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THE Fifteenth Annual Convention of the American Institute of Architects closed November 17, after a very agreeable and harmonious meeting. The Convention seems to have been quite as well attended as usual, and although no important questions were decided, or even discussed, the field was at least left in a favorable condition for such as may come up in future. On the whole, the past year has been a prosperous one for the Institute. The individual chapters have not perhaps gained so much as was anticipated from the relaxing of the bonds which connected them with the national body, but the same step has had the effect of removing the Institute, as it were, to a somewhat higher and less familiar sphere, increasing the dignity of the organization, and perhaps so far furthering the objects to which it was intended to apply itself. The opening address, by Mr. Latrobe of Baltimore, was of itself enough to make the present Convention memorable. Almost in the shadow of the Capitol, the son of the man to whom Washington owes so much of the classic beauty which distinguishes it recounted the earlier architectural history of the place. There are few cities which can trace their artistic development back with such accuracy as Washington, but every piece of testimony which tends to fix and elucidate the account is of permanent value, and Mr. Latrobe's paper will become an important part of our annals.

SOME days ago two houses in South Fifth Avenue in New York fell with a frightful crash, burying in their ruins a number of persons, of whom five or six were killed or fatally injured, while many more suffered severe injuries. The buildings were old, with brick foundations, and brick superstructure some forty feet high above the sidewalk. In both houses the walls of the ground floor had been removed and replaced by iron columns and girders, while openings had been made, and new partitions built in the rooms above, until the original plan was hardly recognizable. The first warning of the catastrophe was given some six weeks before the final crash, by the appearance of a long seam in the party wall, and the owners of the buildings, after consultation, had reported the wall as unsafe to the Department of buildings, but without any effect. Besides the probable weakening of the structure by cutting, the soil on which it was built was known to be bad, so that some settlement may have complicated the circumstances of the case.

So far as the occupants and proprietors of the place are concerned, everything seems to have been done that could be expected; but the apparent negligence of the Department of Buildings to take any notice of the appeal to its authority was for a long time unexplained, until it was found that the note containing the particulars of the complaint had been received by a clerk in the office of Mr. Hyde, the chief inspector, and by him placed in a certain pigeon-hole in Mr. Hyde's desk. Unfor-

tunately the paper was a small one, and in putting it into the pigeon-hole it slipped within the folds of a larger document, containing a similar complaint in regard to another building. When Mr. Hyde came to his office, he took the larger paper from its box, and glanced over it without noticing the small piece concealed within its folds; ordered a deputy to make the proper examinations, and returned the document for filing. Not until the fatal fall was he aware that an appeal had been made to him, which might have been the means of saving many lives if it had only reached its destination. It seems hardly just to condemn him on account of an occurrence so purely accidental, but as usual in such cases, it was thought necessary to appease a somewhat unreasoning public indignation by the offer of a victim, and Mr. Hyde, one of the most experienced and able officers of the Department, was forthwith removed on the ground of "neglect of duty." In order further to set themselves right before the populace, the Fire Commissioners immediately issued an order inviting complaints in relation to insecure structures, which brought out a host of letters, condemning buildings which may very possibly have no more serious defect about them than the circumstance of interfering with some one's pecuniary interests, while the Mayor prepared for publication a letter containing much admirable matter, but not apparently calculated to be of much value except as an expression of praiseworthy sentiments.

WHILE Mr. Hyde was being driven from the position which he had held with so much credit for twenty-one years, on account of an accident of the most innocent kind, an occurrence happened on West Broadway which illustrates in a striking manner the difference between real and constructive neglect of duty on the part of such officers. On the corner of Varick Street a building was in process of erection for the Leggett estate, the walls being up nearly to the fourth story. How the scaffold from which the masons worked was constructed, we do not know, but it was evidently defective, for it suddenly gave way, throwing the men upon it from the third story to the ground, killing or maiming several of them. If there is any point in building which is, and should be, always under the eye and control of an official inspector, it is the construction of scaffoldings, and we should like to call attention to the difference in real accountability between the one who had charge of this structure, but overlooked or ignored the stagings, and Mr. Hyde, who performed promptly what he supposed to be his whole duty. The law, as interpreted by the judge in the last recorded case of the kind, only regards as criminal a negligence which *consciously* places the lives or property of others in danger, and we are not so well supplied with good inspectors that we can afford to throw them away without good reason.

LAST week occurred one of those distressing accidents which at intervals of a few months come to cast disgrace — not upon architects, for men of any standing in the profession are seldom concerned in their construction — but upon the hangers-on of political life, who are generally charged with the erection of public buildings. The State of Ohio possesses, or did possess, two immense asylums near the city of Columbus, one being occupied by insane persons, and the other by children of feeble mind. On the morning of Friday, November 18, the latter structure, containing seven hundred patients in addition to their physicians, teachers and attendants, was discovered to be on fire. The first warning was given by a smell of smoke in the basement, and the superintendent ordered the building cleared. Fortunately, all the helpless inmates were collected in the school-rooms, and by the exercise of extraordinary energy on the part of the teachers were marched out in quick time, without any of their necessary outer clothing or other small property, but soon enough to prevent any of them from being burnt to death by the flames which pursued them to the very door. As usual, the extinguishing apparatus provided for the building proved perfectly useless; an elevated tank which had just been built to give a supply under pressure was empty, and the nearest fire engines were four miles away. When they arrived on the ground they were obliged to depend upon the local water reservoirs, there being no hydrant service within reach, and as the account says, "it was impossible to do much in the way of saving any great part of the most elaborate and elegant furnishings." Meanwhile the inmates were packed "screaming and howling" in the stables without food or means

of warming their chilled bodies. We never saw a very "elaborately or elegantly" furnished asylum, but when the one in question is rebuilt, we might suggest that the inmates, at least, would probably be glad to forego the small portion of the cost of such luxuries which would be needed to place such a structure and its occupants entirely beyond the reach of similar fright and suffering for the future.

THE Mutual Union Telegraph Company, forbidden to erect poles in the streets of Chicago, has submitted to the restrictions imposed upon it and is now engaged in laying underground wires, insulated in the most thorough manner which could be devised. Lead pipes are employed as conduits for the wires, of which twenty, encased in glass tubes, are placed in each length of pipe, and the whole grouted, so to speak, with a waterproof and insulating compound of rosin, wax, and other substances, melted and poured into the end of the tubes. The wires are left somewhat longer than the pipes, so as to admit of connection with the next set at each end. Four miles of this costly conduit have already been laid, from the city line to the centre of the business quarter, and the Mutual Union Company will probably in the end reap the benefit of its thorough method of proceeding by the great economy in the expense of maintenance and repair of such a line. Whether the insulation will be sufficiently effective to make such conduits available for telephone service remains to be seen. If so, their use must extend rapidly.

THE experiment of lighting the Grand Opéra in Paris with electricity appears to have been completely successful. The lamps all worked properly, and the only complaint heard from the spectators was that the rooms were too brilliantly illuminated, so that their eyes were dazzled, and nervous ladies suffered from headaches, in consequence, they thought, of the excessive radiance. For the first time, the ceiling of the grand foyer was so brightly lighted as to make Baudry's famous paintings distinctly visible, and also, unfortunately, to show clearly the havoc which the smoke from the gas-burners has already wrought upon them. To other portions of the decoration the electric lamps gave new and strange effects. The sculpture, by the unusual contrast of the shadows, was brought out with great prominence, but had a harsh, unnatural look, and the colors of the paintings assumed new relations. The ceiling of the auditorium, for example, perhaps partly on account of its position over the great chandelier, appeared almost black, and would have interfered materially with the general brightness if the precaution had not been taken to place a circle of seventy-two Jablochkoff candles just beneath it. Throughout the building gas was freely burned in conjunction with the electric lamps. Not only was it necessary to light the interior of the boxes by means of the accustomed brackets, but in several places the gas was purposely employed to moderate the excessive whiteness of the electric light. The cost of the illumination was far greater than that of gas lighting alone, but expense is not much regarded in providing for the Grand Opéra, and the experiments are to be continued.

MR. FRANCIS H. CUSHING, to whose self-sacrificing labors in studying the character and customs of the Zuñi Indians we have already adverted, sends some letters, which are quoted in the Boston *Herald*, describing his successful efforts to gain admission to the more closely guarded ceremonies of the tribe. Already adopted as an Indian in full standing, and even made commander of the military force of the pueblo, he had never been allowed to take part in certain warlike ceremonies which appeared to him particularly important and interesting. The essential pre-requisite for leave to witness them was, he soon discovered, the presentation of a scalp, marking the applicant as worthy to bear knightly honors, and as certain scruples stood in the way of procuring this for himself, his wishes might have been entirely frustrated, had not the Apache insurrection put him in possession of the needful offering, which, not without some difficulty, was accepted, and he was solemnly initiated into the chivalric order of the Eagles. The initiation ceremonies were the reverse of pleasant, but Mr. Cushing's enthusiasm, and the satisfaction of gaining at last the knowledge which had so long been kept from him, encouraged him to endure the worst, and after nearly two weeks probation he was informed that the ordeal was over. The extraordinary experiences of this courageous young student certainly form the very romance of archaeology, and the relation of them will, we hope, some time form a volume of great and permanent interest.

AN important change is proposed in the relations of the French government to art and artists by M. Jules Ferry, minister of Fine Arts and Public Instruction. According to M. Ferry the interests of provincial museums and schools of art will be promoted by a closer connection with the central administration than they now enjoy, which will afford opportunity for carrying out comprehensive measures, and for establishing constant and free interchanges between the different portions of the country, without waiting for the coöperation of a large number of independent local functionaries. The plan proposed has a little the air of being modelled after the English system, which makes the Department of Science and Art, with head-quarters at South Kensington, the supreme authority in all matters within its province, establishing its own rules in all public schools of art throughout the kingdom, prescribing the selection of teachers, and conferring rewards, besides superintending local exhibitions of pictures or statuary, and lending for such purposes the treasures of its own collection at the metropolis; but the South Kensington administration, whatever criticism it may have deserved for some arbitrary and perhaps injudicious acts, has done wonders for the artistic development of England, and it is only natural that the French should be anxious to imitate, and if possible to surpass their rivals across the Channel. By M. Ferry's proposed measure, the government administration of fine art would be divided between two permanent officials, one bearing the title of Director of Museums and Instruction in Art, having under his orders the three bureaux of Museums, Schools of Design, and Schools of Lyric and Dramatic Art; while the other, under the name of Director of Works of Art, would control the four bureaux of National Manufacture, Historic Monuments, Finance, and Public Artistic Works. If it should be adopted, M. Louis de Ronchaud, at present Secretary of the administration of Fine Art, would be made Director of Museums and Instruction, while M. Jules Pointu, now prefect of the department of Haute-Marne, would be Director of Works of Art.

MR. HINTON ROWAN HELPER, of St. Louis, a gentleman once noted for his political writings, has undertaken to advocate the construction of a railway extending through almost the entire length of the Western continent, from the Canadian frontier to the extremity of Cape Horn. The traffic over this route would require, he thinks, a double track, laid with steel rails and bordered by a telegraph line, and the cost he estimates at about one hundred million dollars. To show his sincerity in promoting this extraordinary enterprise, he offers out of his own pocket a prize of five thousand dollars for the best essay on the subject which shall be published in America within six months after the announcement of the offer. We think it may be safely predicted that none of our readers will ever see the accomplishment of this undertaking. It is possible that a railroad along the central meridian of the United States might sustain itself against the competition afforded by the river navigation of the Mississippi; and it is not improbable that a single line between the United States and Mexico may be made to pay dividends, but from the environs of the City of Mexico for three thousand miles southward stretches an unbroken and almost uninhabited forest. Such settlements as Central and South America possess are almost without exception near the coast, but Mr. Helper's railroad is, we are told, intended to avoid the sea, and penetrate as nearly as may be the centre of the continent, where it would be sheltered from the Chilians and Peruvians on one side by the impassable range of the Andes, and from the Brazilians on the other by an endless jungle. Beyond the tropical forests the road would reach the unexplored deserts of Patagonia, concerning the habits of whose inhabitants enough is at least known to make it certain that their commerce with the United States does not yet require a double-track railway. Every successful railroad ever built has followed some track already well beaten by other modes of travel. The Pacific roads followed a trail strewn with the bones of emigrants and oxen; the Saint-Gothard tunnel pierces the mountain over which thirty thousand persons every year are dragged in diligences or toil painfully on foot, but of travel through the length of Central and South America there is none whatever. If any one thirsts to be the pioneer in the construction of another trans-continental railway, either of the two great caravan routes of Africa, from Morocco to Timbuctoo and the Niger, or from Zanzibar by Unyanyembe and Ujiji to the Congo, afford a prospect of success and profit which is wholly wanting to Mr. Helper's project.

THE FIFTEENTH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

WASHINGTON, November 17, 1881.

THE Fifteenth Annual Convention of the American Institute of Architects has met, transacted its business, listened to the reading of reports, addresses, and occasional papers, eaten its lunches, and adjourned. There have been in attendance between twenty and thirty members, coming from Boston, Newport, New York, Philadelphia, Baltimore, Wheeling, Nashville, Cincinnati, Cleveland, Toledo, and Washington itself. There has also been in attendance a delegation from the intelligent public that we serve, reinforced by some members of the profession not yet members of the Institute, so that for a good part of the time, there has been an audience of forty or fifty persons. Among these the most notable figure was that of the venerable Mr. Corcoran, who came to hear the opening address of his contemporary, — it was said his great contemporary — Mr. Latrobe.

But Mr. Latrobe, though reported to be in his seventy-ninth year, seemed twenty years younger, and nobody but a very young person indeed would think of stigmatizing him as venerable. His voice and manner were as animated and vigorous as if he were still in the prime of life. Animated and vigorous, too, was what he had to say, and he said it with the grace and dignity of a gentleman of the old school. He began by frankly admitting that an account of the early days of the Capitol must be virtually a rehearsal if not a eulogy of his father's work upon it; but it was not necessary for him thus to forestall criticism. The facts he narrated and the documents he cited sufficiently established Mr. Latrobe's position, and there was nothing, as there was no occasion for anything, in what his son said, that could suggest that he was performing the rôle of an advocate. The personal element served, however, greatly to heighten the interest of the moment, and to give volume to the applause with which the address was received. Mr. Latrobe brought with him a very interesting set of drawings, illustrating some of the main points of his paper, which the Convention examined at leisure after adjourning at noon.

Meanwhile the time was occupied with the reading of the reports of the Board of Trustees, of the Chapters, and of the various committees. Of these the first was really, as well as officially, the most important, and the Convention were again surprised, as so often before, to learn how much work the Board of Trustees and the Secretary have had to do, and how carefully it had been performed. The reports of the Chapters did not exhibit a very lively activity, the Boston Chapter being the only one apparently that could congratulate itself upon an increased vitality. Of the committees, the Special Committee on the Duties of Architects to their Clients asked further time. The Committee on Education, in the absence of their chairman, Professor Sturgis, made separate individual reports upon such matters as they had personally had in hand, Professor Ricker forwarding from the prairies of Illinois an extremely interesting and well digested account of the aims and methods pursued by him in the Architectural Department of the Industrial University at Champaign, Ill., an invaluable contribution of the results of long-continued and apparently successful experiment in the application of laboratory practice in such teaching. The system and intelligence with which the details of the instruction were arranged, the amount of work performed by the students, and still more the great amount of work of permanent value accomplished by Mr. Ricker himself, made a marked impression. The proposed course of study at the School of Mines of Columbia College, and the new arrangements at the Institute of Technology were explained by Mr. Ware, who took occasion to dispel any anxieties the friends of either institution might have, lest, being so near together, their interests should clash, and the prosperity of one imply the ill-success of the other. It was made sufficiently to appear that the rules and regulations in regard to qualifications and attendance were so different in the two schools that they virtually addressed two entirely different classes of students, both equally desiring to get what they wanted, but wanting different things. He also insisted strongly on the advantage each of these three schools might and should be made to gather from each of the others, testifying at the same time to the existence of the cordial personal relations among their managers, without which of course such coöperation would be impossible.

A handsome and comfortable sit-down lunch continued and well-nigh terminated the exercises of the day, but little time remaining for the visits to the public buildings that were set down for the afternoon's work. After four o'clock only the outside of any buildings could be seen, with the exception, indeed, of the Corcoran Gallery, which, by Mr. Corcoran's express interposition, was opened for the Convention after the regular hour, and kept open as long as daylight lasted.

The second day was given to the reading of the papers, the first of which was Mr. J. T. Clarke's paper upon the Architectural Aspects of the Discoveries of the Archaeological Expedition at Assos under his direction. This was illustrated by more than a dozen exquisite line drawings, made by Mr. F. H. Bacon, and kindly forwarded by Professor Norton. The extent and importance of the work undertaken and in great part already achieved by the Expedition was a complete surprise to most of those present, and excited the greatest interest. Mr. George C. Mason then read a very good paper on Queen Anne work, treating the subject both historically and critically, and with sense and judgment, and Mr. Bloor con-

cluded the morning with his promised paper on Interior Decoration. It was not his fault that the subject is one that pretty successfully defies literary treatment, while the merit of making some excellent suggestions was altogether his own.

Beyond instructions to the Board of Trustees to consider whether the Schedule of Charges may not well be made more explicit, nothing was done or attempted in the way of action of any kind. There was not a question of any sort raised, and there was no debate on any subject. The several reports and papers elicited no remark or comment, and were successively accepted, or laid on the table, or received with thanks, as the order of business might determine. Nevertheless, it was a very pleasant and successful convention. Many members of the profession who never meet at any other time renewed old acquaintance, new acquaintances were formed, and the profession bound more closely together. The mere fact that the Institute had nothing particular that it wanted to do perhaps made more conspicuous than ever: how much it accomplishes for the profession merely by existing, how much better the profession stands to-day, and every individual in it, than if no such professional organization was in being.

THE COMPETITION IN WALL-PAPER DESIGNS.

NEW YORK.

SOME months ago Messrs. Warren, Fuller & Co. announced their intention to hold a competitive exhibition of designs for wall-papers. Four prizes, aggregating \$2,200, were offered. Competitors were limited to the use of twelve tints, including gold and silver, and were obliged to furnish colored drawings of full size, each design to include the three divisions now considered necessary in a wall-paper of proper sort — frieze, field, and dado. The project was advertised abroad, and in the exhibition which has just closed its doors a large proportion of the designs came, it is said, from foreign sources: English, German, and French. The judges were Messrs. Herter, E. C. Moore, and Francis Lathrop. It is gratifying to note that in spite of the vigorous foreign competition, all their awards were given to American draughtsmen. Perhaps this last, by the way, is not exactly the word to use, as all four prize-winners happened to be women. The first award fell to Mrs. T. M. Wheeler, well known as the partner of Mr. Louis C. Tiffany, in his firm of "Associated Artists." The second was given to Miss Ida Clark, the third to Miss Caroline Townsend, and the fourth to Miss Dora Wheeler; all of whom, I believe, have been accustomed to design for the firm in question. Miss Townsend will be remembered as the winner of the first prize in the embroidery competition of last spring, and Miss Wheeler as one of the prize-winners in the last Christmas-card competition.

From the point of view adopted by the jury, who evidently looked for originality in design more than for perfection in workmanship or even in the development of the chosen idea, there can be no doubt that the decisions were the best that could have been arrived at. Excellence in workmanship, considered and prized as such, could not by rights have been a prime consideration. This was not, of course, a case where a performance was to be criticised as an art-product existing for its own sake. The prizes were not offered for good draughtsmanship, or even for workmanlike treatment of the theme, as might have been the case, for example, with the pupils of a school of Decorative Art. They were offered for new ideas in mural decoration — for new wall-papers, in a word. Originality, if of a proper and practicable sort, was therefore the first consideration; and the prize-designs were incomparably more original, fresher, and more unconventional in every way, than were any of the foreign specimens, superior as were some of these last in actual manipulation. This originality consisted not only in the motives chosen for treatment, but also, I think, in the color schemes attempted.

Those papers wherein the best conventional ideas and the most capable workmanship were displayed were, as I have said, from foreign exhibitors. Many of them were very good indeed in their way, but it was a way that has so long been stereotyped that their production was nothing more than a "work of supererogation." They might some twenty years ago have been well entitled to rewards, had prize competitions been then the order of the day; but they had no right to them at this late hour. It would, I think, have puzzled the judges to decide whether they had seen them a hundred times before, or had only seen, in every shop where French wall-papers are sold, patterns so like them as to be practically their duplicates. The best among contributions of this sort were beautifully executed, showing the hand of men practised in this special sort of work. The effect of the design was precisely the same as would be the effect of the paper subsequently to be printed from it: texture, as well as color, being exactly obtained. And the drawing was mathematically accurate and finished. The American designs, on the other hand, at least those which took the prizes, were as evidently "amateur" work. I mean that they were evidently done by hands unfamiliar with just this sort of designing, though their good qualities were such as to prove their authors well instructed in the principles of design in general. Especially was this last true, I think, of the element of color.

Among the best of the foreign designs was one signed "New Columbia," a very clever treatment of an orthodox, not to say hackneyed, Renaissance theme, good in color and in line, and excellent in its elaborate workmanship, but without the slightest spark of origi-

nality in any direction. Six very elaborate and beautifully worked-up patterns came from a French factory. They were rather low in color, and showed what may be called Europeanized Japanese motives. They were all signed "S. T.," and all looked as though they came from the same hand. Indeed, there was so little originality, so entire an adherence to the traditions of the trade, in all the designs of this class, that it would have been useless to question how many or how few artists had been at work upon them. Another good essay was signed "Spes," and showed figures of the Seasons in the frieze, a hawthorn pattern in the field, and conventionalized peacocks in the dado. Another which seemed to be of home production, though of experienced workmanship, was signed "Perseverance," and was accompanied by a printed advertisement, covering several pages, which pointed out to the judges the aims of the draughtsman and the success he had achieved in his effort to realize them. It was not a bad design, though rather glaring in color, and certainly not so remarkable as its author imagined. It was a Japanese idea rather clumsily carried out. The field was occupied by a pattern of what looked like little green fans, but were intended for conventionalized pine-needles; united with these were pinecones of very disproportionate size. The designer stated that pinecones are never employed in decoration by Japanese artists, but that he had treated them just as a Japanese artist might, would, and should have done. The observer could hardly agree with him, I think, in either of these statements. The pink almond and the inevitable stork composed the dado. This paper might have been admired for certain merits, had not the author so clamorously attracted notice to qualities which it did not possess, originality being especially claimed and conspicuously lacking. Another design that was attractive was in fawns and crimson, with a pattern of thistles very slightly, if at all, conventionalized. Another which showed the hand of an amateur, and had certain qualities that allied it in style with the prize papers was marked "Wall-Flower." The motive was the purple chrysanthemum, treated realistically in the dado and frieze, and conventionally in the field. It was very nice, I think, in color. Some other papers that had good points were not of equal excellence throughout. In most of them the field was more successful than the other portions—a natural result, perhaps, with designers unaccustomed to the formalizing of their ideas. This point should also be noted of the papers which took the third and fourth prizes, and was there to be attributed to the same cause.

In considering the foreign papers, it was impossible to say which had come from the Continent, and which from England. I could not see in any the influence of the very newest English ideas in decoration.

If we turn now to the prize-designs, a more detailed description will be in order. Mrs. Wheeler's stood easily first, being most ably worked out, as well as most original, most beautiful, and most appropriate. The field showed a silver ground overlaid with a fine network of gold. Upon this was a design of clover, sprinkled with bees. This pattern was not distributed over the whole surface, but the clover was formed into graceful whorls at intervals, leaving portions of the metallic ground exposed. The tints were gold for the clover-leaves, and brown for the tips, with black and yellow in the bees. In line the plant was not conventionalized. The bottom of the dado showed two bands of gold, with brown clover-heads, and above them a star-shaped pattern. The main portion of the dado had, on a metallic ground, a growth of clover with disks of gold irregularly placed, and swarms of bees against them. The frieze was also of gold, with a regular row of disks simulating the texture of a bee-hive, and was edged with bands decorated with an hexagonal pattern suggesting, as did the net-work of the field, the cells of the honey-comb. The silver ground of the field was not uniform in tint, but mottled, as it were, so as to avoid monotony. And the clover in the dado was done with natural colors, the dull pink of the blossoms coming in very effectively. Both in grace of line and harmony of color, this design seemed to me quite remarkable.

Miss Clark's design was of the same general style in conception, though much more pronounced in motive and color. The field was composed of blue-green tints, laid on in long, irregular dashes. Over this was a net-work of silver, much coarser than that in the first design, and, owing to the greater contrast of color, not so successful in harmony. The dado was the most conspicuous feature, being composed of high growths of sea-weed, drawn on a very large scale and interspersed with fish, all against a green background. At the bottom was a gold band with shells. The frieze was gold, and was also decorated with shells.

Miss Townsend's design was less novel in motive than either of the foregoing. The field was covered with a thick, interlacing growth of lilies, done in dull tones of cream and green, the petals being outlined with silver. The frieze had a silver background with upright branches of lilies colored in accordance with nature. The dado showed a basket pattern, separated into squares, and painted in tints of olive and gold, with red outlines. Between it and the field was a broad band of gold, with silver lilies conventionalized. This band seemed to me the least successful part of the design. Another paper, with a rose motive, contributed by the same artist, was not very effective, showing little of the beauty of color which distinguishes Miss Townsend's treatment of roses when her tool is the embroiderer's needle.

Miss Wheeler's paper showed, again, a gold background in the field, against which was a bold pattern of peonies, beautifully colored

in white and pink tones. The flowers were single, and treated rather flatly as to form, though not at all conventionalized. The arrangement of lines in this part of the design was exceptionally good, the rather intractable material having been formed into graceful curves. The frieze also was very good—a pink ground with gold disks, against each of which came a peony, the stems of the plant sparsely covering the spaces between. But the dado was a sad falling-off, looking quite as though it had got connected with the rest of the design by accident. It was hardly in harmony with the rest, I think, in color, and was trite in motive, showing, on a maroon-colored ground flecked with gold, a pattern formed of the leaves of the plant in question. The most faulty point of this design, however, as of the other prize-winners, was the insufficient working out of minor details. This was least apparent in Mrs. Wheeler's, but very marked in the three others. I mean that, while the main motives of the three chief divisions of the papers were well designed, the transition from one to another was not sufficiently considered, was not led up to with sufficient care, or executed with sufficient refinement and profusion of detail. Our designers might take a lesson here from the trained workmen whose efforts fell so far below their own in originality and real value. Each of the good foreign papers was an organic whole, so to speak; the various parts, however diverse in motive and treatment, being well brought together by the numerous carefully treated small bands and intermediate patterns that connected them. In the prize papers, these intermediate passages had been almost entirely neglected. They were far too scanty, and such as did exist were coarse in detail, and gave evidence of having been less interesting to their designers than the bolder portions of the work. Yet here was just where minute, or at least delicate and well-considered detail would have been well in place. Breadth and boldness are most desirable things, especially at the beginning of what we hope may grow to be a new and worthy school of design. But there are occasions when both are out of place, and passages where delicate elaboration would serve by contrast to enhance their value. If the fine designing and good color in Miss Wheeler's field and frieze, for example, had been framed in delicately-wrought borders, and thus both emphasized and connected into a more coherent whole, the beauty of her work would have greatly gained. Designing of this sort, of course, is more or less mechanical, and can be easily executed in the future by any hand that has shown itself capable of more difficult things. Its absence in these papers was not proof of incapacity, but merely of inexperience or want of patience.

It will be seen, perhaps, from these descriptions—at least the fact was very striking in presence of the actual designs—that the style of treatment in all was what is called "naturalistic," as opposed to "conventional." I do not think the idea that all good decorative art must be strictly conventional is nearly so prevalent now as it was a few years ago among those beginning to interest themselves in such things. A certain degree of naturalistic treatment is necessary, I think, if designers to-day are to produce anything original, as well as good. Strict conventionalism cannot but discourage fresh fancy, and render almost impossible new modes of treatment as well as noticeably new ideas. Natural forms must of course be adapted to decorative use; but adaptation is very different from what is popularly known as conventionalizing. It is in her retention of natural aspects, while adapting them nicely and easily to the requirements of her design, that Mrs. Wheeler's work—not only in this instance, but in many others—has seemed particularly good. It is hardly necessary to add that, having drawn their motives so directly from natural forms, the artists in question had not given to their designs the flavor of any typical school or fashion.

Such papers as these four are not suitable, of course, for indiscriminate or even for ordinary use. Their color would often be difficult to harmonize with the fittings of a living-room, and they could not do good service as mere agreeable backgrounds whereon pictures or other decorations might be disposed. It is doubtful whether we need any designing for such a purpose, however: doubtful whether anything can here be as satisfactory as a simple flat surface of one color or another, with a decorated border at the ceiling only. But for cases where supplementary adornment is not desired, for hotels, or vestibules, or public buildings, these papers will supply not only striking and effective, but truly decorative hangings. Mrs. Wheeler's is perhaps the most strictly "realistic" of any, yet, being also the most modest in motive and the most harmoniously delicate in color, will assimilate most easily with its surroundings. All who have examined her drawing must look forward with interest to seeing its effect when finally executed and somewhere put in place.

It may be thought that wall-paper designs can afford little opportunity for misplaced or grotesque imaginings, such as present themselves whenever Christmas cards or such minor subjects are in order. Yet among the fifty designs shown in this exhibition were some entitled to the name of abnormal, almost pathological, specimens of art. One was an immense design, in the most depressing tones of gray, and black, and white, and pale green, copied from Assyrian motives. The whole field, as well as the other portions, was filled with figures of men and animals, with trees, and chariots, and buildings, the interstices being covered with an imitation of the Assyrian script. Of course they were mere caricatures of the archaism of the originals, the drawing looking not like that done in the sturdy childhood of art, but like that done by modern children on their slates at school. The labor that had been wasted on this huge effort,

the utter want of sane ideas as to art, as such, or even as to the requirements of the actual occasion, could not but sadden the spectator. As mistaken in aim, and more grotesque in idea, was another design most elaborately wrought out, and also in cold tones, chiefly of gray and black. Think of a wall-paper devoted to the allegorical illustration of a poem, and of Poe's *Raven*, at that! The frieze showed "busts of Pallas" with a raven perched on each brow, apparently in the most precarious manner. The field was composed of curious little squares and lozenges, in each of which was a flower spray. A long "key" in the margin explained the significance of these, according to the accepted "language of flowers," I suppose, as each typifying one of the various sentiments expressed in the poem or latent in its lines. Some other papers were quite as ugly and inappropriate as these, though less eccentric in their motives.

M. G. VAN RENSSELAER.

REPAIRS OF MASONRY.¹

THE important economical results accomplished on the Erie Railway (now the New York, Lake Erie and Western Railroad) within the last six years, by the use of *béton*, warrant making an exception to the general rule concerning methods which are protected by letters patent, and induce me to give an account of a material which is capable of extensive application by engineers.

Béton is simply a mortar of hydraulic cement and sand, mixed by means of patent machinery, with as little water as practicable, in proportions experimentally ascertained by M. Coignet, a French engineer. When freshly made it looks like a loose, incoherent heap of damp sand, slightly coated with lime, and a more unpromising mortar can scarcely be imagined. When put into place, however, it forms a plastic mass, capable of being rammed into crevices of all masonry, of being moulded to all shapes, and made into monoliths of all kinds and sizes, from a statue or obelisk to a culvert or viaduct.

When set, it becomes a hard imperishable stone, with a tensile strength of some 300 pounds to the square inch, and a crushing resistance of about 8,000 pounds per square inch, or about as strong as good granite, and when well made of good materials, neither time nor the elements seem to have any more effect upon it than upon the ancient Roman mortar which it resembles in its hardness and tenacity of adhesion to natural stone.

It is proposed to give an account in this paper of the uses to which *béton* has been applied on the Erie Railway:

In May, 1875, the Portage viaduct, over the Genesee River, on the Erie Railway, was burned down. This viaduct, which is 850 feet long and 234 feet high above the bed of the stream, had been built of wood in 1852, and rested upon fifteen stone piers, from ten to thirty feet high. These piers were much injured externally by the fire, and when examined for the purpose of rebuilding upon them the iron viaduct which replaced the wooden one, they were found considerably shattered and shaken in consequence either of bad workmanship, the perishable nature of the stone, or the settling of the foundations.

In order to save expense, however, it was determined to use these old piers, provided they could be protected from the further disintegrating effects of the weather; and investigations having pointed to the efficiency of *béton* for this purpose it was determined to try it.

A contract was accordingly made with Dr. Goodridge, President of the New York Stone Contracting Company — this being the name of the organization which controls the *béton* process in this country — to repair these piers. This was done by encasing all portions exposed to the wash of water at the ordinary winter stage (which portions had been more or less shattered by frost and undermined by the action of water) with twenty-four inches of *béton*; the ice breakers at the ends were also encased, and the tops of the piers were covered with a coat of *béton* two inches thick, to keep out infiltration, and the consequent splitting apart of the masonry. The new pedestal blocks for the posts were also boxed in with *béton* to keep them firm and sound.

The amount paid to the Stone Contracting Company for the *béton* work came to about \$6,000. It would have cost \$40,000 to have rebuilt the piers for the new iron bridge, and thus the saving was very large. The result has been very satisfactory. The piers, to be sure, are not as good as new, but they have stood strains from the superstructure which would have shaken them all to pieces by this time if they had not been so protected.

From motives of economy less was done in 1875 than was advisable, and, as will be further stated in this paper, after an account has been given of some other uses *béton* has been put to, it will be employed this year in making further repairs at Portage.

THE WARSAW CULVERT.

Although the Erie Railway runs much of the way through a rocky country, few of the stones found along its line stand the weather. Many of the culverts, abutments and piers have therefore been eaten into by the elements, and in the course of years, not a few have been replaced by new structures.

When such culverts are under heavy embankments, their renewal involves the great expense and risk of digging them out, carrying the track upon temporary works, and rebuilding a new culvert and embankment under the trains.

¹ Read by O. Chanute, Vice-President A. S. C. E., at the thirteenth Annual Convention of the Society, June 15th, 1881.

In 1875 there was such a culvert near Warsaw, on the Buffalo Division, which threatened to fall into ruins. It was one hundred and forty-six feet long, fourteen feet in clear opening, and under an embankment sixty feet in height. The frosts had gnawed its bench walls and ring-stones, until they had become an irregular mass of crumbling flakes, which came down with the slightest touch. Some of the stones were entirely gone, leaving cavities from three to six feet long, and extending back from one to three feet from the original face.

This culvert was more or less injured throughout its whole length, and hung together, apparently from the force of habit, in those natural arches which form with time in thoroughly settled embankments. It would have cost about \$36,000 to have dug it out and replaced it with a new structure, as had been done during the previous year with a similar culvert upon the Western Division, when the contractor for the *béton* process offered to put a new face on the matter for \$2,200. In view of the results already accomplished at Portage, the offer was accepted.

The work was done in this way: Wooden centres were erected inside of the culvert, and on these were placed lagging plank, section by section, leaving a space of about four inches between the planks and the original face of the culvert. Into this space the *béton*, duly mixed outside, and wheeled into the culvert, was rammed by hand until every cavity and crevice (these were previously cleaned out) were duly filled. Some of these cavities extended clear back to the earth filling, all the stone having perished. The *béton* lining was also extended down the bench walls to the rock foundation of the culvert. As fast as one section was filled, the centre and lagging were put up for the next, and the work proceeded as before, from the free end.

One week after the completion of the work the centres were struck, and when removed, together with the lagging, the inside of the culvert presented a hard, smooth surface, (except the saw-marks and joints in the lagging plank which had been faithfully moulded by the *béton*), and the work appeared to be entirely impervious to water.

It was completed just before cold weather, and some misgivings were felt by the railroad officers as to the effect of the succeeding winter. It was feared that water might percolate through the embankment and joints of the old work down to the *béton*, and there freeze and injure it. The culvert was therefore closely examined the next spring, but not a weather-mark nor any change whatever could be discovered.

It was thought, however, that perhaps the winter of 1875 had been too mild to test the material severely, and that another season would bring different results and show some defects or weak points in this method of saving money in the repairs of masonry. No further work of this kind was therefore done in 1876, and in the spring of 1877 a new examination was made of the Warsaw Culvert, to detect any possible injury. None whatever was found, but it was then, and it is now, after a winter as severe as heart could wish, as perfect as when originally built.

THE CLIFTON CULVERT.

In the spring of 1877 it was reported that a culvert at Clifton, twelve miles from Jersey City, needed to be rebuilt. It had originally been constructed of red sandstone from quarries in the vicinity, and was not only dilapidated and peeled by the weather, but it had settled upon its foundation, so that it was in a very dislocated and disjointed condition. Its wing walls had parted from its main walls, the parapet had been pushed out by the thrust of the earth, so that it partly overhung the arch, and, singular to relate, it being under a shallow bank, the vibrations of the trains acting upon the earth that pressed against the culvert, had actually lengthened it, so that its barrel was two feet longer than originally built. We know this to be a fact, for we found the original record plan, we measured the culvert carefully, and found enough openings in the joints fully to make up the two feet it had lengthened.

It would have cost \$6,000 to have rebuilt this culvert, but a contract was made to repair it for \$600. This was done by lining it with an inside ring of *béton*, four inches thick, rammed into all the crevices and joints, and building *béton* buttresses at the ends, to prevent any further creeping away of the structure from under the trains. The success has been complete, and the culvert is now as good as new.

BERGEN TUNNEL.

In the fall of the same year it became necessary to make some repairs to the Bergen Tunnel at Jersey City. The tunnel is 4,316 feet long, and driven through trap rock. This, although very hard and unaffected by the weather, is full of seams and faults, and being entirely unstratified, it comes down in blocks of isolated stones, which set dangerous traps for the trains. Some portions had been arched from time to time, but this had been done with brick, and in the course of years, alternate freezing and thawing had peeled off the face from the bricks, generally in flakes about one inch thick, until in some places the arching had been eaten into for a depth of eight inches.

It was decided to arch over an additional section 130 feet long, where the naked trap rock was badly shattered, and to reline with a thin coating of *béton* another section 30 feet long in which the bricks had been most injured.

This was done by erecting iron centres, so arranged as to clear the trains, placing on the centres wooden lagging plank, and ramming

the space between them and the face of the rock or brick, full of béton, the latter being mixed on cars in the tunnel.

This work was all done at night, in order to have the least annoyance from trains, of which some two hundred pass through every twenty-four hours.

When an infiltration of water was struck, in order to drain it and to prevent the formation of the stalactites of ice which hang down (and fall down) every winter from the rock, drain-tubes were left in the béton by inserting hollow blocks made at the factory.

The work was successfully accomplished, and has stood perfectly ever since.

BUFFALO DIVISION CULVERTS.

Thoroughly convinced by these successes, a further contract was made in 1878 to repair, by the same means, a number of culverts on the Buffalo Division, which were getting into the same condition as the one at Warsaw, which I have described.

The following is a list of them:—

These thirteen culverts, which had been built in 1851-2, had been nursed for some years, and exhibited all the ills to which masonry is subject in its old age. The stones were disintegrated, portions had caved in, the foundations were undermined, the bench walls were broken-backed, the arches were distorted, and the ends and parapet walls were thrust out. These were repaired with appropriate doses of béton.

In all cases in repairing these culverts, all the loose mortar was picked out of the joints, the loose flakes of stones were knocked off, and the béton was rammed into all the holes and interstices.

We estimate that it would have cost to dig out and trestle these culverts, some of them being, as will be seen by the table, under embankments from sixty to eighty feet deep, and to have rebuilt them with new masonry, at say \$10 a yard, the sum of about \$80,000. We paid the contractor for repairing them \$15,112.45, and we estimate that the labor of our carpenters, making and erecting centres, the free transportation of men and materials over the road, etc., etc., may have amounted to \$5,000 more, so that the aggregate cost to the railroad was about \$20,000.

The economy of the process was, therefore, marked and monotonous. All the culverts have stood perfectly ever since.

WEST PATERSON BRIDGE.

In the spring of 1880, the two piers under the double-track iron bridge over the Passaic River, at West Paterson, were reported as cracking open and falling asunder. They were founded upon cribs, resting on the sandy bottom of the river, and the settling of the cribs, together with the jarring of the trains, was shaking the piers to pieces. It would have cost \$12,000, and have involved some risk, to have rebuilt them under the bridge. After careful consideration and discussion, it was decided to envelope them entirely in a shell of béton from four to twelve inches thick. For this purpose, wooden frames, planked inside, were erected at a suitable distance off, all around the pier, and the space between the planks and the stones was rammed full of béton. A coat four inches thick was also put on top, the whole enclosing six iron rods, three on a side, which had been temporarily put around the pier, to keep it from tumbling apart while its permanent repair was under discussion.

The cost has been \$6,000, and it is confidently believed that the piers are now good for many years; for the béton, being an average of twelve inches thick on the sides, and four inches on top, and of a tensile strength of say three hundred pounds per square inch, it would require an internal stress in the pier of

One side, 12' x 12" x 12" x 300 =	518,400 pounds.
Other side, 12' x 12" x 12" x 300 =	518,400 "
Top..... 5' x 12" x 4" x 300 =	72,000 "
	<u>1,108,800</u> "

to burst its shell asunder, while the six iron bolts, one and one-eighth inches diameter, are only good for 300,000 pounds.

DAM AT PORTAGE.

In the fall of the same year it became necessary to make further repairs at Portage. The stones in one of the piers which had been injured by the fire were found to be flaking off dangerously near to one of the pedestal blocks which carry the posts. This was easily repaired and further disintegration prevented by a buttress of béton over the injured spot.

Another pier was found more seriously affected. It had been built on top of a loose mass of rubble stone about twenty feet thick, thrown out when the Genesee canal was excavated, and, although strong enough to carry the wooden trestle, with its many posts, proved insufficient to carry the concentrated weight on the two iron posts which constitute the two iron piers. Their weight had broken the back of the stone pier and forced down the outer ends some two inches into the rubble beneath. There was no telling where the injury would stop, and repairs were urgent. As it was late in the season when this was discovered, temporary repairs only were attempted. These were made by throwing out béton buttresses, beyond

the ends of the pier, thoroughly bonded with it, and thus increasing the bearing area upon the loose rubble to about double the amount it had before. This has stopped further settling for the present, but to be entirely safe, we deem it necessary to extend the foundations under the iron posts either down into or entirely through the loose rubble, which is on a sloping bank of rock. This we propose to do by drifting in narrow galleries through the loose rubble under the pier, and filling them with béton, which, when thoroughly set into stone, we propose to use as the sides and roof of other galleries, to be likewise drifted in and filled with béton, until we have a solid mass under the pier to a suitable depth.

I will tell you next year how we have succeeded.

We also propose to administer béton to the Genesee river. This has worn its way to a depth varying from two hundred to six hundred feet, through the Portage group of clay shales, which have a bad notoriety for their disintegration under the action of the weather.

When the Portage bridge was first built, a waterfall sixty feet high had its crest 240 feet down stream from the bridge. It wore back, first in the shape of a horseshoe, and then all on one side, so that now the nearest point in the top of the cascade is only 119 feet from one of the piers, and it is wearing back at the rate of about fifteen feet a year. The chief trouble arises from the shaly, rocky bed of the river, which cleaves into blocks, shells off and is swept down the waterfall by the floods. Operations were begun last fall by running a béton dam 210 feet long and three feet high, which deflects all the water, at ordinary stages, from the portion where the rock has been wearing away fastest, but is submerged in floods; and will be followed up this year by filling in with rubble masonry a cavity in the rock, where the water is boring a dangerous channel nearest to the pier, and putting an apron or floor of béton over the whole bed of the stream where there is fear of its wearing back.

BLAUVELTVILLE CULVERT.

The preliminary work at Portage last fall occupied so long that winter was upon us before we could repair a culvert of sixteen feet span, at Blauveltville, on the Piermont Branch, which carries a wagon-road under our track. However, in December the travel was turned over to an adjoining road, both ends of the culvert were boarded up, a couple of stoves were put in it, the pipes run out through the ends, and the béton men, provisioned with the necessary sand and cement, as food for their machine, went into winter quarters. They emerged this spring, leaving a new culvert lining behind them.

COST OF THE WORK.

In doing this work different prices have been paid, according to the difficulties of the various locations; varying from sixty cents to \$1.00 per cubic foot, or from \$16.20 to \$27.00 per cubic yard. No new structures have been built entirely of béton, because, although they could be made considerably lighter in consequence of the greater strength of the mass, thus forming one single monolith, we have not deemed such structures more economical than masonry, where good stone can be procured at about \$10.00 a cubic yard in the work. Where, however, stone is scarce and sand plenty, the béton would be the cheapest.

The cost would be reduced if it were found possible successfully to use some of our American cements. A Portland cement, made at Boulogne, in France, has been used exclusively on the works above described, and the contractor says that his attempts to make good béton with American cements have resulted in failures. There have been failures also in France; some of the sewers of Paris, lined with some cheap stuff, are said to have peeled off, and the viaduct of La Vanne, which was wholly built of béton, is said to have cracked and flaked off to a dangerous extent. The proportions used for this structure I understand to have been 20 parts of sand, 4 parts of lime, 1 part of cement. So that this is a formula clearly not to be used. In fact, I can give you no formula, as the proportions are said to vary with the fineness of the sand, and the character of the béton which is required.

We have preferred to have all our work done by contract instead of attempting it ourselves, in order to make sure that the proportions and workmanship should be controlled by experts. The results have been entirely satisfactory. Large sums of money have been saved, not a single failure has occurred, and the repaired works seem likely to endure as long as if originally built of sound stones.

It is believed that the methods which have been described are capable of still further adaptation and extension. Existing structures, the rebuilding of which would seriously interfere with the continued use of a road, canal or edifice, can be repaired with béton, as has been shown, without interference with the traffic, and at a cost of from ten to twenty per cent of the expense of a new work. This can also be done very rapidly, six thousand cubic feet of béton, or over two hundred cubic yards, having, in some instances, been put in in a single day, so that engineers who adopt this method of repairing masonry may be certain of saving both time and money.

THE ILLUSTRATIONS.

THE "FAIRBANKS HOUSE," DEDHAM, MASS.

[Gelatine Print.]

DEDHAM was originally settled in the year 1635 and called Centinient. The grant of land which it then comprised embraced the territory of what is now Medfield, Wrentham, Needham, Bellingham, Walpole, Franklin, Dover, Natick, Norwood and parts of Sherburne

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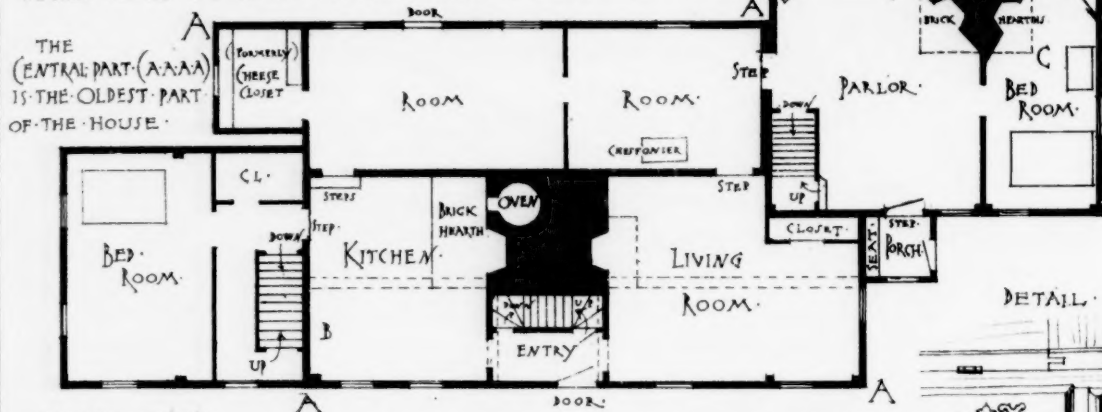
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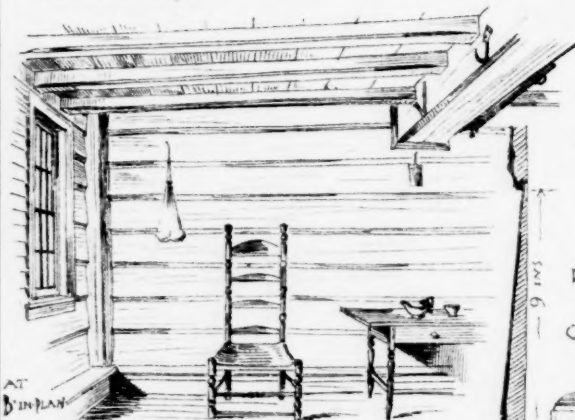


THE OLD "FAIRBANKS HOUSE" DEDHAM, MASS.



BUILT IN 1630

IN STORE ROOM 2D. STORY. ARE A NUMBER OF OLD SASHES WITH LEAD-GLAZING—DIAMOND PATTERN—ONCE USED IN THE HOUSE.

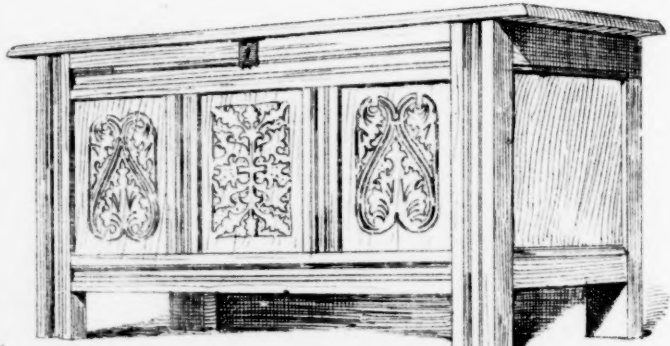
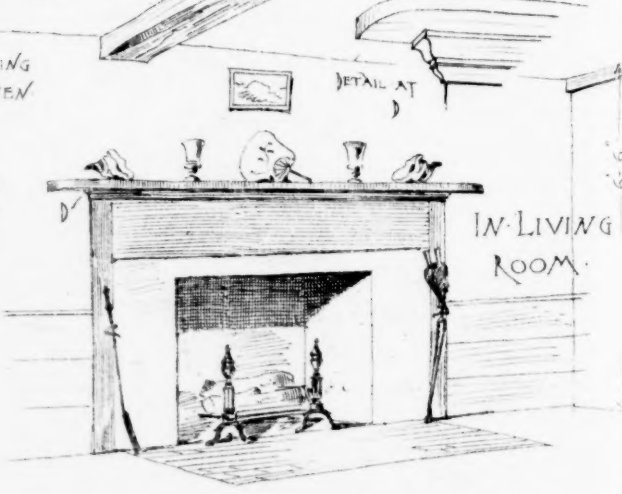


A CORNER IN THE KITCHEN



DETAIL OF MOULDED LAP BOARDING IN KITCHEN

THE CASING OF CORNER POST IS ALSO MOULDED



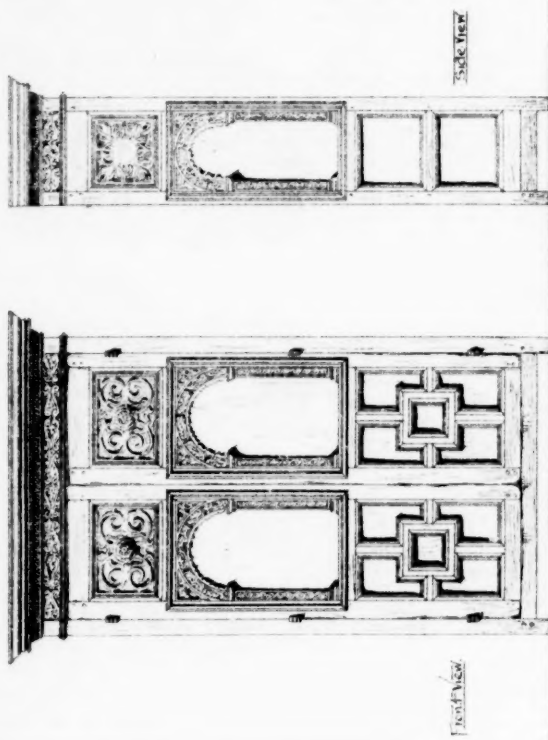
COPYRIGHTED 1881, JAMES ROSGOOD & CO



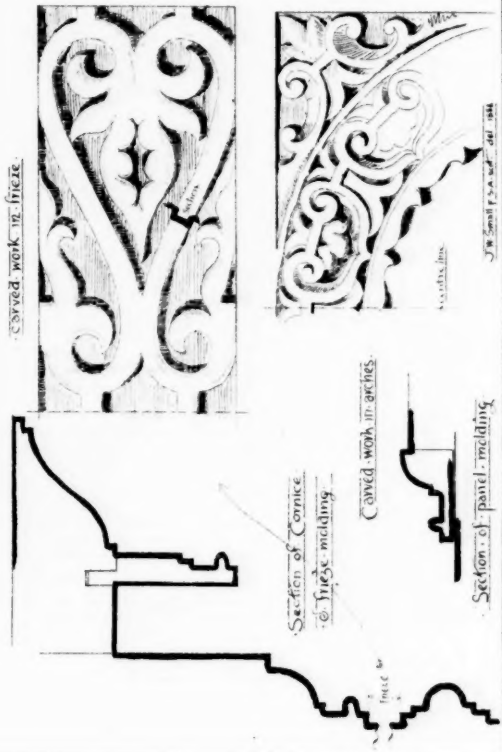
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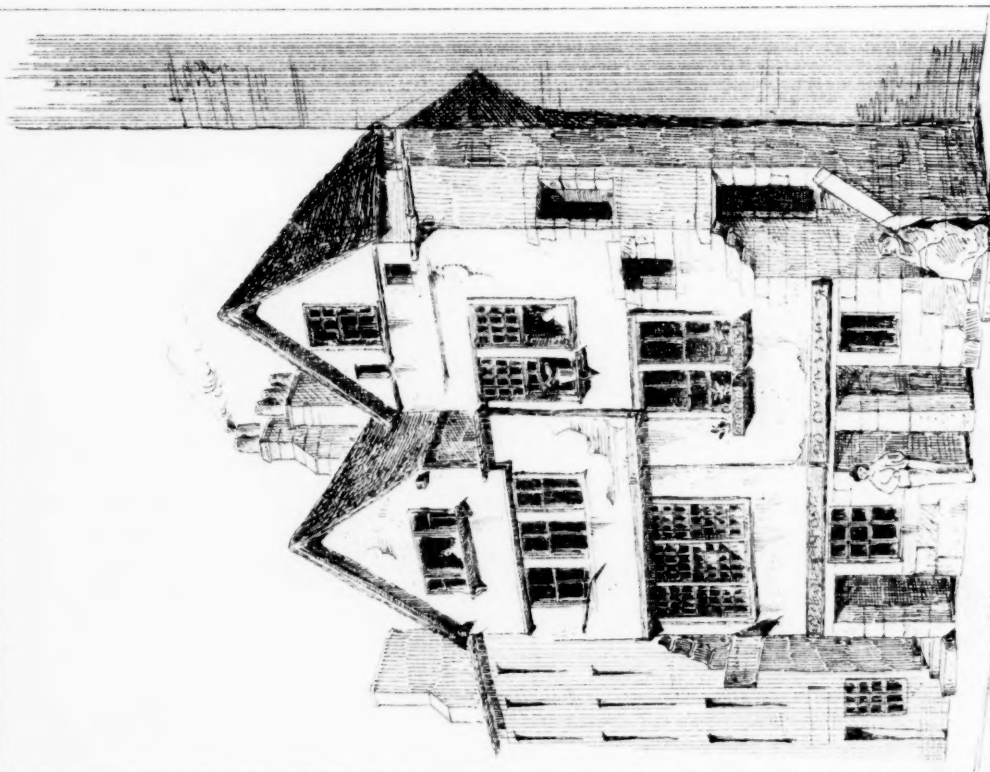
Rowallan-Castle, Ayrshire. Oak-press in hall.



Scale 1/4 inch = 1 foot.
Carved work in frieze.



half-timbered front from Coe-gate, Edinburgh.



Section of door jamb



and Hyde Park. It was incorporated on the 8th of September, 1636, and named from Dedham in Essex County, England.

Mother Brook, the stream now connecting the Charles and Neponset Rivers, was formed in 1639 by cutting a canal (the first dug in this country) through the Charles meadow to the source of East Brook, a tributary of the Neponset. The object of cutting the canal was to create water facilities. A corn-mill was constructed about 1640, the first water-mill in Dedham. In 1664 another corn-mill was built on Mother Brook and a saw-mill on Neponset River. In 1681 a fulling-mill was built on Mother Brook by Draper & Fairbanks.

In 1642 the number of persons taxed was 61; in 1666, 95, and in 1676, 95. In 1686 the number was increased to 124.

In 1736 the persons taxed in the town numbered 518.

The venerable landmark illustrated to-day is situated on the corner of East Street and Eastern Avenue.

The founder of the family, Jonathan Fairbanks, came from Somerby, in the West Riding of Yorkshire, England, in 1633. After a residence of three years in Boston, he came to Dedham and built him a house, — the same house, with the exception of a small addition one hundred and fifty years old, which stands to-day. He survived to a ripe old age, and died December 5, 1668. He had six children, and to the eldest, John, he left the homestead.

Since his time the house has been continuously occupied by his descendants in the male line, who have all carefully treasured such heir-looms as descended to them. Members of the seventh generation now occupy the house.

DETAILS OF THE "FAIRBANKS HOUSE," DEDHAM, MASS.

DESIGN FOR TOWN HALL, DUBLIN, N. H. MESSRS. ROTCH & TILDEN, ARCHITECTS, BOSTON, MASS.

This is a framed building, measuring 39' x 85'. The lower story provides for a school and the town offices. The main hall is on the upper floor and is finished up into the roof, showing moulded wooden beams. The building is now under contract for the sum of \$4,300, complete.

SCOTTISH SKETCHES: — HALF-TIMBERED FRONT FROM COWGATE, EDINBURGH; OAK PRESS IN THE HALL OF ROWALLAN CASTLE, AUSHIRE. BY J. W. SMALL, F. S. A., SCOT.

TOWER OF EXTENSION TO DEPARTMENTAL BUILDINGS, OTTAWA, CAN. MR. THOMAS S. SCOTT, GOVERNMENT ARCHITECT.

LEGAL NOTES AND CASES.

Nuisance. — Private Burial-Ground.

THE natural course of the surface-water from a private burial-ground was through the lot and near to the well of A, who asked for an injunction to prevent any further interments. He alleged in his complaint that he had been compelled to cut a ditch to turn the surface-water and surface-drainage from his yard and well, and that any further interments in the lots would endanger the health of complainant and his family, by corrupting the water of the well and polluting the atmosphere. The first burial was in 1863, and the last in 1874, but it was not stated that there had yet resulted any pernicious consequence. The court said, in ordering a decree granting an injunction, that the allegations of the complaint were too general and indefinite to authorize the interference of a court of equity. Facts and circumstances should have been stated distinctly, from which it could be seen plainly that if further interments on these grounds are not prevented there would be a diminution of the complainant's enjoyment of his dwelling, and, at least, probable injury to the health of his family. It is not enough to simply allege that such consequences will result. *Adams vs. Michael*, 38 Maryland, 128; *Begein vs. City of Anderson*, 28 Indiana, 79; *Kingsbury vs. Flowers*, Supreme Court of Alabama, May, 1881. H. E.

Promissory Note. — Of Corporation.

To bind a corporation by a promissory note it must appear in the body of the note that the corporation itself is to be bound thereby by the officers thereof. The proper corporate name must be used. The mere signatures of its officers with the designation of their official positions will not make the note a corporation note; it will then be only their personal obligation. *New Market Savings Bank vs. Gillet*, Supreme Court of Illinois, September 26, 1881. H. E.

Contracts. — Delivery in Instalments. — Repudiation. — Damages.

A furnace company made a contract with A for 36,621 tons of Connellsville coke at \$1.20, which was to be delivered during the year 1880, in a stated daily quantity, but after delivering 3,765 tons, A gave the company notice that he would not carry out his agreement. The company thereupon entered into a contract with B for the same coke for the remainder of the year at \$4.00 a ton, and then sued A for the difference, \$2.80 per ton, as damages for the breach of the contract. The company recovered that amount below, but on the appeal the court decided that it could not recover the difference between the contract prices of \$1.20 and \$4.00; that the damages were to be fixed by the differences between the contract price and the daily prices for this coke, as the coke was to be delivered in a daily amount, and the breach therefore was the failure to make the delivery in the daily instalments. *Missouri Furnace Co. vs. Cochran*. United States Circuit Court, W. D. of Pennsylvania, August 26, 1881. H. E.

Defence of Property. — Limit of Right.

Every person has a lawful right to defend his person or property, not for the purpose of redressing an injury already perpetrated, but purely on the principle of prevention in the present and for the future. Yet this right, valuable and important as it is, must be commensurate with and strictly limited to the existing necessity. The exercise of it beyond this constitutes the party a trespasser. *Cooley on Torts*, 50; *Walker's American Law*, 7th ed., 217; *Thompson vs. State*. Supreme Court of Alabama, May, 1881. H. E.

Right of Way. — Convenience. — Impassability of Road.

The impassability of a road gives a party no right to an easement. It may confer a personal temporary right, which he has in common with the travelling public, to pass over the land of another where an established road is impassable; but that is not a right which is incident or appurtenant to his estate. A right of way does not originate in mere convenience. It must spring from an express grant, or from an implied reservation, or from a user for a length of time sufficient to create a prescription, or a bar under the statute of limitations, either of which is presumptive evidence of a grant. *Carey vs. Rae*. Supreme Court of California, August 23, 1881. H. E.

Sale. — Payment to "Travelling Salesman."

A "travelling salesman" sold certain goods to A, and one of the terms of the contract was that the purchaser should pay A when he came around on his next trip, in about three months. A represented that he was a member of the firm. A bill was sent with the goods, on which there was printed in an obscure place, "payable at office"; no letter was written to the purchaser. Payment was made to A, and the principals denied his authority to collect for them, and brought suit for the price of the goods. The defendant had judgment and plaintiffs appealed. The court affirmed the judgment, and said: The defendant had a right to rely upon A's making a truthful report of the terms of sale, and to suppose that the goods were sent pursuant to the contract as made. He was not the buyer's agent, and the principals having taken the benefit of their agent's contract, which was one within his apparent authority, cannot be allowed to avoid any of its terms for the reason that he did not disclose them fully. It is just that they should suffer for his dishonesty in this respect, rather than the defendant. It is further insisted by the plaintiffs' counsel that the defendant was charged with notice, that he must pay the plaintiffs and not A by reason of the words "payable at office," written on the bill rendered, when the last invoice was sent. The defendant did not see those words. Therefore, he had no notice in fact. Should he be held chargeable with notice? The plaintiffs sent that bill without any letter, when the goods were sent, which was three months before the time of payment agreed upon. The defendant examined it as to items charged, and amount of same, and filed it away — never noticing those words; and when A came around about the time he was to come for the pay by the terms of the sale, he paid him the balance due — supposing all the while that he was, as he claimed to be, a member of the firm. In view of the obscure manner in which these words were written on the bill-head, and of the circumstances under which, and the purposes for which, in other respects, that bill was sent, and of the terms of the contract as to whom and when and where payment was to be made, we do not think the defendant was guilty of such negligence in not seeing those words as to be chargeable with notice which he did not in fact have. It was a matter which the plaintiffs might easily have made plain. They saw fit to undertake to give the notice in an obscure way, which was likely to be ineffectual. It turned out so, and they should bear the consequences. *Putnam vs. Moore*. Supreme Court of Vermont, February Term, 1881. H. E.

THE NEW YORK UNDERWRITERS AND THE ELECTRIC LIGHT.

THE origin of several recent fires in New York and elsewhere being attributed to the use of the electric light, the Board of Underwriters has been anxiously seeking a plan whereby the insurance interest would be in some degree protected against the new element of fire hazard. A week or so ago the matter was referred to a committee consisting of W. A. Anderson, G. W. Montgomery, L. Remsen Lane, William H. Ross, A. H. Walton, J. H. Langford, and John M. Whiton. This committee made a report, upon which the board has adopted a standard for electric-light wires, lamps, etc., subject to future conditions. The standard is divided into five conditions, and is substantially as follows:

First — Wires to have 50 per cent excess of conductivity above the amount calculated as necessary for the number of lights to be supplied by the wire.

Second — Wires to be thoroughly insulated and doubly coated with some approved material.

Third — All wires to be securely fastened by some approved non-conducting fastening, and to be placed at least 2½ inches for incandescent lights and 8 inches for arc lights from each other, and 8 inches from all other wires and from all metal or other conducting substances, and to be placed in a manner to be thoroughly and easily inspected by surveyors. When it becomes necessary to carry wires through partitions and floors they must be secured against contact with metal or other conducting substance in a manner approved by the board.

Fourth—All arc lights must be protected by glass globes inclosed at the bottom to effectually prevent sparks or particles of the carbon from falling from the lamps, and in show-windows, mills, and other places where there are materials of an inflammable nature, chimneys with spark arresters shall be placed at the top of the globe. Open lights are positively prohibited. The conducting frame-work of chandeliers must be insulated and covered the same as wires.

Fifth—Where electricity is conducted into a building (from sources other than the building in which it is used) a shut-off must be placed at the point of entrance to such building, and the supply turned off when the lights are not in use.

Applications for permission to use electric lights must be accompanied with a statement of the number and kind of lamps to be used, the estimate of some known electrician of the quantity of electricity required, and a sample of the wire (at least three feet in length) to be used, with, in addition, an electrician's certificate of the carrying capacity of the wire. It must also be stated in applications where the electricity is to be generated, whether the connection will have metallic or ground circuit, and, as far as possible, give full details of the manner in which it is proposed to equip the building. The board desires all applications for the permission referred to sent to William M. Randall, Secretary of the Committee on Police and Origin of Fires.

ENGLISH GOVERNMENT ARCHITECTS.

It is rumored that the Government authorities are again complaining of "those architects." Not of all of them, we hope we can say; but the chronic grievance has acquired such a consistency that we are always pretty certain to hear any renewed expression of dissatisfaction with one spoken of as a final want of confidence in all. It is time to consider whether this condition of things cannot be remedied. This misunderstanding is not of old date; indeed it is almost recent; and the question ought to be asked whether it is attributable to some temporary shortcoming in the profession which a little friendly explanation would put right, or to a permanent divergence of some kind which is incidental to the times.

In the present instance we do not care to inquire what new offence has been given or taken; the former history of the quarrel between the Office of Works and the representative men of the architectural profession is in itself sufficient to indicate what is likely to be amiss. This quarrel began, we need not say, with Sir Charles Barry. Before his time the great public buildings were committed, as matter of course, to the charge of certain leading practitioners, who were in fact the standing architects of the Crown. It was in this way that Sir Robert Smirke was sent for by the Government of Sir Robert Peel to take quietly in hand the reconstruction of the Houses of Parliament. The proceeding was one of mere routine; no anxiety entered into any one's mind; Sir Robert received his instructions just as he would have done in the case of a new mansion for my Lord Broadacres, whose old mansion of Broadacres Park had been unexpectedly burnt down; and, if public opinion had not been undergoing at the moment a very remarkable change, the respectable and important architect of the Post Office in St. Martin's le Grand and the British Museum in Great Russell Street would have gone to work in the old placid way to rear a third and still greater great edifice on the banks of the Thames. But the time had come for regarding such matters of great-edifice-building in a new light. When the competition which was eventually set on foot had resulted in the triumph of Mr. Barry, then a man under forty years of age, Mr. Wilkins, R. A., the respectable and important author of the National Gallery, is said to have observed with his accustomed dignity, "Who is this Mr. Barry? I don't know him. A person, I am told, of no education." Competition, in short, had asserted its right; not by accident, not by the caprice of any individual magnate, not even by the authority of magnates at all, or so much as might be wished by their consent; but under the encouragement of a certain feeling which was arising in the general mind of the public. It is easy to see now, when similar liberties are being taken with all kinds of authorities all over the world, and with more and more decision every day, that it was the old serene state of things that had begun to come to an end, not by any means in architecture alone, but in everything social and governmental that the cry for reform could lay its tongue to. So Sir Robert Smirke, R. A., and all his antiquated and privileged order, Mr. Wilkins, R. A., included, had to go to the wall straightway, and young Mr. Competition Barry, as the representative of a new order, had to be accepted in their stead. Before very long it was Messrs. Scott and Moffatt, and Messrs. Wyatt and Brandon, who were to represent much more distastefully to many worthy people the riper fruits of the new movement; but for the present it was quite shocking enough that time-honored institutions should be so rudely jarred by the introduction of a much more brilliant "person of no education" than these, the very thought of whose unmannerly plebeianism and total want of intellectual discipline no doubt set every tooth on edge at Whitehall. So thus the quarrel began, and indeed it is scarcely to be wondered at.

Some may think that, if Barry had been a man of less decision of character, the obstructive force of the old *régime* would have ousted him to a certainty after all; but we do not so read history nowadays. He simply represented the new public mind, and that was an influence which the old *régime* could not oust by any means. But, to do it justice, it tried its best, and worried the new-comer, for example,

into a money bargain so illiberal as to be now scarcely intelligible. That is to say, Mr. Barry was forced to contract with "the Woods and Forests," that his remuneration should be limited to 25,000*l.*, no matter what the outlay should run up to, and, if we remember rightly, that this sum should include the surveyor's charges for measuring up the deviations. As regards this last point, it may be well for some of our high-art architects of the modern Institute, who regard surveying as a kind of dirty work that must not be touched, to be told in passing that the great architect of the Houses of Parliament was as competent as any one need be to measure and value whatever work he might have in his hands; but at any rate so stood the bargain, and what we invite the reader to see in it is this—that the Government of that day expected of the stranger who had been so unceremoniously thrust upon them to do his work in a thoroughly commercial way, and with a sense of direct personal responsibility resting upon him for every penny of finance. Whether in the end Sir Charles Barry at sixty years of age had come quite up to their expectations of him at forty, we do not say; but no doubt, practical man as he was, he had by that time so far departed from the ancient traditions of the Whitehall authorities—the profane reader may possibly prefer to say, less euphemistically, the red tape of the Treasury—that the official mind stood aghast; and we may simply close our narrative of the incident by remarking that the official mind has never to this day recovered itself.

Let it be observed that we attribute the quarrel, not to any casual incompatibility of temperament, but to a change in public opinion; it was part, in fact, of the universal "Reform" movement of the age that the great architectural works of the State should be no longer smuggled into existence, however respectably, by private favorites, but be made the subject of open professional rivalry. And such an innovation as this, it is plain, could not possibly be affected with equanimity. In the course of time the somewhat straight-laced official mind within and the somewhat too elastic professional mind without, may no doubt come sufficiently into harmony, each yielding a little, or a good deal, to the other; but up to the present time it must be acknowledged that they have emphatically not so harmonized.

In the time of Mr. Edward Barry, as will be easily remembered, the quarrel came to an open rupture. Some will say it was the fault of that most unartistic of Ministers, Mr. Ayrton; but this also we take to be an error. Mr. Ayrton was again but the representative of public opinion, the rough-and-ready exponent of the rough-and-ready views of the House of Commons on the point of Mr. Barry's claim of inheritance upon the very principle which his father had overthrown. At any rate, reaction was tried. The new order of outside architects being found, as it was said, so difficult to deal with, the Government (failing signally to see where the reason actually lay) resolved to revert to the exploded system of private or internal administration in another form, and it was determined to act for the future through the instrumentality of the ordinary civil servants of the Crown in the building department. But this has been found possible only to a certain extent, and, with the exception of the addition to the Post Office and some provincial works, the large edifices of the State have still had to be committed to the chances of outside architectural agency.

It is no secret that Sir Gilbert Scott made a lamentable failure of the Home Office; and it is understood that that case went a long way to revive, and indeed to intensify, the feeling of distrust towards the architectural profession as a body. But here, as we venture to think, the fault lay no longer in the system of employment, but in the very peculiar mode of carrying on business which characterized the office of the architect. By what excess of good luck he could have so long conducted without disaster—or profess to conduct—a business so very much beyond the powers of his personal control, is still a mystery, but, if no one else had found out the weakness of his administration before, the Whitehall officials very quickly did when they got into his building, and very effectually expressed their opinion. But even in the case of the Home and Colonial Offices it is by no means certain that all the defects are to be attributed to the architect. In the planning there was much which had been prescribed by the officials themselves, and the evidence before a Parliamentary Committee suggested that the ineffective drainage was due to the negligence of the parish authorities.

To say no more of personalities, however, what is wanted, as we believe, in an outside Government architect under the system of the day is simply this—that he shall be a practical man. The artistic or archæologic afflatus may bear him triumphantly over a great many difficulties with such clients as clergymen, or country gentlemen whose wives are of the Queen Anne taste, but in the eyes of Treasury accountants it makes of him nothing but a wind-bag. He must in the first place know his business, in the strictest and most sordid commercial sense thoroughly; in the second place he must do it thoroughly, and personally. To a man thus qualified the requisite amount of consideration and forbearance will, beyond doubt, be cheerfully accorded by all officials; but to one who seems to them to be above his business, we can quite understand they would show little mercy, and we are bound to say he would deserve no more. There are two things which supreme authority can never tolerate in professional men—sentimental incapacity, and what for want of a better phrase we must call sentimental bumptiousness. Scientific eccentricity and scientific importance are very different weaknesses, which it can scarcely be said that English architects for the moment cultivate. — *The Architect.*

SANITATION IN ANCIENT ROME.

ALTHOUGH there were in ancient Rome no sanitary inspectors, in our modern sense, the *Ædiles* and *Censors* were charged with sanitary functions. It was the Emperor Augustus who first appointed inspectors of water-supply and superintendents of sewers, who exercised a sort of police supervision also over the river of the city, the Tiber. The city of Rome was early provided with a system of sewers, which at first, at the time of King Tarquinius Priscus, only had the object of draining some parts (amongst them the Forum) of the city, but which later likewise served the purpose of modern sewers, that of receiving and carrying away all descriptions of refuse. Under Tarquinius Superbus this system of sewerage was completed by the construction of the Cloaca Maxima (the largest sewer), leading to the Tiber, which still exists, and, whatever be the difference of opinion as to the provision of large sewers, may well rank with the best sewers of our time, so far as regards excellence of construction. For five centuries this system of sewerage was carefully preserved, extended, repaired and cleaned. But with the decline of the city this great work was permitted to fall in ruins, and only the principal sewer remained, which has been preserved down to our day, but choked up by mud, and at its end towards the Tiber filled up two-thirds its height.

The second fundamental condition for the preservation of the public health, that of providing the city with an abundant supply of good water, was done full justice to in ancient Rome. When the water in the Tiber, in consequence of its contamination by the population inhabiting its banks, could no longer be used for drinking, the Censor Appius Claudius constructed an aqueduct, for the greater part underground, from Præneste to Rome, which was called after him the Aqua Appia. Fifty years later this was supplemented by a second; and, after other seventy years (144 B. C.), by a third aqueduct, the Aqua Marcia. The latter brought the water from the Sabine Mountains, was thirty-two miles long, and supplied excellent water, which for centuries refreshed thirsty Romans, and which was originally constructed at a cost of 2,000,000*l.*, an enormous sum at that time. It was in ruins for many years, but was restored ten years ago, and has since then furnished Rome with its water-supply. Numerous other aqueducts, some of them very magnificent and gigantic, were built. Towards the close of the Empire, nineteen aqueducts, fourteen larger and five smaller ones, conducted the water to the metropolis. At the end of the first century after Christ, ten aqueducts supplied a daily quantity of 33,000,000 imperial gallons of water to Rome. As four-eighths of this volume were used by the *Thermæ*, or public baths, and one-eighth by the imperial palaces, there remained yet three-eighths for the use of private consumers, the quantity supplied to the two million inhabitants of the metropolis being sixty-two imperial gallons of water per head per day for domestic use. The water was conducted through the city in leaden or earthenware pipes. The aqueducts were fully protected by law. No buildings could be erected over them, no trees planted near them. Heavy punishment was inflicted on persons polluting the water or damaging the aqueducts or conduits. With the decline of Rome, those splendid institutions also fell into ruins; but they were partly destroyed by hostile armies or besieging forces, in order to compel the Romans to surrender their city.

Public baths reached a state of perfection in Rome such as has not been attained by any other nation. At first, of course, only the Tiber formed a natural basin for ablutions; later artificial public baths were constructed, and under the emperors the *Thermæ* were introduced. Those magnificent bathing establishments not only furnished cold, warm and hot baths, but they supplied also shampooing baths and cold ablutions; anointment of the body was likewise practised there. Those institutions still serve in many cases as patterns for baths erected now for our well-to-do classes, but which at that time existed in incredibly large numbers, the use of them being, besides, free to all comers. But those establishments did not bring with them the unmitigated advantages it was probably at first thought they would furnish; they degenerated, and became the abodes of idleness and hotbeds of vice.

There was no want of regulations in ancient Rome as to height of houses and width of streets. When, after the great fire, under Nero, the city had to be rebuilt, regulations of this description had to be strictly followed. There was likewise an abundance of public places of amusement, walks and public gardens. The government also looked to the supply of provisions, its solicitude at first being merely confined to taking care that a sufficient quantity of corn was continually stored in Rome. Many descriptions of food, — for instance, meat, — were also inspected. Of the stored grain, large quantities were given away to the poor since the time of Cæsar; during the reign of Pompey very nearly 1,000,000*l.* was spent for this purpose annually.

There existed many charitable institutions, although there were few of them according to our notions. The Emperor Nerva sank large funds, the interest of which was applied in supporting the children of poor parents and orphans. Trajan placed nearly 5,000 children on the list of recipients of corn. Antoninus Pius founded an institution for poor girls. Hospitals did not exist very early; they sprang up under the influence of Christianity, their number amounting in the ninth century to over twenty. Nothing was done in the direction of public care for the poor until the middle of the second century after Christ. Antoninus Pius appointed communal physicians, who were free from taxes, but who were under the obligation of ren-

dering certain services to the state and the commune, and who had, among other things, to treat gratuitously all the poor of their respective districts. Alexandrus Severus was the first to pay them a salary, and gave them the name of *Archiatři populares*.

The ancient Romans did not permit the industrial classes to poison the air for them. Fullers, who used urine in a state of putrefaction in the manufacture of cloth, had to carry on their calling outside the city gates or in its remote quarters. Roman law-makers had a watchful eye on the disposal of the dead. At first deceased persons were interred inside the city; later those interments were prohibited, and a public cemetery was laid out outside its walls. Funeral funds existed very early in Rome, which paid, as in our time, a fixed sum at the death of a member if the latter had subscribed regularly. Cremation was introduced in the time of the Decemvirs, at first only in the case of individuals, but later, after Sulla, cremation became more common. At one time this was the general mode of disposing of the dead, but committal to the soil was never entirely abandoned, and with the spread of Christianity became again more general. But in the beginning of the second, during the third and fourth, and the beginning of the fifth centuries, the Christians used the subterranean cemeteries, the so-called Catacombs, in which the bodies were placed in hollows cut in the walls of the passages driven through the tuffaceous limestone underlying Rome, the cavities being afterwards closed by marble slabs, on which the names of the deceased were engraved. In time these catacombs became more and more complicated.

From the above it will be seen that the institutions and hygienic regulations of the ancient metropolis were very remarkable, and in some respects at least much more perfect than at the present day in many cities and towns the inhabitants of which think a great deal of their sanitary arrangements. — *The Builder*.

THE LAW OF COPYRIGHT.

A PAPER on "The Condition of Copyright as regards Music, Painting, Sculpture, and the Fine Arts generally, considered in relation to the Bill introduced into the House of Commons," by Mr. Basil Field, was read in the Art Section of the Social Science Congress at Dublin.

The writer said he neither pretended to defend nor criticise in detail the clauses relating to the fine arts contained in the Bill of 1881, his object being merely to invite discussion and elicit opinion which may aid to improve the Bill and strengthen the hands of supporters before it was again submitted to Parliament. Under the fine arts copyright of 1862 the painters, acting on the assumption that they would be no less liberally treated than the sculptors, sought the aid of the Society of Arts, and prepared a Bill which was introduced by the Attorney-General as a Government measure. It declared that the copyright in the design of a work of graphic art should be vested in the author and his representatives for the term of his life and seven years, and that such copyright could only be assigned by a written agreement. Unfortunately for the painters, photography was included in the Bill and treated on the same footing as graphic art. This gave rise to great opposition when the Bill was considered in the House of Commons. It was thought that if the copyright remained the property of the artist after he had sold his picture, the right of reproducing a photographic portrait would remain with the photographer. It was suggested that if the artist retained the copyright after parting with his painting he might, in the case of an exceptionally popular picture, repeat it many times, and thereby depreciate the value of the original by reason of its being no longer unique. These difficulties led to the adoption of hastily considered amendments, inconsistent with each other, and with the main object of the Bill. The provisions of the Act may be thus summarized: — The author of any original painting, drawing, or photograph has the sole right of copying, engraving, reproducing, and multiplying such painting or drawing, and the design thereof, by any means and of any size, for the term of his life and seven years after his death. But if the painting is painted on commission, the commissioner has the copyright. It is then provided that on the first sale of such work of art there must be a written agreement, signed by the purchaser, reserving the copyright to the artist, or signed by the artist or his agent transferring the copyright to the purchaser; and if no such agreement be made the copyright ceases to exist. This is the law at the present time, and it is admitted on all hands to be unsatisfactory. It will be seen that not only the reservation but the preservation of copyright in all but commissioned works is thus made dependent upon the execution of a written contract at or before the first sale. The struggling artist whose means of subsistence too often depend upon the ready sale of his picture, dares not run the risk of jeopardizing the sale of his work for the sake of retaining a copyright, the value of which is purely speculative, and it seems that even painters of assured position feel such difficulty in broaching the subject that they prefer to sell their works through dealers, from whom they can easily get the necessary contract for reserving their copyright. The framers of the Bill of 1881 have been most careful that it should be in no way a one-sided measure. While following the general principle upon which enactments have been framed dealing with copyright in other branches of art, and giving the painter his copyright until he chooses to part with it, they have, at the same time, protected the purchaser against *replicas*, and the owner of a commissioned portrait against its repetition in any form of art. They have also pro-

vided that the owner of a work should have concurrent right with the painter or other owner of copyright to institute proceedings for infringement. In the same way, when dealing with musical compositions and dramatic works, though the measure of damages for the infringement of performing rights has been increased, a provision is inserted that only one sum shall be recovered in respect of the same performance, thus practically limiting proceedings to an action against the responsible manager—instead of allowing the owner of the right to recover a sum of forty shillings from each and every of his subordinate actors, musicians, scene-painters, and carpenters, as by existing law he is empowered to do. The promoters of the Bill have, since it was drawn, come to the conclusion that the summary powers for the enforcement of these penalties should not apply to musical compositions, as is now the case, but only to dramatic works. Another suggestion intended to meet the difficulty was that an exception should be made in cases where the performance was given for the benefit of a charitable object, and not for private gain. This was, it need hardly be said, at once rejected. The promoters of the Bill consider that it will be best to confine the application of this clause to dramatic work, and to leave infringements of musical performing right to be dealt with by action for damages. It is impossible in the limits of this paper to touch on many points of interest. The question of painters' copyright has been dwelt upon at some length, because it is the most important point upon which the framers of this Bill have differed in opinion from the majority of the Royal Commissioners. On most other points the spirit, if not the strict letter, of their recommendation has been followed.

Mr. Hastings, M. P. (Chairman), said Mr. Basil Field was solicitor to the Royal Academy of Arts in London, and it was well known that he represented the views of the Academy from its president to its youngest members. He was aware that the Royal Commission appointed to inquire into this subject was adverse to the main proposition in the Bill—that copyright should vest in the artist even after the sale of his works, unless that on the occasion of the sale he conceded his rights; but the contention of the artists was that their special interests were commensurate with the general servants of the public, and there was this very remarkable fact in favor of that position—that not only the Royal Academy of Art and the Royal Society of Painters in Water Colors, but also the Printsellers' Association, which represented the exactly opposite interest, had petitioned in favor of the Bill.

The Hon. Dudley Field, of New York, said that in America artists also felt the want of protection in this special direction. Personally, he thought authors, sculptors, and painters should have their creations secured to them even with greater security and strictness than any other description of property.

Sir Thomas Jones, P. R. H. A., said the Irish academies were unanimously in favor of the provisions of the Bill of 1881. As an illustration of the present condition of affairs, and showing the necessity of proceeding in some manner for the protection of the artist, he mentioned an incident of his own experience. When quite young at his profession he made a sketch with the view of painting a large picture from it for their exhibition. A friend visiting his studio fancied the sketch, and he (Sir Thomas) said it would be of no use to him after he had finished his picture, and would let him have it for eight guineas. Pressure of business and private affairs prevented him going through with the oil painting, and he, having highly finished the sketch, sent it into the exhibition. On the opening day he was offered fifty guineas for it, and wrote, detailing the circumstances in full, to his friend, who replied stating that the picture was his, and enclosing a check for eight guineas. Some legal friends of his (Sir Thomas Jones) felt so strongly about the matter that they advised him to resist the claim, and promised to pull him through any litigation; but being a young man and a beginner, he did not think this advisable. A short time afterwards a London publisher also fancied the sketch, and the result was, that having been brought into communication with its then owner, that gentleman, his friend, made, first, eighty guineas for a copy which was made and sold in London, and £2,000 for the engraving of a portion of the picture.

Sir Robert P. Stewart spoke of the injury to musical art by the present state of copyright as applicable to it; and the Chairman thought there was a great chance of the Bill passing next session. It had the support of Mr. Gladstone, by whose direction the Attorney-General had given assistance to the promoters.

CALKING WAREHOUSE FLOORS.

NOVEMBER, 1881.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—My speciality as a constructor lies in ships, and I find myself somewhat out of place in addressing you on the subject of warehouses. I venture to do so, however, in the hope of having the suggestions I offer duly considered and their objections pointed out.

We hear daily of fires in warehouses where much of the damage is done by water. A fire in upper stories is sometimes extinguished without much damage to the building, but with a good deal to goods in the lower stories. My suggestion is to have all the floors laid like the decks of ships and calked; at the outer edges of the floors I would have water-tight metallic gutters or waterways, with scuppers or openings large enough to carry off the water thrown in by the engines or let in by standing pipes. The idea being to carry off the water

through pipes leading down between the walls, which should be double, or so contrived as to admit of placing pipes or conductors to carry the surplus water into a large cistern and also into the street so as not to be wasted; in these days when a scarcity of water is feared, and much property may be endangered in case of fire for want of a sufficient supply, it is well to save the water and use it over again if necessary; this carries me to another idea I have long entertained, and that is, to have in all seaport cities large tanks to receive salt water, to be kept full by the flow of the tides or by steam pumps.

The water-tight floors will probably cost more than the common floors, but when we consider the immense amount of money expended on outside and inside ornamentation the difference of cost as compared to this and the saving of property will be insignificant.

I have not so far matured my plan as to be ready to go into minute details; I make the suggestion for what it may be worth, and I invite discussion. One objection will be made, that common pine plank will shrink and the calking will not be effective. This applies equally to ship decks. Unless the planking is well seasoned and well put together it may require occasional recalking; perhaps marine glue to fill the seams may be better than common pitch, as it firmly binds the planks together and is much more elastic than pitch. Against the extra cost will be the fact that warehouses so constructed will be insured at a cheaper rate and probably let at a better rent than those built in the ordinary manner.

The only serious objection that I see, lies in the stairways, elevator spaces, hatches, etc. Most, if not all of these can be arranged by coamings and water-tight hatch covers and the like, so as generally to prevent water going where it ought not to go; but people may be driven away by smoke and fire, and not be able to close the apertures in time. The apertures should be so contrived as always to be closed when the warehouse is closed at night. Another possible objection lies in regard to the plastering which might have to be made more solid than usual. I assume, however, that plastering should be put directly on the wall without the usual furring off with highly inflammable wood.

In conclusion I would suggest that if we make floors water-tight and have plugs at hand to stop the outlets, we may under certain circumstances let on to a floor, above one on fire, a certain quantity of water, and so keep back the fiery element or perhaps prevent its going into the story over it.

I am, very faithfully, your servant, R. B. FORBES.

EFFECT OF AMERICAN CEMENTS ON WROUGHT-IRON.

WASHINGTON, Nov. 8, 1881.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

I NOW, November, 1881, find a welded iron water-pipe, laid in a cement concrete floor in the year 1869, honey-combed and leaky. The plumbers tell me that it is their experience that American cements corrode iron,—uncoated iron,—more rapidly than that protected by a coating of zinc,—galvanized iron as it is commonly styled.

This is of importance. Fire-proof buildings of great cost are built by the United States and by merchants, in which all the floors are of rolled I-beams supporting brick arches laid in cement mortar, and joints of cement are laid in contact with the iron beams, whose vertical webs are not very much thicker in some cases than are the welded iron pipes used in domestic water supply.

Such floors seem, therefore, to have in them, if cement corrodes wrought-iron, the means of ultimate decay and destruction.

Wrought-iron built into a wall laid in lime mortar appears to be indestructible. I have myself tried in vain to pull out from a brick wall in a hippodrome in Rome, built under the Emperors, a wrought-iron clamp whose stem was not larger than $\frac{3}{4}$ x $\frac{1}{2}$ inch, of which one end was exposed by the crumbling of the brick wall. It was perfectly clean, sharp in the edges, free from all rust or corrosion, and very soft and tough. That small bar of iron must have been buried in that brick-work for 1,500 years.

A leaden drain-pipe, $1\frac{1}{2}$ inches diameter, has lately been taken up in my basement, of which for over twelve inches in length the rats had cut away one-half. The marks of their teeth upon the cut edges showed unmistakably the authors of the mischief. M. C. MEIGS.

AIR-SPACE.

149 BROADWAY, NEW YORK, November 7, 1881.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Sirs,—Will you be kind enough to inform me whether a brick wall built with a four-inch air-space is practically any warmer than one that is built with two inches only?

Yours truly, E. K. R.

[We have never heard any comparison made, but can hardly imagine that there would be any difference in this respect, other things being equal.—EDS. AMERICAN ARCHITECT.]

QUANTITY SURVEYING.

Nov. 16, 1881.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Having previously some experience in the architectural line, I would suggest in reply to "Student," page 235, *American Architect* for November 12, 1881, that he procure "Waters's Adjust-

ment of Fire Losses on Buildings" as suggestive as to labor, prices, and quantities of recent date, time of labor being given so that different rates per day may be used. Its cost in book form is \$2.00 or \$3.00 according to binding. If needed for the scrap-book, it has appeared in *The Spectator*, an Insurance Journal, in 1880, I think.

B.

DANGEROUS HALF-TIMBERED WORK.

TARRYTOWN, November 15, 1881.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

MAY I submit to you an account of a piece of work done in the house we are living in, built last year by New York architects.

The gables are composed of a 4-inch brick wall, held in place by perpendicular and cross-studding, built according to architects' plans. Walls of the house from foundation to garret floor, heavy stone, nowhere less than 2 feet thick. The bricks are prevented from falling out by rabbet or stud, but nothing prevents their falling in. During a high wind this morning a whole compartment of brick about 4 feet square fell in on garret floor with a great crash. If the children (for whom the garret was fitted up as a play-room) had been there, I do not see how loss of life could have been avoided.

Now, when architects belong to the "Guild of Architects," is the position one of honor only, or is there also responsibility? In a criminally careless case like this, should not censure be expressed? I am told that this is not the first case of accident from these American imitations of English open-timbered gables.

May I ask you how I can brace these gables from inside? Would timbers fastened to the rafters do? I think the studs between the rafters seem too slight to depend on alone: they are 4 inches square and hold the bricks only on the outside.

Very truly, A THREE YEARS SUBSCRIBER.

P. S. If you happen to come to Tarrytown, we should be happy to show you our house, which I have principally planned myself, and which is very satisfactory, except these "architects' blunders." Omitting to allow windows to slide up more than 18 inches was another "blunder" which we were able to set right, except in case of some arched heads.

[The proper method of preventing the brick-filling from blowing in must depend somewhat on the size of the gables. If not too large, 1½ inch boards nailed closely over the inside would give protection enough, we should say, for ordinary cases. If, however, the studs are so long as to oppose of themselves too feeble a resistance, which is a matter easily capable of calculation by the usual rules for wind-pressure and transverse strength of timber, they might be doubled, outside of the lining board, or braced from the rafters, according to the position of the surrounding work, and various other circumstances about which a judgment could only be formed by actual inspection. Our correspondent is doubtless right in considering that the architects were culpably careless in leaving a construction of this kind so insecure, but we do not find the names of either of the gentlemen on the membership lists of any professional association with which we are acquainted, and therefore, although this is no evidence against their capacity or responsibility, we cannot undertake to say what rules of conduct they would consider applicable to them. — Eds. AMERICAN ARCHITECT.]

THE VAULT OF THE ALBANY CAPITAL.

RICHMOND, VA., November 14, 1881.

TO THE EDITORS OF THE AMERICAN ARCHITECT:

Dear Sirs, — In answer to the correspondence of Mr. Leopold Eidlitz in No. 307 of your paper, concerning the vault of the Albany Capitol, I have to say that my representation is correct, being based upon the detail drawing left at the time to my disposition by Mr. Eidlitz, who also told me the weight. An examination on the spot by a commission would clear up the matter. Sure it is, that the final result does not deviate from my calculations. I even go so far as to assert, that every vault, if large enough, constructed according to the old principle, resulting in the variance of the line of pressure from the line of arch, is in a thoroughly bad statical condition. More in regard to this object will be found in the continuation of my article.

Yours truly,

H. W. FABIAN.

NOTES AND CLIPPINGS.

HOUSES IN MASSACHUSETTS.—Mr. Henry B. Pierce, Secretary of State, reports that the total number of dwelling-houses in Massachusetts is 280,563.

THE SANITARY CONDITION OF AMERICAN CITIES.—It is said that the six healthiest cities in the United States should be rated in the order following: Knoxville, New Haven, Portland, San Francisco, Cleveland, and Lawrence. The unhealthiest are Charleston, Memphis, Lynn, New York, and St. Louis. St. Petersburg is the unhealthiest city in the world, and is followed by Malaga, Alexandria, Warsaw, and Budapest.

THE TEMPERATURE OF AIR BELOW THE GROUND.—At a recent meeting of the Paris Academy of Science, a memoir on the temperature of the air at the surface of the ground and down to thirty-six metres depth, also the temperature of two pieces of ground, the one bare, the other covered with grass, during 1880, and of the penetration of frost into these, was read by M. Becquerel. Amongst other things the propagation of frost is shown to be slower in grassy ground than in bare ground. In the latter the rate increases very slightly with the depth, the propagation being very regular. In grassy ground the increase is very notable, and with increasing depth the rate tends to come near that in bare ground. Each layer of ground is subject to two caloric effects; one due to variations of external temperature; the other to the action of deep layers which tend to give a constant temperature.

EFFECTS OF LIGHTNING ON TREES NEAR TELEGRAPH-WIRES.—Some instructive facts have been brought to light by M. Montigny, in a recent examination of poplars bordering part of a road in Belgium, between Rochefort and Dinant. The part in question is some 4,600 metres in length, and runs westward; it is level for some distance, then rises gradually to a height of 61 metres, through a wood, traverses a wooden plateau 200 metres in extent, and then descends, still through wood, to a plain. A telegraph-wire runs near the row of Virginia poplars on the north side, and it appears that, out of nearly 500 poplars forming this row, 81, or a sixth, have been struck by lightning. Hardly any have been struck in the other row. The trunks have been mostly struck on their south side and nearly opposite the wire. Comparing different portions of the road, it is found that in the horizontal part none of the (129) trees show injury from lightning, or, at most, only one (a doubtful case), but as the road rises through the wood the cases quickly multiply, and on the wooded plateau as many as 9 out of 14 trees, or 64 per cent, have been struck. On the slopes the proportion is 25 per cent. M. Montigny distinguishes three kinds of injuries: 1. The bark torn and detached on a limited part of the trunk. 2. A furrow, straight, or (rarely) spiral, made on the tree, from near the wire, down to the ground. 3. A peculiar oval wound, longer axis vertical, and lips colored light-brown. Now, the furrows, which are probably due to the most violent discharges, are relatively more frequent on the plateau and on the western slope, which the storms usually reach first. M. Montigny is of opinion that the lightning, while provoked by the wire, does not strike this first, then the tree, but strikes the tree directly. His conception of the process is to the following effect: Suppose a thunder-cloud charged with positive electricity. A long telegraph-wire under it, though insulated, may acquire as great negative tension in the nearest part as if in direct communication with the ground, and the tension is greater the nearer to the cloud. While the inductive influence affects the wire most, near objects, such as trees, share in the influence according to their conducting power. The lightning, attracted in the direction of the wire, yet does not strike this, the insulating cups presenting an obstacle to its prompt and rapid escape. It finds a better conductor to earth in a neighboring poplar wet with rain. From the facts indicated it results that, of two similar houses, one built on a plain, the other in a wood, and having a telegraph-wire fixed to them, the latter is the more liable to injury by lightning, and the danger is greater if the wood inclosing the house be upon an eminence. — *Iron Age*.

ELECTRICITY AS AN AGENT FOR EXTINGUISHING FIRES.—The Electrical Congress and Exhibition at Paris has developed several things of interest, both to fire and life insurance managers in the way of death-dealing and fire-raising qualities, all of which has been so fully dealt with in the cablegrams to the daily press that it will be unnecessary to repeat it. It seems however, now, that in the latter case the current is literally being turned against itself, for certain experiments lately made at St. Petersburg have in view its use as a fire protection. It is, by these experiments, proposed to turn the increased multiplication of wires for the electric light, etc., to practical advantage. To illustrate the matter, the wires used for illuminating a café were continued to the steamboat landing on the Neva, and the current made to move a dynamo-electric machine with which two pumps were worked. One of these was for raising water into a cistern for fire purposes. In ten seconds it could fill a cistern of 50 hectolitres, or 800 to 1800 hectolitres of water in an hour. The other was a force-pump giving from 400 to 800 hectolitres of water per hour in a powerful jet. Although the machines were worked to their maximum, there was an evident gain. An apparatus contained in a case which measured only about one cubic metre furnished the same amount of water as the strongest pump. The movement is most simple, as by turning the handle of the communicator the circuit is closed for the actual current. With this apparatus there could be a central generation of electricity, furnishing a current for lighting purposes, and facilities given in case of fire to easily connect the moveable machines with the conducting current, or in the buildings which are lighted the current might still more readily be utilized. As the experiments were apparently quite successful, according to reports in the city papers, the firemen will have to look to their laurels. — *The Spectator*.

THE ELECTRIC LIGHT AS AN ACOUSTIC AID.—It is said that a marked improvement has been noticed in the acoustic properties of the Grand Opera House, Paris, since the introduction of the electric light. A layer of heated gases acts as a screen for sound, hence the volumes of hot fumes arising from the old gas foot-lights obstructed and marred, to some extent, the voices of the singers. With the electric light, inclosed in air-tight bulbs, no fumes can be emitted, and very little heat is given off. Hence it benefits the ear as well as the eye.

LUNACY AMONGST ARCHITECTS.—We suppose few will deny that the work of the architect is arduous and of a nature involving great mental strain. We have been examining some lunacy statistics recently, and find the results more favorable than we anticipated, knowing the severity of the mental toil to which the architect is in general subjected. It appears that during last year, out of 5,234 civil engineers 24 were admitted into asylums, and 16 painters and sculptors out of 5,804. There were, however, only 25 patients among builders, surveyors, and architects, although there are 32,000 at work in England. Even clergymen of the Established Church show a larger percentage, as among 20,964 there were 35 lunatics. — *The Building World*.

WATER GLASS.—The *Génie Civil*, in an article on water glass, some time ago, gave the following proportions used by English manufacturers for producing this article by fusion in crucibles: Pure quartz, 45 parts; powdered alkaline carbonate, 23 parts; charcoal, 3 parts. Another recipe is: Quartz sand, 100 parts; caustic soda or potash, 48 parts; and charcoal powder, 5 parts. Or, washed quartz sand, 65 parts; anhydrous alkaline carbonate, 34 parts; and charcoal powder, 4 parts. The mixture is heated to redness, until entirely fused, and the contents are cast on tin plates for cooling, and finally crushed.

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.]

- 249,466. AUTOMATIC FIRE-EXTINGUISHER. — Frederick Grinnell, Providence, R. I.
 249,476. STEP-LADDER. — Joseph G. Moomy, Erie, Pa.
 249,477. WRENCH. — August Nelson, Kent, Ohio.
 249,500. EXTENSION-CHANDELIER. — John T. Bruen, Brooklyn, N. Y.
 249,502. APPARATUS FOR SUPERHEATING STEAM OR HEATING AIR. — Solomon N. Carvalho, New York, N. Y.
 249,508. TREESTYLE AND SCAFFOLD. — John M. Douns, Leavenworth, Kansas.
 249,538. RAIN-WATER FILTER. — Nathan H. Long, Muncie, Ind.
 249,539. EAVES-THROUGH HANGER. — Nathan H. Long, Muncie, Ind.
 249,547. COMPRESSIBLE CAST METAL PIPE. — Jno. A. Reed, New York, N. Y.
 249,549. LAVATORY-BASIN. — Charles E. Robinson, Brooklyn, N. Y.
 249,558. SEAT FOR THEATRES, ETC. — Edward F. Underhill, New York, N. Y.
 249,563. BENCH-DOG. — Charles P. Whitman, Athol, Mass.
 249,568. DOOR AND SASH CLAMP. — Atley W. Ale, Caro, Mich.
 249,579. SELF-CLOSING FAUCET. — James E. Boyle, Brooklyn, and Henry Huber, New York, N. Y.
 249,588. TOOL-HANDLE ATTACHMENT. — John L. Coleman, Jr., Watsborough, Va.
 249,594. PIPE-JOINT. — Oswald L. W. Dietz, Cincinnati, Ohio.
 249,601. COMMODE WASH-STAND. — Wm. T. Egbert, Morristown, N. J.
 249,604. ASH-CHUTE FOR BUILDINGS. — George A. Fisher, New York, N. Y.
 249,617. HEATING-STOVE. — Melville C. Hawley, St. Louis Mo.
 249,627. HINGE-FOR SCHOOL-FURNITURE. — Charles M. Hughes, Lima, Ohio.
 249,637. EDGE-PLANE. — Charles A. Kilpatrick, Athens, (Orent Creek P. O.), Pa.
 249,638. MITERING-MACHINE. — Theodore E. King, Westport, Conn.
 249,639. SAW-SET. — Emanuel Larson, South Pueblo, Colo.
 249,645. CONSTRUCTION OF BUILDINGS. — John B. Love, Philadelphia, Pa.
 249,654. SAND-CORD GUIDE. — Alexander Millar, Baltimore, Md.
 249,682. CANT-HOOK. — Albert Sanford, Oshkosh, Wis.
 249,697. WINDOW. — James Thompson, Baltimore, Md.
 249,722. BOILER-PEDESTAL. — George Beck, Eldred, N. Y.
 249,729. SAND-CORD CLAMP. — Christian J. Scheelky, Martinsburg, W. Va.
 9,934. LIGHTNING-ROD. (Reissue). — Henry W. Spang, Reading, Pa.

SUMMARY OF THE WEEK.

Baltimore.

- BUILDING PERMITS.**—Since our last report twenty-four permits have been issued, of which the following are the more important:
 Samuel Burns, one-sty brick building, s e cor. Fort Ave. and Goodman Alley, and two-sty brick building on Fort Ave., adjoining.
 W. A. Black, three-sty brick building, Carey St., 142' n of Lanvale St.
 Catharine Fink, two-sty brick building, Upton St., bet. Lanvale and Townsend Sts.
 Henry Westphall, 4 two-sty brick b'ld'gs, Clark-ston St., s of Fort Ave.
 Estate of Jos. Tewes, two-sty brick building and two-sty brick store and dwell., Chapel St., bet. Lombard and Pratt Sts.
 M. D. Banks, five-sty brick warehouse, Frederick St., bet. Baltimore and Fayette Sts.
 Geo. W. Corup, two-sty brick shop, Ann St., s of Thames St.
 A. Weiskettel, three-sty brick building, 45' x 60', Aliceanna St., bet. Washington and Castle Sts.
 St. Paul M. E. Church, brick school-house, Raborg St., bet. Schroeder St. and Carrollton Ave., in rear of church building.
 E. W. Frou, three-sty brick building, No. 197½ Pennsylvania Ave., s of Dolphin St.
 Frederick Burger, 8 three-sty brick buildings, Lombard St., bet. Choptank St. and Duncan Alley.
 Mrs. Anne Beehage, two-sty brick building, No. 134 Montgomery St., bet. Johnson and Williams Sts.
STORES.—Mr. Wm. Ferguson, builder, is erecting for Mr. Alex. Reinau, 3 three-sty stores and dwells, on the n e cor. of Howard and Mulberry Sts. They will have an entire frontage of 50', depth, 82', be built of brick and stone, and cost about \$12,000; Mr. Charles L. Carson, architect.

Boston.

- BUILDING PERMITS.**—Wood. — Monadnock St., near Dudley St., for Mary E. Cowell, dwell., 24' 6" x 38', ell, 19' 6" x 20', two-sty.

Ashford St., near Linden St., for Royal Winters, 2 dwells., 22' 6" x 45', two-sty; W. B. Cameron, builder.

Boylston Ave., near Green St., for John Kelley, dwell., 26' x 32', two-sty.

Upton St., rear of, near Western Ave., for J. A. Whitten, drying-house, 12' x 200', five-sty; Wm. Tobey, builder.

Trull St., near Glen St., for Samuel B. Pierce, dwell., 30' x 38', two-sty; Wm. J. Jobling, builder.

Decatur St., near Border St., manufactory of furniture, 28' x 45', three-sty; Manson Bros., owners and builders.

Park St., near Washington St., for Wm. T. Carlton, dwell., 20' x 28', two-sty; Chas. Stinson & Co., builders.

Beacon St., near Brookline Ave., for Geo. J. Quinler, blacksmith-shop, 30' x 35'; J. D. Payne, builder.

Ashford St., near Linden St., for Isaac Pratt, Jr., dwell., 23' x 32', two-sty; Wm. B. Cameron, builder.

Terrace St., Nos. 12 and 14, for Wm. Goldsmith, 2 dwells., 20' x 40', three-sty; Samuel Rantin, builder.

Brick. — Marlborough St., No. 384, for Mary C. Boardman, dwell., 23' x 47', two-sty and mansard, H. McLaughlin, builder.

Commonwealth Ave., No. 302, for Uriah H. Coffin, dwell., 25' x 62'; three-sty mansard; Uriah H. Coffin, builder.

Hersey Pl., off Essex St., for Dio Lewis, hotel, 61' 6" x 104' 9" and 128' 6"; six-sty and mansard.

Thompson's Island, Boston Harbor, for Boston Asylum and Farm School for Indigent Boys, hall for amusement and education, 37' x 62', two-sty; Ivory Bean, builder.

Levee St., near Charles St., blacksmith-shop, for D. P. Flagg, 18' x 28' 6"; R. R. Perkins, builder.

WAREHOUSE. — The property bounded by Kingston, Bedford and Columbia Sts., covering an area of 23,946 square feet, and having 425 feet frontage, owned by Eben D. Jordan and Charles Marsh, will be immediately covered by a first-class warehouse, six stories high with granite fronts, except a portion of Columbia St., which will be brick and granite. The intended cost is about \$300,000. Mr. S. J. F. Thayer, architect.

ALTERATIONS.—Mr. David Nevins is making extensive alterations in the house No. 32 Beacon St., at a cost of about \$20,000. Mr. S. J. F. Thayer, architect.

Brooklyn.

BUILDING PERMITS.—Kean St., n s, abt. 200' e Kent Ave., two-sty brick factory; cost, \$3,000; owners, G. F. & J. S. Simpson, 87 Keap St.; builder, Patrick Conannon.

Willoughby Ave., n s, 140' w Marcy Ave., 2 three-sty brownstone dwells.; cost, \$7,000 each; owner, etc., Samuel Peden, Jr., 398 Marcy Ave.; mason, John Softy.

Broadway, s e cor. Ellery St., three-sty frame tenement; cost, \$5,000; owner, Louis Levy, 113 Even St.; architect, Th. Engelhardt; builders, Ullrich Maurer, Jr. and John Kueger.

Tompkins Ave., No. 65, e s, 60' n Floyd St., three-sty frame tenement; cost, \$4,000; owner, Mrs. C. M. Haik, 666 Flushing Ave.; architect, Th. Engelhardt; builders, Wm. Beyer and Daniel Kreuter.

First St., w s, bet. South Second St. and South Third St., ten-sty brick sugar-house; cost, \$100,000; owners, Havenmeyer & Elder; architect, T. H. Havenmeyer; builders, Thos. Winslow and J. E. James.

Hancock St., 340' w Nostrand Ave., 3 three-sty brownstone dwells.; cost, each \$6,500; owner and builder, John S. Frost; architect, R. Dixon.

CHAPEL. — The Emmanuel Baptist Church, which was formed last winter, has bought lots at Lafayette Ave. and St. James Place, opposite the Adelphi Academy, for the erection of a chapel, which will be built for \$30,000. A church will be built on the property within a few years.

Cincinnati.

THE SEASON.—The *Gazette* says the building statistics for the season just closing show that more money has been put into new buildings in this city during the past year than ever before in an equal length of time. About \$2,000,000 have been spent in putting up new manufacturing establishments alone, and fully \$3,000,000 in the building of business blocks. These figures do not include additions which have been made to factories already in existence, or residences, of which more have been built than for many years. Upwards of \$1,000,000 have been expended by a single firm, the Emery Brothers, in the construction of French flats. There is no branch of industry that will not begin the new year with enlarged facilities. It is noticed that Mill Creek flat is fast becoming a manufacturing centre. The work of manufacturing is moving in that direction, and will soon completely occupy a district which has never seemed desirable for residences and has been a perpetual eye-sore. The demand for new buildings and increased facilities is likely to lead to still more activity in the matter of building another season.

SCHOOL-HOUSE.—A site for a new school-house next to the Hughes High School is to be bought for \$50,000.

New York.

BUILDING PERMITS.—One Hundred and Thirty-first St., s s, 332' 10" e Eighth Ave., 2 three-sty brownstone dwells.; cost, each \$7,500; owner, Abbie J. Fielder, 102 East Eleventh St.; architect, R. Rosenthal; builder, J. M. Fielder.

Fifty-eighth St., n s, 150' e Ninth Ave., five-sty brownstone apartment-house; cost, \$65,000; owner, Hugh Blossom, 60 East Seventy-fifth St.; architect, J. C. Prague.

Twelfth Ave., n w cor. Seventy-first St., one-sty brick engine-house; cost, \$6,000; owner, N. Y. C. & H. R. R. Co.; builders, Meeker & Hadden.

Seventy-fifth St., s s, 344' e First Ave., one, two and three-sty brick carriage-house, factory, stable, etc.; cost, \$6,000; owner, Gustavus H. Gerdes, 630 Third Ave.; architect, Julius Boeckell.

One Hundred and Fourth St., n s, 255' w Fourth Ave., three-sty brownstone tenement; cost, \$12,000; owner, Dennis McGrath, Weehawken, N. J.; architect, J. M. Dunn.

Ninety-third St., s s, 60' w Lexington Ave., 2 five-sty brownstone tenements; cost, each \$15,000 and \$18,000; owner and builder, Joseph Schwarzer; architects, Thom & Wilson.

Fourth Ave., e s, 27' 2" s Eighty-third St., 4 four-sty brick tenements; cost, each \$14,000; owner, architect, and carpenter, J. Bentley Squier.

Lexington Ave., s w cor. One Hundred and Eighteenth St., 6 three-sty brownstone dwells.; cost, \$8,000; owner, Caroline L. M. K. Yost, 237 East One Hundred and Twenty-second St.; architect, R. Rosenstock; builder, A. Yost.

Madison Ave., s e cor. One Hundred and Twenty-first St., 6 three-sty brownstone dwells.; cost, total, \$120,000; owner, Lottie L. Dean, 143 East One Hundred and Twentieth St.; architect, R. Rosenstock; builder, H. N. Dean.

Fourth Ave., n e cor. Eighty-fourth St., 3 four-sty brick stores and tenements; cost, each \$16,000; owner, Henry Ganzemiller, 31 Seventh St.; architect, Jobst Hoffmann.

East Fortieth St., No. 152, three-sty brick stable and dwell.; cost, \$15,000; owner, Clara A. Helm, 49 Park Ave.; architect, S. D. Hatch.

West Thirty-fourth St., Nos. 632 and 634; three-sty brick feed store; cost, \$8,000; owner, Samuel Ingersoll, 376 Eighth Ave.; architect, C. F. Ridder, Jr.; builder, O. E. Perrine.

Fifty-sixth St., s s, abt. 500' w Fifth Ave., five-sty brick and stone dwell.; cost, \$40,000; owner, Washington Lee, 15 East Forty-fifth St.; architect, B. Price; builder, D. H. King, Jr.

Renwick St., w s, 131' s Spring St., four-sty brick stable and dwell.; owner, H. K. Thurber, 1267 Broadway, Room 24; architect, M. C. Merritt.

East Eightieth St., No. 176, four-sty brownstone tenement; owner, Donald Mitchell, 15 East Thirtieth St.; architect, M. C. Merritt; builders, Alex. Brown and D. Mitchell.

One Hundred and Forty-sixth St., s s, 225' w Brook Ave., two-sty frame dwell.; cost, \$2,500; owner, Fred. Schwab, Tinton Ave., cor. One Hundred and Fifty-first St.; builders, John Diehl and Fred. Schwab.

Elton Ave., n w cor. One Hundred and Fifty-third St., two-sty frame dwell.; cost, \$2,800; owner, E. Stelters, Third Ave., bet. One Hundred and Fifty-second and One Hundred and Fifty-third Sts.; architect and carpenter, F. Schwab; mason, J. Diehl.

Seventy-ninth St., n s, 100' e First Ave., one-sty granite church; cost, \$40,000; owner, St. Monica's Church, 334 East Seventy-ninth St.; architects, Babcock & McAvoy; masons, Giblin & Lyon.

Thirty-second St., s s, 80' e Fourth Ave., five-sty brick dwell.; owner, J. H. Morrell, 477 Fourth Ave.; architect, M. C. Merritt.

First Ave., e s, bet. Fortieth and Forty-first Sts., one and two-sty building for offices and stables; cost, abt. \$15,000; owner, Edward W. McClave, foot Twenty-third St., North River; architect, H. K. Parkin.

Madison Ave., s e cor. Sixty-fourth St., one-sty Little Falls, N. J., brownstone church; cost, \$75,000; owner, J. F. Wyckoff; architect, E. L. Roberts.

ALTERATIONS.—Sixty-ninth St., s s, 400' e Avenue A, remove the old mansion and extend dancing platform; cost, \$15,000; lessee, Emma C. Gent, Sixty-ninth St., East River; architect, J. Kastner.

West Fifty-first St., No. 31, four-sty brick extension; cost, \$4,000; owner, Henry C. Berlin, 52 West Fifty-first St.; builder, J. C. Miller.

East Seventeenth St., Nos. 632 to 636, three-sty brick extension; cost, \$6,000; owners and builders, Grissler & Fausel, 632 East Seventeenth St.

East Fifty-eighth St., Nos. 13 and 15, new fixtures, windows, etc.; cost, \$6,000; owner, Stephen M. Cadwell, 770 Madison Ave.; architect, J. L. Lyons; builders, Schwab & Schieffelin.

Sixth Ave., No. 397, one-sty brick extension; cost, \$2,500; owner, Augustus Barth, 164 Bowery; architect, Wm. Jose; builders, E. Griffith and J. M. Seaman.

CHURCH.—A plan has been filed in the Building Bureau by the Rev. F. T. Dougherty, pastor of St. Monica's Church, for the erection of a building for church purposes in East Seventy-ninth Street, near First Avenue, the structure to be 80' front by 150' deep, and to cost \$40,000; to be one-story and basement, and the front to be of granite and stone.

OFFICE-BUILDING.—No. 110 Wall Street is to be torn down, and a new office-building to be built for Mr. J. H. Jones, from designs of Messrs. D. & J. Jardine. It will be four stories high, and will be built of brick and stone.

APARTMENT-HOUSES.—One of the most important enterprises of the season is the "Central Park Apartments," which will cost about \$2,000,000. There are to be eight distinct buildings on the lot bounded by Seventh Ave., Fifty-eighth and Fifty-ninth Sts., and running back 425 feet from the avenue. Each building will be owned by a joint-stock company, and will cost about \$240,000; of which \$160,000 is to be raised by the associates, and \$80,000 has been arranged on mortgage. The buildings are to be fire-proof in construction, and the feature of plumbing will receive the utmost care. Each apartment is to be as much separated from the others as one private house from another. The eight buildings are placed so as to form a hollow square, with a central court so disposed that the rear of the buildings will have as much light and air as the front of houses on an ordinary street. The service of the houses is done through a well-lighted tunnel on a level with the basement.

CASINO.—The site for the new Casino, corner Broadway and Fortieth St., is being prepared for the erection of the building. The general ideas of the designs are incorporated in the plans, but some of the minor details are in abeyance. One of the prominent features will be the promenade which will embrace the major portion of the roof. The architects are Messrs. Kimball & Wisedell.

"FIELD" BUILDING.—Mr. Cyrus W. Field has accepted the plans of, and appointed Mr. Ed. H. Kendall architect for his new building, of which we gave notice in a late issue.

ALTERATION.—Mr. A. A. Bonner has purchased the house No. 21 East Sixty-fourth St., and has entrusted

(Continued on next page.)



THE "FAIRBANKS HOUSE," DEDHAM, MASS.

BUILT 1630.