. Other remarkable heads of men past middle life are those of "Col. James Swan" (No. 222), "Col. Timothy Pickering" (No. 231), "General David Cobb" (No. 249), "Mr. John Derby" (No. 253), and "Captain Joseph Anthony" (No. 278), which last is one of the few of Stuart's pictures which seems to have greatly darkened with age. A very fine half-length, representing an elderly man with his hair brushed up on top of his head, and a half-genial, half-quizzical expression of face, is one of the most life-like portraits in the collection. I am unable to identify it, as at the time of my visits it was neither named nor numbered. Among the best known of Stuart's works, as belonging to the City of Boston, is the "General Henry Knox," a fine three-quarters-length, superb as portraiture, and beautiful in tone.

Among the feminine portraits, one would cite first, perhaps, the beautiful and beautifully painted head of Mrs. Andrew Ritchie (No. 274), and then the "Mrs. Winthrop" (No. 290), the "Mrs. Coffin" (No. 259), the "Mrs. John C. Howard" (No. 221), the "Mrs. Grafton" (No. 226), the "Mrs. Otis" (No. 213), and the lovely sketch of the "Misses Jackson." In citing these works, and adding, by the way, as one of the best the portrait of "Mr. John Vaughan" (No. 233), I do not claim to have picked out those of absolutely the greatest value. One acknowledges the excellence of almost all the numbers on the catalogues, but cites those which appeal most strongly to one's own taste.

Historically the most important of all, and technically very good, is the unique set of the first five presidents, belonging to Mr. Jefferson Coolidge, the finest of which to my taste, are the Madison and the Jefferson. Even more interesting than the latter, however, is a medallion-like profile of Jefferson in monochrome, painted, I believe, as a guide in cutting a medal. It is the only profile in the collection.

Of especial interest to students, — though with a great charm for all of us, — is the unfinished head of Nathaniel Bowditch, begun a very short time before Stuart's death. If, as we are told, it was hard for the painter in the last years of his life to steady his hand, there is no trace of such difficulty in the way the tints are laid here, with all decision and the greatest delicacy of sentiment and touch. The canvas has been tinted a smooth pale gray, the face alone begun in the centre of it. The delicate, gently radiant features of the old man are scarcely more than washed upon the canvas, yet the likeness is as unmistakably vivid as in any of the completed pictures. There are certain heads in the collection which from their streaked and marred appearance seem to have lost much of their original local color, whether through hard treatment at the hand of time or of picture-cleaners, I cannot say. But there are very many, as I have

said before, in which the carnations are quite fresh and perfect. Whether Stuart had radically different modes of working which result in these varieties of permanence, his biographers nowhere inform us. But no picture begun as is this of Mr. Bowditch, could ever lose its color unless obliterated entirely. There is no grounding with neutral tones which are to furnish modelling and substance, and serve as a background for the local coloring. The face is simply and thinly painted in with soft carnations, the shadows in cool browns, every stroke nicely calculated, delicately applied and "telling" with marvelous effect.

Painters whose practice it is to "build up" a head from rough beginnings, getting the solid masses first, and then the delicacies of modelling, resemblance and color in such order as they may, will appreciate even more than a layman is able to do, the ease with which everything has here been indicated from the first stroke, and the refinements of form and expression rendered with so slight and delicate a layer of paint. Solidity and depth of tone are to come last when the picture is finally worked up.

There remain to be spoken of in this exhibition the Washingtons, — to my mind the least interesting division of Stuart's work. Iteration takes from the charm of all things, and we feel as if there were nothing more to be known either as to the face of Washington or the manner in which Stuart painted it, so many copies have we seen of all grades from good to very bad. But aside from this, the face itself seems to have been too rigid in its conformation. Too little plastic or finely expressive to give full scope to Stuart's powers. Nor is the technique in most cases of special excellence. The famous Athenæum head, for instance, is pinkish in effect and inferior in tone to his best efforts.

After what I have said as to Stuart's dislike of full-length subjects, it will hardly be expected that when he did attempt them, they would prove very satisfactory as compositions. For proof that the reverse was the case, we may turn once more to the portraits of Josiah Quincy and Bishop Cheverus. As compositions they must, I think, be called failures, however great their claim to be respected as good likenesses. The Bishop's is theatrical in pose, and — almost alone of Stuart's portraits that I have seen — may be called something less than simple and dignified in expression. The curtain in the Quincy picture is very bad and the background with its absurd little Faneuil Hall as an attempt to illustrate the sitter's rank and importance in the Commonwealth, is unworthy of the usual straightforward manner and excellent taste of the artist.

Of Stuart's technique when at its best, it would be impossible to speak too highly. His command over the color and texture of flesh is absolute, as I have said. The ease with which his brush works is most admirable, and the perfection of contour joined to the absence of all rigid lines in his drawing of the face is worthy of all study. When he leaves the features, however, he leaves, whether designedly or perforce, much of his skill behind him. There are one or two cases where he has given certain textures, — as of lace and furs, — with a great degree of success, but usually he neglects both the surface texture and the color-charm of his accessories. Even in painting hair, more often than not he is far from satisfactory. If it is curled, as was so commonly the case with the ladies of his time, he gives the form of the tendrils by hard strokes that indicate neither the softness nor the changing color of the original. There is a story on record of how he ridiculed, — unwittingly in the presence of the artist, his master, — the figure-of-three strokes with which West represented hair. But he seems, nevertheless, to have often followed the same labor-saving receipt himself. The hair in some of his finest heads is fairly well done, but I do not remember a single case in which he seems to have taken actual pleasure in rendering its beauty.

It would have been very instructive if the dates of as many pictures as possible had been given in the catalogue. So few are noted that it seems as if many more, even if not all, might have been obtained. So far as we can guess from our scanty information on this subject, there seems to have been no steady progression from poorer to better in Stuart's work, at least after his return to this country. Some of the best and some of the worst of the portraits are credited to the same years. At all events there was, in spite of any possible bodily failings, no falling off in the quality of his power, even in the last year of his life. Was not the John Adams painted in 1825, and the Nathaniel Bowditch begun as the last of all his works?

After studying the pictures in this collection one turns very naturally for help in chronological and critical matters to the recent authorized biography of the artist by Mr. George C. Mason. But within the capacious and promising covers of the book one meets with nothing but disappointment. It was hard, I believe, to gather sufficient materials for anything that could with propriety be called a complete life of Stuart. But the materials that were to be had have not been sifted even into agreement among themselves, and are arranged in no sort of order, not even chronological. The more important part of an artist's biography, that which considers him not as a social unit but as a painter, has been almost entirely forgotten. There is nothing which even purports to be a detailed estimate of his power, still less is there any examination of his aims and methods such as might have been made interesting to the amateur and instructive in the highest degree to the practical student of art. Failing such general examination into Stuart's artistic and technical merits and defects, it was at least to be expected that comments as full and practical as possible would be found appended to his works when individually named, and that the dates of as many as practicable

would be accurately fixed. But we are again disappointed. There is what pretends to be a *catalogue raisonné* at the end of the book, but it is nothing more than a list, — perhaps unavoidably very incomplete, — of the artist's sitters, with such biographical notice of them as the author could obtain. The paintings are not described at all in the majority of cases, and very slightly, superficially and untechnically at the best. One must dismiss the book with the verdict that there is nothing to be learned from it except what all the world knew before in the shape of more or less authentic anecdotes about Stuart and his friends. All it leaves in the mind is a sense of wonder as to what may have been considered the *raison d'être* of its production.

It seems a pity, in conclusion, that the benefit of such a collection as this, should be limited to any one city. If the Trustees of the Metropolitan Museum could obtain so great a favor as its loan to them, and would supplement it with those portraits of the artist which are to be had in New York and Philadelphia, they would be doing a vast service not only to the memory of him who was the greatest painter of our past, but also to the picture-lovers and the art-students of to-day.

M. G. VAN RENSSELAER.

THE TENEMENT-HOUSE PROBLEM.¹ — II.

THE movement in our own country is one of comparatively recent date. The earliest successful experiment was made by an association formed in Boston in 1853, the attention of its members having been drawn to the subject by the indefatigable Mr. Henry Roberts. A like association in New York, of the same date, failed financially. In 1866 a reform was set on foot, productive for a long time of but slight results. In 1867 was passed the first law in regard to the subject in New York, an Act for the Regulation of Tenement and Lodging Houses in the cities of New York and Brooklyn. This left the enforcement of its provisions largely to the discretion of the Boards of Health. At various times, also, there have been passed in different States acts incorporating building societies — the first being that of Pennsylvania in 1849² — and, by the reports of charitable associations and by occasional newspaper articles, a spasmodic interest was aroused in the subject of the housing of our poor.

With the exception, however, of certain noteworthy individual undertakings like those of Mr. Alfred T. White, of Brooklyn, in 1876–78, it was not until 1878 that the tenement-house question met with any effectual recognition. In October of that year the New York Association for Improving the Condition of the Poor issued a statement of the laws affecting tenement-houses, recommended the consideration of the question to their visitors, and engaged Dr. A. B. Judson to supervise such inspection as was carried on by them. From this movement of reform grew the offer of \$500 made in December, 1878, by the proprietors of the *Sanitary Engineer*, conjointly with D. Willis James, F. B. Thurber, H. E. Fellow, and Robert Gordon, as a premium for the best four designs for a tenement-house, to be built upon the ordinary city lot of 25 feet by 100 feet. More than two hundred designs were sent in by February 4, the time appointed, and placed on exhibition in Leavitt's Art Rooms in New York city; but the almost universal judgment passed upon them goes to show the impossibility of erecting any successful tenement upon the New York city-lot.

In consequence of this agitation, the State Charities Aid Association, which had had the subject under consideration by means of committees since December, 1877, was emboldened to action. The clergymen of the city were induced by them to take up the matter, and stirring sermons were preached from a number of New York pulpits. Public feeling was stimulated in various ways; and the result of a mass meeting held at Cooper Union, February 28, 1879, was the formation of a joint stock corporation for the erection of a block of model tenement-houses. A second meeting, two weeks later, added to the already intense interest. The attention of the State Legislature was effectually drawn to the subject, and in May, 1879, was passed an important amendment to the Tenement-House Act. The Act, as it now stands, after certain injunctions as to space and ventilation, provides that a penalty of \$10 be imposed for each and every day of violation of any of the provisions of the Act, the fines to accrue to the Tenement-House Fund. The enforcement of the Act is in the hands of the City Boards of Health.

Since that time, great improvement is noticed. Two associations have already been formed, and several private individuals have been moved to an active enthusiasm. Here then, as in England, we have four agencies to which to attribute our improvement — legislation, public organization, private enterprise, and the tendency to co-operation which has wrought so much good to Philadelphia.

The principal objections urged against the working of the present improvements are two, viz.: that it does not provide for the lowest classes, those which suffer most from the tenement-house life, and which comprise the most degraded and ignorant of our population; and that it has not yet succeeded in making model tenements a desirable investment. In reply to the first objection it may be urged that such reforms must work gradually downward. The reason why the lowest classes do not care to make the change, is because they have no conception of anything better within their reach. When the possibility is held before their eyes, and rigid enforcement of sanitary laws is made in existing tenements, they must learn, al-

though slowly, the object lesson set them. The financial results of the experiment have not been very inspiring. The difficulties in the way of success have already been shown; and, moreover, the failure may in part be attributed to the basis of charitable action upon which many of the schemes were started. It is only of late that the necessity of carrying on such enterprises upon purely business principles in order to insure philanthropic success has been appreciated. The lowest return quoted is that of Miss Burdett Coutts, at two and one-half per cent; the highest, those of Mr. Hilliard and Sir Sidney Waterlow, at nine per cent. The greater part of the associations feel that they have done well, if they are able to maintain a yearly dividend of five per cent. Naturally, stock-holders grumble at this precarious and unsatisfactory interest. In our own country, Mr. White has realized seven per cent, net, upon his investments; but whether this would hold under competition is of course a question.

It may be urged, however, that if this has been made a fairly profitable undertaking, this standard can be maintained, as experience and study render economy more possible. It certainly seems strange that the landlords of the old tenement-houses should be enabled to amass large fortunes from such poor and intermittent incomes as their rents would seem to offer. Still, Mr. Smirke declares that his attention was first called to the possibility of reform with financial success, by discovering that an individual who rode in his own carriage and was giving his son a University education, had derived his entire property from a St. Giles's lodging-house. That the reform obtains and flourishes in a money-getting age like ours, proves not alone the persistence of charity under adverse circumstances, or the strength of the impulse of self-interest; it must also be taken as a sign of inherent business possibilities.

ARRANGEMENT OF THE TENEMENT-HOUSE.

In building a tenement-house it is first of all necessary that it should be adapted to its purpose by the convenience and comfort of its arrangement. The best of sanitary appliances and fire-proof constructions fail of appreciation at the hands of the ordinary tenant, if they be not recommended by the more palpable advantages of "having things handy." No one of us, in fact, can be induced to enjoy that sweetmeat which has the appearance of medicine.

The systems of arrangement which have been employed are easily classified. Historically, the movement has been in the direction of separation and self-contained dwellings.

Considering first the general arrangement of the blocks, we find that those who have studied the matter hold to separation, and division by streets and alleys, rather than the agglomeration around a number of small and confined courts pursued in France. Such plans have been strongly advocated in London, and have been urged in our own country by architects like Mr. Potter and Mr. Post. By means of such separation, although a slight amount of space may be wasted, free passage is obtained for currents of air, all temptation to inner dark rooms is avoided, and the tenants are somewhat relieved from the feeling of being huddled together in indiscriminate communities. While it seems impossible that any system other than that of the flat should be made available for the purpose in the midst of large cities, there is certainly no reason why our city blocks should be made so painfully solid. This solidity gives a seeming economy of space, but a real waste thereof in many dark corners, as was seen in the recent tenement-house competition.

Another admirable form is that of a large block, bounded by the ordinary streets, and arranged around a large central court with wide approaches on the several sides. It is asserted that this method furnishes an amount of sunshine and of open recreation-ground impossible upon the system of narrow auxiliary streets; but it is somewhat extravagant of space, necessitates the use of occasional light and air shafts, and bears an undoubted resemblance to the much-dreaded barrack. Where dividing alleys are used, moreover, it would be possible for several owners to build upon the same block, under competition, but by a co-operation much more simple than that required for the erection of one immense building.

The number and width of the subordinate streets, or the size of the central court, would be determined by the plans and situation adopted; but probably very few separate blocks would be erected without accommodation for more than the four families per floor found practicable in the city-lot tenement. Coming then to the internal arrangement of the block itself, the question resolves itself into one of the grouping of a number of families about the staircases and passages of approach.

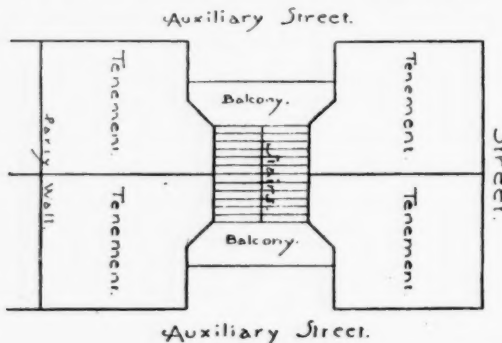
The simplest and earliest of all methods of grouping is that with which we have grown uncomfortably familiar in our hotels, — that of one or two staircases giving admission to a long central corridor, with rooms opening on either side. This proves unsatisfactory for many reasons: the hall is unlighted and difficult to keep in order, and each set of rooms is inconveniently and uneconomically arranged. If the long corridor be placed on one side, it gains more than its due share of light and air, and compels dark rooms in each tenement, or a great waste of space. To gain the light from both sides of the building, and at the same time free access to a long series of rooms by means of as few staircases as possible, what is known as the gallery system was adopted. In this system the long corridor is simply made external, windows as well as doors opening upon it on one side, the other being entirely open to the light; the staircases, in the later work, being also external. The advantages claimed for the gallery system upon

¹ Portions of a graduating thesis by Miss Margaret Hicks, graduate in architecture from Cornell University.

² Unincorporated building associations existed in Philadelphia as early as 1831.

its inception were, that it furnished covered walks in bad weather, lounging places, and places for flowers, an economical exit in case of fire, an open space for drying linen, and an easy access for itinerant vendors! Nearly all these advantages have been found worse than useless by experience as well as by argument. In houses of such a type, lounging places afford dangerous temptations to fights; flowers find no safe abiding place upon so common a highway; long lines of wet and flapping clothing are far from being either ornamental or convenient appendages to a front balcony; and itinerant vendors have happily almost passed away, and no encouragement should be offered for their resurrection. The strength and durability of these slender iron galleries might seriously be questioned in case of fire, while they interfere with the complete and frequent separation so necessary in fire-proof construction. It may also be urged that there can be no privacy in rooms which look directly upon the common passage-way; and there is certainly no privacy of access. The rooms opening upon these galleries, moreover, are seriously darkened. The one argument in favor of the system is that it is the only one which provides a reasonable amount of light and air to a long series of apartments reached only by a single staircase. A good example of it in its latest form is visible in Mr. White's "Tower Buildings" in Brooklyn.

To the multiplication of staircases most builders object on the score of cost and of wasted space; they do not seem to reflect that a reasonable number of staircases is necessary to safe and rapid exit in case of fire or panic. By means of staircase openings comes also much of the scanty ventilation of such houses. In the earlier plans in which staircases were multiplied, one staircase, placed in a corridor transverse to the building, was thought necessary for each pair of dwellings. Later students succeeded in making one staircase serve for four dwellings. One of the best of the recent devices is that of Mr. Chancellor, first used in London in 1874, and sketched below. The plan, which he denominates the "balcony plan," offers



some of the advantages of the older gallery plan; but each balcony belongs to a single family, acts merely as an open lobby, and can be shut off at will from the open staircase, which is placed in the middle of each division of his block. This plan differs from the dumb-bell plan on which most of the city-lot competition designs were based, in having the sides of the block, used by us for party-walls, open to the light and air of the auxiliary streets—which Mr. Chancellor recommends, thus gaining an opportunity for extending his blocks to an indefinite length.

A plan recently published in the *Sanitary Engineer* (April 1879), uses transverse streets running in both directions, and thus gains blocks open to the air on all sides. The staircase-shaft is placed in the centre, and gives access to four dwellings. Oddly enough a somewhat similar plan was published in London by Mr. Loudon during the first agitation of the question, 1840-43. In Mr. Loudon's design, however, the central shaft was made octagonal, and gave access to eight dwellings; but light and ventilation were not so well studied as in the plan of 1879. Now, however, staircases as far as possible detached from the rest of the building and open to the air are considered an essential in the model tenement-house.

The modern endeavor in the grouping of these dwellings, apart from the introduction of sanitary and constructive safe-guards, appears to be to combine the seclusion of each suite of rooms with economy and ease of access, thereby adhering to the so-called "self-contained principle" enunciated by Mr. Matthew Allen several years since. It should in every case be the aim to comprise within each dwelling all the needed conveniences. Even co-operative laundries are strongly reprehended. The two things which it seems absolutely necessary should be held in common are the drying and play grounds. For the former, the roof should be arranged, being a place clean, airy, and retired; but no device has yet successfully provided any place of resort for the children. One solution of the problem has been the utilization of the large central court. In one instance this space was covered by a roof of glass; but although the advocates of this experiment were enthusiastic over its success, I have not been able to discover any second instance of its use. When auxiliary streets are employed, an occasional small garden might be planted at their intersection.

Coming now to the arrangement of each dwelling within itself, we find that the absolute essentials are few, but important. The rooms

required,—their height never being less than eight feet—are a living-room, with an area of 150 square feet, and one, two, or three bedrooms, each containing 80 to 100 square feet. By some English agitators three bedrooms, one for the parents, one for the daughters, and another for the sons of the family, are absolutely insisted upon; but in most cases a ventilated bed recess in the living-room will take the place of the third bedroom, and satisfy the stringent economists as well as stringent philanthropists. English designers invariably add a good sized scullery to the list of necessary apartments, and Mr. White has followed their example in his blocks in Brooklyn; but most Americans would consider this an unnecessary luxury. In case it is added, however, it should be placed, with the water-closet, which should invariably be attached to each dwelling, in an extension from the main building, open to the air on at least two sides. This plan, now universally recommended, and adopted, so far at least as a good measure of separation goes, in all modern designs, is the one now in use in Mr. White's houses above referred to.

In the disposition and fitting up of the rooms, the need of simplicity should constantly be borne in mind. The living-room, for instance, should be so placed as to be within easy reach of the dust-chute, etc., and should in most cases be the room nearest the general entrance; it should be square in outline, with unnumbered corners; the fixed cupboards, in themselves a wise provision, should be without dark corners, or complicated doors and fastenings; the appointments of the sink, or, if they be considered necessary, of the two sinks, and simple bath-tub, should be of the simplest and strongest; the windows should be within easy reach, but should be protected by a strong external railing of some two feet in height; both windows and doors should be devoid of unnecessary ornament, and made to open easily; the gas fixtures should be strong, single, and of the bracket form; and the range, if this fixture, usually provided in England, be thought advisable, furnished with few appendages, except perhaps a copper boiler, should be small and compact. No encouragement should be offered to anything to get out of order, or excuse given to the tenants for breakage or neglect.

With all possible precautions no system can be expected to work well without organized and thorough inspection.

To successfully meet the requirements of the problem in detail, would require careful study, and a comparison of the experience of those who have lived in tenement-houses with that of those who have built them. Great progress has already been made by means of such comparison; but the end is not yet.

THE ILLUSTRATIONS.

A HOUSE ON THE HUDSON. MESSRS. STURGIS & BRIGHAM, ARCHITECTS, BOSTON, MASS.

OFFICES OF THE INSURANCE COMPANY OF NORTH AMERICA, PHILADELPHIA, PA. MESSRS. CABOT & CHANDLER, ARCHITECTS, BOSTON, MASS.

CAIUS COLLEGE, CAMBRIDGE, ENGLAND. MR. ALFRED WATERHOUSE, ARCHITECT.

We reproduce this illustration from the pages of *La Semaine des Constructeurs* chiefly as an example of what architectural sketching ought to be.

INDUSTRIAL CO-OPERATION.

THE question of industrial co-operation, or participation by the workmen in the profits of the employer, is one of very considerable importance, which appears to have received more attention on the Continent than it has in England, where, certainly, it has been tried, but with somewhat doubtful success. A work was published about a year or so ago at Leipzig, written by Herr Victor Böhmert, who took a great deal of trouble to ascertain what had been done in various places towards a practical trial of the experiment; and the subject is one of so much interest that a brief résumé of his facts can scarcely fail to be acceptable to the readers of the *Builder*. Herr Böhmert made inquiries in every European country, and gives particulars of some 120 cases in which the system has been attempted, deriving his examples as follows:—Germany, 54; Switzerland, 25; France, 17; England, 10; Belgium, 3; United States, 3; Austria and Italy, 3; Scandinavia and Russia, 3. It is not pretended that these instances are exhaustive of the subject; but they are, at all events, sufficient to show what has been done in this direction.

France seems to have taken the initiative in these matters, and the first experiment was made there by M. Leclaire, a painter in a large way of business, who started with nothing in 1826, but succeeded so well, that in 1842 he was enabled to carry out his favorite scheme of allowing his workmen to participate in profits. M. Leclaire died in 1872,¹ a wealthy man, while his *employés* had received over 30 per cent beyond their salaries, partly in money presents, and partly in deposits in the savings-bank fund. The total sum returned as having been disbursed in this way between 1842 and 1876 is said to have been no less than 1,760,000 francs, and from the fund thus accumulated, forty-five superannuated members enjoy an income of 1,000 francs per annum, while temporary help is also given of 500 francs per annum. By the balance-sheet of 1879, the accounts showed that 13,000 francs had been distributed amongst 1,032 participants, and 65,000 francs were to the good in the *caisse de secours*.

¹ Some particulars of the career of this benevolent man appeared in the *Builder* for last year, p. 1419, and before.

Since Leclaire's time, other efforts have been set on foot with success, such as those of Chaix & Cie., the railway printers; Bord & Cie., the pianoforte-makers; Laroche Joubert & Cie., paper-manufacturers; and Heuze, of the tan-yards at Coulommès. These and others have all adopted the principle of participation in profits. Another form of the experiment is that of the employer establishing a fund in which each workman shall share according to the value of his place, either after a certain time of service or of age,—a kind of life insurance, in fact. This system was set on foot in 1850, by M. de Courcy, superintendent of the General Insurance Company, and it has been adopted by other firms, such as the Bon Marché shops, Hannapfen & Cie., wine merchants, of Bordeaux; the Orleans Railway Company; Godchaux, the printers, etc. Again, there are certain well-known houses which give periodical bonuses upon profits, such as Christoffe, the goldsmith; Fourdinois, the upholsterer; Pleyel & Wolff, the piano-makers; and there are many others who have followed these examples. In some shape or other, then, the effort to interweave the interests of the *employé* with those of the employer has taken very good root in France.

Switzerland, in proportion to its limited extent and the sparseness of its population, can show more examples of participation than any other country, although, as the conditions of labor vary throughout the nineteen cantons and six demi-cantons of the Swiss Republic, there has been great diversity in the forms in which the experiments took place. The most ancient, still met with in some districts, is to be found in the agricultural population, in which the farm-laborer or vine-worker frequently shares some part of the land with the owner. In commercial and manufacturing pursuits, participation meets with less difficulties than in most places, owing to the prevalent equality of civil rights and social conditions. The master often lives or works under the same roof as the journeyman, and is, therefore, more impelled to interest himself in the well-being of that journeyman. The Canton of Zurich was the first to take up the question in 1868, and its example was speedily followed by those of Geneva, Basle, and St. Gall. One of the largest and most important firms in Switzerland that have adopted the participation system is that of Geilinger Brothers, cotton-spinners, at Winterthur, though here there is no hard-and-fast line in dealing with the question, the participation of each workman being settled by reference to the foremen and the position which the artisan holds in the establishment. The workmen, however, have experienced steady progressive benefits therefrom, having received in 1867 an increase of 5 per cent to their wages; from 1868 to 1871, but 2 per cent (owing to depressed times); in 1872 it was 10 per cent; and in exceptionally favorable years, such as 1873 and 1874, from 12 to 20 per cent. The system was tried in 1869 by the woollen manufacturing houses of Fleckerstein and Schulthess at Wädenswil and Feldbach (Zurich). In this case the participation was given through a savings-bank, to the deposits in which bonuses were added. Two large linen-manufacturers at Schaffhausen followed suit, the distribution of profits in 1870 reaching 5,000 francs, while in the next year it went up to the very large sum of 34,000 francs. A certain number of houses in Switzerland have a system of participation, carried out in an improvised manner by premiums and presents, dependent partly on length of service and partly on the production; and in this category may be mentioned several spinning and weaving establishments at Lorze (Zug) and at Ziegelbruch (Glarus), Rutschi & Co.'s silk-mills at Zurich, Dupasquier's watch establishment at Cortaillod (Neuchâtel), and the currying and skin-dressing firm of Henri Raymond at Morges (Vaud), etc. M. Spöri, of Barentschweil (Zurich), left by his will 50,000 francs to be divided amongst his workmen; and Henri Kunz, of Zurich, bequeathed no less than 18,000 francs, part of which was divided amongst the work-people, and part went to the sick-fund and savings-bank. Very many employers make a regular practice of helping their artisans, either in building houses for them or making donations of coals, wood, groceries, clothes, furniture, or anything else that the household happens to want. In some establishments cows are kept, and the milk sold to the people at such low prices as to be almost nominal. There is no doubt but that the old patriarchal system of community of interest is still very prevalent in Switzerland, the effects of which are plainly visible in the rarity of Swiss appearances in the stormy arena of labor quarrels. The feeling has unhappily disappeared in Great Britain, and we very much question whether the adoption of any such system by a large employer would not be viewed at the present day with a considerable amount of suspicion by the intended recipients. A Swiss firm, which has, of all others, gone most deeply into the experiment of participation, is that of Billon & Isaac, of Geneva, musical-box makers, which employs about 90 or 100 workmen. Since 1871 these masters have given up to their industrials 50 per cent of the net profits in one form or another; and M. Billon has likewise contributed much to the literature of the question, having written a pamphlet in which the whole of their system is minutely described. Both M. Billon and Isaac are fully convinced of its equity and good policy, and consider that, if properly carried out, it would do more than anything else to eradicate strikes.

In other Continental countries the participation system has been tried so far but slightly. Some of the Austrian railway companies give bonuses to such of their *employés* as appear to be deserving of encouragement; but only one firm, that of Dr. Marchet, a paper-maker at Schlögnhüh, in Lower Austria, has made any regular division of profits amongst the men, taking for a basis the duration

of employ, the value of the yearly wages, and the amount of production. In Italy the experiment has been tried satisfactorily at the woollen-mills of Signor Rossi, at Schio, although the money is not given in hard cash, but is spent on various objects of domestic requirement. In Belgium the zinc-mining establishment of Vieille-Montagne has adopted the system, together with a few houses at Antwerp and Verviers. In Denmark, the Baron Zytphen-Adeler, an extensive proprietor in the northwest of Seeland, has successfully tried it on a large scale amongst his agricultural laborers; but only one other manufacturing firm, that of Burmeister & Wain, engineers and ship-builders at Copenhagen, has followed his example. In Sweden, however, and particularly at Gothenburg, participation has taken root at the steam saw-mills of Strömman & Larson, the well-known philanthropists, who are ever foremost in applying any scheme which seems likely to benefit their people, and it is said that it has exercised the happiest result in diminishing drunkenness,—the plague of Scandinavia, and of Sweden in particular.—*The Builder*.

THE GODIN FAMILISTÈRE AT GUISE.

IN our last issue, mention was made of the well-known co-operative experiment of M. Godin, at Guise, France, and the following remarks, by the St. Louis *Globe-Democrat*, upon the success of the undertaking, will be found of interest when taken in connection with what was said before, and with the article on "industrial co-operation" published elsewhere:

"To those labor reformers who, like the author of a recent article in the *International Review*, believe that the relations between employers and employed should be reversed, and that instead of the capitalist hiring the laborers, the laborers should own the capital and hire the manager, we commend a frank and truthful report by a *Herald* correspondent, of a visit to the celebrated *Familistère* or co-operative establishment founded by Godin, at Guise, in France. The result of the perusal will be a depressing but firm conclusion that, no matter what may be the future of co-operation, the experiment at Guise depends for its success, not on the workmen who have been induced to join it, but on the individual intelligence and exceptional philanthropy of M. Godin, and at his death it will furnish another to the long list of melancholy failures in the attempt at co-operation.

"The business which Godin turned over to the co-operative corporation is one of the most extensive iron foundries in France, which he had built up, as all great businesses are built up, by enterprise, economy, honesty and intelligence. The company took his business at an appraised value of 4,600,000 francs, the payments to bear five per cent interest until Godin is bought out. It is managed by a board of directors, with Godin at the head, and in the division of the profits the workmen are entitled to a dividend on their wages, at the same rate as the dividend on the stock. For instance, the net profit last year, after paying interest and all other expenses, was some \$40,000. This profit was made on an outlay of \$300,000 in wages to labor, and \$40,000 interest to capital; accordingly, the stock receives less than one-seventh of the net profit, and the other six-sevenths is distributed among the workmen as the dividend of labor. All the workmen share in this dividend, and as the result of years of teaching and preaching, many of them have invested their surplus wages in the stock, so that they are both capitalists and workmen.

"In addition to this ownership of the establishment by the workmen there are model lodging-houses, restaurants, baths and schools where the workmen can get all the comforts of life cheaper than the discomforts of life cost them outside. In spite of the attractions and advantages offered by this 'social palace,' as it is called, a majority of the workmen prefer the freedom of their own more expensive and ill-kept homes. Mr. Godin is reported as saying that he regrets having made his experiment with such dull and unpromising material as the workmen of Guise, who are, it must be admitted, deficient in point of intelligence; but in spite of these drawbacks something has been accomplished. Such a thing as a strike has never been known at Guise, the business has been uniformly prosperous, the workmen are better paid, better housed, and in better condition every way than they would have been if Mr. Godin had been a mere capitalist intent on selfish enrichment; but the vital question is, is the arrangement permanent? The depressing answer is, 'No.'

"A single incident shows that the success of the experiment so far has been the result of a single will controlling the whole scheme, and that even among workmen trained by years of experience in the benefits of co-operation the selfish instinct of immediate individual gain overpowers the desire for a remoter gain through the general well being. The following is the incident in the words of the *Herald* correspondent:

"Some time ago a rule was drawn up enacting that an allowance out of the general fund should be made to all workmen who fell ill and could not work. This allowance was to be paid from the day the illness began. Shortly after this had been decided upon, the committee found the number of illnesses increased in a most suspicious manner, and the relief fund diminished rapidly. A fresh rule was made, providing that no allowance for sickness was payable till the patient had been ill three days. The new arrangement had a miraculous effect upon the health of the *Familistère*, and the fund was soon as large as ever. Seeing this the committee reverted to the original rule, of course with the same result as before. The relief fund dwindled away in a twinkling, and for the sake of the workmen's health—not to speak of their morality—it was judged advisable to abandon the instantaneous relief plan."

"One such incident sets aside the whole experience of years in the attempt to establish human relations on any other basis than that of

selfishness. When we speak of an enlightened selfishness as the basis of society, we may rest assured that the measure of enlightenment in the selfishness will be the measure of enlightenment in society, and there is no existing society in which the wage-earning class is sufficiently enlightened to carry on with success such a project as the kindly, generous heart of Godin has devised. There is no use in sentimental regrets over the failure of experiments carried on under conditions which render success impossible, and the failure of the Guise *Familistère* will merely prove that Godin was too early with his reform. If we were to seek a law or formula by which to describe the inevitable failure of such experiments, we might say that in a condition of society in which they are practicable they will not be needed; or, we might say that workmen intelligent enough to profit by them will be, and are, intelligent enough to get along quite as well without them."

PARIS WATER-SUPPLY.

Few cities were worse supplied with water than Paris a few years since — neither quality nor quantity was satisfactory, and the Seine was in danger of being actually drunk up. An addition was obtained by the fine artesian well at Grenelle; but a second well, sunk at Passy, at an enormous expense, proved a total failure for drinking or culinary purposes, and the water may be seen constantly bubbling up — hot, and with a flavor of rotten eggs, in an avenue which leads to the Trocadéro. After this failure, the supply of the French capital with water was taken up and carried out under M. Belgrand, who died in 1878, just as the great work of his life was completed. In the first place, search was made for the purest available springs, and those fixed on were the Dhuis, which rises near Château Thierry, and delivers its water in Paris at an altitude of 354 feet; and the Vanne, which rises between Troyes and Sens, at about 112 miles from the capital, and falls into its reservoir at an altitude of 262 feet. The reservoirs which receive the waters of the Dhuis and Vanne, with their tributaries, are situated one on each side of the Seine, the former in the outlying arrondissement of Menilmontant, in the north-east of Paris, the latter at Montrouge, just outside of the city boundaries, on the south or southwest. The quantity of water obtained from these splendid sources is equal to 16 gallons per head *per diem*, and the water is of fine quality. The water of the Oureq, brought up to Paris by a canal, is impure, and is used for street watering and sanitary purposes. These reservoirs are of gigantic size, having a lower and upper chamber, and the water flows into them through iron pipes, a metre in diameter. The reservoirs are covered with a good thickness of vegetable mould and grass, in order to keep the interior cool.

The latter undertaking, the Vanne aqueduct, is interesting in an engineering and economical point of view; and as no official account has been published, a short sketch of it may be given here. The only official information on this subject was at the Exhibition of 1878, where the municipal authorities showed a series of drawings, models, and accessories of the aqueduct and reservoir.

The Vanne is the name of a valley between Troyes and Sens in Burgundy. The little streamlet is first caught in earthenware tubes, joined with cement, from a number of fissures in the side of a little hill or mound, and these are connected with a secondary aqueduct, which extends from the boundary of the department of the Yonne by Villeneuve-l'Archevêque to Theil, where all the streams are brought together, raised to the same level at Malay-le-Roi, and then enter the main aqueduct, which has a diameter of two metres. Here the aqueduct is formed of chalk, and here it may be stated, that the composition of the aqueduct varies throughout its course with the geological formation of the various regions through which it passes, the material nearest at hand being always employed. Here it is formed in a trench and covered by the earth it has displaced; then it is carried on a series of light arches, a continual fall being maintained throughout. In some places it was necessary to tunnel, and much ingenuity was exhibited in order to ensure accuracy and save expense, but which need not be particularized. The crossing of the deep valley of the Yonne with the river at the bottom, between the Lyons railway and a high-road, was a difficulty; the aqueduct entered it at a great height, and had to be carried on in a cast-iron siphon following the profile of the sides of the valley, but carried over road, railway and river, on three bridges. These bridges were formed of concrete *blocs (bétons agglomérés)*; that over the river being 40 metres in span. The series of arches in the valley extends 1,800 metres. At Ville-Saint-Jacques, the conduit had to be tunneled through solid rock, while in the adjoining valley was found no less than fifteen metres depth of vegetable mould. The aqueduct passes Moret, and is carried across the forest of Fontainebleau on a series of tall graceful arcades. — *Journal of the Society of Arts.*

A CASE OF HALF-TIMBERED CONSTRUCTION.

NYACK-ON-HUDSON, July 21st, 1880.

TO THE EDITOR OF THE AMERICAN ARCHITECT:

Dear Sir, — Will you please tell me if you see any weakness of construction in a gable-wall in which the stud-beams are about five inches square, the spaces between the studs being filled in with a wall of one brick thickness. This is as architects have designed, but our builder thinks the wind might blow in so thin a wall. The largest of these spaces measure two feet three inches by six feet.

I am also exercised about ventilating our gas-burners. I want to

lead away the heated air from a point above the burners as near as possible to them into the nearest chimney. Will not the heat be so great as to endanger the walls through which the tubes must pass? Is tin the best material for these tubes, and of what size should they be?

I don't know whether I can venture to ask whether you would recommend Ericson's Automatic Engine, or the "Storm-Defying Windmill" for pumping water to a tank.

I am yours respectfully,

PERPLEXED LAYWOMAN.

[The "Perplexed Laywoman" does not perhaps do her architects full justice in her description of the half-timbered construction of the gable. Such a frame, of plain, square timbers, would inevitably shrink so much as to allow wind and rain to blow through between the wood and masonry. Of the actual overthrow of the panels of brickwork there is, we fancy, little danger, as the architects have probably taken precaution to cut the proper rebates or chases in the wooden frame-work, to afford ample support to the masonry built between them. Moreover, there is small chance that wind can overthrow so considerable a piece of brickwork as the largest of these panels, even if they are not securely connected with the wood-work, seeing that the resistance of a considerable volume of confined air behind the gable-wall must be overcome, as well as the stability of the brick-work. Through the wall itself, if one brick, that is, eight inches in thickness, wind would hardly penetrate perceptibly, though water might. A half-brick, or four-inch wall, would be very pervious to rain, and possibly somewhat so to wind. However, the architects have in mind, no doubt, some lining for the wall in question, either of fire-proof furring blocks, plaster or something else, which will give the protection required. As to the ventilated gas-burners, the capacity of the outlet pipes should be about one-half greater than the inlet to the Argand burners which are usually employed in such cases. A two-inch tube is quite sufficient, unless it is desired to carry off air from the room, in addition to that used in the gas-burner. If tubes join, the capacity of the main pipe must equal the sum of the branches. Bright tin is the best material, as it radiates the heat least, but tubes with spiral, not soldered, seams are best to use. Where the pipe passes near wood-work, this may be protected by pieces of bright tin, tacked on, or the pipe may pass through an outer ring of tin, care being taken to provide for circulation of air between the outer and inner tubes. For pumping water to a tank there are very many devices which will prove reasonably satisfactory. Windmills of various makes work well and cheaply, but the tank should be large, to provide for long periods of calm weather, and the apparatus is rather more conspicuous than ornamental, to say nothing of the noise, which with some varieties of mill is considerable. Hot air pumping-engines, or even steam pumps, are reliable and easily managed, particularly where a large supply of water is needed. For small establishments an automatic pump is often attached to the bath-boiler, which, if the supply is constant, lifts all the water required without any attention whatever, warming it slightly, however. — *EDS. AMERICAN ARCHITECT.*]

HEATING HOUSES BY GAS.

TORONTO, July 20, 1880.

TO THE EDITOR OF THE AMERICAN ARCHITECT.

Sir, — Can you, through the columns of your valuable paper, give me some information on the heating of houses by gas, either by gas stoves or as a means of heating water or making steam, instead of using coal for fuel. Also, what kind of fixtures are the most suitable, and the probable cost. I am contemplating building a house for myself about 25 feet front by 40 feet deep, and two stories high, and want to get rid of those abominable coal stoves, and the handling of coal. They are costly to start with, and exceedingly dirty to run, all things being considered. Carrying of ashes and coal through the house and taking down and putting up stove-pipes and stoves should be things of the past. Any information you can give will be thankfully received by a

TORONTO SUBSCRIBER.

["Toronto Subscriber" can find many gas heating as well as cooking stoves in the market; all of them, however, so far as we know, adapted to heating single rooms only. They are inexpensive, and if a flue, costing only from four to ten dollars each, is provided for carrying away the products of combustion they are, as we know from experience, convenient and pleasant in use, but they are hardly economical. Our correspondent can easily calculate for himself the cost of heating such rooms as he wishes, by applying the simple rule that in such stoves the consumption of eight feet of gas per hour will keep a thousand cubic feet of space comfortably warm. In his house, we should roughly estimate that by placing stoves in every room, so that they might be lighted only as required, he would need to warm on an average at least ten thousand cubic feet of space for ten hours a day, which would involve the consumption of eight hundred feet of gas *per diem*. If he desired, steam boilers, or even furnaces, can very easily be fitted to burn gas as fuel, but the amount used in this way will be much greater than would be necessary with the separate stoves. — *EDS. AMERICAN ARCHITECT.*]

THE REGULATION OF PLUMBING.

NEWPORT, R. I., July 27, 1880.

TO THE EDITOR OF THE AMERICAN ARCHITECT: —

In your issue of July 24th, referring to the discussion instituted by Professor Chandler and Dr. Janeway, of New York, you make some remarks which seem to me to indicate less than your usual wisdom concerning sanitary matters. The more intelligent classes of house-owners are quite sure soon to insist on a much more radical modification of plumbing-work than seems yet to be regarded by architects as necessary.

With some experience on this subject it seems to me very clear that soil-pipes must be made "accessible throughout their entire length," even at the cost of "a radical change in the planning." The wall of a drawing-room is no place for a suspected soil-pipe, and all inaccessible soil-pipes are open to suspicion. The day is coming when "costly decorations" and essential plumbing-work must not be allowed to clash.

I have never yet found an instance in a city house where it was

necessary to retain a sewer-pipe under the cellar floor. Even on the Back Bay in Boston, where there are no cellars, there is a sufficient air-space under the basement floor to carry the outlet pipe in sight.

Your last statement is your worst. The pan-closet will soon pass entirely out of use. Its defects are radical and ineradicable, and the more careless and slovenly its users, the more dangerous it becomes. A simple hopper-closet—with an abundant sudden flush is an entirely reliable substitute, and it is of so nearly the same cost that the difference is not worth a moment's consideration, in view of the difference of cleanliness. Very truly yours, GEO. E. WARING, JR.

NOTES AND CLIPPINGS.

THE FARRAGUT STATUE.—The bronze of the colossal statue of Admiral Farragut, by Augustus Saint-Gaudens, will reach New York in a few weeks. The site has not yet been decided upon, but will probably be in the Central Park. The work in plaster was exhibited at the late Salon. The Admiral stands as if on deck looking out to sea with a sea glass in his hand.

THE LINCOLN MONUMENT.—Hon. O. M. Hatch, Secretary of the National Lincoln Monument Association, has received a cablegram from Larkin G. Meade, the sculptor, announcing that he had completed and shipped to the Chicopee Works the models for the last two groups to be placed on the monument, the artillery and cavalry groups. The foundry will cast them immediately, and they will probably be placed in position early in October. When this is at last done, the monument will be completed.

THE LORILLARD EXHIBITION.—M. Leon Charnay, the leader of the expedition recently sent to Central America, telegraphs that the Mexican Government has signed a treaty, giving him all the privileges and facilities he needs in making explorations, and has appointed a representative to accompany him. He also reports from the City of Mexico, July 10, the discovery of an important archaeological station, 4,000 metres above the sea, consisting of tombs, vases, skulls, and other antiquities.

SANITARY PRECAUTIONS ON THE PACIFIC COAST.—The specification for one of the cheap houses published by the San Francisco *Bulletin* contains the following clause: "Cesspool.—Enclose cesspool with two-inch rough redwood boarding, with strong frame of four by four inch redwood!"

ACCESS TO LIGHT.—The mere fact of a purchaser of a plat of ground seeing a window in an adjoining tenement facing such land, is not sufficient to give him constructive notice of an agreement between his vendor and the owner of the tenement, that such window should have an indefeasible right to the access of light, the purchase having been completed without any actual notice of such agreement.—Allen vs. Seckham, English High Court, Chancery.

MR. RUSKIN ON HIS OWN TEACHING.—In a letter to the *Oxford University Herald*, Mr. Ruskin says: "Of all men who have ventured to take a teacher's office in these modern days, I am precisely the one who has taught least of his own. Had I announced myself as a discoverer or doctor of new things, I should instantly have had a following, and been amicably received by my fellow-sectarians, as taking my fair part in their round game. It is precisely because I utter nothing of my own, and therefore virtually hint to them that they had better utter nothing of theirs, that they unite in ignoring or abusing me. The theology I teach is not mine, but St. Bernard's and St. Francis's; the philosophy I teach is Plato's and Bacon's; the art, Phidias's and John Bellini's; the economy, Xenophon's; the geology, Saussure's; and I quitted the University, not at all because my health had failed, but because I saw that I could be of no more real use where practically I was looked upon as a lively musical-box instead of a man who knew his science and his business; and where the traditions in which I had been trained to my mastership were set at naught by the younger schoolmen, who read Spencer instead of Plato, Smith instead of Solomon, and were so ashamed of the Church they were champions of that they dared not ask their pupils to say its prayers."

THE UTILIZATION OF SOLAR HEAT.—Since May last year, M. Mouchot has been carrying on experiments near Algiers with his solar receivers. The smaller mirrors (.80 metres diameter) have been used successfully for various operations in glass, not requiring more than 400 degrees to 500 degrees. Among these are the fusion and calcination of alum, preparation of benzoic acid, purification of linseed oil, concentration of syrups, sublimation of sulphur, distillation of sulphuric acid, and carbonization of wood in closed vessels. The large solar receiver (with mirrors of 3.80 metres) has been improved by addition of a sufficient vapor-chamber and of an interior arrangement which keeps the liquid to be vaporized constantly in contact with the whole surface of heating. This apparatus on November 18th last year raised 35 litres of cold water to the boiling point in 80 minutes, and an hour and a half later showed a pressure of 8 atmospheres. On December 24th, M. Mouchot with it distilled directly 25 litres of wine in 85 minutes, producing 4 litres of brandy. Steam distillation was also successfully done. But perhaps the most interesting results are those relating to mechanical utilization of solar heat. Since March the receiver has been working a horizontal engine (without expansion or condensation) at the rate of 120 revolutions a minute, under a constant pressure of 3.5 atmospheres. The disposable work has been utilized in driving a pump, which yields 6 litres a minute at 3.50 metres, or 1,200 litres an hour at 1 metre, and in throwing a water-jet 12 metres. This result, which M. Mouchot says could be easily improved, is obtained in a constant manner from 8 A. M. to 4 P. M., neither strong winds nor passing clouds sensibly affecting it.—*London Times*.

A BRONZE STATUE RECOVERED FROM THE ÆGEAN SEA.—It is said that divers engaged in the sponge fishery in the Ægean Sea made last winter a curious discovery on the shores of the Island of Delos. At a depth of some fifty feet they found a life-size bronze statue of a horse with a rider. They then brought to the surface a hind foot and lately one of the legs.

A PROTEAN STATUE.—At a meeting of the Court of Common Council, an announcement was made which should be a source of gratification to all good citizens of this ancient city, and should, besides, fill the hearts of all artists and lovers of art with hopeful joy. It was moved by Mr. Hart, and seconded by Mr. Edmeston, that it was desirable that Blackfriars bridge should be completed, in accordance with the designs and intentions of the architect engineer of that structure, by the addition of appropriate groups of statuary to be placed on the pedestals now standing vacant at the extremities of the bridge, and that it be referred to the Bridge House Estates Committee to obtain, by means of public competition, designs for the required sculptures, a selection from which designs should become the absolute property of the corporation at an expense, by way of premiums awarded to the most deserving of the competitors, of a sum not exceeding £1,000. To the honor of the City of London, it should be remembered that this is not the first time that the corporation has striven to encourage and to patronize the glyptic art. The maiden essay of the city in this direction was, it must be admitted, somewhat droll. Strype, the antiquarian, was indeed, able to speak admiringly of a "nobly great statue of Charles II. on horseback trampling on stairs, standing on a pedestal, with dolphins cut in niches, all of freestone, by a water conduit pipe," given to the corporation by Sir Robert Vyner, the convivial Lord Mayor and Baronet, who vowed that the merry monarch should come back to Guildhall and take "t'other bottle." "He that's drunk is as great as a King," quoth the easy sovereign; and he returned to the mayoral table and took "t'other bottle" accordingly. His statue had nevertheless a very curious story. The convivial Sir Robert picked up the effigy somewhere abroad, and in its original form it represented the heroic John Sobieski, King of Poland, trampling on the Turks, whom he routed so signally at the siege of Vienna. John Sobieski's head was cunningly removed by an English statuary named Latham, and the head of Charles substituted for it; while the face of one of the vanquished Ottomans whom the Christian champion was crushing under his armed heel was transformed into the presentment of the lineaments of Oliver Cromwell. This statue was first set up, under the Restoration, at the top of the Poultry; subsequently it was relegated to Fleet Market, and in 1779 the corporation made a present of it to a descendant of the festive Sir Robert. It thus escaped probable destruction in the riots of 1780.—*London Telegraph*.

EARTHQUAKES.—Prof. Palmieri, of Rome, has been lecturing recently on the possibility of foretelling earthquakes, and has expressed the belief that they will yet be foretold about three days in advance of their occurrence. If they can be anticipated in season, a great saving of life and property will be insured. We are mainly so free from these convulsions of nature in this country that we hardly realize how very calamitous they have been and continue to be in other quarters of the globe. It is estimated that 12 or 13 earthquakes, more or less destructive, take place annually; and it has been ascertained that the surface of the earth is never free from sensible evidence of constantly active earthquake agencies. No land entirely escapes; but volcanic districts are the most frequent sufferers. Beginning with these, they have been known to pass beneath sea and land from one hemisphere to another until one-eighth of the entire surface of the world has been disturbed. In the city of Antioch, (Syria,) 250,000 persons are said to have been killed in 526, a crowd of strangers having been present at the festival of the Ascension. This was the most terrible earthquake on record. In the great Lisbon earthquake (1755,) 60,000 people perished in six minutes. The rumbling subterranean sound was immediately followed by the shock, which threw down the principal portion of the city. The sea retired and returned in a wave 50 feet high. The adjacent mountains were so violently shaken as to be rent and hurled in fragments into the valleys below. Thousands of persons fled from the falling buildings to the marble quay, just finished at great expense, when the quay suddenly sank; the waters closed over it; boats, vessels, and human beings were drawn into the whirlpool, and not one of the bodies rose to the surface. Over the spot the sea stood 600 feet deep, burying the greater portion of the life and wealth of the capital. The extent of the surface of the earth shaken by the agitation was four times greater than the whole of Europe. In Calabria, at the end of the last century, 40,000 lives were swallowed up by an earthquake. As many as 13,000,000 of human beings have, it is calculated, been lost by such convulsions. Egypt has probably been less visited by them than any other country, but a serious earthquake took place there in 1740, and Holland, notwithstanding its loose alluvial soil, has felt their influence. The earthquake at New Madrid, Mo., (1811,) is the most important known in this republic. That was one of the few examples of the incessant quaking of the ground, far from any volcano, for several successive months. For 300 miles, from the mouth of the Ohio to that of the St. Francis, the ground rose and sank in vast undulations; lakes were formed and drained; the surface burst open in fissures, from which mud and water were thrown to the height of 60 or 70 feet. All theories as to the cause of earthquakes agree about the connection between them and volcanoes. The existence of a molten fluid mass in the centre of the earth is generally conceded; hence the generation of immense quantities of elastic gases from such a vast source of heat would naturally produce explosive force enough to create earthquakes. The latest, and perhaps the most satisfactory theory, has been put forward by the Rogers brothers, who regard the direct cause of earthquakes as the actual pulsations of the fluid beneath the crust of the earth, propagated like great waves of translation from prodigious ruptures, produced by tension of elastic matter, and floating forward on its surface the superimposed rocky crust of the globe. This theory harmonizes with the phenomena of earthquakes, and is remarkably confirmed by the structure of many mountain ranges.—*New York Times*.

BUILDING INTELLIGENCE.

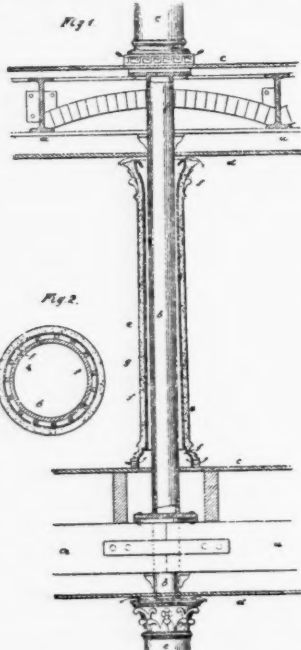
[Reported for The American Architect and Building News.]

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

227,985. METHOD OF PROTECTING IRON COLUMNS FROM FIRE. — John McGlensy, New York, N. Y. This invention aims to provide an effective protecting-covering for iron columns which will enable them to resist fire for a long time. Figure 1 gives a vertical sectional elevation; Fig. 2 is an enlarged cross-section of the protected column. *a* indicates the girders, on which the floors are built, and *b* the iron columns, extending vertically from girder to girder and supporting the same. *c* indicates the floors, and *d* the ceiling, which are all of the ordinary construction. By this invention the column from floor to ceiling is enclosed with a jacket *e*, of some fire-proof or non-conducting material, which completely envelops the column, and yet leaves an air-space, *f*, between the two, while the enveloping-jacket *e* is open both at top and bottom, or at the base and capital of the column, so as to admit a free circulation of air through the air-space up and around the column. This air-space, in connection with the outer fire-proof or non-conducting envelope, constitutes the chief novelty of the invention. The outer protecting envelope, *e*, is best made of some material which is both fire-proof or incombustible, as well as a bad conductor of heat; and for this purpose a mixture of plaster-of-Paris, cinders, and Keene's cement may be used, which is applied while in a plastic condition and in a layer of substantial thick-



ness over an inner supporting-sheath, *g*, of wire-cloth, surrounding the column at the proper distance and supported against the same at intervals by narrow slabs *h*, of plaster or equivalent material. Instead, however, of using the wire-cloth sheath *g*, sheet metal, punctured like a grater, to afford adhesion for the plaster, may be substituted. Not only does the outer envelope, *e*, resist the passage of heat, but the free air-circulation allowed through the intervening space *f* constantly acts to convey away any heat that may penetrate the outer envelope, and thus prevents the concentration of heat upon the iron column.

230,104. FURNACE. — Edward Brook, Bradford, Great Britain.

230,110. CLAPBOARD MACHINE. — Albert Cunningham, Milwaukee, Wis.

230,111. The same.

230,112. The same.

230,113. SASH-HOLDER. — Walter C. Curran, Ithaca, N. Y.

230,114. WINDOW-SHUTTER OPENER. — John R. Day, New York, N. Y.

230,125. MACHINE FOR BENDING SHEET-METAL TUBES. Samuel W. Gear, Cambridgeport, Mass.

230,127. CARPENTER'S-GAUGE. — Wilbur Goodwin, Boston, Mass.

230,145. TOOL FOR CLEARING ROCK-DRILL HOLES. — Walter S. Moses, Gloucester, Mass.

230,161. ROOF. — William P. Walker, Macon, Mo.

230,173. VALVE FOR FAUCETS. — Ludwig Brandeis, Brooklyn, N. Y.

230,174. COMPOUND LUMBER. — William E. Brock, New York, N. Y.

230,175. CIRCULAR SAWING-MACHINE. — Calvin Bryant, Keene, N. H.

230,193. STEAM-HEATER. — John H. Osborne, Auburn, N. Y.

230,219. STEAM-RADIATOR. — Stephen E. Babcock, Troy, N. Y.

230,223. CHISEL. — John D. Baxter, Mechanicsville, N. Y.

230,238. SASH-SUPPORTER. — Jesse Chandler, Warsaw, Ill.

230,267. STEAM-RADIATOR. — Lewis G. Goldsmith and Nicholas Reed, Jersey City, N. J.

230,270. WRENCH. — James M. F. Hall and John H. S. Coleman, Davenport, Iowa.

230,290. LIGHTNING-ROD INSULATOR. — Charles H. Lilly, New York, N. Y.

230,316. FIRE-PROOFING IRON COLUMNS. — Chas. Mettiam, New York, N. Y.

230,338. PENCIL-SHARPENER. — Henry C. Rice, Easthampton, Mass.

230,341. SAW-SWAGE. — William W. Rochelle, Star Landing, Miss.

230,348. BRICK-MACHINE. — Frank W. Schu, Baltimore, Md.

230,355. AWNING-BLIND HINGE. — Walter S. Stockman, Boston, Mass.

230,371. THREE-WAY COCK. — William H. Ward, Pittsburg, Penn.

9,301. WINDOW-SPRING-CATCH. (Reissue) — Franklin Babcock, Middletown, Conn.

9,307. TRANSDOM-LIFTER. (Reissue) — John F. Wolensak, Chicago, Ill.

9,309. LUMBER-DRIER. (Reissue) — Eli J. Sumner, Mooresville, Ind.

SUMMARY OF THE WEEK.

Baltimore.

BUILDING PERMITS. — The following building permits have been issued since the last report: —

Win. King & Bro., two-sty brick glass-factory, Leadenhall St., near Dephous St.

Tilghman & Haskins, 2 three-sty brick buildings, Gilmore St., between Lanvale and Townsend Sts.

Baltimore Iron Co., 1 kiln, cor. Toome and Potomac Sts.

Johnson & Sutton, 2 three-sty brick buildings, Gilmore St., near Saratoga St.

Hubbell & Co., addition and improvement to store, Liberty St., between Baltimore and Fayette Sts.

Estate of John Glenn, 14 three-sty brick buildings, on Mulberry St., between Stricker and Calhoun Sts.

Boston.

BUILDING PERMITS. — Brick. — Commercial St., No. 484, for John McAllister, 1 dwell. and store, 20' x 40', three stories; Edward Lynch, builder.

Washington St., cor. Castle St., for J. W. Wheelwright, 1 tenement-house and store, four stories, 56' x 108'; Geo. W. Pope, builder.

Delle Ave., near Parker St., for John S. Lamprey, 3 dwells., three stories, 17' x 35'; John H. Gigie, builder.

Burney St., cor. Delle Ave., for Wm. H. Wallace, 1 tenement-house, three stories, 40' x 43'; John H. Gigie, builder.

Burney St., near Delle Ave., for Wm. H. Wallace, 1 tenement-house, three stories, 40' x 43'; John H. Gigie, builder.

Wood. — East Ninth St., for Choate Burnham & Son, 1 building for storage of lime, etc., 28' x 70'; C. A. Goodwin, builder.

Pleasant St., for Frank P. Appleton, 1 dwell., two stories, 30' x 37'; McNeil Bros., builders.

Adams St., near junction of Richmond St., for James Moore, 1 dwell., two stories, pitch roof, 21' x 29'; two stories; James Moore, builder.

Brooklyn.

BUILDING PERMITS. — Central Ave., 1 two-sty frame dwell., 22' x 36'; cost, \$2,100; owner, William Volhringer, 155 Myrtle St.; carpenter, John H. Eich; mason, George Welch.

Tenth St., 3 two-sty brick dwells., 16' 8" x 40'; owner, William Corrigan, 646 Sixth Ave.; builder, Thos. Corrigan.

Ross St., 1 three-sty brown-stone dwell., 22' x 47'; owner, C. Doscher; architect, W. H. Gaylor; builders, Thomas Gibbons and Marinus & Gill.

Keap St., 1 three-sty brown-stone dwell., 21' x 47'; owner, Aaron Lovell; architect, W. H. Gaylor; builders, Thomas Gibbons and Marinus & Gill.

Bedford Ave., cor. Rutledge St., 5 three-sty brown-stone dwells., 20' x 41'; cost, \$6,000 each; owner, R. Taylor, 111 Clymer St.; architect and builder, J. H. Devoe.

Macon St., 4 two-sty brown-stone dwells., 17' 8" x 42'; cost, \$4,500 each; owner, Albert Wilkinson, 83 Madison St.

Sixth Ave., cor. Ninth St., 5 three-sty brown-stone dwells., 20' x 45' and 50'; cost, \$25,000; owner, John W. O'Rourke.

Boorum St., cor. Bushwick Road, 4 two-sty frame dwells., 22' x 28'; cost, \$6,000; owners, Cross, Austin & Co., Kent Ave. and Cross St.; architect, etc., Berlenback Scheld; mason, Wm. Bayer.

North Third St., No. 97, 1 four-sty brick coopershop, 20' x 37'; cost, \$5,000; owner, Paul Weidmann; architect, A. Herbert; builder, not selected.

Hanson Pl., No. 91, 1 three-sty brick store and flats, 20' x 50'; cost, \$4,000; owner, Alphonse Fredericks; architect, M. J. Morrill; builders, J. H. Whittier and John McKee.

Hooper St., 1 two-and-a-half-sty brown-stone dwell., 20' x 40'; cost, \$4,000; owner, Geo. A. Hawkins, 138 Fifth St.; mason, J. M. Brown.

ADDITIONS. — Orange St., No. 92, four-sty brick extension, 22' x 20'; cost, \$2,500; owner, James Given, Myrtle, cor. Adams St.; architect, Amzi Hill; builder, R. Given.

Clinton Ave., No. 276, raised one-half-story; cost, \$3,000; owner, A. W. Tenney; architect, G. Anderson; builders, J. D. Anderson and Wm. Draper.

Chicago.

BUILDING PERMITS. — Robert Fox, improvement Lyceum Theatre, Desplaines St., near Madison St.; cost, \$15,000.

Miss B. Houska, two-sty brick dwell., 22' x 54', 443 Desplaines St.; cost, \$2,800.

G. Gesslin, three-sty brick dwell., 21' x 60', 733 North Halsted St.; cost, \$4,500.

C. J. Samuelson, two-sty brick dwell., 21' x 63', 106 Townsend St.; cost, \$3,100.

A. Waales, three-sty brick store and dwell., 25' x 65', 782 Milwaukee Ave.; cost, \$7,000.

J. Corbitt, two-sty brick dwell., 21' x 56', 361 West Congress St.; cost, \$3,000.

J. Singer, 2 two-sty brick dwells., 21' x 42', 2523 Fifth Ave.; cost, \$4,000.

C. J. Hull, 3 two-sty brick dwells., 38' x 48', 356 and 358 West Ohio St.; cost, \$3,000.

P. C. McDonald, two-sty brick store and dwell., 40' x 44', 91 and 93 Indiana St.; cost, \$3,000.

L. Miller, improvement of dwell., Sedgwick St. and North Ave.; cost, \$3,000.

Mrs. Porter, two-sty stone dwell., 50' x 66', Clark St. and Fullerton Ave.; cost, \$15,000.

Chicago Distilling Co., four-sty brick distillery, 40' x 71', Elston Ave. and Blackhawk St.; cost, \$35,000.

Mrs. Smalley, two-sty brick dwell., 23' x 69', 147 Prairie Ave.; cost, \$5,000.

W. H. Keough, three-sty brick store and dwell., 25' x 80', 1434 Wabash Ave.; cost, \$8,000.

Evangelical Lutheran Zion Cong., two-sty brick dwell., 24' x 50', 58 Nineteenth St.; cost, \$3,000.

H. McFarlane, two-sty brick factory, 60' x 100', Harrison St., near Clark; cost, \$4,000.

Joseph Weber, one-sty brick dwell., 21' x 48', Wisconsin St., cor. Sedgwick; cost, \$2,300.

B. P. Hutchinson, two-sty brick carriage-factory, 25' x 170', 1456 Wabash Ave.; cost, \$2,500.

J. Beidler, 2 four-sty brick stores and dwells., 70' x 95', 195 to 199 West Madison St.; cost, \$32,000.

G. Knecht, two-sty brick dwell., 24' x 72', 18 Wisconsin St.; cost, \$7,000.

Mrs. Shelby, three-sty brick store and dwell., 25' x 70', 467 West Madison St.; cost, \$4,000.

Mrs. Dorman, three-sty brick store and dwell., 25' x 70', 469 West Madison Ave.; cost, \$4,000.

John Barron, three-sty brick stores and dwells., 50' x 74', Western Ave., cor. Grand; cost, \$8,000.

Moss & Earle, two-sty brick saloon, 50' x 100', Third Ave., near Harrison St.; cost, \$10,000.

C. J. Hull, 4 two-sty brick dwells., 52' x 60', Jefferson St.; cost, \$4,000.

Cincinnati.

BUILDING PERMITS. — H. W. Brockmann, Bro. & Co., three-sty brick, Bank St., between Central Ave. and Linn St.; cost, \$5,100.

N. C. Harmony Lodge, No. 2, repair four-sty stone-front house, northeast corner Third and Walnut Sts.; cost, \$1,500.

B. H. Brengelman, addition to one-sty brick, Nos. 445 and 448 Elm Street; cost, \$3,300.

Feller Matre, 3 two and one-half sty bricks, Madison St., between Calhoun and Corry Sts.; cost, \$8,000.

Feller & Matre, 2 two and one-half sty bricks, Dennison St., between Corry and Calhoun Sts.; cost, \$5,000.

A. E. Heighway, four-sty stone front, Main St., between Thirteenth and Allison Sts.; cost, \$6,000.

Fred. Otte, two and one-half sty brick, Eden St., between Charlton and Boone Sts.; cost, \$3,000.

Kuhlmann & Buening, three and one-half sty brick, cor. Pleasant and Green Sts.; cost, \$4,700.

Jas. Griffith & Sons, to repair a four-sty brick, Sycamore St., between Pearl and Second Sts.; cost, \$2,000.

L. H. Wilson, four-sty brick, Nos. 342, 344 and 346 Front St.; cost, \$4,960.

New York.

BUILDING PERMITS. — Third Ave., No. 2194, 1 five-sty brick store and tenement, 25' x 72'; cost, \$12,000; owner, B. C. Wandell; architect, W. W. Gardiner.

Monroe St., Nos. 293 and 295, 1 four-sty brick factory, 50' x 25'; cost, \$4,000; owner, Jacob Henckell, 297 Monroe St.; architect, Julius Jordan; mason, Geo. Severs.

Seventy-sixth St., 1 one-sty brick stable, 10' x 27', and 1 three-sty brick store and dwell., 25' x 27'; cost, \$4,000; owner, Herman Toney, cor. Second Ave. and Seventy-sixth St.; architect, John McIntyre.

Fifty-Seventh St., cor. Ninth Ave., seven-sty brick French flat, the lower story to be used for stores, 50' x 115'; cost, \$115,000; William E. Stewart, owner; Theodore G. Smith, architect.

Fifty-Seventh St., west of Ninth Ave., a similar building, 30' x 91'; cost, \$48,000. Same owner, etc.

Fifty-Seventh St., west of Ninth Ave., a similar building, seven stories in front and five in rear, 20' x 65'; cost, \$20,000. Same owner, etc.

One Hundred and Eighth St., cor. Grand Boulevard, a brick two-sty dwell. and store, 25' 5" x 64'; cost, \$16,000; Austin Hall, owner. Thom & Wilson, architects.

Madison Ave., south of One Hundred and Twenty-Seventh St., a brown-stone front, three-sty dwell., 23' 7" x 50'; and extension; cost, \$15,000; Isaac E. Wright, owner and builder.

East St., Nos. 39 and 40, 1 six-sty brick warehouse, 44' x 100'; cost, \$15,000; owner, Charles A. Coe, 3 and 5 Stone St.; architect, Wm. Graud; builder, M. F. McCabe.

Houston St., cor. Ave. C, four-sty brick store and tenement, 31' 8" x 48' 6"; cost, \$12,000; owner, S. Erlanger, cor. Ave. C and Houston St.; architect, Edward Kenny.

Fordham Ave., 1 three-sty frame dwell., 20' x 40'; cost, \$2,200; owner, Mrs. Dubois, West Farms; carpenter, D. W. Burnett; mason, James Lacost.

One Hundred and Third St., 5 four-sty brick apartment-houses, each 30' x 80'; cost, each, \$20,000; owner, John E. Styles, 160 Broadway.

West Thirty-Sixth St., No. 404, 1 five-sty brick tenement, 25' x 57'; cost, \$11,000; owner, Peter Weick, 319 West Thirty-Eighth St.; architect, John M. Foster.

Ninth Ave., 1 four-sty brick store and tenement, 25' x 60'; cost, \$7,500; owner, D. Dermody, East Fifty-Fifth St.; architect, C. F. Ridder, Jr.

Eighth Ave., cor. One Hundred and Forty-Fourth St., 1 four-sty brick store and tenement, 25' x 67'; cost, \$13,000; owner, E. Molwitz, southeast cor. Sixth Ave. and Fifty-Fourth St.; architect, R. Townsend; builders, James Hamel & Son.

Ave. C, cor. Thirtieth St., 1 five-sty brick factory, 72' 6" x 103'; cost, \$35,000; owner, Theodore Levy, cor. Ave. D and Tenth St.; architect, J. H. Schwarzmann.

Seventy-Fifth St., 1 four-sty brick (brown-stone front) apartment-house, 18' x 60'; cost, \$14,000; owner, Anthony McQuade, 345 East Seventy-Seventh St.; architect, John C. Burne.

Seventy-Eighth St., 2 four-sty brick (brown-stone front) apartment-houses, 28' 2" x 60'; cost, each, \$11,000; owner, Mrs. Henrietta Bauer, 430 East Seventy-Ninth St.; architect, John C. Burne.

Third Ave., cor. Ninety-Fifth St., 1 four-sty brick (brown-stone front) store and apartment-house, 25' 2" x 58'; cost, \$14,000; owner, M. C. Smyth, First Ave. and Eighty-Eighth St.; architect, John C. Burne.

Third Ave., 6 four-sty brick (brown-stone front) stores and apartment-houses, 25' 2" x 58'; cost, each, \$13,500; owner, M. C. Smyth; architect, John C. Burne.

Avenue A, cor. Eighty-Sixth St., 1 four-sty brick (brown-stone front) apartment-house, 20' x 62'; cost, \$14,300; owner, Otto W. Loeffler, 113 East Seventy-Seventh St.; architect, John C. Burne; builder, Jas. A. Frame.

Avenue A, 4 four-sty brick (brown-stone front) apartment-houses, each 20' x 62'; cost, each, \$13,800; owner, Otto W. Loeffler; architect, John C. Burne; builder, Jas. A. Frame.

Fifty-Second St., 1 five-sty brick apartment-house, 25' x 61'; cost, \$18,000; owner, Edward C. Coggeshall, 158 East One Hundred and Fifth St.; architect, Geo. B. Pelham.

One Hundred and Fourteenth St., 1 four-sty brick apartment-house, 20' x 53'; cost, \$10,000; owner and builder, Edward Conlon, 229 East Ninety-Third St.; architect, George B. Pelham.

One Hundred and Fourteenth St., 1 four-sty brick apartment-house, 26' x 60'; cost, \$14,000; owner and builder, Edward Conlon; architect, Geo. B. Pelham.

One Hundred and Fifteenth St., 1 four-sty brick tenement, 25' x 60'; cost, \$9,500; owner, James Kehoe; architect, Andrew Spence.

Fifth Ave., cor. Seventy-Third St., 1 five-sty brick (brown-stone front) dwell., 36' x 80'; cost, \$80,000; owner, Mrs. Francis E. Quintard, No. 43 West Thirty-Third St.; architect, Arthur Gilman; builders, D. & E. Herbert.

Eighty-Ninth St., 1 four-sty brick apartment-house, 25' 6" x 60'; cost, \$12,000; owner, J. B. Squier, 55 East Seventy-Ninth St.; architect, A. D. Seaman; builder, T. A. Squier.

Eighty-First St., 2 four-sty brick (brown-stone front) apartment-houses, 24' x 60'; cost, \$15,500 each; owner, Anthony McQuade, 345 East Seventy-Seventh St.; architect, John C. Burne.

Seventy-Fifth St., 4 four-sty brick (brown-stone front) tenements, one 20' x 51', one 27' x 51'; cost, \$10,000 each; owners and builders, T. Flannigan and J. Peters; architect, Fr. S. Barus.

First Ave., cor. One Hundred and Nineteenth St., 1 four-sty brick tenement, 38' x 39', and one two-sty brick dwell. and store; cost, \$12,000; owner, Julius Strauss; architect, Jobst Hoffman.

ALTERATIONS.—*Water St.*, No. 81, damage by fire to be repaired; cost, \$2,500; owners, estate of B. M. Cheeseborough et al; builder, Edward Smith.

Tenth Ave., cor. Forty-Fifth St., a sixth story to be added; cost, \$2,000; owner, W. P. Brown; architect, John M. Forster.

Fourth Ave., No. 466, new roof to be put on, front wall to be rebuilt; cost, \$2,000; owner, Herman Masemann; architect, A. B. McNeill; builder, Peter Looman.

Sixth Ave., cor. Thirtieth St., five-sty brick extension, 20' x 78' 7", to be built; cost, \$15,000; owners, Estate of Wm. C. Rhineland; architect, Geo. Martin Huss; mason, H. M. Reynolds.

East Thirty-Second St., Nos. 46 and 48, a four-sty brick extension, 25' x 102' to be built; cost, \$10,000; owner, Joseph Leach; masons, Murphy & McGinty; carpenter, George Mulligan.

Park Row, cor. Beekman St., five-sty brick office-building to be raised to seven stories, and new elevator; cost, \$25,000; owner, Orlando B. Potter; architect, Geo. B. Pelham.

West Fifty-Seventh St., No. 144, two-sty and basement brick extension, 12' x 30'; cost, \$5,000; owner, H. L. Horton; architect, Henry M. Congdon; builders, Jeans & Taylor.

Water St., No. 334, front wall to be rebuilt, and interior alterations; cost, \$2,500; owner and builder, Thomas Auld.

One Hundred and Ninety-Fifth St., cor. Ridge Road, stone dwell. to be raised to two stories; cost, \$3,500; owner, Mr. Libby; builder, C. R. Terwilliger.

Henry St., No. 49, one-sty brick extension on rear, 18' 6" x 35' 6"; cost, \$2,500; owner, St. James R. C. Church; architect, Arthur Crooks; builders, James Power and James Thompson.

Fifty-Sixth St., one-sty brick extension, 134' x 67' 8"; cost, \$4,000; owners, T. Shriver & Co.; architect, A. B. Ogden; builder, Geo. Dollinger.

PROSPECTS.—Building interests remain quiet. Architects generally are busy with present work, and do not regret the fact of the few calls at present made for professional advice. The only important work we hear this week as projected is a large addition to the store of Messrs. Stern Bros. on Twenty-Second St.

BUILDING MATERIALS.—The market is very quiet, and prices are sustained with difficulty. As anticipated in our last issue, the brick market is lower, and New Jersey brick can now be bought by the cargo at \$3.25 @ \$4.00, adfost.

Providence, R. I.

HOUSES.—Mr. Chas. D. Rogers is building a cottage on Olney St., from plans by Messrs. Stone and Carpenter, architects; cost, \$5,000.

Mrs. Mary A. Bullock is building a tenement-house on Olney St.

Mr. Oren Westcott is building a dwelling on Keene St. Work is being done by the day. Messrs. Peabody & Wilbur, carpenters; Mr. J. P. Kinn, of Boston, is the architect.

Mrs. D. M. Risley is building a tenement-house on William St.; Mr. Wm. G. Matthews is the contractor.

Mr. James Coates is having a laundry-cottage built on his grounds, from plans by Messrs. Stone & Carpenter, architects.

Mrs. A. M. F. Brayton is building a two-sty and French-roof house, corner of Burnett & Bucklin Sts.; cost, about \$5,000.

Mr. E. Allen is building a two-story and French-roof house, at a cost of about \$4,000, on Burnett St. Mr. Ellery Millard is now putting in foundations for a dwelling-house on Ocean and Briggs Sts., for Mr. M. W. Tillinghast. Messrs. French, Mackenzie & Co. will do the carpenter's work, by the day. Designs were furnished by Mr. Frank W. Angell, in the office of Messrs. Walker & Gould, architects.

Caroline C. Daboll is building a cottage on Daboll St.; Henry R. Evans is the architect and builder.

Daniel Burrows is building a house on Mawney St., from plans furnished by James Russell, who also does the carpenter's work; cost, \$4,500.

Susan M. Wade is building a small cottage on Plenty St.; cost, about \$1,500.

San Francisco.

BUILDING MATERIALS.

Oregon pine, framing, common rough, per M.,	\$18 00
“ “ extra lengths.....	20 00 @ 22 00
“ “ flooring.....	30 00
“ “ second quality.....	21 00
“ “ refuse rough lumber.....	14 00
“ “ laths, per M.....	3 50
Redwood, rough merchantable, per M.....	18 00
“ refuse.....	14 00
“ surfaced.....	28 00
“ tongued and grooved.....	28 00
“ rustic.....	28 00
“ “ second quality.....	25 00
“ pickets.....	16 00 @ 20 00
“ shingles, sawed.....	2 00
Cedar, No. 1.....	60 00
White Pine No. 1.....	60 00
Nails, framing, per keg.....	4 75
“ four, five, six, and eight pennies.....	5 50
“ brad head finishing.....	6 50
“ three pennies, fine.....	8 50
Bricks, soft, per M.....	7 00
“ merchantable, hard.....	9 50
“ face.....	28 00
Lime, Santa Cruz.....	1 50
Cement, Rosendale.....	3 00
“ Portland.....	6 00
Hardware, plumbers' materials, glass, and other imported building material, about five per cent advance of Eastern rates.	

St. Louis.

BUILDING PERMITS.—Thirty-eight permits have been issued since our last report, of which two are for frame structures of slight importance. Of the rest, those worth \$2,500 as over are as follows:—

OWNERS NAME.	USE.	Sq. F.	RENT.	COST.
Evers & Tennue,	Mould'g Shop	1 1	\$3,000	
Missouri R. R. Co.	Cow Stable	12 12	4,000	
Piense & Eagle,	Dwell.	12 8	4,500	
Brennan & Biglow,	Dwell.	12 8	4,500	
J. Biglow,	Dwell.	12 8	4,000	
D. S. Irons,	Dwell.	11 2	4,000	
Mrs. B. Birch,	Dwell.	2 12	2,700	
Dane, Calvert & Co.,	Warehouse	3 3	7,000	
A. McNichols,	Church	2 6	21,000	
Iron Met. R. R. Co.,	Store	3 3	2,500	
	Offices	3 3	2,500	

PROPOSALS.

BREAKWATER.

[At Cleveland, O.]
U. S. ENGINEER OFFICE
CLEVELAND, OHIO, July 17, 1880.

Sealed proposals, in duplicate, addressed to the undersigned, will be received at this office until 11 o'clock, A. M., on Tuesday, August 17, 1880, for constructing one thousand lineal feet, more or less, of the new breakwater at Cleveland, Ohio.

Blanks for proposals and specifications and instructions to bidders, containing detailed information, may be obtained at this office.

One copy of the specifications must be securely attached to each duplicate proposal, and must be mentioned therein, as comprising part of it.

The United States reserves the right to reject any and all proposals.

JOHN M. WILSON,
Major of Engineers, U. S. A.

PIER.

[At Ashtabula, O.]
U. S. ENGINEER OFFICE,
CLEVELAND, OHIO, July 17, 1880.

Sealed proposals, in duplicate, addressed to the undersigned, will be received at this office until 11 o'clock, A. M., Tuesday, August 17, 1880, for constructing two hundred and eighty lineal feet, more or less, of pier, at Ashtabula Harbor, Ohio.

Specifications and instructions to bidders, containing detailed information, may be obtained at this office. One copy thereof must be securely attached to each duplicate proposal, and must be mentioned therein as comprising part of it.

Blanks for proposals may be obtained at this office. The United States reserves the right to reject any and all proposals.

JOHN M. WILSON,
Major of Engineers, U. S. A.

PROPOSALS.

IRON LIGHTHOUSE.

[At Bell Rock Lighthouse, Va.]
OFFICE OF LIGHTHOUSE ENGINEER, FIFTH DIST.,
BALTIMORE, MD., July 27, 1880.

Sealed proposals will be received at this office until 12 o'clock, noon, on Tuesday, the 10th day of August, 1880, from iron manufacturers only, for furnishing the materials and labor of all kinds necessary for the completion of the metal-work of Bell Rock lighthouse, York River, Virginia, in accordance with the drawings and specifications to be obtained from this office on application. The pamphlet of specifications contains all necessary information and the blank forms which must be used in bidding upon or contracting for this work.

The right is reserved to reject any or all bids, and to waive any defects.

O. E. BABCOCK,
Major of Engineers, U. S. A.
Lighthouse Engineer, Fifth District.

DREDGING, RIP-RAP GRANITE.

[At New Haven, Conn.]
ENGINEER OFFICE, U. S. A.,
NEW LONDON, CONN., July 15, 1880.

Sealed proposals will be received at this office until 11 o'clock, A. M., on the 5th day of August, 1880, as follows:

For dredging New Haven Harbor, Conn.; Bridgeport Harbor, Conn.; Norwalk Harbor, Conn.; Southport Harbor, Conn.; Milford Harbor, Conn.; Thames River, Conn.; and Housatonic River, Conn.

Rip-rap granite for breakwater at New Haven Harbor, Conn., and Port Jefferson Harbor, Long Island, New York.

Specifications and blank forms for proposals and guaranty will be sent on application to this office.

J. W. BARLOW, Major of Engineers, U. S. A.

LUMBER.

[At Baltimore, Md.]
OFFICE OF BALTIMORE STOCK-YARD CO.,
42 LEXINGTON ST., BALTIMORE CITY.

Sealed proposals for the delivery of the following material at the Claremont Yards of this company will be received at this office until noon of Tuesday, August 3d, 1880.

Specifications and information can be obtained at this office.

The company reserves the right to reject any or all bids.

LUMBER.

4,000 white oak posts, 6 x 6 inches, 18 feet long.
2,000 cedar or chestnut posts, 12 feet long.
10,000 cedar or chestnut posts, 8 feet long.
400,000 feet B. M. white or yellow pine, 1 1/2 x 6 inches, 16 feet long.
300,000 feet B. M. white or yellow pine, 1 x 12 inches, 16 feet long.
2,500 pieces white or yellow pine, 2 x 10 inches, 16 feet long.
1,000 pieces white or yellow pine, 2 x 8 inches, 16 feet long.
60 pieces white oak, 8 x 12 inches, 24 feet long.
20,000 feet B. M. white oak, 2 x 12 inches, 16 feet long.

STONE.

Paving-stone to pave 100,000 square yards.
20,000 lineal feet of gutter-stone.

J. L. KECK, President.

BRICK FLOOR ARCHING.

[At Hartford, Conn.]
OFFICE OF THE SUPERINTENDENT,
HARTFORD, CONN., July 26th, 1880.

Sealed proposals will be received at this office until 12 M., on the 13th day of August 1880, for furnishing the material and building the brick floor arches required for the U. S. custom-house at Hartford, Conn., in accordance with drawings and specification, copies of which and any additional information may be had on application at this office or the office of the Supervising Architect.

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T. C. SNYDER & CO. (Canton, O.), Iron Roofing. ix.THE EXHIBITION OF THE AMERICAN
INSTITUTE.

Just at present, when our manufacturers have a breathing place in their preparations for the great international exhibitions which have become fashionable during the past decade, an opportunity is presented to them which is as capable of returning them as direct profit on their outlay as the large and unwieldy exhibitions, where the work or goods of any particular manufacturer are but too likely to be lost to sight. We have a shrewd suspicion that the number of manufacturers who ever obtain a profit in return for their trouble and elaborate preparations for the great World's Fairs bears a very small ratio to the whole number of exhibitors. It stands to reason that in a smaller exhibition, which can display one man's goods to as great advantage, at least, as the more crowded larger shows, the chances that a given outlay will return a larger profit are exceedingly good. The Forty-ninth exhibition of the American Institute, which is to be held in New York in September, offers such an opportunity to inventors and manufacturers, and we believe that except through an exhibition especially devoted to building appliances, such as have been held in England, manufacturers of such building appliances could find nothing in the way of exhibitions which would so surely be profitable to them. Heavy machinery will be received only until August 23, other goods as late as September 6.

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Net Surplus,	1,366,888.06

CASH ASSETS, . . . \$6,390,233.89

SUMMARY OF ASSETS

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Cash in Banks,	\$ 329,682.45
Bonds and Mortgages, being first lien on real estate (worth \$4,144,650)	1,852,928.00
United States Stocks (market value)	2,724,500.00
Bank Stocks and Railroad Stocks (market value)	339,576.25
State and Municipal Bonds (market value)	191,350.00
Loans on Stocks, payable on demand (market value \$906,896.49)	652,250.00
Interest due on July 1st, 1880,	83,310.47
Balance in hands of Agents,	142,103.68
Real Estate,	66,103.16
Premiums due and uncollected on Policies issued at this office,	8,429.88
Total,	\$6,390,233.89

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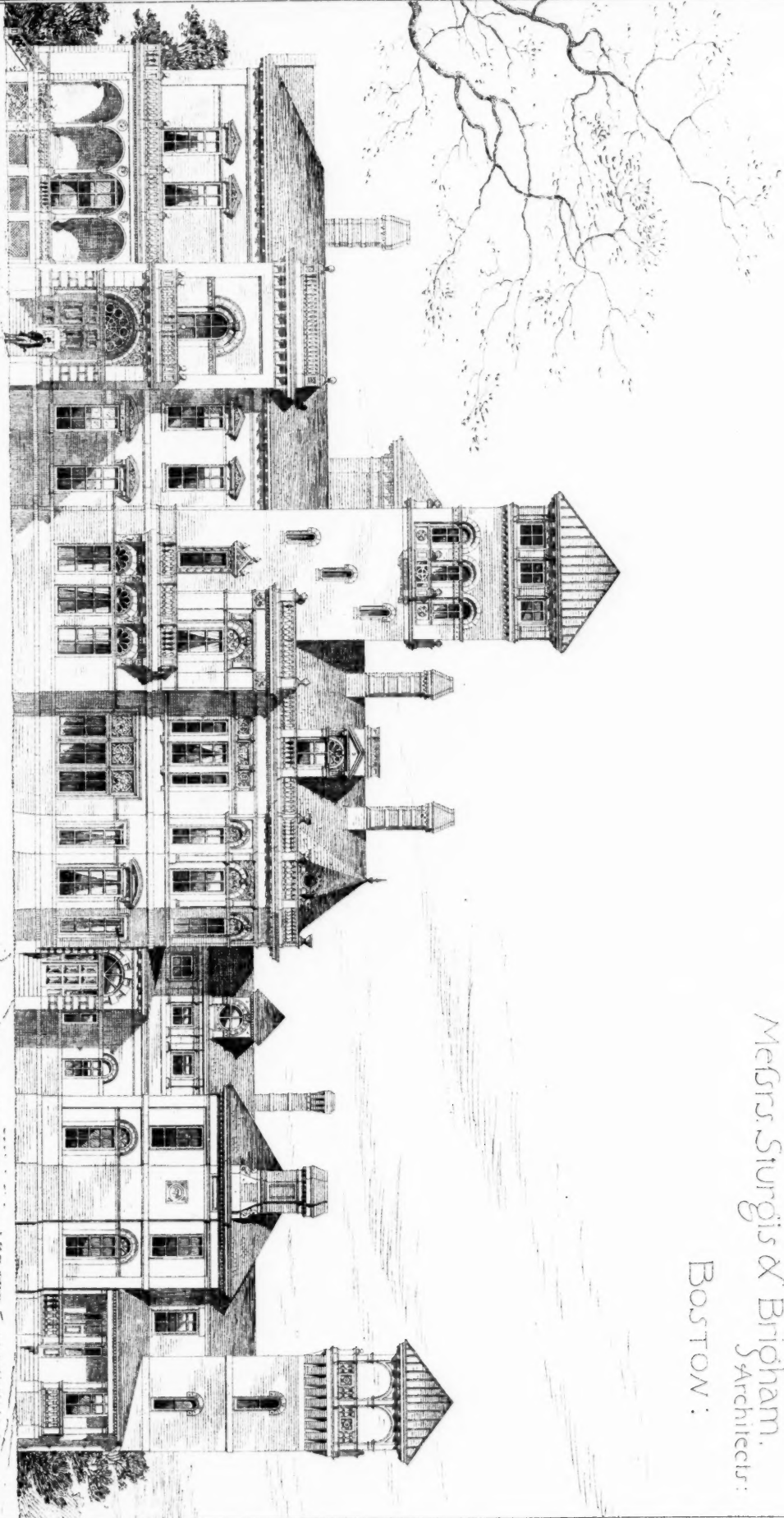
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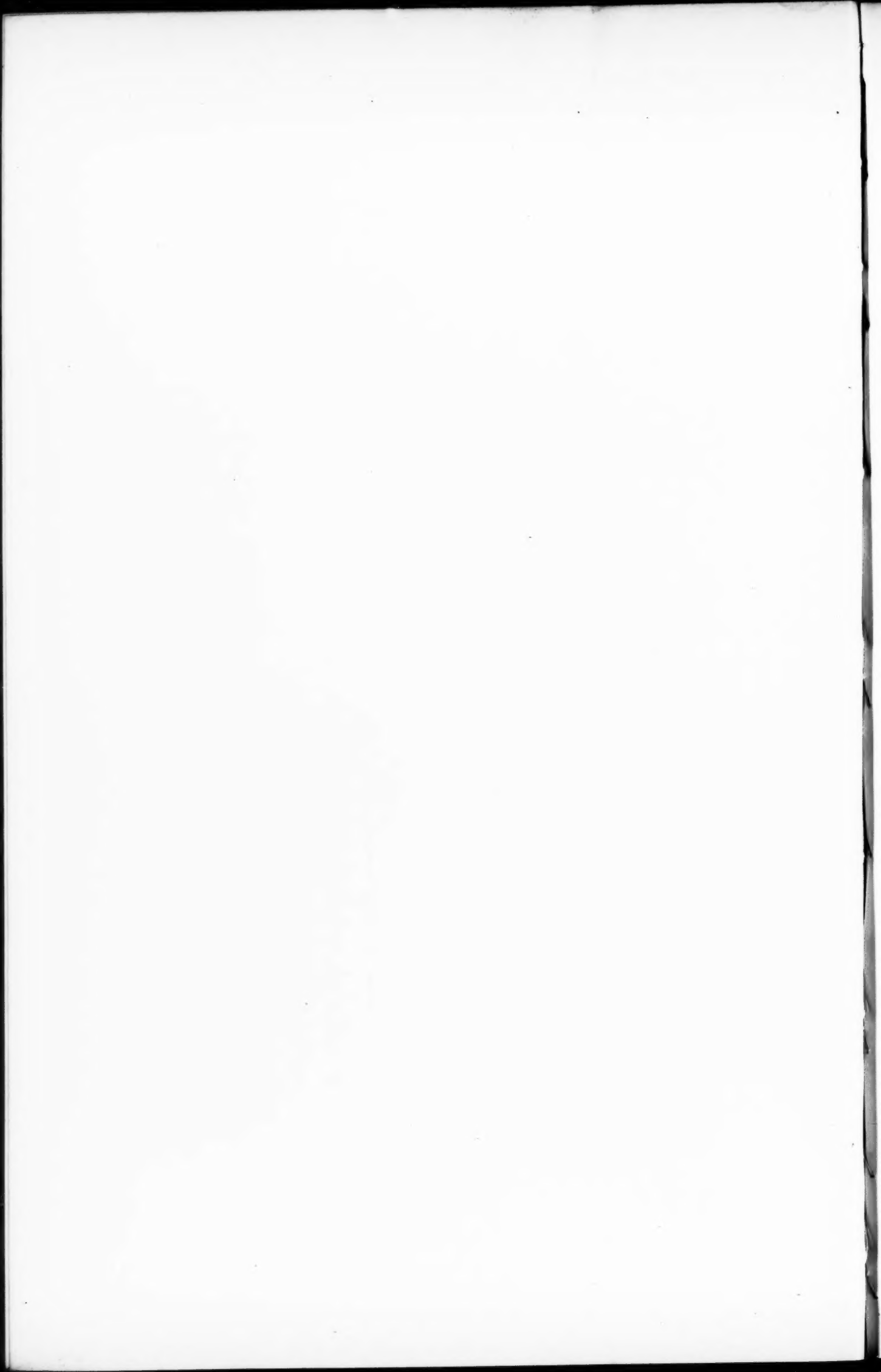
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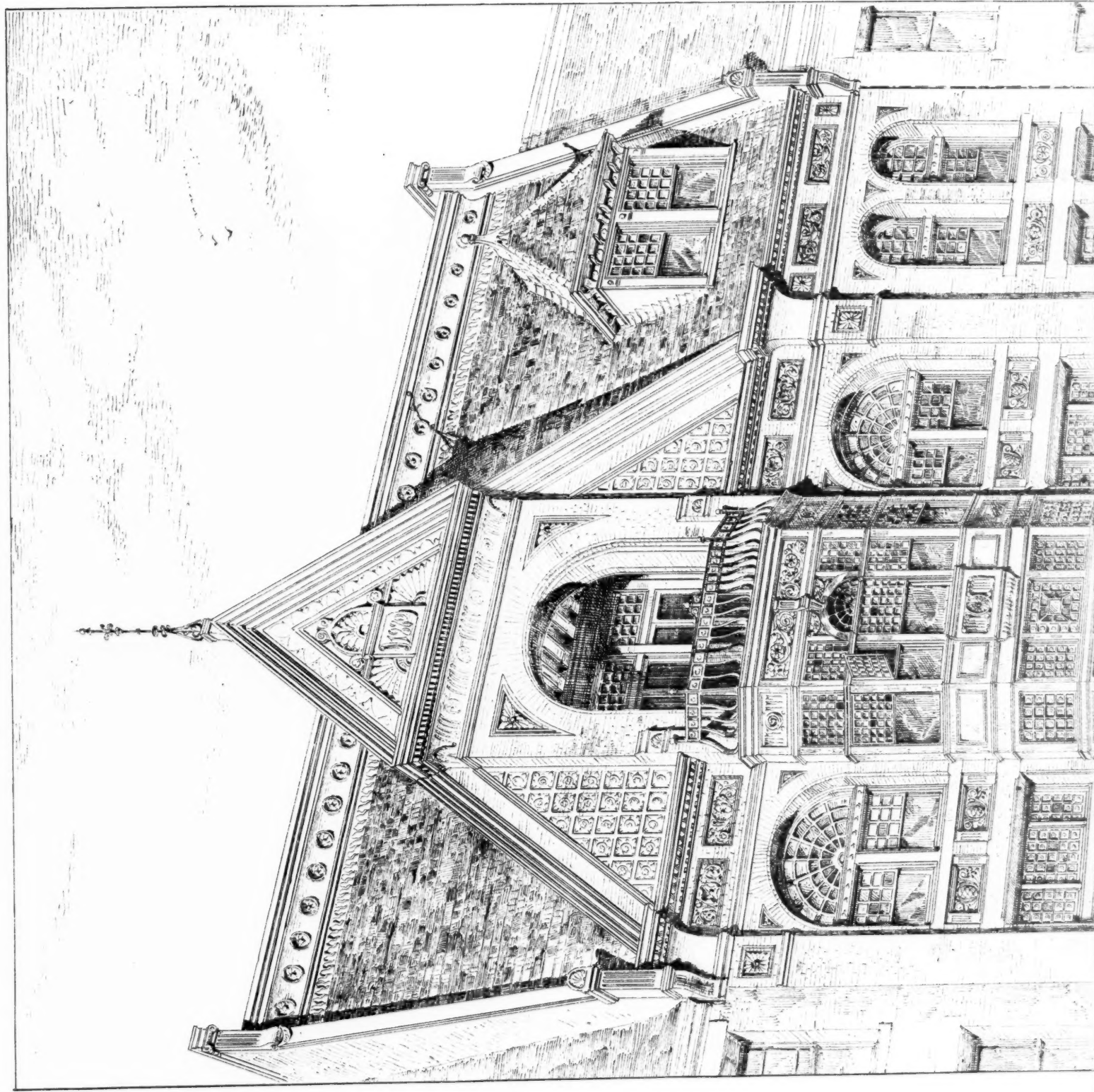


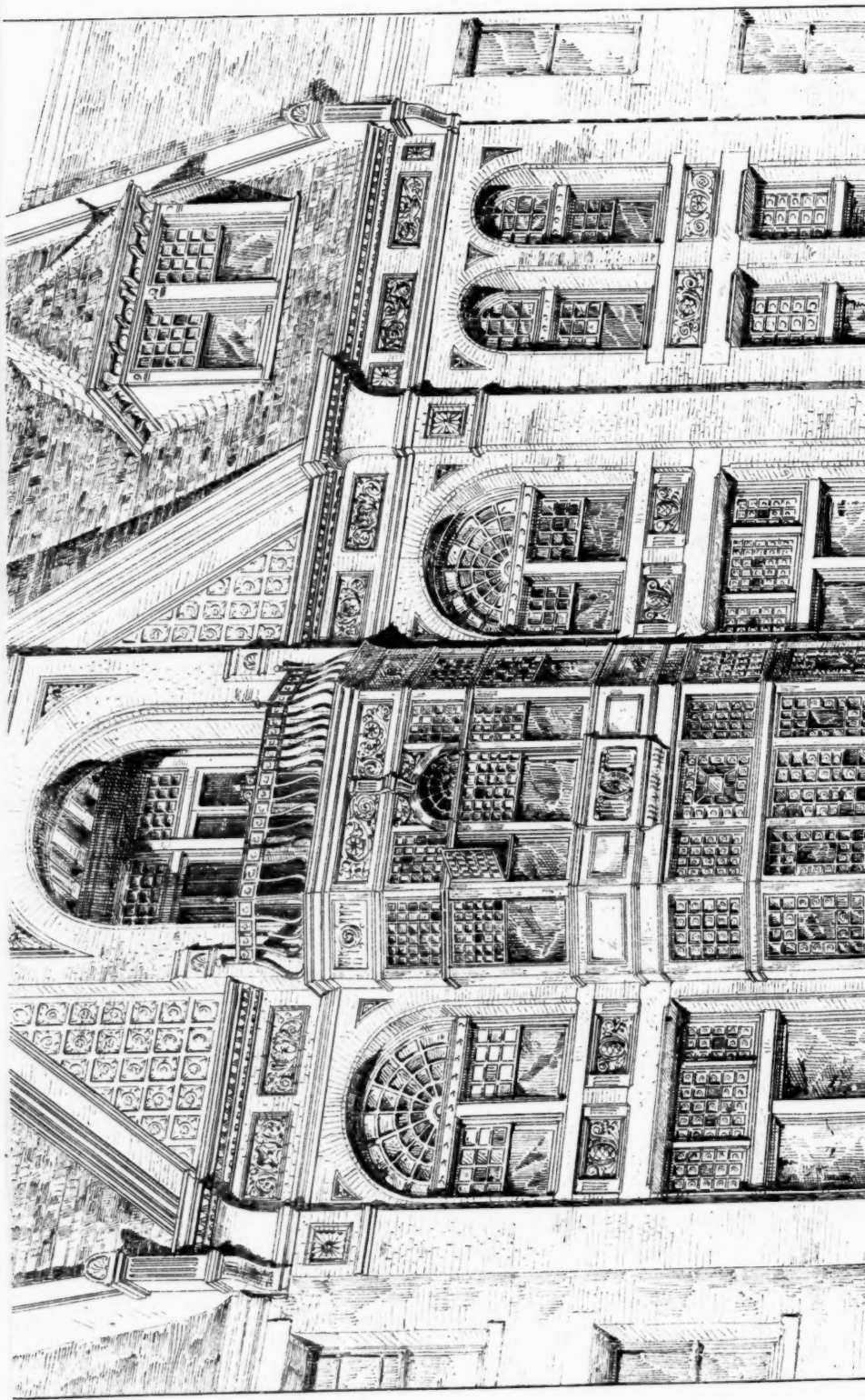
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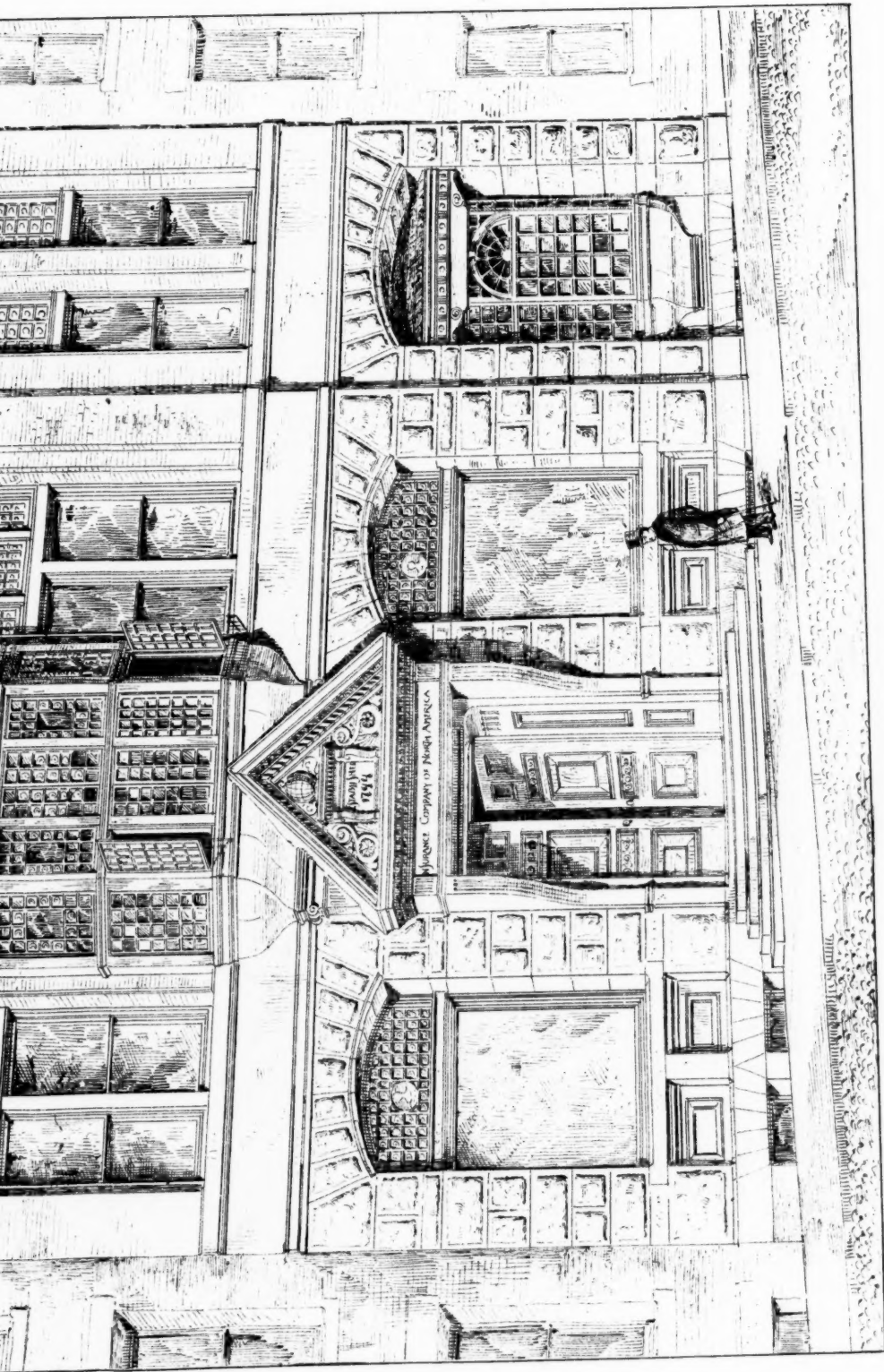
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