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THE new Pennsylvania Capitol, the corner-stone of which was laid last August, is said to have been ready, as the statute required, for the opening of the session of the Legislature this week, although the rooms are not yet plastered, and the walls of the principal rooms are finished with hangings of cotton cloth. The exterior is, of course, quite unfinished. The money appropriated for the building has been spent, and another appropriation, of three million dollars, will be asked for at the coming session of the Legislature. Whether this sum, if granted, will be sufficient to complete the building remains to be seen, but the experience of other States does not encourage the belief that no further expenditure will be necessary. There is no need of recalling now the scandals of the competition, but it may be permitted to remark that Governor Hastings, notwithstanding the excellence of his intentions, and the determined stand which he has taken all through the affair in favor of honesty and good faith, really gave the other side an advantage over him by the ill-judged limit which, at his instance, was placed by the statute on the cost. The half-million dollars or so to which the expense was restricted was evidently barely sufficient to provide mere shelter for the Legislature, and altogether inadequate to the needs of a rich State like Pennsylvania. If two or three million dollars had been appropriated in the first place, the public would have been interested in the æsthetic part of the competition, and would have asked emphatically why the best design should not be carried out; while, under the present circumstances, the Commissioners have only to allege that the money allowed by law was hardly sufficient to build a barn, and that they did the best they could to reconcile the statute with a proper regard for the dignity and credit of the people of Pennsylvania, to draw to their side a great number of people, including, probably, nearly all the inhabitants of Harrisburg, who, remembering little of the circumstances, will easily be led to believe that the controversy is simply one between the niggardliness of the Governor and the good taste and public spirit of the other Commissioners.

EVERY one will be pleased at the appointment of Mr. John B. Cauldwell as the Director of Fine-Arts in the United States Commission to the Paris Exposition of 1900. Mr. Cauldwell was recommended for the appointment several months ago, by a convention of the National Academy of Design, the Society of American Artists, the National Sculpture Society, the American Water Color Society, and the National Society of Mural Painters; and the recommendation was immediately endorsed by nearly all the other important artistic associations in the country. It is hardly necessary to

say that Mr. Cauldwell possesses to a remarkable degree the qualifications needed for his important position. He has studied art both here and abroad, and is known as a skilful amateur, so that he can judge of the work submitted to him as an expert of wide sympathies; while his familiarity with the French language and French ways will help very much in smoothing the way for what should be an important event in the history of American art. It is known that the wall-space in the Fine-Arts buildings in Paris will be comparatively restricted, so that a good deal of tact will be needed to secure such room as the Americans will wish to have.

A PECULIAR case, in which the Field Columbian Museum, in Chicago, is defendant, is before the Illinois courts. Four years ago, Messrs. Maw & Company, of London, who are well-known manufacturers of tile and ceramic productions, sent to the Museum for exhibition, as a donation, a quantity of mosaics and other articles, valued at fifteen thousand dollars. The authorities of the Museum placed on exhibition some of the articles, but put the greater portion in storage, and notified Messrs. Maw & Company that they were not wanted, and would be returned if requested. Notice was also given that they were not insured. Some time later fire broke out in the warehouse where they were stored, and the goods were slightly damaged. It does not appear that Messrs. Maw & Company ever reclaimed the articles, and, some time ago, they were sold at auction by the directors of the Museum, together with some other Museum property, the whole bringing five hundred dollars. Now, Messrs. Maw & Company claim fifteen thousand dollars' damages, maintaining that their goods were given to the Museum only for exhibition for educational purposes, and that the Museum had no right to sell them.

WITHOUT wishing to anticipate the action of the jury, it is tolerably safe to predict that the plaintiffs will fail to establish their claim. It cannot be supposed that the directors of a public museum are bound to keep on exhibition any and all articles that may be sent them by enterprising manufacturers, unless they expressly agree to do so. In the present case, the authorities of the Museum seem to have informed Messrs. Maw & Company plainly that they did not want most of the goods, that they were paying storage for them, and wished to have them taken away, and, having waited for four years, in vain, for compliance with this request, they decided to spend no more of the money of the Museum in paying storage on articles which were forced on them against their will, and terminated the matter by selling them. It is obvious that, unless the directors of museums are allowed the privilege of declining offered gifts, and of disposing of articles bestowed on them which they do not want, they will soon be overwhelmed with exhibits from people who wish to advertise their goods at small expense, and it is to be hoped that the Columbian Museum case will establish their rights permanently.

THE development of street-paving in this country is a matter of much interest. Naturally, New York tries to be in the lead in such matters, and, within the last nine years, one hundred and thirty-six miles of streets in Manhattan Island have had their pavements of granite blocks replaced with asphalt. The process is still going on, and, although about two hundred and fifty miles of street-pavement still consist of granite blocks, these will, in the opinion of the city officials, be gradually abandoned, and asphalt substituted, except in the lower parts of the city, and on the water-front, where stone-paving will probably always be necessary, to endure the heavy traffic. Only a few yards of wood-block pavement exist in the city, this being in Twentieth Street, between Broadway and Fifth Avenue, and the ancient macadam, which lent itself so pleasantly to the drives along the Hudson in the Fort Washington region, has nearly disappeared, only eighteen miles being left in the entire island. It is curious that, while New York has been introducing asphalt, foreign cities, which once used it everywhere, have been giving it up. Even in Paris, where the universal asphalt pavement was once considered a distinguishing glory of the "Ville Lumière," the roadway in the most frequented streets is now generally paved with wood-blocks, only the sidewalks being asphalt; and a great deal of pavement is laid, particularly in the neighborhood of the railway-stations, with blocks of hard stone, apparently granite or

trap. In London, the same change has taken place, to a still greater extent, nearly all the principal streets having had their asphalt pavement replaced with wood. In London, the reason for the change is said to have been the slippery quality of the asphalt after the light rains characteristic of the English climate; but in Paris such rains are less common, while the thorough washing of the paving every morning prevented the accumulation of slimy mud upon it. Whatever may have been the reason for the change, it must be confessed that it has been for the advantage of horses rather than men. Even the wood pavement, although smooth in comparison with stone blocks, is less smooth than asphalt, while the porous material soon becomes saturated with filthy street mud, which, as the fibres of the wood are worn away, is blown with them, in the form of dust, into the faces of the passers-by, and into the windows of the houses. The stone pavement, although less porous than that of wood, particularly when, as is generally the case, the interstices between the blocks are filled with gravel and coal-tar, is rough and noisy, soon destroying the rubber tires of light carriages, as well as causing injury to the nerves of people living in the vicinity. All pavements, however, in London and Paris, are kept in shape by being laid on a strong foundation of concrete, so that the peculiar appearance of the Boston streets, for example, in which the stone-block pavement usually presents a succession of hillocks and ridges, alternating with hollows of unknown depth, filled with muddy water, is unknown in either city.

A CHANGE has been made in the Architectural Department of the University of Pennsylvania, Prof. Edgar V. Seeler, who has for the last five years had charge of the work in design, retiring, to devote himself entirely to private practice, and being succeeded by Mr. Frank Edson Perkins, a graduate of the Massachusetts Institute of Technology, and a *diplômé* of the School of Fine-Arts in Paris. Mr. Perkins has had a brilliant record in the School of Fine-Arts, his name appearing with great regularity among the winners of the various School honors, and his appointment gives assurance that the reputation already won by the University of Pennsylvania among American architectural schools will be well maintained.

AN extraordinary piece of house-moving was successfully carried out in New York a few days ago. In consequence of the widening of a street, it was necessary to remove a block of four five-story brick houses. The street was to be increased in width forty feet on each side, and the most available new lot to set the houses on was at some little distance, so that it was necessary to transport them one hundred and fifteen feet; but the only alternative was to pull them down entirely, and, as they cost sixty-four thousand dollars to build, the owner decided to take the risk of trying to move them. Under the direction of a clever architect, a plan was devised for transferring them on greased ways, instead of the usual rollers, and the scheme was carried out with complete success. The first step was to insert three hundred and seventy-five jack-screws successively in openings made for the purpose in the foundation-walls. By means of the jack-screws the whole block was then raised four feet, and the ways, of heavy timber, well lubricated with soap, were placed beneath, and the houses lowered upon them. As soon as the weight rested firmly on the ways the jack-screws were taken out, and applied to pushing the building laterally. In this way the block was pushed back forty feet. The ways were then shifted, to a position at right angles with their former direction, and the houses pushed seventy-five feet in the new direction, until they reached the new foundations which had already been built to receive them. It was then an easy task to lower the block on the new foundation-walls, reconnect pipes and flues, and make the houses ready for occupancy. It is said that the work was done without causing a single crack in any of the houses, and, as the cost of the whole operation was only ten thousand dollars, a considerable sum of money was saved. Although the celebrated moving of the seashore hotel, on Long Island, by means of a gang of locomotives, was a more picturesque performance, it was hardly so serious as that of shifting a block of brick houses, and the operation attracted much attention. The Inspector of Buildings actually concluded that the experiment was too hazardous to be allowed, and ordered the work stopped before the moving had fairly begun; but an appeal was taken from his decision to the Supreme Court, and, after six weeks' delay, the Court reversed the Inspector's action.

THE Forest Warden of Minnesota, Mr. Andrews, is doing much good by his interesting and effective way of calling public attention to the necessity for action in regard to forest lands. He observes, in a newspaper interview, that twenty thousand men are now employed in robbing the single State of Minnesota of its forest wealth, while the processes of destruction are so perfected that a tree which has been growing for two hundred years may be felled, brought to the mill, sawed, kiln-dried, planed and used in building, within sixty hours from the time that the axe first touches it. Formerly, the destruction of the forests was restricted by the necessity for hauling the logs to some stream for transportation, but the State is now penetrated in every direction by lumber railways, which are extended or shifted as required, and it is estimated that all the remaining timber will be exhausted in from twelve to eighteen years. Mr. Andrews points out that, under present conditions, the manufacture of paper is perhaps the most destructive agency that affects our woodland. The cutters of wood for the pulp-mills do not spare the smallest sapling, but leave the ground as bare as if a fire had passed over it, and the area thus annually denuded is very great. For a single newspaper in New York eight thousand acres of woodland are stripped every year, while the total consumption of paper in the city involves laying waste at least one hundred and twenty-five acres of virgin spruce forest per day. Once stripped, these wasted forests are, in Minnesota at least, abandoned. No taxes on them are paid, and they are bought in, at the tax sales, by the State, or revert to the State under special laws. At present, there are, in Minnesota alone, three million acres of land abandoned in this way, on which no taxes are paid. By degrees, these tracts will come into possession of the State, and, as they are worthless for agriculture, it is proposed to replant them with trees, and hold them as public forests, trusting that, years hence, they may become an important source of revenue, as the State forests are in Europe. In Germany and France, the public forests bring in a net income, varying from about twenty-seven cents to several dollars a year per acre, and Mr. Andrews thinks that the Minnesota pine-lands should produce an average annual revenue of ninety cents per acre, after cutting begins in them, which, if the present saplings are not destroyed, he thinks would be in about twenty years.

INDUSTRY in Europe has its risks, even more, perhaps, than in this country. A few weeks ago Franco Tosi, a distinguished engineer, and the proprietor of the noted machine-works at Legnano, was shot and killed, as he entered his factory, by a discharged workman. An attempt, which was unfortunately unsuccessful, was made by the spectators to lynch the murderer on the spot, but he was soon captured, and placed in jail. The *Schweizerische Bauzeitung* remarks that it is only a year and a half since a similar murder took place in Switzerland, the president of a manufacturing company having been shot in the street in Zurich. There is no capital punishment in either Switzerland or Italy, so that a person who murders his employer is rewarded by being comfortably supported at the public expense, for the rest of his life; and it is not surprising that Italian criminals see no great inducement for restraining themselves. Signor Tosi was a graduate of the Polytechnic School at Zurich, and is said to have been a kind and considerate employer, and to have done much to improve the condition of his twelve hundred workmen.

NOTHING in contemporary history is more curious than the sudden affection which has sprung up between the English and Americans. It must be confessed that the emotion is, as yet, rather one-sided, but it is, on that side, real; and apart from the effusiveness of the English newspapers, which is suspected of being intensified by political considerations, there is no doubt that English people generally have awakened of late, in a remarkable degree, to our good qualities, and not only like to call us their "cousins" but take pains to treat us as such. As an evidence of this new feeling, it has been seriously proposed to place in Westminster Abbey a monument to George Washington. Naturally, the first suggestion came from the Anglo-American League, in London, but it is said to have been received with favor by influential personages. Meanwhile, the fashion of Americanism has been spreading, less obtrusively, on the other side of the Channel, where the Rue Washington, and the Rue Lincoln, in the most fashionable quarter of Paris, pleasantly remind the American visitor of the generosity with which the French acknowledge greatness of mind in strangers, as well as in their own people.

THE EVOLUTION OF DECORATIVE MOTIVES.¹—VIII.

THE PALMETTE AND ANTHEMION.—II.



Fig. 112. Top of Palm-tree, from an Assyrian Relief in British Museum.

But it was not from Melos alone that the Greek potters derived their suggestions of palmette forms. Assyria contributed largely to the development of the anthemion. This Assyrian influence in Greek decorative design, formerly accepted as a commonplace of art history, has been called in question in recent times; but a careful study of the Greek patterns themselves affords convincing evidence of their relation to Mesopotamia.

At least one or two centuries before the date of the Melian vases above cited the Assyrians had incorporated the Egyptian palmette into their system of ornament.

Its resemblance to the conventionally pictured date-palm as figured in their reliefs (Fig. 112 compare Fig. 108) apparently struck the fancy of their artists, gave direction to their treatment of its details—suggesting, perhaps, the chevron, which is almost universal in Assyrian palmettes, as a conventional portrayal of the leafage of the palm—and led to its adoption as a detail of their Sacred Tree. Whether it came to Assyria directly from Egypt, or by way of Cyprus and Phœnicia, or by several channels, is of secondary importance. The Assyrians associated it as an alternating form in bands and friezes with the lotus, lotus-bud, pine-cone, and “pomegranate,” invariably linking it to its neighbor on either hand by a curved band or ribbon, whose pointed ends curled over like horns or incipient volutes under the volutes of the palmette itself (Figs. 106, 108), while the volutes of the palmette were bent down and then curled upward to a voluted termination, forming a reversed curve. In the minor palmettes of the Sacred Tree these volutes were omitted, and the fan-like leaves spring directly from between the ribbon-ends (Fig. 108).

These observations, at first sight trivial, are really of great importance as evidence of the Assyrian origin of many features of the Greek anthemion. The spiral of reversed curvature ending in an eye or button, the pointed ends of the clasped ribbons, the radiating curvature of the leaves, the systematic linking of the palmette to its neighbors by looped or festooned ribbons or bands, and the alternation of palmette and lotus forms—all these are distinctive features of Assyrian palmette-bands, and every one of them is plainly recognizable in Greek pottery decorations. In Figures 113, 114, 116, the curved leaves of the lotus-forms and the upward curled spiral at the end of a line of reversed curvature connecting the units of the pattern, in 113, 115, 116 the alternation of palmette and lotus, the palmette in 115 and 117 springing directly from between the spirally-ended connecting bands, are evidences of this; and one has only to look over the plates of anthemion-bands in Owen Jones's “Grammar of Ornament” to find abundant further confirmation. Now these peculiarities of treatment are nowhere found in Egyptian, Cypriote or Phœnician examples: they are encountered only along the path of Assyrian influence. Figure 118 shows a Persian palmette frieze from Susa (time of the Achæmenidæ) enamelled in color in slight relief upon blocks of concrete. Like nearly all Persian ornament, it is based on Assyrian types. Figure 119 is also from Susa, and shows a curious effort to evolve a surface-pattern out of the Egyptian form of the palmette as distinguished from the Assyrian; the contrast with the preceding is striking in the absence of that organic linking of the units which was so characteristic of Assyrian ornaments.



Fig. 114. Palmette-pattern, red on black: Vase in Louvre.



Fig. 113. Greek Pottery Band; framed Palmettes.



Fig. 115. Greek Palmette-and-lotus, black on red.

By what precise channels these Assyrian ideas reached Greece is not wholly clear; but the Assyrian influence was widespread through Western Asia, and the ubiquitous Phœnicians no doubt carried Assyrian wares and imitations of them wherever they traded, as well as those of Egypt. This Assyro-Phœnician influence is abundantly evidenced in Cypriote art. There, as in Rhodes, Egyptian and Assyrian models are met with side by side; but in the vases found in the necropolis at Camyros it is Assyrian types which predominate; and the fact that these vases were probably from Bœotia, and that Corinth may have been originally colonized by Phœnicians, indicates how widespread were the Assyro-



Fig. 116.

Phœnician influences, both in the Greek colonies and in Greece itself. Another pathway of Assyrian influence was through the countries of Asia Minor and the Greek colonies along the coast. Assyrian ideas chiefly dominated in Western Asia, in Persia, Lycia and Lydia, throughout the Hittite Empire, in Phœnicia itself. “Goodly Babylonish garments,” Mesopotamian embroideries and Sidonian textiles were articles of commerce from a very remote period; and, as the reliefs from Nineveh and Khorsabad show, the palmette was worked upon textile fabrics as well as upon architectural surfaces.² Thus more or less directly from Assyria and Phœnicia, as well as from Egypt by way of Cyprus, Rhodes and Melos through the agency of Carian as well as Phœnician trade, the palmette was made known and became a familiar form to the Greeks. Even in the so-called “Heroic” age it was used in Mycenæ (Fig. 120) in the stiff, straight-leaved, fluted form we have seen in Assyrian ivories, but without volutes; and perhaps even in Troy (121), though it is doubtful whether the example here given, much as it resembles later anthemions, be really a palmette and not a caprice of an individual designer. The Mycenæan example, however, may be perhaps taken as a mere elongated half-rossette. This, if correct, tends to confirm the conclusion that the whole series of palmette-forms, from Egypt down, started in the half-rossette superposed on the trident-lotus, and not on the lotus alone.



Fig. 117. Anthemion Pattern from Vase in Louvre Collection, Paris.

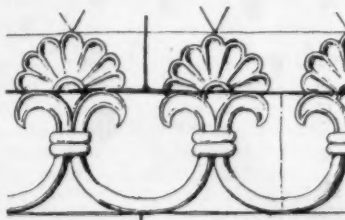


Fig. 118. Persian Palmette-pattern on enamelled Blocks, Susa (Louvre).

Thus made familiar in diverse ways with an ornament-form which, originating as an Egyptian talisman, had already become a conventional motive of decoration, the Greeks subjected it to the refining and beautifying operations of their keen decorative instinct, and developed what was destined to prove the most prolific and, on the whole, the most beautiful, of all motives in decoration. It would be interesting to trace the history of this development in detail, from the earliest to the latest vases and through the whole range of Greek architectural carving, but this is quite beyond the limits of our space: we must content ourselves with a brief and comprehensive survey.

The palmette as an incipient anthemion appears very early on Greek pottery. We have seen how the Melian artists utilized it. Vases of the so-called “Mycenæan” style, from Ialysos, Mycenæ, and other seats³ of this culture show many curious variants of the palmette, modified into suggestions of plant-life, under the nature-loving imitative instinct of that art (Fig. 122). Two or three centuries later, in the archaic vases with black decorations on a



Fig. 119. Persian Palmettes, Susa.

¹ Dr. Colley March has indeed advanced the theory that the Assyrian palmette is an independent Mesopotamian skeuomorphic ornament originating in the tasselled fringes of rugs and hangings, and Professor Haddon appears to have partly adopted his view (“Evolution in Art,” pp. 146, 147). Fringes and tassels were undoubtedly common, and indeed almost essential, features of even the earliest hangings and rugs of Mesopotamia, and this fact doubtless explains the partiality of the Assyrians for palmette-and-lotus borders and patterns, which they certainly treated often in imitation of such tasselled fringes. But it seems to me absolutely demonstrated that the motives which they so treated came originally from Egypt, as already explained, and were in Mesopotamia subjected to modifications suggested by the already well-established processes and finishings of the Mesopotamian textiles, just as the isolated palmette was modified into some resemblance to the palm-tree top and made the chief feature of the Assyrian Sacred Tree. This is nothing but the common phenomenon of convergence or assimilation in its natural operation upon imported motives.

² Fürstwängler u. Löschke, “Mykenische Vasen,” especially the plates.

³ Continued from No. 1198, page 88.

light-red ground, the characteristic Greek treatment appears quite fully developed, although Phœnician and Cypriote types are often met with—instances of persistence into the more advanced period. The palmette as a free ornament alternating with a lotus is the usual type, painted with a brush with a bold and free stroke.



Fig. 120. Mycenaean.

The palmette leaves, generally curving slightly outwards and tapering to a point at the bottom, nestle between two spirals or volutes (Figs. 113, 116). The lotus has usually three leaves, the two outermost broadly spreading in Assyrian style (Figs. 114, 116), pointed at the top, while the central leaf is often blunt at the top and pointed at the bottom. Not infrequently this lotus is treated like a palmette, with fan-like leaves or lobes between the central and lateral leaves (Figs. 113, 114). With the progress of time and of art, the vase-painters not only improved in their technique and drawing, but learned to give to their patterns a grace of line and of movement quite unknown in the earlier examples. It is interesting to observe the progress of the technique of the brush in the hands of these ancient Hellenic artists. They developed an assurance, a firmness of touch, a freedom of stroke, and a deftness in modulating the pressure upon the brush so as to shade and taper the line or stroke in any desired manner, a crisp delicacy of line combined with a fine indifference to merely mechanical precision, which impart to their work a vitality, a vivacity and interest wholly wanting in the more labored and deliberately careful work of the Egyptians, or, indeed, of any of the ancient Oriental decorators. The Japanese are perhaps the only people to whom the Greek pottery-painters can be compared in the qualities of crispness and vigor of touch and correctness of truly freehand drawing; but Japanese and Greek art are too widely separated in subject-matter and methods for any extended parallel between them.

Without going into the history of Greek pottery in any detail, it is proper to observe in passing that practically all the early pottery is decorated in black or a dark reddish-brown upon the natural color of the vase, and that the more archaic examples, from the eighth or seventh century down, generally betray the strongest Oriental influence in design and decoration; an influence predominantly Assyrian, as Collignon points out, indicated by superposed tiers or bands of ornament and processions of animals, grotesques, chimeras and winged figures. The later pottery, from the first quarter of the fifth century, or earlier, down to and through the Alexandrian period, is decorated in red upon a black background, the red being the color



Fig. 122. Painted Palmette, Mycenaean Style, from Ialysos and Egyptian Lotus-palmette for Comparison.

of the vase left untouched within the outlines of the design, while the background is filled-in solid with the black fusible pigment or slip, which in the finest examples possesses a dull lustre like thin varnish. This fundamental difference between vases having the decorations in black on a red ground and those having a black ground with the decorations left in red (sometimes distinguished as "black-on-red" and "red-on-black" vases) broadly divides all Greek pottery of a date earlier than the Persian wars from that of later date, though there are exceptions and overlapping, which do not really affect the general division. During the Alexandrian period, with its ostentatious art, the black background was sometimes abandoned for a florid decoration in various colors on the red ground; but black grounds continued in general use until the second century B. C.

The fundamental difference between the technique of these two broad divisions of Greek pottery corresponds to a marked difference in the detailed treatment of the ornament, and especially of the anthemion patterns employed. This difference is not always in favor of the later vases. In those with black decorations on a red ground the ornament, produced at one operation, preserves all the delicacy and vigor of the artist's touch, and in the best examples there is a freedom, a grace and a fineness of line and movement which the more labored process of painting-in the background up to the outlines of the red-on-black decorations tended inevitably to destroy. The

palmette-leaves were painted-in with a single firm stroke of the brush (Figs. 115-117), the stems and scrolls were slender and graceful, the frets and waves done with a half-careless ease that gives them great animation. There is, moreover, a greater variety of type in the anthemions of the black-on-red vases than in their successors, although

there is nothing among them as sumptuously elaborate as the great anthemion compositions of the later Italo-Greek vases, of which Figure 124 is an example, interesting to compare with Figure 125, from a vase in the style of Nicosthenes. Figures 126 and 127 illustrate some of the more striking types of the lotus and palmette-decoration of these vases; Figure 128 is from an Italo-Greek vase in somewhat similar style.

With the change of technique involved in the substitution of the black for the red background the light grace and freehand elegance of the earlier ornamentation were exchanged for a more formal, a richer and more carefully elaborated decoration. Every detail had to be first outlined, either with a stylus or with a finely pointed brush, and the background then carefully filled-in up to this outline. The anthemion immediately changed its character, by the close



Fig. 124. Anthemion Pattern, from an Italo-Greek Vase of 4th Century.

crowding of the leaves resulting from the effort to paint the separations each with a single stroke of the brush. The stems also were made thicker and heavier than formerly, because of the difficulty of "blackening" on either side of a very fine red line. This is not to say that fine lines and freedom of design disappeared, but the tendency

was naturally towards a more crowded ornamentation, not only to simplify the brushwork but to relieve the monotony of too much unbroken black. The ornament was less spontaneous, because it must be completely thought out and drawn before the brush was laid to the vase. But this very fact operated in favor of more careful drawing, of maturer study of each detail. Very rapidly, almost suddenly, the crudities of the earlier patterns, the lingering vestiges of Oriental influence, disappeared. The very Assyrian lotuses, the broad and varied palmettes and the gracefully-wandering interlaces of the Nicosthenian vases were no longer sought after. There was less variety of type, but greater perfection of design, and the anthemion was developed from a mere border-pattern into a superb field-ornament, to decorate the sides or backs of vases whose fronts were occupied by pictorial subjects. In the Italo-Greek vases of the fourth century these patterns were of a florid and crowded richness of design which marked the beginning of the decline (Fig. 124). What a marvellous growth from the germ of the Egyptian lotus and semi-rosette!

If we analyze the forms and details of the Greek pottery-anthemions, the first and most far-reaching modification of their Assyrian and Phœnician prototypes which they reveal is the substitution of the S-scroll in symmetrically opposed pairs for the monotonous upward-curved linked bands by which the Assyrians connected the elements of their palmette-lotus bands. While we must credit the Assyrians with the first adoption of the palmette as a unit for a border-pattern, and with the first systematic linking-together of the units in an organic manner, their artistic inventiveness stopped there. Although the reversed curve appears in the "horns" under their palmettes, they wholly failed to discern its inherent beauty and importance as a decorative element. This the Greeks early perceived, and the great majority of their anthemion patterns display

the line of double or reversed curvature as an essential element in the decorative movement of the design. It figures in four of the five types illustrated in Figure 129, and in Figures 113, 114, 116, 117, and it is precisely these patterns which have the most grace and



Fig. 126. Palmette-pattern, Assyrian Type, from a "Nicosthenes" Vase.

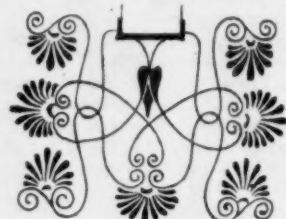


Fig. 125. Anthemion Pattern from a Sixth-century Greek Vase, Style of Nicosthenes.



Fig. 123. Palmettes of Phœnician Type: a Phœnician Gold Bracelet from Tharros (British Museum); b typical Cypriote carved Palmette; c from an Archaic Greek Vase.

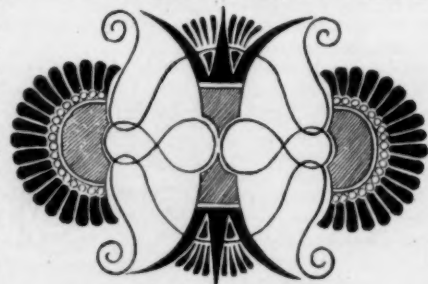


Fig. 127. Palmette-pattern, Style of Nicosthenes.

the line of double or reversed curvature as an essential element in the decorative movement of the design. It figures in four of the five types illustrated in Figure 129, and in Figures 113, 114, 116, 117, and it is precisely these patterns which have the most grace and

movement. In these the units of the pattern are parts of a continuous design, not mere juxtaposed forms. We might almost say that the Greeks discovered the principle of rhythmic and harmonic movement in decoration. They were certainly the first to make the reversed curve (the "line of beauty" of Hogarth) the controlling element in that movement. It occurs, it is true, in Egyptian ornament, in certain all-over patterns in tomb ceilings; but there, as in Assyrian ornament, it is merely incidental, almost accidental, and is very far from being a characteristic feature in Egyptian decoration generally. But from the earliest and simplest examples on the red vases of the seventh century the history of the double reversed or S-scroll may be traced in a splendid series of developments of increasing importance on pottery and carved marble, through the fine scrolls of the mouldings of the Erechtheum and the neckings of its columns (Fig. 134) to the superb carved stele-heads of the fourth century B. C. (Fig. 104) and the magnificent finial of the Choragic monument of Lyciastes. That, however, is another story.



Fig. 128. Framed Palmette or Anthemion, from an Italo-Greek Vase in Louvre.

The next modification of the Oriental palmette characteristic of Greek handling was the treatment of the palmette-leaves. The technique of the brush compelled the separation of the leaves, which in the original semi-rossette and in most Assyrian examples had been crowded into close contact. This simple change led to wide-reaching results, for it left the painter free to give to each leaf the curvature and outline he might prefer. To this we owe the rapid departure from the approximately circular outline for the whole palmette (Fig. 127), which led to the elegant proportions and oval outline of the perfected anthemion of Figures 116, 117 and 130. The nearly circular outline persisted along with this development, as in Figures 113-115, but though in these cases we have a palmette rather than an anthemion, they display in the outward curvature of the leaves and their graceful tapering from summit to base the artistic feeling which pervades all Greek ornament. With the beginning of the fifth century the form of the leaves began to change.

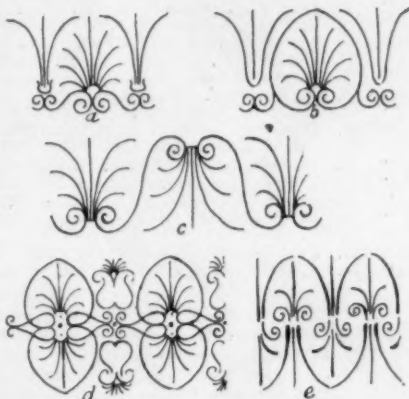


Fig. 129. Five Types of Anthemion Patterns.



Fig. 130. Framed Anthemions.

line was the decorative echo or reflection of these sepals, as may be clearly observed in *b* of Figure 129, or in Figure 114. The framed anthemion never passed into Greek carving, but it reappeared in Byzantine decoration, by a very remarkable process of reversion, of which due notice will be taken later.

Through all these developments the anthemion retained a certain family resemblance to its ancestor, the palmette. Not so, however, the unnamed ornament which gradually replaced the primitive lotus. It went through an extraordinary series of mutations, until it was metamorphosed into a tall plant, with stiff, out-curving, blade-like leaves growing from a nest of acanthus-like leaves at the bottom (Fig. 134). On some vases the Assyrian lotus is plainly recognizable, as in Figure 115, by its flaring outline, spear-like leaves and extra calyx. In others there is a reminiscence of the lotus-palmette, as in Figures 113, 126, 127, and in that whole class of vases of the sixth century denominated "in the style of Nicosthenes." But in the majority of fifth-century vases, both



Fig. 131. Framed Anthemion Pattern, dark red on black. (Compare with Figure 5, No. 1153 of American Architect.)

black-on-red and red-on-black, the lotus is hardly to be recognized. When drawn with three leaves, the outer ones are often shaped like a scimitar, the broad bases fitting the curve of the spirals below,



Fig. 132. Anthemion. (Repeated from Figure 12, No. 1153 of American Architect.)

while the central leaf is lanceolate (Fig. 116, 132); in other cases they sometimes suggest a conventional representation of a trumpet-shaped blossom (Fig. 133). But in many of the patterns there is no resemblance at all to the lotus: the artist has evidently sought simply to produce a rich floral ornament, not the picture of any given plant or flower, though based on the general principles of plant-growth (Fig. 134).

The last in our list of the changes wrought by the Greek vase-painters in palmette-decoration was the carrying out to its logical results of the fundamental innovation made by the Assyrians when they converted an Egyptian amulet into a border-pattern. The Assyrians never progressed beyond the simple and monotonous alternation of the palmette with the lotus, pinecone, or "pomegranate." The Greeks made out of the palmette a vital, plastic, ornament-motive capable of endless variation of detail and of endless variety of combination; they used it right-side up and upside down, vertically and obliquely and horizontally, symmetrically and unsymmetrically, with leaves many or few, blunt or pointed, straight or curved, crowded or sparse, broad or narrow; but always and everywhere the sense of rhythmic movement, of smooth and gliding motion, of balance, of the proper use of contrasted forms and pleasing alternation, seems to have presided over these countless permutations and combinations. Figure 129 illustrates five among scores of types of these combinations. In *a* and *b* we have simple alternation of the unframed and framed anthemion with the lotus, in *c* the alternation of upright and inverted anthemions with the S-scroll. At *d* and *e* we have double anthemion-patterns, one symmetrical, and



Fig. 133. Greek Lotiform Details. (Repeated from Figure 92, No. 1176 of American Architect.)

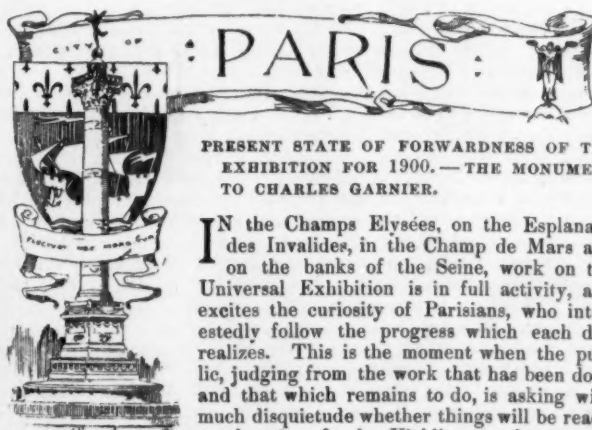


Fig. 134. Carved Anthemion from Erechtheum.

the other alternately inverted in a sort of countenance design; and Figure 117 shows one out of many oblique anthemions. Without asserting positively that no anthemion-pattern was ever duplicated on two Greek vases, I believe this to be a fact; at least I have never yet been able to find, in the two or three large collections I have had a chance to visit, nor among the thousands of illustrations in the books, two patterns from different vases that were precisely alike. Was there ever, in any other decorative art, such a marvellous variety of beautiful ornament produced from so limited a stock of primary motives?

A. D. F. HAMLIN.

[To be continued.]



PRESENT STATE OF FORWARDNESS OF THE EXHIBITION FOR 1900.—THE MONUMENT TO CHARLES GARNIER.

IN the Champs Elysées, on the Esplanade des Invalides, in the Champ de Mars and on the banks of the Seine, work on the Universal Exhibition is in full activity, and excites the curiosity of Parisians, who interestedly follow the progress which each day realizes. This is the moment when the public, judging from the work that has been done and that which remains to do, is asking with much disquietude whether things will be ready at the time fixed. Yielding to the general belief that an exhibition is never ready at the proper time, it is decided that this one of 1900 will also be behindhand. This is an error which must be contradicted, for it rests on a mere misunderstanding. In 1889 the buildings, with some unfortunate exceptions, were finished in time for use. If on the day of the opening many of the galleries were empty, or still encumbered with half-unpacked cases, the fault lay with the exhibitors who were not willing to install their

exhibits before the last minute. I remember, personally, the difficulty which the administration had in persuading them to exhibit some little speed in arranging their exhibits. It may be the same in 1900, but will it? It is to be hoped that it won't, considering that the demands for admission are coming in greater numbers than they were at the corresponding time in 1889. In any case, the works are much farther advanced. The palaces on the Champs Elysées are showing up rapidly, and have reached the height of main cornice and entablature. Now we can take account of the mass of these constructions and of their grandeur of aspect. As for this, the Parisians who showed themselves in the beginning hostile to this transformation of the Champs Elysées now seem better to understand the monumental grandeur of the executed scheme.

The strikes of the workmen in October last have evidently brought weeks of trouble on the yards, but everything has been restored to order to-day and the delays have not been important. Work on the Pont Alexandre III progresses rapidly. Of the four great piers which emphasize the entrance, two, those on the right bank, are almost finished for their full height. A great iron bridge cast over the Seine serves for the false-works for the arches of the bridge. This allows the least encumbering of the river's bed, and does not interrupt the circulation up and down during the whole time required for the building operations. This temporary bridge is composed of a great lattice-girder, 150 metres long by 6 metres wide, and 7½ metres high. On the site of the Invalides the work of grading is going on, and some of the trusses of the future palaces begin to rear themselves. These palaces, forming a great rectangular horseshoe opening towards the Pont Alexandre III, will shelter Groups 12 and 15, consecrated to decoration and the furnishing of public buildings and dwellings, and to different industries. The left side is to be reserved for the French sections, that on the right to the foreign sections. The general plan of the palaces on the Champ de Mars has also the form of a rectangular horseshoe, backed against the Machinery Gallery. The highest point of it is occupied by the Palace of Electricity, from which stretches a monumental fountain, or château-d'eau, on each side of which a ramp of gentle slope leads to the first story of the palace. In fact, everywhere they have been obliged to build first stories in order in some measure to satisfy the demand for space, still insufficient, which has been claimed for different classes. The rule established by M. Picard, the Commissary-General, grants to each of the classes the same area as in 1889 increased by 25 per cent — the French sections occupying 60 per cent of the total space, and the foreign sections the remaining 40 per cent. It was necessary, therefore, to find how to provide in the buildings such considerable surfaces, and this was quite impossible if the buildings should have only ground-floors. The galleries, then, were a foregone conclusion, but the difficulty was to induce exhibitors to accept positions here which they really considered disadvantageous. In former exhibitions the upper floors were few, and consequently little frequented. It was necessary, therefore, in 1900, to induce the public to reach the first story and to retain them there not only by interesting exhibits but by different attractions. Therefore, the restaurants in the galleries overlooking the central garden will be very numerous. The staircases, the ramps and the elevators will also be multiplied to the farthest limit. Moreover, moving staircases of continuous operation are to be installed at several places to raise visitors without their having themselves to make any effort. Much is expected from the curiosity which these elevators will excite, since, according to the actual figures, they will be able to transport from twenty to forty persons at a time. But this is not all. An electric railway is to connect the Champ de Mars with the Invalides by the quais and the Avenue de la Motte Piquet. This last being outside the limits of the exhibition, the railroad will have to be raised above the level of the public streets to a height of 7 metres, and so will correspond to the height of the first story of the palaces. In this manner visitors will be naturally and easily brought to these first stories and there retained by interesting exhibits.

The machines which are to furnish the steam or electric power to the exhibitors are to be installed in the Champ de Mars at each side of the Palace of Electricity, between each wing of the palace and the old Machinery Gallery. The power will be such that the great steam-stacks are to have a height of 80 metres with a maximum diameter of 5 metres. All the galleries for these machines are in course of erection and the monumental chimney-stacks and ducts have just been put out to competition. The old Machinery Gallery which, unfortunately, they have been obliged to preserve, will be completely transformed inside. Its centre will be occupied by the grand hall, which is to contain seven out of the nineteen bays of the gallery. This hall, square in plan, will include a grand circular arena, the angles being arranged like huge niches with seats *en gradins*, which will accommodate 20,000 persons. Its domed ceiling will be glazed in the upper portion. For this considerable amount of work, the architect, M. Raulin, may be excused for being a little behindhand. The agricultural and hippic competitions and the *salons* of painting having still to be held in 1899 in the Machinery Gallery, there will remain thereafter only ten months, about, for the transformation. Up to that time the studies of the detail of construction and decoration will be pushed forward in such a fashion as to enable the preparation of the metallic framework and all the staff-work so as to have only the simple setting in place to do at the last minute.

Work is also actively being pushed upon the banks of the Seine, by the Chemin de Fer de l'Ouest, whose station occupies a portion of the Esplanade des Invalides. The roadbed is ready and they are now restoring the surface upon which are to be erected the foreign pavilions. These are coming to the administration in the shape of schemes which rival one another in richness and originality. Several regrettable withdrawals have occurred in the cases of several of the South American Republics, among others the Argentine Republic, whom its political embroilment with Chili has obliged to provide costly armament, with the result that it has had to renounce its participation in the Universal Exhibition of 1900. This withdrawal is all the more disappointing because the Argentine Government had opened a competition for French architects, and this competition, which seems to remain without result, leaves an unfortunate recollection amongst those artists who relied on the good faith of the promises of the Argentine Republic. The competitors, wronged in their personal interests, have addressed a protest supported by the Société Centrale des Architectes and by the Société des Architectes Diplômés.

At this moment the Committee of Admission is actively at work. Their rôle consists in examining the demands of exhibitors in each class: these classes number 121 and are divided into 18 groups in the following manner:—

- Group 1. Education and Instruction. (Classes 1 to 6.)
- " 2. Works of Art. (Classes 7 to 11.)
- " 3. Instruments and the General Processes of Letters, Sciences and Arts. (Classes 11 to 18.)
- " 4. Material and Processes of Machinery. (Classes 19 to 22.)
- " 5. Electricity. (Classes 23 to 27.)
- " 6. Civil Engineering, Means of Transport. (Classes 28 to 34.)
- " 7. Agriculture. (Classes 35 to 42.)
- " 8. Horticulture. (Classes 43 to 48.)
- " 9. Forests, Hunting, Fishing, Crop-gathering. (Classes 49 to 54.)
- " 10. Alimentation. (Classes 55 to 62.)
- " 11. Mines and Metallurgy. (Classes 63 to 65.)
- " 12. Decoration and the Furnishing of Public and Private Buildings. (Classes 66 to 75.)
- " 13. Threads, Tissues, Clothes. (Classes 76 to 86.)
- " 14. Chemical Industry. (Classes 87 to 91.)
- " 15. Divers Industries. (Classes 92 to 100.)
- " 16. Social Economy, Hygiene, Public Assistance. (Classes 101 to 112.)
- " 17. Colonization. (Classes 113 to 115.)
- " 18. Military and Naval Armament. (Classes 116 to 121.)

In principal, the demands for admission must be submitted to the Commissary-General before the first of February, 1899. They will be, each class at a time, scrutinized by the examining committee for admission. In the month of March the committees of installation will be nominated, who will designate an architect or an engineer to whom shall be entrusted the care of carrying out the work of installation of each class conformably to the general dispositions adopted by the administration.

To the Exposition Contemporaine is to be added a retrospective exposition rehearsing the progress accomplished in the different branches of production as pertaining to each of the classes. The Committee of Admission is now trying to determine whether this retrospective exhibit should be isolated for each class, or grouped several classes together. The administration ought to provide in the centre of the groups a nave arranged with halls corresponding to the different epochs where should be arranged the articles necessary to exhibit to the public the home life of former times. This arrangement in separate rooms would be preferable to museums where the objects would be exhibited in isolated series. It would give instruction at once more practically and more vividly. It appears also that this scheme is more favorably considered by the greater part of the Committee of Admission.

In another letter I shall take occasion to speak of the different isolated pavilions and the private enterprises which present different attractions. They are very numerous, and the artistic, scientific and picturesque schemes are not lacking. To-day I have simply intended to take a glance at the general aspect of the work now going on and to assure you that things are moving satisfactorily. Everybody is working with ardor and confidence.

I cannot finish this letter without speaking of the monument to Charles Garnier. American architects already know what French art has lost in the person of this great master, this good and excellent *confrère*, so sympathetic to every one who approached him. The day of his obsequies the Société Centrale took the initiative in the matter of a subscription for the erection of a monument to the memory of this great artist, and voted three thousand francs as a first contribution. A committee was formed on which are to be found the names of the leading architects, artists and litterateurs of Paris. This committee has just selected its working force in the following fashion:—

Honorary President, M. Georges Leygues, Ministre de l'Instruction Publique et des Beaux-Arts; President, M. Alfred Normand, Membre de l'Institut, President de la Société Centrale des Architectes Français; Vice-Presidents, M. Roujon, Directeur des Beaux-Arts, and M. Francisque Sarcey, a man of letters; Secretary, M. Gustave Larroumet, Membre de l'Institut, Secretary of the Académie des Beaux-Arts; Treasurer, M. Bartaumieux, Treasurer of the Société Centrale des Architectes Français.

In the first place, the committee interested itself about the site of the proposed monument. It was decided with unanimity that it ought to be erected on the outside of the Opéra, at the foot of the rotunda

of the library, between the two ramps originally intended for the entry of the head of the State. While being actually on the outside, it will at the same time be within the lines of the Opéra itself, and will contribute still further to the embellishment of this magnificent work conceived by the grand master in whose honor the monument will be erected. The committee also selected the architect who should be entrusted with the design of the monument, and named M. Pascal, Member of the Institute, who was a friend and co-laborer with Garnier. Already, at the first of December, the subscription has reached more than 12,500 francs, while from every side money is still flowing in, societies of architects and artists adding theirs to individual subscriptions, and we shall hope to be able to perpetuate the memory of our dear master in a monument worthy of him.



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

UPPER PART OF THE PALM-GARDEN: "SHERRY'S," 44TH ST. AND FIFTH AVE., NEW YORK, N. Y. MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS, NEW YORK, N. Y.

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

COMPETITIVE DESIGN FOR "SHATTUCK PRIZE" FOR ARTISANS' HOMES. [OPEN COMPETITION.] SUBMITTED BY MR. HARTLEY DENNET, BOSTON, MASS.

THE features of this design, to which attention is called, are, large, common, central area, private gardens, teaming only in alley surrounding the lot and in rear of central building. The living-rooms are on the gardens, which face the alley. No teaming in the interior of the property: the park is kept safe for children and quiet for adults. Houses separated by space of 60 feet from property-line, assuring these dwellings continual enjoyment of sun and air. Stores have been provided, but not so many that the dwellings are thrown into the rear. Very liberal floor-space has been provided, and these plans are intended for a more prosperous class of artisans, although the arrangement of grounds is elastic.

Substantial but plain two-story brick houses, with dry cellar and finished attic, five, six, or seven rooms and bath, small shed for fuel and ashes.

In these studies grates or coal-stoves have been assumed, with provision for furnace. The arrangement of buildings is, however, favorable for heating from the central building.

The central building included in these estimates contains laundry, assembly-hall, and dwelling for the caretaker.

ESTIMATED COST.

House A 650 sq. ft. at \$2.80.....	\$1,820 (on 50 block houses)
" " 2,000 cubic ft. at 9 cents.....	1,800 " " " "
Total ground covered:—	
38 small houses, 6 large houses, 6 stores with dwellings over, central building.....	38,056 sq. ft.
Cost of buildings, at \$2.80 sq. ft.....	\$106,557
" " land at 15 cents per sq. ft.....	26,136
" " grading, draining, paving, fencing and machinery, say...	10,000
	\$142,693
RENTAL.	
From stores, use of laundry and lodge, say.....	\$3,500
Six 25-foot houses (in rear) at \$250.....	1,500
44 houses at \$210.....	9,240
	\$14,240

Equals 10 per cent gross on cost.

PLANS OF THE SAME.

UNION LUTHERAN SUNDAY-SCHOOL BUILDING, YORK, PA. MR. B. F. WILLIS, ARCHITECT, YORK, PA.

THE materials proposed, which will be most likely adopted, are hand-made, common red brick, laid Flemish bond, dark headers, Indiana limestone, terra-cotta to match same in color, unfading green slate, 6" x 12" in size. The "head" building will contain on the first floor a Sunday-school library-room, pastor's study, with ceiling, 9' 6" in the clear; the second floor of the same contains a large meeting-room and smaller anteroom with arched high ceilings, richly modelled in hard plaster. Each of the above four rooms has an open fireplace. The auditorium portion of the building, also, has arched ceilings, enriched with hard-plaster work. The seating capacity of auditorium proper and gallery over is 1,040.

UNITED STATES POST-OFFICE, POTTSVILLE, PA. MR. JAMES K. TAYLOR, SUPERVISING ARCHITECT OF THE TREASURY DEPARTMENT.

UNITED STATES PUBLIC BUILDING, BOISE, IDAHO. MR. JAMES K. TAYLOR, SUPERVISING ARCHITECT OF THE TREASURY DEPARTMENT.

HOUSE FOR MILTON L. CUSHING, ESQ., FITCHBURG, MASS. MR. O. A. THAYER, ARCHITECT, BOSTON, MASS.

[The following named illustrations may be found by reference to our advertising pages.]

LONDON STREET FRONTS.

This plate is copied from the *British Architect*.

A GROUP OF MONUMENTS.

CLASSIC REMAINS.

[Additional illustrations in the International Edition.]

A CORNER OF THE PALM-GARDEN: "SHERRY'S," 44TH ST. AND FIFTH AVE., NEW YORK, N. Y. MESSRS. MCKIM, MEAD & WHITE, ARCHITECTS, NEW YORK, N. Y.

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

A QUESTION OF COMMISSION.

NEW YORK, N. Y., December 28, 1898.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Would you be willing to give me your opinion in your extended experience as to equity in settlement for architectural service?

Architect received orders for planning a church in 1892 under formal agreement of 3½ per cent. Plans were completed early in 1893 and architects notified in April, 1893. Contract placed for \$24,483.00.

Architect requested payment in July, 1893 and has since written many urgent letters, obtaining, in the course of five and one-half years, in four small instalments, about one-fourth of the amount due him. Meanwhile the church has been slowly constructing and the figure now given of cost is several thousand less than the \$24,483—possibly on account of low building rates that have lately prevailed. Question: Is architect entitled to commission on contract of 1893 representing building prices at the time he did the work? Or, because he was compelled to go unpaid so long, should his commission be reduced by the lower building rates of succeeding years? The moral is clearer than the technical status—for architect was to have "3½ per cent on the cost of building,"—but it was due and payable when contract was placed.

Second: Is architect entitled to interest when he is kept waiting five and one-half years after he had completed his work?—he did not superintend.

Yours truly, "A."

[The answer to this question depends entirely on the wording of the contract. Where the agreement was to pay the architect 3½ per cent "on the cost of the building," this phrase, in the absence of any express or implied explanation, means the actual cost. If, however, the contract stipulates further that the architect's percentage shall be payable when the contract is signed, this is strong evidence that the "cost" intended by the parties was the contract-price. On the latter supposition, the architect would seem to be entitled to interest on the sum promised him, from the time when it was due, that is, the time of the signing of the contract, unless he has, by neglecting to give notice that he expected interest, or in some other way, waived his claim. If the contract only provided that the architect should be paid a percentage on the cost, without specifying the time of payment, it seems to us that, as the cost can only be ascertained when the building is finished, he is not entitled to interest unless the work has been unreasonably delayed, which, considering the way in which churches are often built, does not appear to have been the case; or unless instalments were agreed to be paid at certain periods, and are in arrears.—Eps. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS

SEARCH FOR THE HIDDEN TREASURE OF ZANTE.—Just now the attention of Athenians is centred at the Island of Zante, one of the Ionian group. Some time ago there was found in the archives of the State library in Athens a parchment, dated several hundred years ago, saying that when Suleiman in 1536 conquered Corfu, the inhabitants of Zante, fearing that their island would share a similar fate, buried all their treasures and fled, and that the Empress Sophia did the same. The place where the Empress's treasure lay is described as "within the fortress under a large red stone near the Temple of St. Luke." In the year 1800 Pope Clement VIII made a search for the treasure, but the result is unknown. In 1814 the English attempted to find it, and excavations were made, the large stone mentioned in the ancient document found, but then the search was interrupted. Now the document is in the hands of an Italian, who, together with some Greeks, is searching for the treasure. The Greek Government has granted a concession for the work, on condition of receiving half of the treasure if it be found. A patrol of soldiers guards the place day and night. The excavators met with a well, which was easily pumped dry, but instead of the large red stone, they found at the bottom of the well two grottos, one running north, the other south. The former is said to be very remarkable. It has been explored for eighty metres, and runs close below the Church of St. Laurentia. In it was found a structure of masonry, which, when struck, emitted a hollow sound. This has now to be opened, and the operation is looked forward to with great interest and excitement. — *N. Y. Times*.

THE GROWTH OF LONDON.—Mr. Robert Vigers delivered his Presidential address at the Surveyors' Institution, Savoy Street, recently. There was a large attendance. Speaking as a surveyor of fifty years' standing, he had, he said, seen the open spaces taken possession of by the extra 2,000,000 people who had had to be provided for during that time. The population within the administrative County of London had risen from 2,363,274 in 1851 to 4,232,118 in 1891, or about fifty-six persons to the acre. The number of inhabited houses was 306,064 in 1851, and 548,315 in 1891. The serious problem was how to provide a population increasing at the rate of about 500,000 in ten years with the proper means of internal communication. Speaking broadly, the bulk of the heavy traffic of London was between the north and south, or the termini of the great railways on each side of the river. The lighter traffic and the ebb and flow of the pedestrian tide was, on the other hand, mainly from east to west. They might wonder what the state of things would be in twenty or thirty years' time, and yet nothing had been done to mitigate the growing inconvenience. The widening of the footpaths had scarcely been considered. The system of tube railways would probably absorb some of the foot traffic, but their carrying-capacity would soon be reached, and wider roads and pavements and new arteries for wheeled traffic would become imperative. What had hitherto been done was mere tinkering, and an enormous expenditure would have to be incurred in further widening streets, like Oxford Street, Holborn, the Strand, Fleet Street, and Ludgate Hill, which were originally laid out for a population one-tenth the present size. The value of property had enormously risen in the city, and he had purchased for £73,000 property for which the grandfather of the vendors had given £1,500. — *London Times*.

PERPENDICULAR CHARACTERISTICS.—Arches at first enclosing an equilateral triangle, afterwards obtusely pointed. Piers generally oblong; longitudinal direction, north and south. Mouldings continued from base through arch; capitals with mouldings, large, angular and few, with abacus and bell imperfectly defined. Foliage of conventional character, shallow, and square in outline. Bases with bead, reversed ogee and hollow, polygonal. Windows, when lofty, divided into stories, by transoms; the mullions often continued perpendicularly into the head. Canopies of ogee character richly crocketed. Doors generally with square label over arch, the spandrels filled with ornament. Buttresses with fold projection often ending with pinnacles. Flying-buttresses pierced with tracery. Walls profusely ornamented with panelling. Parapets embattled and panelled. Open-timber roofs of moderate pitch, of elaborate construction, often with hammer-beams, richly ornamented with moulded timbers, carved figures of angels, and with pierced tracery in spandrels. Roofs sometimes of very flat pitch. Lofty clerestories. Fonts raised on steps, octagonal in shape, with sculptured panels of tracery and figures. Elaborate font covers. Mouldings large and coarse, with wide and shallow hollows and hard wiry edges, meagre in appearance, and wanting in minute and delicate detail; generally arranged in chamfer planes. Early in the style the mouldings partake of Decorated character. — *The Architect*.

PIPES THAT WON'T FREEZE.—The frozen water-pipe is a problem that confronts almost everybody where large systems of water-piping are in use. A new German invention designed to prevent this provides an opportunity for its expansion by cold. Into the iron pipe as far as it is above ground there is inserted a second narrower pipe of thin sheet tin or lead, which is filled with an elastic substance, such as rubber, for instance. This insertion remains unaffected by ordinary pressure, but if extreme cold should cause the water to freeze the elastic insertion is compressed by so much as the volume of water is increased by freezing. In thawing the insertion expands again to its original circumference. The tin or lead around the insertion is for the purpose of preventing the water from assuming an unpleasant taste or odor. Water-pipes provided with such insertion withstood a cold test of 40 degrees C., while others that were not provided with it burst every time. — *Invention*.

THE PASSING OF THE PLAINS OF ABRAHAM.—The announcement is made that the famous Plains of Abraham, at Quebec, which are popularly supposed to be the property of the Dominion Government, may before long pass beyond its control and be divided up and sold as building-lots. This comes from the fact that the Hôtel Dieu nuns, and not the Government, are the owners of the property. The Government is only the occupant in virtue of a ninety-nine years' lease, which will expire three or four years hence, when the property will revert to the nuns, who will probably find it more profitable, as in the case of some of the martello-tower fields, which have already fallen back to them, to cut it up into building-lots and sell it than to renew the lease *en bloc* for the annual rent of \$200 or thereabouts, which they now receive for it from the Government. — *N. Y. Evening Post*.

IMPROVEMENTS IN FLORENCE.—Great improvements, our Florence correspondent says, are being carried out in Florence, and those who have not visited the city for ten years would scarcely recognize it again. The new service of electric tram-cars has been started, electric-light has been laid down in all the principal streets, old streets have been swept away, and new and wide ones have taken their place. The site of the old Ghetto is now the very centre of the city, with fine shops and buildings on every side. Even old inhabitants can scarcely recognize the Florence of a few years ago, so great has been the metamorphosis. Archaeologists are, of course, crying out loudly against the destruction of old buildings, but as far as sanitation is concerned the Florence of to-day is doubtless an improvement on old Florence. The authorities also are very careful to preserve all buildings of interest. — *London News*.

EXCAVATIONS IN CHINA.—Information received here from the most remote corner of Shensi, Northern China, within the sphere, I believe, of the important British concession in that region, leaves no room for doubting that systematic excavations, conducted on a scientific principle, would yield valuable and important objects of antiquarian interest. The very primitive and fragmentary attempts in this way already made have revealed many pieces of antique bronzes and pottery, several of which have now arrived in London. Experts who have seen them state, I am informed, that they are at least 2,000 years old. Reports have also reached certain quarters in London of the discovery near Fonghsian-Fou of gold objects, supposed to belong to coats of mail, and an inlaid casque; all of which news makes it evident that a rich harvest for the antiquarian is in store when the time is opportune to carry on the work of exploration in those regions. — *Birmingham, Eng., Post*.

WHITEWASH AND THE CENSUS.—In a former article I mentioned some curious superstitions which are still to be found among the people, but here is one of the most curious, which I happened to hear the other day: A clergyman was walking through the outskirts of his parish one evening when he saw one of his parishioners very busy whitewashing his cottage. The parson, pleased at these somewhat novel signs of cleanliness, called out, "Well, Jones, I see you're making your house nice and smart." With a mysterious air, Jones, who had recently taken the cottage, descended from the ladder and slowly walked to the hedge which separated the garden from the road. "That's not 'xactly the reason why I'm a-doing of this 'ere job," he whispered, "but the last two couples as lived in this 'ere cottage 'ad twins; so I says to my missus, I'll tak an' whitewash the place, so as there may n't be no infection. Ye see, sir, as 'ow we got ten of 'em already." Whether the whitewashing was effectual or not I have not been able to ascertain. — *Cornhill Magazine*.

THE CHURCH OF THE SACRÉ CŒUR, PARIS.—It is announced that the cupola of the Church of the Sacré Cœur at Montmartre, Paris, will be completed for the year 1900. Two-thirds of the work is done, and the summit of the cupola will be reached in the course of next year. The progress seems in reality to be absurdly slow, we presume owing to difficulty in collecting funds. After the completion of the dome, which will be surmounted by a stone cross, five or six months will be spent on the interior decoration; and after the removal of the scaffolding the church, which is very dark at present, will receive a flood of light from the twenty windows of the dome. There will then remain, it is estimated, another three years' work in the erection of the campanile on one side, and the sacristy and presbytery on the other; and there is also another tower to be built, of specially solid design, to receive the great bell called "La Savoyarde." The work was commenced in June, 1875, and has cost 24,000,000 francs up to this date; its completion will require another 6,000,000. — *The Builder*.

WHAT IS "THIRTY FEET HIGH" IN ENGLAND.—Another decision has been given on the important question, What does 30 feet high mean, under the Workmen's Compensation Act? A laborer claimed compensation from Mr. Goodall, a builder, for injuries which he suffered while working at a building in Bermondsey. In the course of the evidence, it was ascertained that at the time of the accident the height of the building was only 26 feet from the basement level, although it was 35 feet from the lowest part of the foundations. Judge Atkinson, Q. C., was of opinion that foundations were not to be reckoned. The height was to be 30 feet from the level of the basement, and, as the building was 4 feet short of that dimension, judgment was given for the builder. Mr. Goodall did not seek costs, and generously offered to keep the man in his employment. Judge Atkinson took the opportunity of pointing out the mischief which was caused by inserting an appeal clause in the Act, which was alike oppressive to rich and poor. In the case just heard the man was five weeks out of work, and if he had been successful he could receive no more than half his usual wages for three weeks, while for the remaining two he could not be paid. It is now becoming evident that the Act is a white elephant for workmen. — *The Architect*.

THE AMERICAN ARCHITECT AND BUILDING NEWS

ADVERTISERS' TRADE SUPPLEMENT.

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SATURDAY, JANUARY 7, 1899.

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GREENHOUSE HEATING.

It was with something akin to surprise that in looking over the new catalogues of the well-known greenhouse architects and engineers, the Lord & Burnham Co., of Irvington-on-Hudson, N. Y., the writer's eye caught the statement that in addition to the five "highest awards" this concern received at the Chicago World's Fair for "Conservatories, Rose-houses, Greenhouses, Iron-framed Plant-tables and Ventilating Machinery," it also received the "highest award for Heating-apparatus."

After all, as any one knows who is at all conversant with flower-growing, this is not so extraordinary, for a successful builder of greenhouses must also be able to so warm them that plant-life of many kinds can be fostered, and this can only be effected through the agency of a heating-apparatus which can be easily controlled and withal so simple as regards management and so inexpensive as regards first-cost, operation and repairs that greenhouse-men can afford to use it.

Now plants require, first of all, an equable temperature without excessive variations, and that too is just what man himself needs, and, on general principles, one who can equally heat a greenhouse with its vast expanse of cold-radiating surface may be safely intrusted with the complex matter of house-warming, and we know several cases where greenhouse-heaters have been used with the greatest success for house-warming.

Naturally the system used is the hot-water system, and we make the following extracts from their catalogue:—

"The Principle of hot-water circulation is very simple. The power which produces the circulation of water through the apparatus is gravity, or the difference in weight of the ascending and descending columns of water in the perpendicular flow and return pipes. Water is at its greatest density at 39 degrees Fahr. As the temperature is raised above this point the volume of water increases and the density decreases, or, in other words, the water becomes lighter. Thus when the apparatus is filled with water and the fire started, the heat coming in contact with the surfaces of the heater is absorbed by the water which, becoming lighter, is forced upward through the heater outlet and flow-pipe to the radiating-coils, by the colder heavier water descending through the return-pipe. As the water passes through the radiating-pipes, it imparts its heat to the atmosphere until, upon again reaching the heater, it has become cooler and heavier and again takes the place of the heated water, thus forming a continuous cir-

ulation as long as there is fire in the heater, or a difference in the temperature of the water in the flow and return pipes.

"The Principle applied will accommodate itself more fully than any other to the various conditions found in general greenhouse heating. By this method houses up to 300 feet in length are warmed by a heater placed at one end with little or no variation in temperature between the two ends; or, a range of several houses may be warmed by the same heater with such variations in temperature in the separate houses and compartments as may be required to suit the class of plants in each, the temperature of each being under independent and complete control.

"Its Adaptability. It is obvious that this system is the one best adapted to the heat requirements of perfect plant growth. A large amount of radiating-surface, moderately heated, imparts to the air a mild congenial warmth, free from any impurities and neither drying nor impairing its vitality in the least, thus producing the nearest possible approach to the natural atmosphere.

"In its Management, it requires less attention than any other method. When once the pipe-coils are properly proportioned to maintain certain temperatures in the different houses or compartments the entire apparatus is controlled by the draught-regulator on the heater. By simply increasing or decreasing the fire by means of its draught-regulator, and a person will quickly become familiar with the amount of draught necessary to obtain the desired results,—the temperature may be regulated to suit all conditions of weather. It is then automatic in its operation, since, should the outside temperature fall or the wind rise, a fall of temperature in the greenhouse would immediately follow; but the increased wind velocity or lower outside temperature increases the chimney-draught, which in turn quickens the circulation and raises the temperature of the water, and additional heat is radiated from the coils and no change in the temperature of the greenhouse takes place. Then again, should the outside temperature rise, or the wind die out, a rise in the greenhouse temperature would follow, which is not desired; the chimney-draught is now decreased enough to reduce the circulation and temperature of the water, less heat is radiated from the coils and the temperature of the greenhouse is not changed. The fire in the heater, after being prepared for the night and properly regulated, will run automatically without attention until morning, or from eight to ten hours. In the morning the fire is shaken down, ashes removed, coal put

on, and the draught again regulated to meet the conditions of a cold, mild, clear or cloudy day, as the case may be, and it will require no further attention until night.

"A Perfect Apparatus must include: First, an economical, durable heater, simple in management, easily cleaned, and capable of maintaining a steady temperature for eight or ten hours without attention; Second, mains of ample size so arranged as to properly distribute the heat in the different compartments; Third, radiating-pipes so placed as to maintain an even temperature in all parts of the house and to keep up an active circulation of the heated air, thus producing a natural atmosphere. For private and commercial greenhouses the most satisfactory method of heating is by an open tank hot-water apparatus. This embodies the requirements necessary to success to a greater degree than any other system, and at the pre-ent low prices of materials is comparatively inexpensive.

"Other Systems have many objectionable features. Brick flues and saddle heaters leak gas and smoke in the houses and do not distribute the heat properly, while the conical hot-water heaters are deficient in fire-surface and therefore are extravagant in the use of fuel. The system of hot water under pressure is well adapted to some special cases but cannot be recommended for ordinary purposes. That of heating by low-pressure steam is well adapted to very large commercial ranges and to large conservatories in parks and on private places where a night attendant can be kept in charge of the fires, and to turn on and shut off steam to the radiating-pipes as the changing outside temperature may require."

A LASTING PAINT.

CONSIDERABLE has been written lately about an old sign in possession of the Western Society of Engineers at Chicago. The words "Harper's Ferry," painted in black, stand out as boldly as when they were first formed by the artist's brush, while the wood around the letters, which was painted with white paint, has worn away about one-sixteenth of an inch. It is asserted by the writers that no paint manufactured nowadays is equal in durability to that which was applied on the old sign.

Mr. Wm. Hooper, of Ticonderoga, N. Y., does not see anything specially remarkable in the preservation of the old sign and claims that there is just as good a paint made nowadays as then. He adds: "I have seen signs that have been painted with black paint directly on the clapboard of the building. The

(Continued on page 3.)

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PART III,

and though it will contain only the same number of plates as does Part I, these plates will include
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ing scale of prices for this new Part and the others already issued:—

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: :: PARTS I, II and III :: :

[121 plates, 10 x 14½ inches.]

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lettering was good after the paint on the balance of the building had disappeared, and after this the whole building was painted over, lettering and all, and the lettering obliterated; yet within ten years afterwards the old black lettering appeared again quite freshly to view. I suppose the paint for the lettering was made of linseed-oil and lamp-black. I believe, however, that finely ground graphite mixed with pure linseed-oil will last as long, or longer, than any other paint ever known of or used. I had a large iron casting which laid in my mill-yard for over thirty years. It was painted with only one coat. The old casting was broken up and sold for old iron last month, and I noticed that the paint on the pieces of casting, even after being broken up, looked quite fresh.

"If the surface to be painted is perfectly dry when the finely ground graphite is applied the paint will prove the most lasting paint known, because, if time eliminates all of the oil, the graphite seems to adhere to the surface painted, just the same as a piece of paper or wood will appear after it has been rubbed with a lead-pencil or a piece of graphite. No other pigment known to me will remain on the surface painted after the oil has been thoroughly destroyed. With the experience I have had with graphite paint, I thoroughly believe that if any dry surface be covered with graphite paint and left untouched for a period of thirty years,—by which time the oil will have disappeared,—no doubt a letter could be written plainly on the surface by using a piece of large wire or nail, after smoothing the end of the wire or nail which is to be used as a pencil. I have done all this and shown it up to others. Writing with the piece of wire polishes the graphite, which adheres to the surface, showing that it is there still."

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GOOD AND BAD ROOFING-PLATES.

MERCHANT & Co., Philadelphia, Pa., are sending their friends a small publication entitled "How Roofing Tin is made." This is a treatise on tin-plates for roofing purposes, and, as the company inform us, is "published in the interest of consumers and for the protection of the reputable roofing-plate manufacturers of the United States." As is well known, this concern has manufactured and sold this product for a great many years.

Most of the information contained in this booklet is entirely unknown to consumers, and even to dealers generally, and in too many cases to architects who specify various brands of tin. It is well worthy of perusal by all who have to use tin-roofing. The publishers say: "If property-owners were aware of the inferior goods they are using, and the immense amount of money lost by using acid plates, a change for the better would soon take place." The publishers will be pleased to send a copy of this publication to any who may wish one.—From "Hardware," December 10, 1898.

REFLECTORS.



MR. I. P. FRINK, 551 Pearl St., New York, reports a very gratifying output of his justly celebrated reflectors for the past year. Mr. Frink has recently gotten out a new catalogue, showing a variety of very practical fixtures, some of them entirely new. We illustrate a couple of them herewith. No. 2779 shows a



sectional glass reflector, finished with handsome brass corona, suitable for offices, banks, corridors, public buildings, etc. No. 2729 is a combination cluster sectional glass reflector, which makes a very practical combination fixture, and is used largely in lighting stores, schools, hospitals, depots, waiting-rooms, offices, and public buildings generally.

NOTES.

THE mail has brought us this year less than the average number of almanacs and calendars—but still more than we can possibly use—and it looks as if this most wasteful of all forms of advertising were at last losing ground.

The most artistic calendar that has come to us is that issued by the Okonite Co., Ltd., of New York City, a very pretty French chromo-lithograph in a gray mat, and the only thing about it of an advertising nature is the well-known trade-mark of the Okonite Co., Ltd., so disposed upon the mat as to be not only unobtrusive but so as to enhance the color-value of the print.

We have also received the calendars, calendar pads and diaries sent us by Samuel H. French & Co., of Philadelphia, dealers in more kinds of building supplies than they think it well to advertise with us; by The C. T. Nelson Co., of Columbus, O., manufacturers of turned columns, etc.; by The Lorillard Refrigerator Co., of New York; by the Gurney Heater Mfg. Co., of Boston; by the Troy Laundry Machinery Co., of Troy, N. Y.; by N. W. Ayer & Son, advertising agents of Philadelphia, and others.

While calendars are useful things to have, in moderation, there are other things which can express good-will and being different in each case are more useful and so are not thrown away because a better one of the same class chances to come in later. Not every manufacturer is so fortunate as the Joseph Dixon Crucible Co., of Jersey City, whose yearly greeting to us consists in so large an assortment of pencils as to practically see us through the year, and though we would not like to have the Gurney Heater Mfg. Co. to send us annually a full-size heater as an appendage for our desks, yet it seems as if the calendar might be given a rest—unless it is made up in some unusually attractive and useful form of moderate size.

FOREIGNERS have for some time been interested observers of the experiments made in this country in the fireproofing of buildings and have both learned useful lessons from our experiences and show now a willingness not only to adopt those of our methods that have stood the test of use but also to import those fireproofing materials that meet with approval in this country.

While it is gratifying it is not, therefore, at

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all surprising to know that the contract for fireproofing a building for the Tramway Power Co., Dublin, Ireland, was awarded to The Pittsburgh Terra Cotta Lumber Co., of Pittsburgh, several months ago. This material, amounting to about 1,500 tons, was shipped from their Works No. 3, East Palestine, O., and they also sent men to Dublin to put same in place and have received advice that everything was all right and the parties were exceedingly well pleased with the work.

Another contract, amounting to about 1,000 tons, for a Municipal Building, has been received by them from Mexico City, Mexico. This job has not yet been started but the tiles have been made and are now on the way and men will leave in a few days to set this material, which was made at Works No. 2, Port Murray, N. J.

It is with regret that we announce the death of Edward F. Randolph, which occurred on Sunday, December 18, 1898, of pneumonia,

at his late residence, No. 12 East 58th Street, in the City of New York, in the 69th year of his age.

The business of Randolph & Clowes will continue under the same management as heretofore. With respect we remain,

Yours truly,

RANDOLPH & CLOWES,
WATERBURY, CONN.

THE United Gas Improvement Co., of Gloversville, N. Y., are erecting a new plant, consisting of generator-house and boiler and engine house. The building is about 50 feet wide and 80 feet long. It will be fireproof throughout. The side-walls are of brick, and the roof framing of steel, which will support slate-roof covering. The trusses are clear span — no interior columns — and rest directly on the side-walls of brick. The steel-work was furnished and erected in place by the Berlin Iron Bridge Co., of East Berlin, Conn.

THE Boston & Maine Railroad Co. are erecting at Portsmouth, N. H., a building for their Electric-Power Station. The building is 118 feet wide and 64 feet long, divided into two rooms — one for the boilers and the other for the engines and electric generators. The side-walls are of brick, the roof construction fireproof; the trusses are of steel, and they support steel beams for the purlins, on which is to be placed a concrete roof. The contract for the steelwork was given to the Berlin Iron Bridge Co., of East Berlin, Conn.

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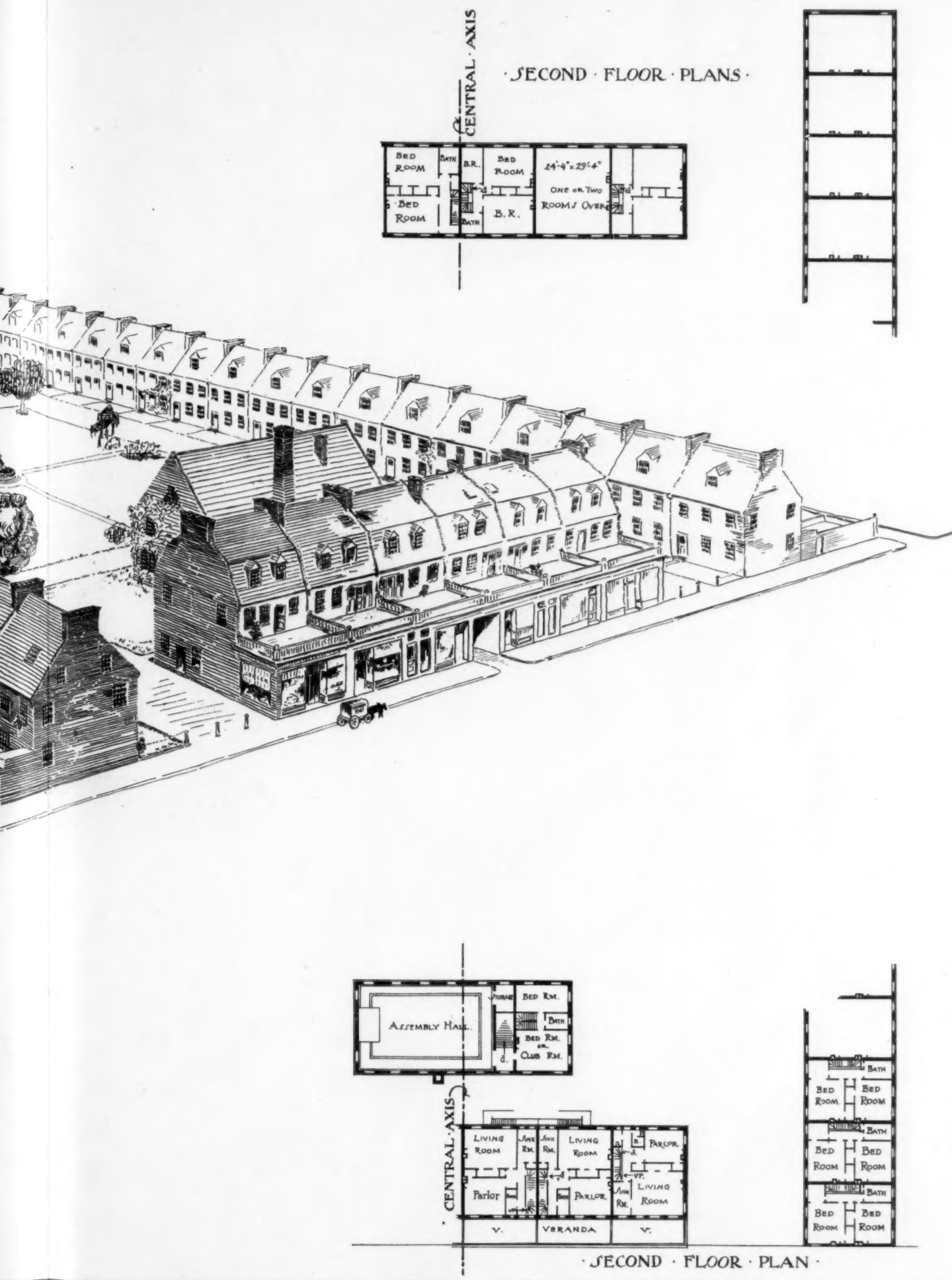
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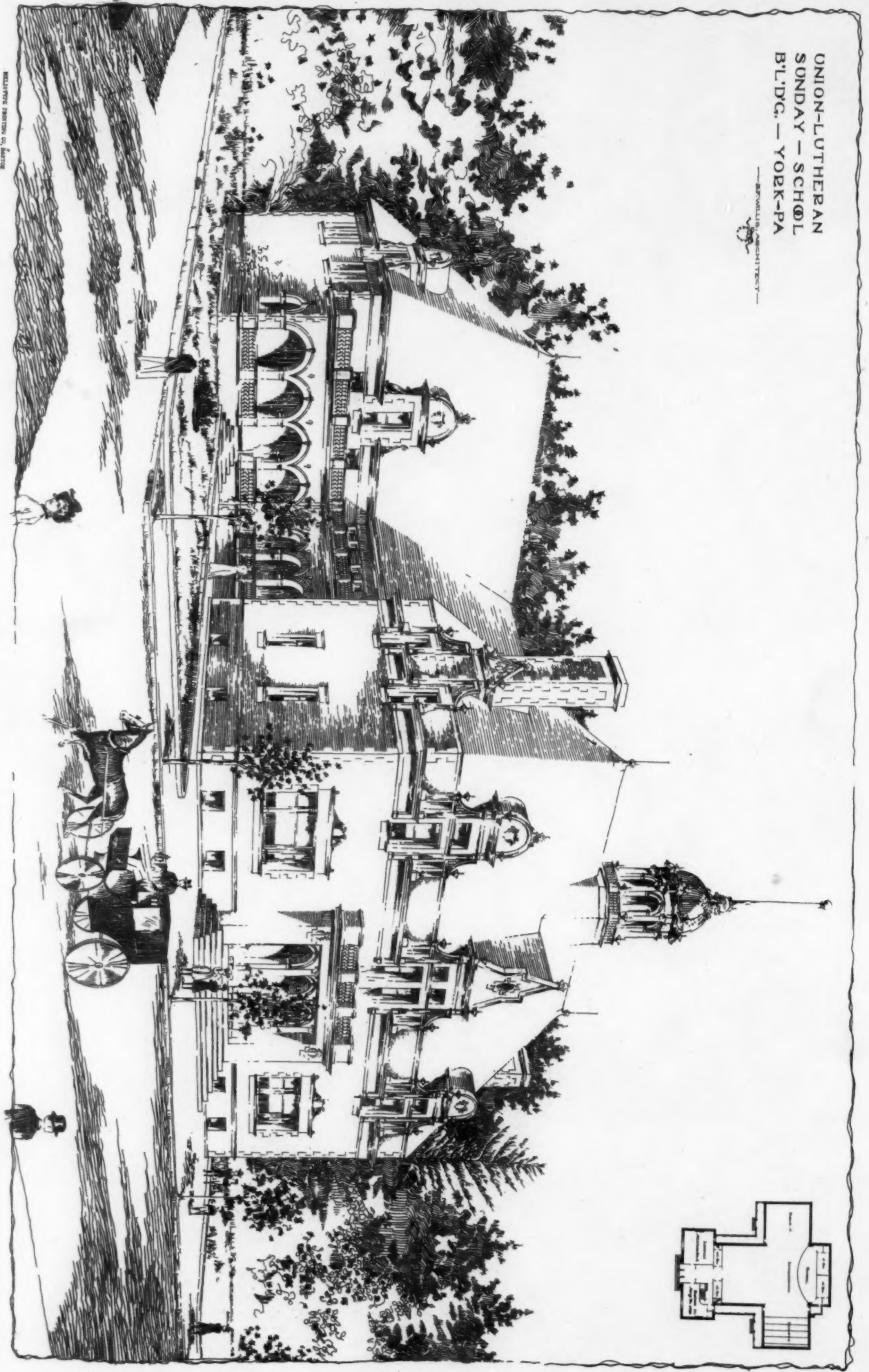
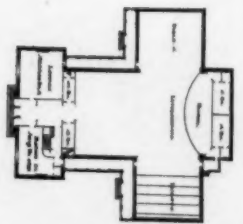
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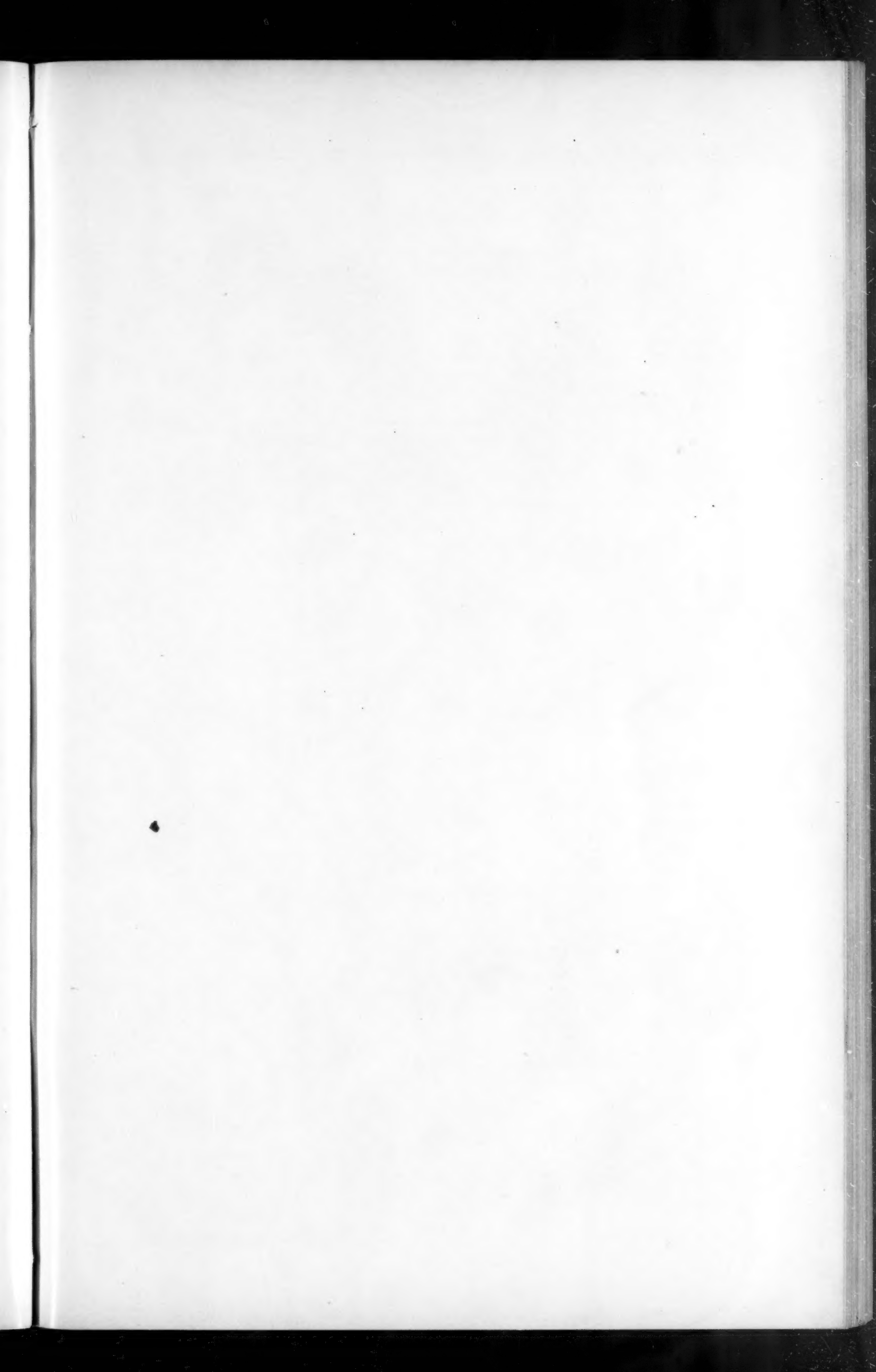
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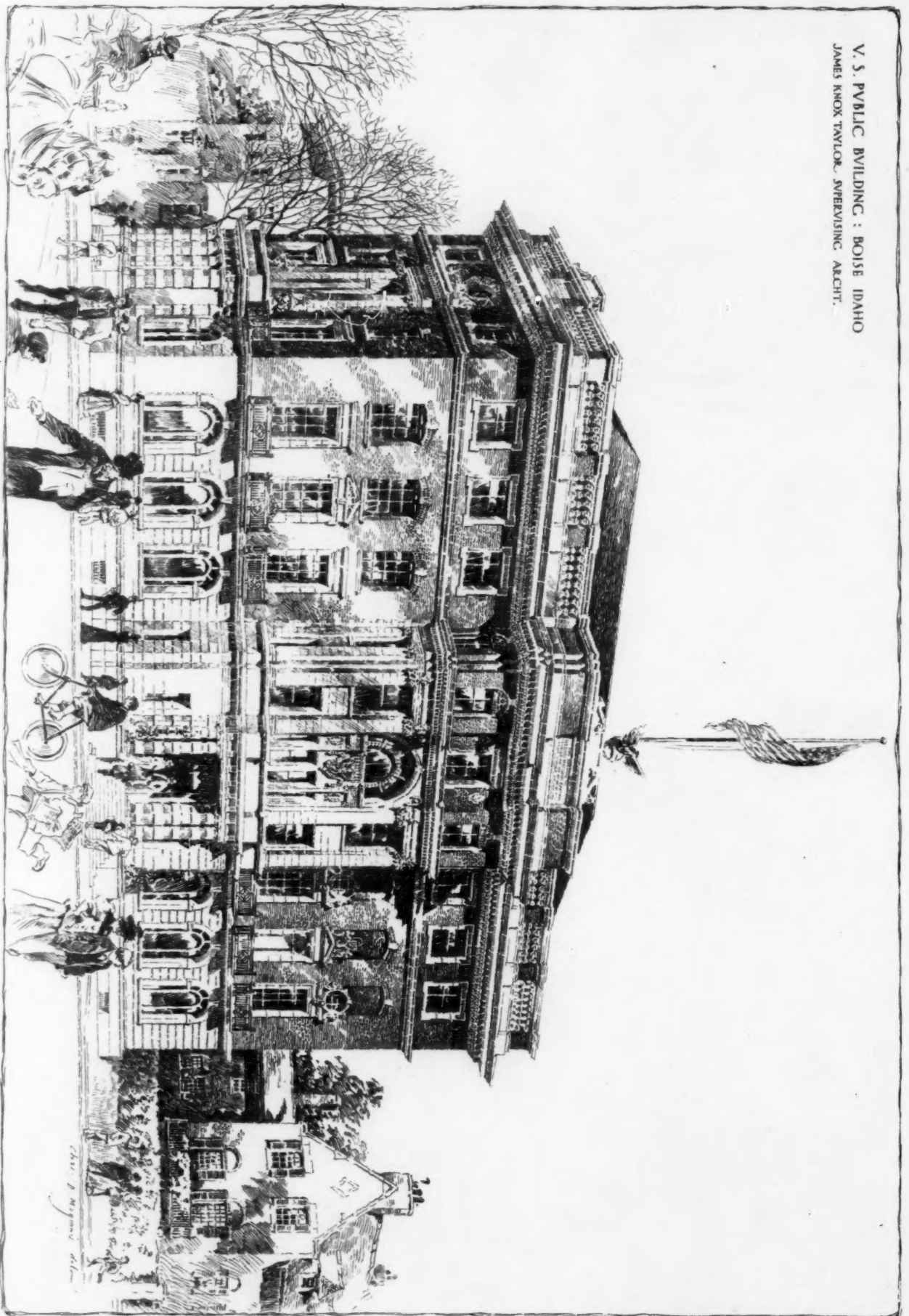


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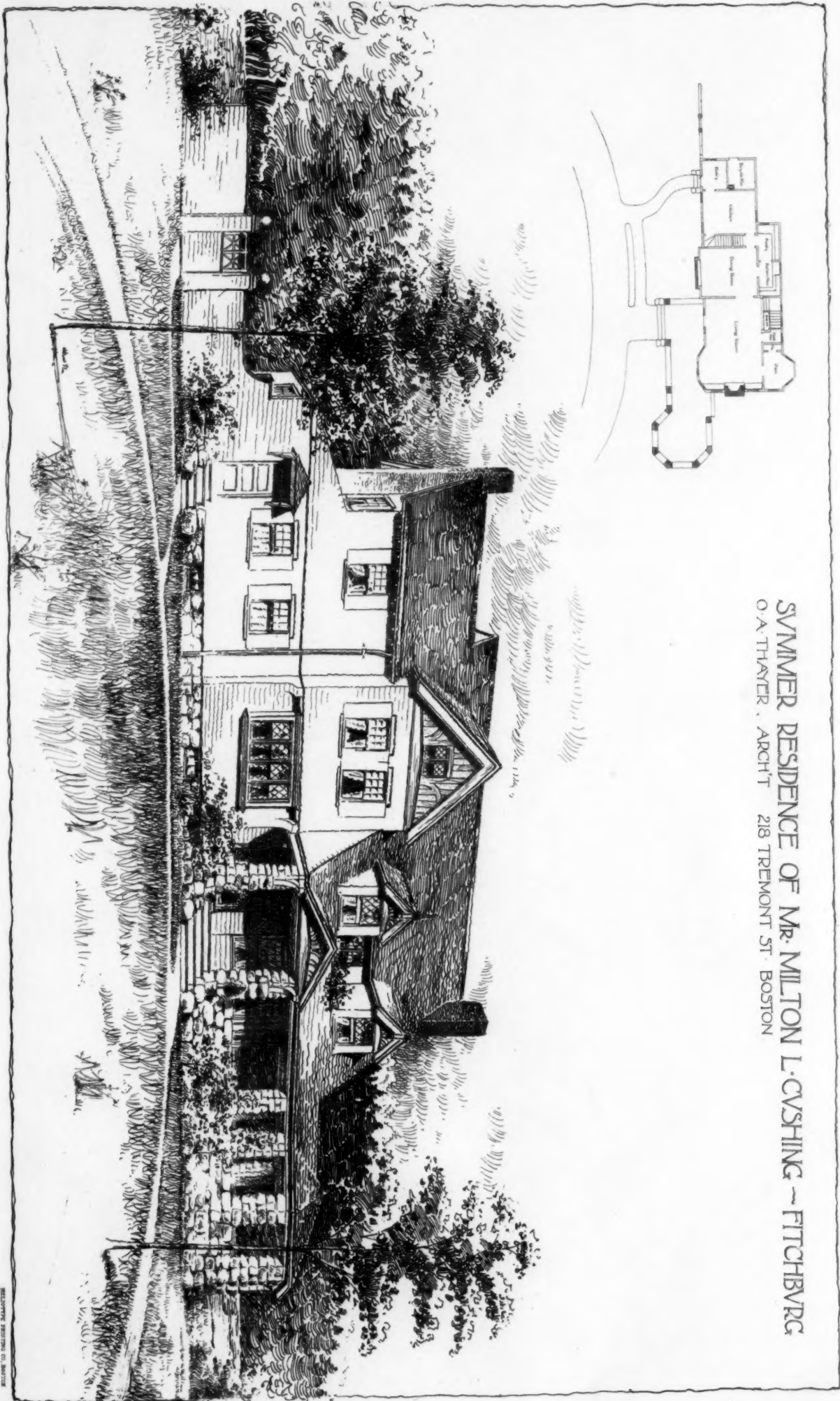
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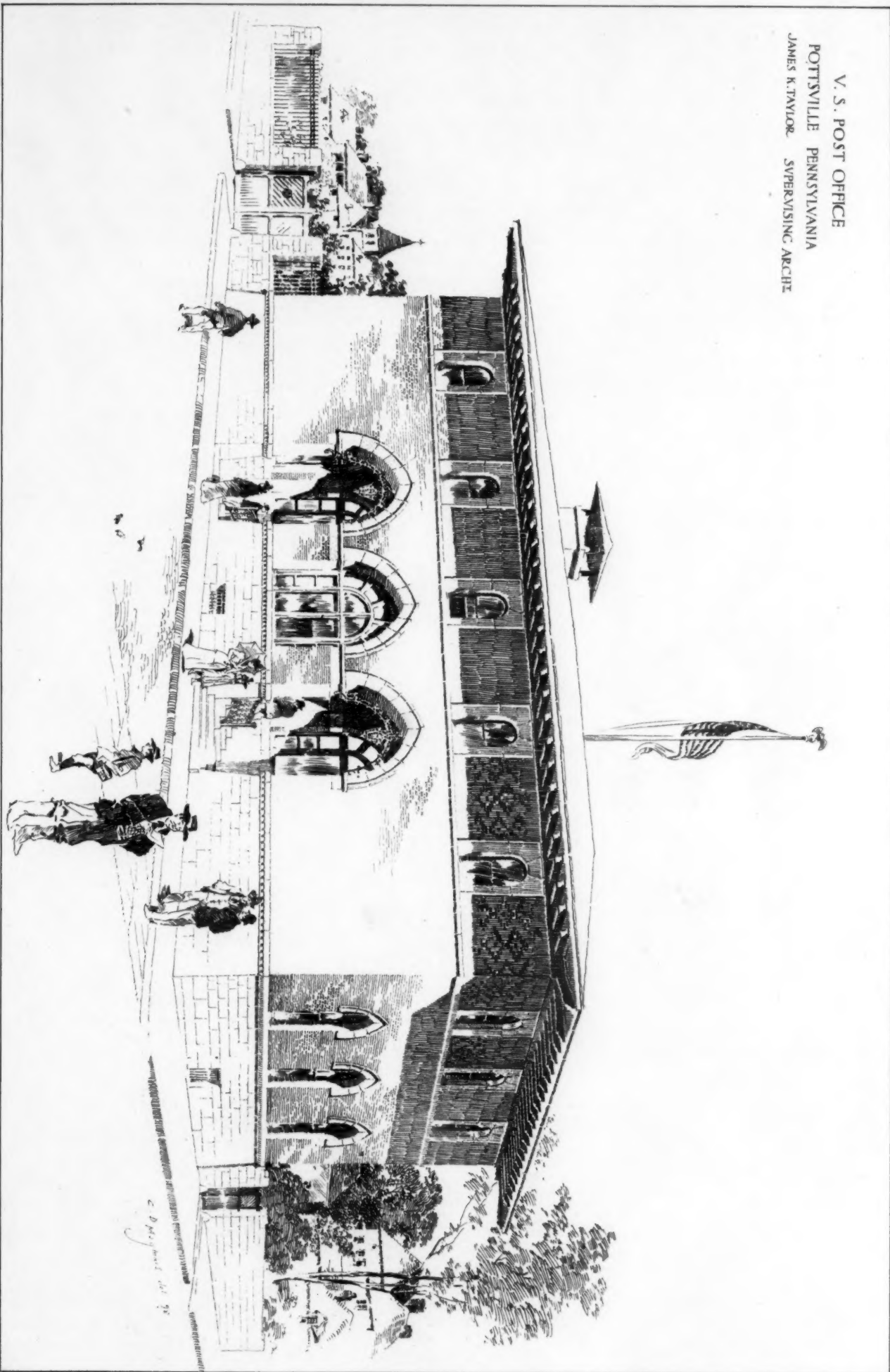


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SATURDAY, JANUARY 7, 1899.

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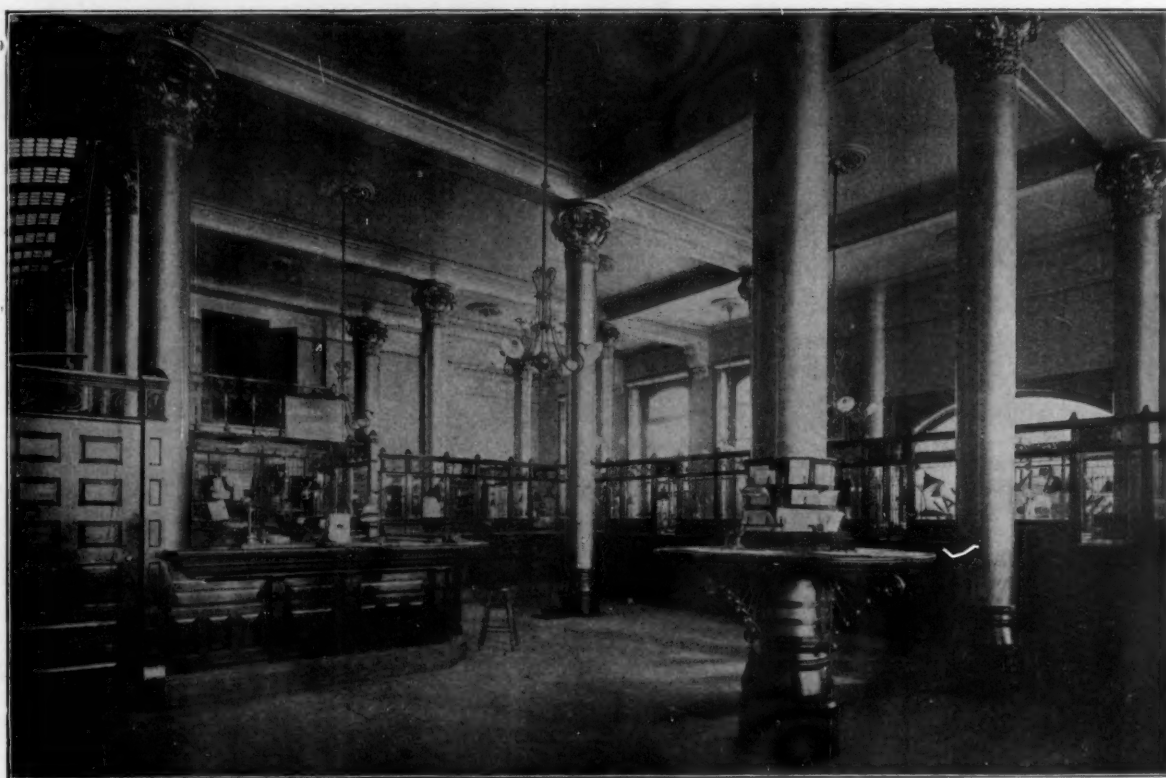
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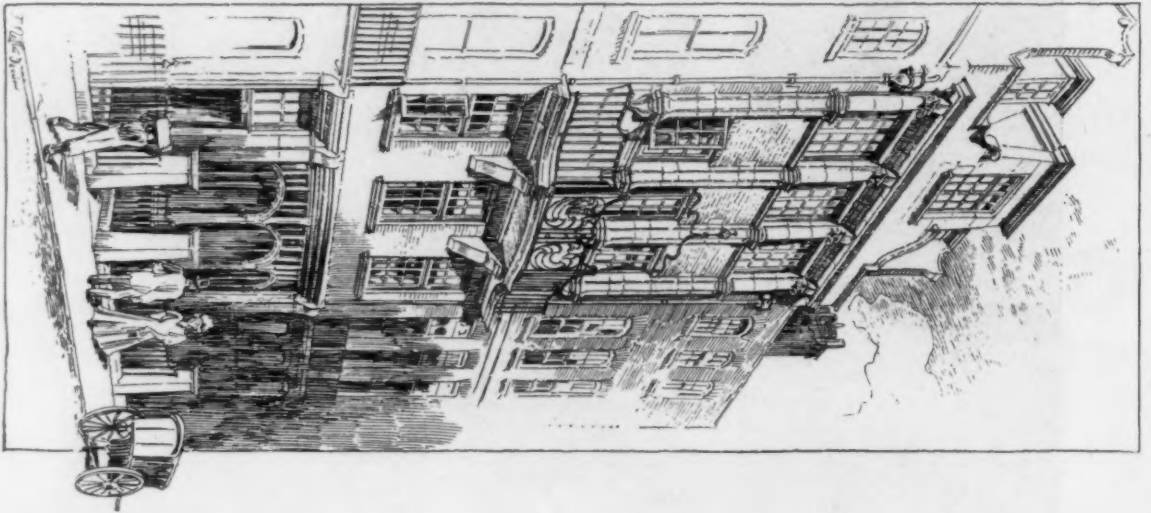
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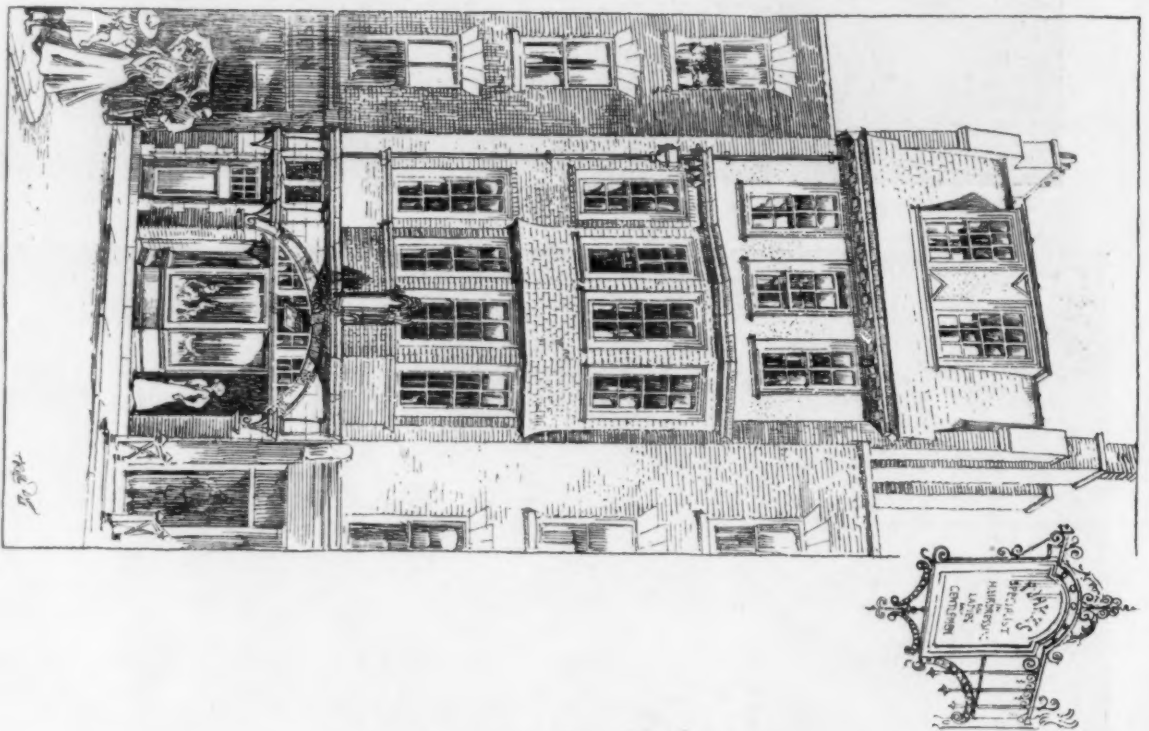
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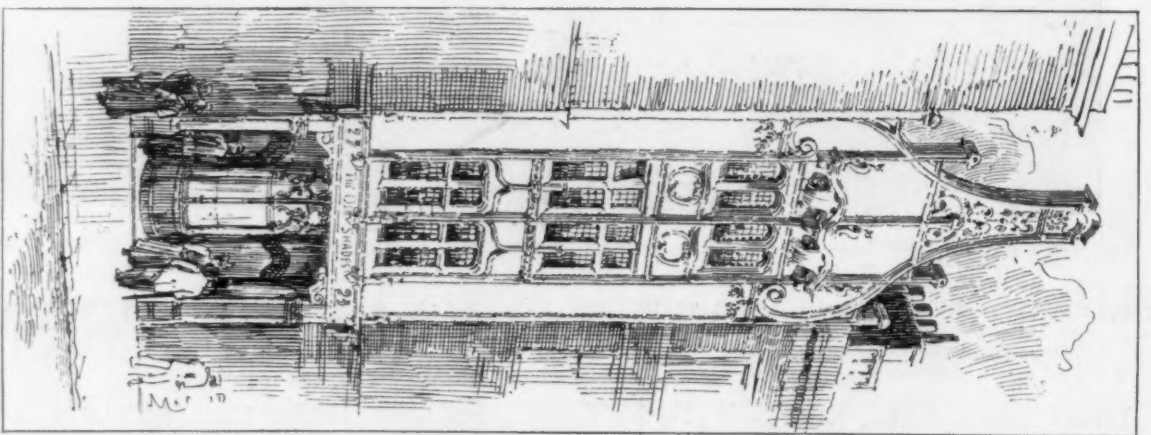
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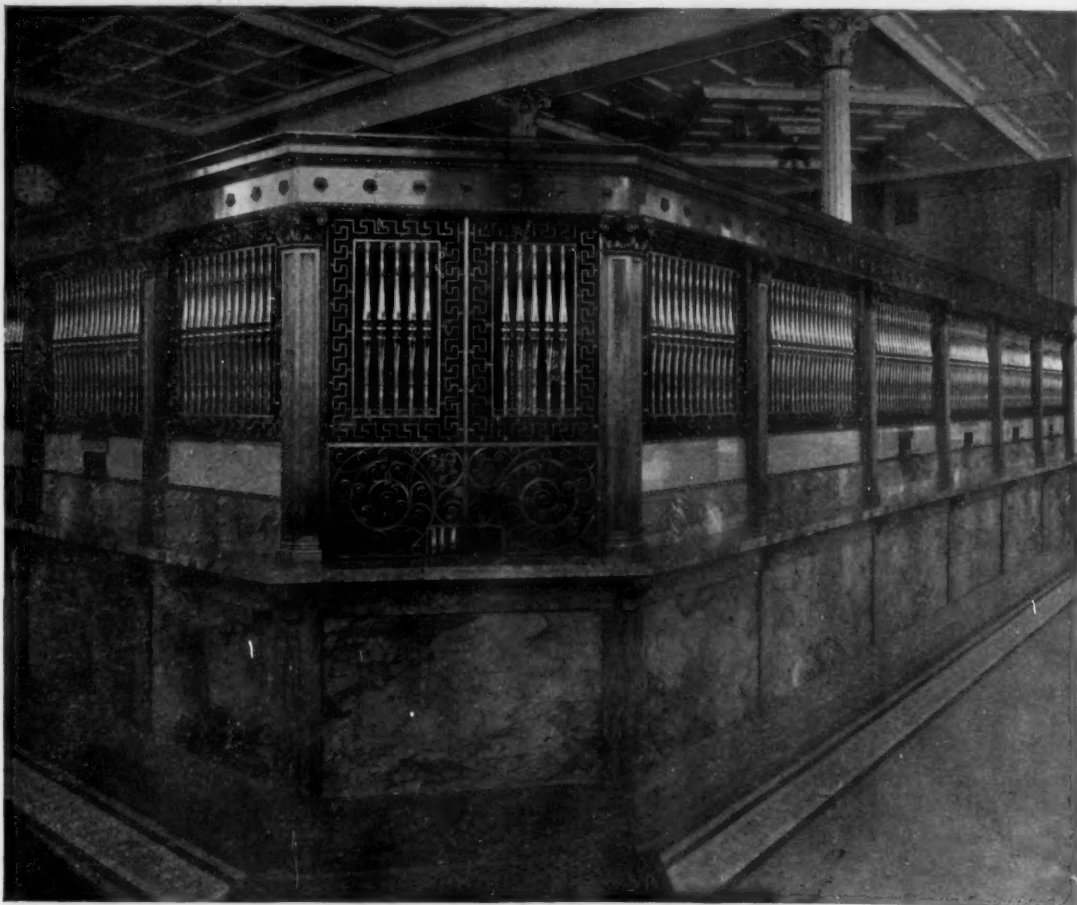
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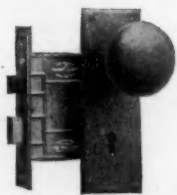


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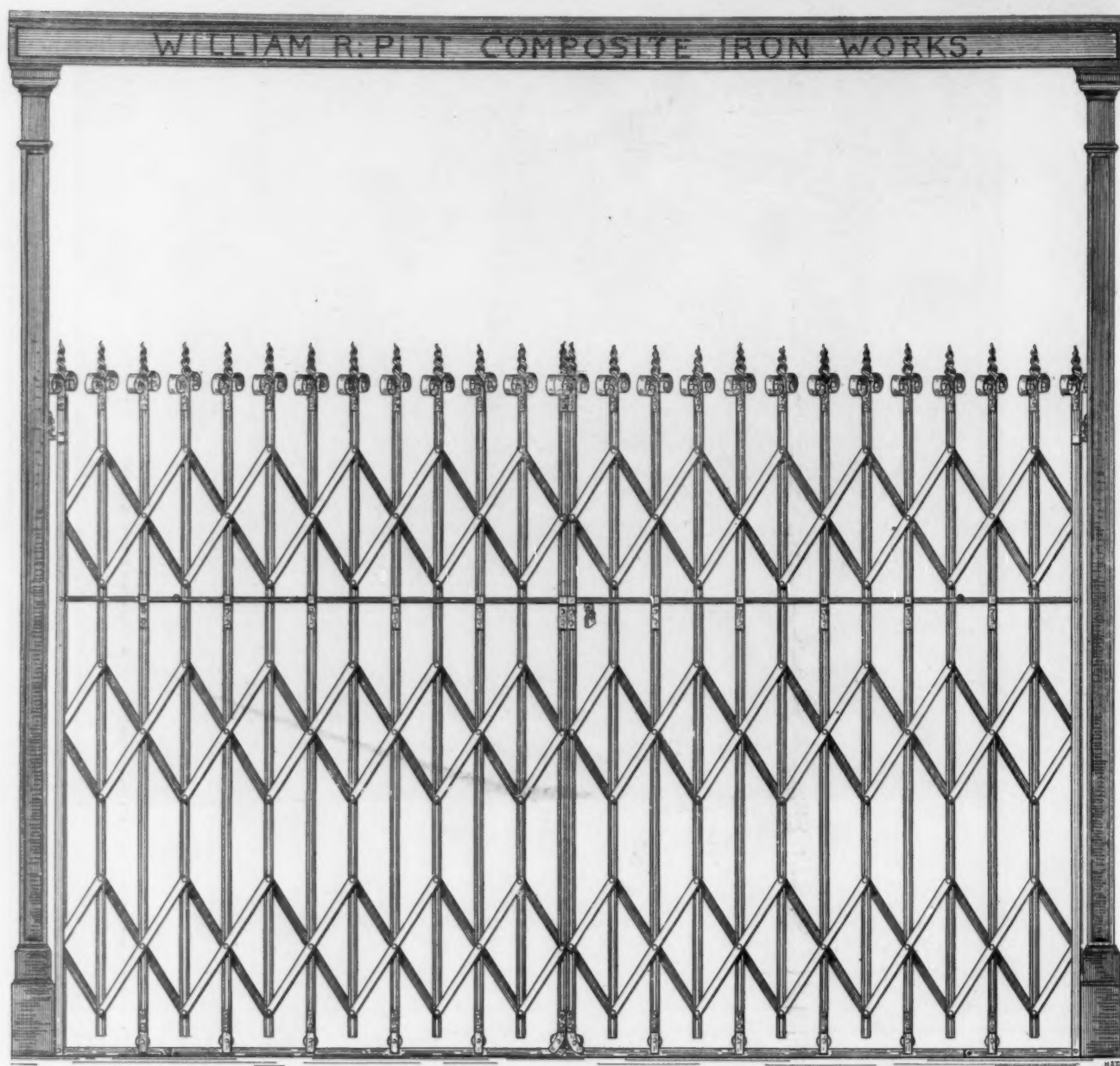
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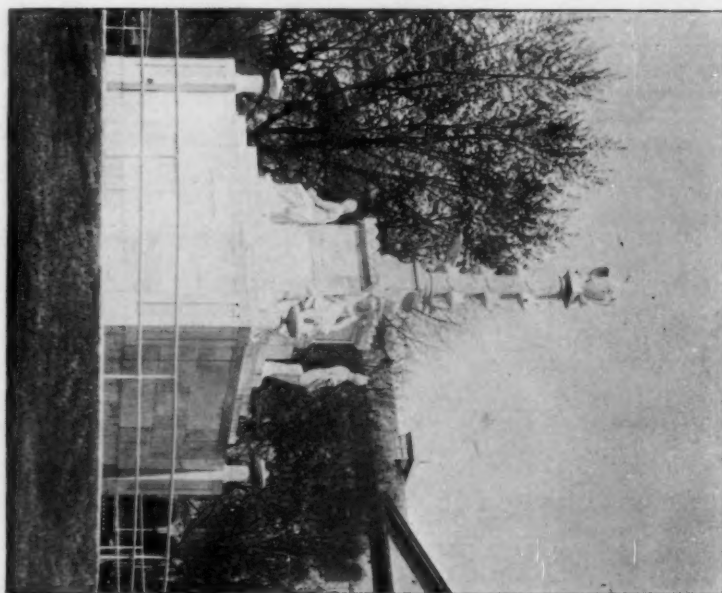
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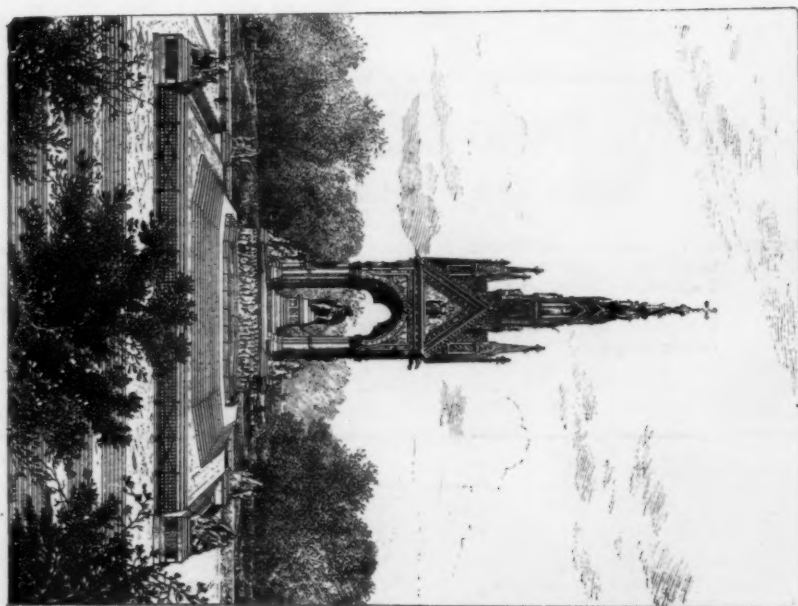
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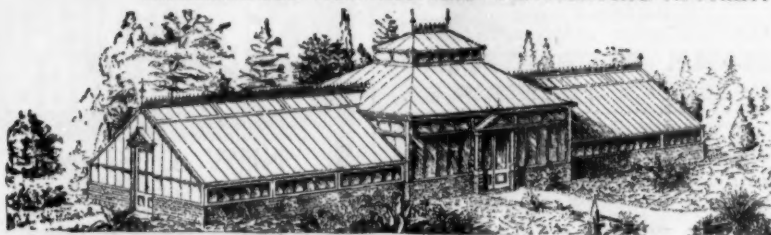
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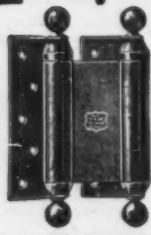


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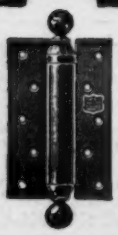
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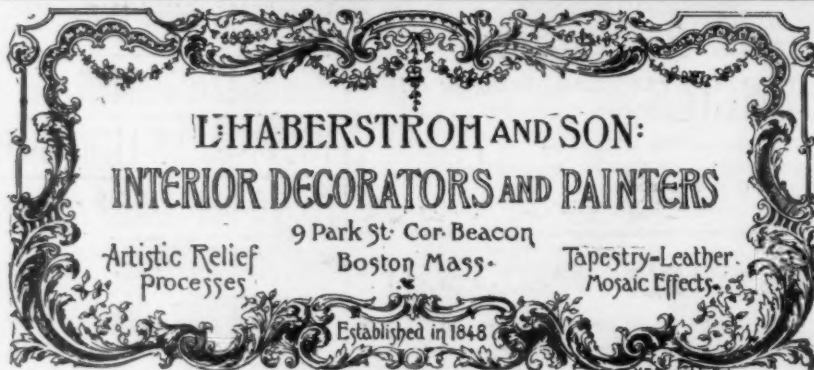
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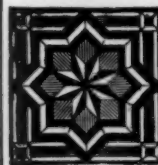
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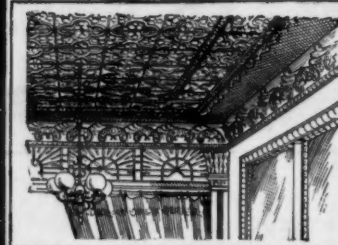
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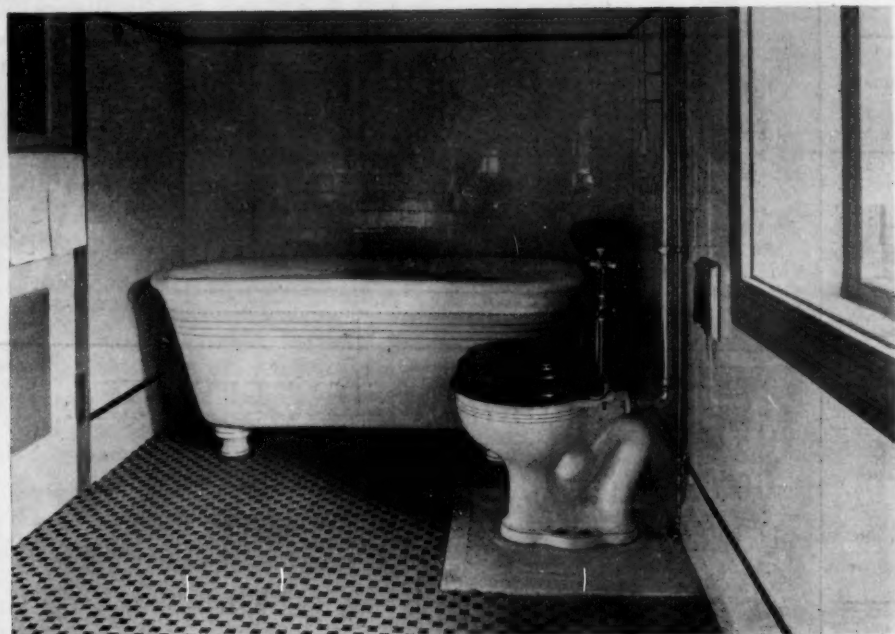


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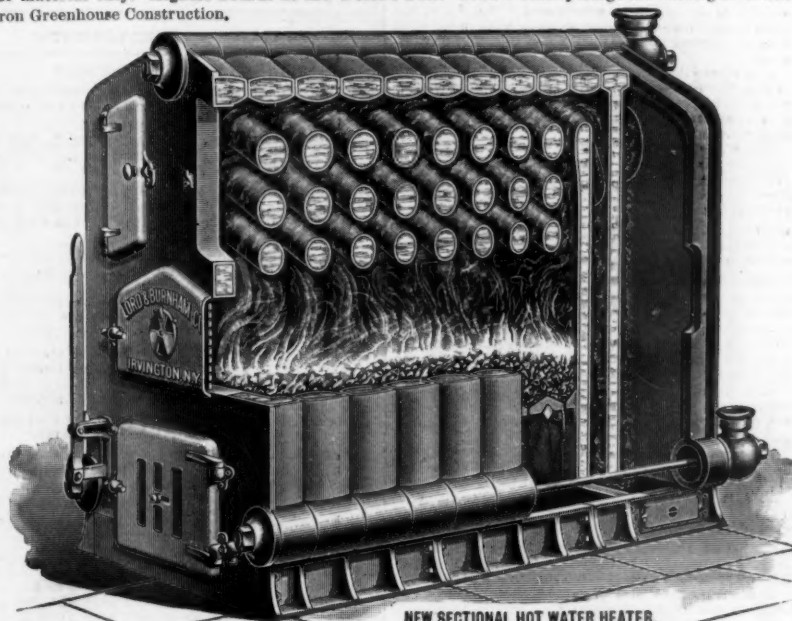
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616,759. CONSTRUCTION OF ASPHALT PAVEMENTS.—John L. Adams, New York, N. Y.
616,781. GUTTER FOR GREENHOUSES.—George M. Garland, Des Plaines, Ill.
616,809. NON-CONDUCTING PIPE-COVERING.—William H. Seltzer, Philadelphia, Pa.
616,843. WATER-CLOSET.—Daniel Hurst, Eccles, Eng.
616,844. FURNACE OR HEATER.—Charles D. Howard, Syracuse, N. Y.

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.]

ADVANCE RUMORS.

Atlanta, Ga.—A velodrome, to cost about \$20,000, will be erected by J. Prince.

Boston, Mass.—The Massachusetts Hotel Co. has been incorporated to erect and maintain a hotel in Boston. George F. Lowell is president and treasurer.

A movement is on foot towards the establishment of a police-station at Grove Hall. The City Government has requested the Board of Police to furnish an estimate of cost for the building of a modern station-house.

Plans for a remodelling of the six-story brick building Nos. 235-237 Washington St., adjoining Williams Ct., are now in the hands of Peabody & Stearns. Nothing definite has been decided in the matter, however.

Cambridge, Mass.—The Cantabrigia Club contemplate building a new club-house, and Mrs. Wilder has been delegated to select a suitable site.

Carlisle, Pa.—The First Lutheran Church has decided to erect a new church-building to cost about \$50,000. Dr. Henry B. Wile, pastor.

Chicago, Ill.—It is stated that J. E. Murphy will erect a \$30,000 three-story stone apartment-building, 40' x 115', at Central Park Ave. and Flournoy St. Plans by John R. Stone, 140 Dearborn St.
S. S. Beman, 604 Pullman Building, has prepared plans for a \$20,000 stone apartment-building, 50' x 85', to be erected by Michael McDermott on Michigan Ave., near 41st St.

Morris & Collins will build two four-story apartment-houses at 6043 6045 and 6046 6042 Woodlawn Ave., at an estimated cost of \$40,000.

T. T. Hanrahan will build a four-story apartment-house at 2943-2945 Wabash Ave., at an estimated cost of \$35,000.

Des Moines, Ia.—It is reported that the Still College of Osteopathy will erect a building, at W. 15th and Locust Sts., to cost \$50,000.

It is announced that J. S. Polk, president of the Des Moines Street Railway Co., and others, will erect an eight-story office-building at 6th and Mulberry Sts., to cost about \$250,000.

Detroit, Mich.—The Continental Match Co. has bought the property corner 2d Ave. and the Belt Line and will improve the same for their new plant to be established here.

Louis Kamper has prepared plans for a terrace of three brick and stone dwellings for Dr. J. B. Kennedy, to be constructed on Trumbull Ave., near Myrtle St., cost, \$12,000.

C. H. Colwell will build a four-story brick and stone apartment-building on Charlotte Ave., near Cass Ave., to cost about \$30,000. Norval Wardrop, architect.

E. C. Van Leyen has prepared plans for a four-story brick and stone apartment-house for Clayton A. Grinnell to be erected on the s.w. corner of High and Clifford Sts.; estimated cost, \$20,000.

The proprietor of Wonderland, Mr. Moore, has employed Col. J. M. Wood, of Chicago, to rebuild his theatre that recently collapsed.

Easton, Pa.—A memorial gateway at the Porter Street entrance to the campus of Lafayette College grounds is proposed in honor of Lafayette men who took part in the Spanish-American War. Their names will be inscribed on one side, and the names of those who were in the Civil War on the other side.

Everett, Mass.—The Common Council have passed the order appropriating \$12,000 for a new engine-house to be built on Hancock St.

Fall River, Mass.—The New York, New Haven & Hartford R. R. is to build a bridge across the Sakonnet River, between Tiverton and Portsmouth. The bridge will cost \$100,000. It is stated that the highway bridge will be reconstructed soon after or at the time the railroad bridge is built.

Green Lake, Wis.—Church & Johnson, of Chicago,

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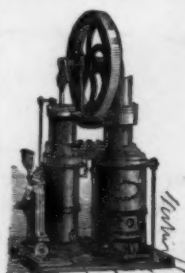
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

have prepared plans for a \$12,000 residence to be erected here. Bids will be taken about January 10.

Greenport, L. I., N. Y.—The will of the late Wm. H. Johnston bequeaths \$10,000 for the purpose of building a Masonic Temple.

Groton, Mass.—Prof. Gardener, one of the instructors at Groton School, has presented the school with \$75,000, to be used for building a new chapel.

Indianapolis, Ind.—The Northern Insane Hospital Board contemplate erecting a new building to cost about \$80,000.

A new church will be erected by the First Baptist Society on the site of the present structure, at Pennsylvania and New York Sts.; cost, \$60,000.

Kankakee, Ill.—Work will begin at once on a refinery for the Indiana Pipe Line and Refining Co., to cost about \$40,000. Cuddey Bros., Rookery Building, Chicago, are the chief stockholders.

Madison, Wis.—There is a movement on foot to erect a university hospital, to cost \$20,000.

Marshall, Minn.—Report states that Orff & Guilbert, Minneapolis, are preparing plans for rebuilding the high school on a much larger scale than the burned building; cost, \$30,000.

Mt. Vernon, Ia.—The Methodist Episcopal Society contemplates erecting a church to cost \$25,000.

New York, N. Y.—It is rumored that efforts are being made to erect seven large piers with immense storage warehouses on them at Gowanus Bay. According to the report it is the plan of those interested in the franchise of the New York & South Brooklyn Ferry & Steam Navigation Co. to spend \$22,000,000 in equipping it to compete with the Brooklyn Warehouse Co., which now has a practical monopoly of the warehouse business from foreign countries.

Reports state that a concert-hall and palm garden will be constructed by George Ehret on Broadway, near 58th St., at a cost of about \$75,000.

Oshkosh, Wis.—Plans by Wm. Waters, architect, have finally been adopted for the city library building; cost, \$40,000.

Philadelphia, Pa.—The New York Biscuit Co. have purchased a large lot at 12th St. and the Pennsylvania Railroad, upon which they will erect an immense factory, 150' x 350'; also a stable. It is understood that plans will be prepared at once and estimates asked.

Contractor Frank S. Riggs is to put up the five-story brick library and hall building, 60' x 84', at the corner of 15th and Cherry Sts., for the Young Friends' Association, at a cost of \$32,000.

The congregation of the Old North Presbyterian Church, at 6th and Green Sts., has decided to sell the property and build a new edifice at Broad St. and Allegheny Ave.

Plans for four new apartment-houses are being prepared by Architects E. P. Brink & Son, one to be erected on Chestnut St., near 33d St., one at the corner of 17th and Arch Sts., one at 33d and Chestnut Sts., and one at 10th and Clinton Sts.

Pittsburgh, Pa.—The East End Charity Hospital contemplates erecting a new building, to cost about \$50,000.

Elise Mercier, Times Building, has prepared plans for a three-story brick and stone apartment-house for Mrs. Frank Sellers, to be 42' x 71', steam heat, etc.; cost, \$30,000.

Seattle, Wash.—Work is being pushed on the brick

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

block for J. J. Hill, of the Great Northern Ry. It will contain twelve stores, and will cost \$70,000.

South Acton, Mass.—The Fitchburg R. R. Co. contemplate building a new depot. It is to be located on School St., some distance easterly from the present structure, which has been in use nearly 60 years.

St. John, Mich.—The Congregational Society will erect a \$15,000 church.

Upton, Mass.—We stated two weeks ago that the will of the late E. F. Knowlton, of Brooklyn, N. Y., provided \$40,000 for a library for this town. Now, the disappointing news comes from the New York surrogate's office, that this munificent bequest was abrogated by codicils.

Washington, Ind.—It is stated that John R. Walsh, president Chicago National Bank, Chicago, Ill., contemplates erecting a \$40,000 hotel on the Indian Springs property.

Waukesha, Wis.—The Board of Trustees of Carroll College is considering the erection of new buildings, for which a fund is now being raised.

West Chester, Pa.—The Trustees of the Westminster Presbyterian Church have decided to erect a \$30,000 edifice at Church and Barnard Sts.

ALTERATIONS AND ADDITIONS.

Madison, N. Y.—Three-st'y st. wing to dwell., 10' x 60', to be used as servants' quarters; \$30,000; o., Fred. A. Bell; a., Carrière & Hastings, 28 E. 41st St., New York City.

APARTMENT-HOUSES.

Detroit, Mich.—Four-st'y bk. apart., 45' x 80', comp. roof, steam; \$35,000; o., S. C. Falkenburg, 903 Hammond Building.

Jane McPartien, fr. apart., 881-85 Fourteenth Ave.; \$10,000.

New York, N. Y.—Henry St., No. 71, six-st'y bk. store & flats, 25' x 87' 3"; \$25,000; o., James Shay, 75 Henry St.; a., M. Bernstein, 145 Centre St.

Elizabeth St., No. 126, six-st'y bk. store & flats, 26' 3" x 89' 4" & 86'; \$23,000; o., Edw. R. Poerschke, 55 St. Mark's Pl.; a., Kurtzer & Rohl, 7th St. & 3d Ave.

Broome St., Nos. 127-131, six-st'y & base. bk. stores & flat, 50' x 60'; \$50,000; o., Jacob Fischel, 197 Henry St.; a., Horenburger & Straub, 122 Bowery.

Third Ave., cor. 81st St., six-st'y bk. stores & flat, 51' 10" x 88'; \$100,000; o., a. & b., Lorenz F. J. Welher, Jr., 125th St. & Park Ave.

Ninety-second St., nr. 2d Ave., five-st'y bk. store & flat, 20' x 72'; \$20,000; o., F. J. Schuegel, 1 E. 94th St.; a., M. Johnson, 468 Ninth St., Brooklyn.

Ninth St., Nos. 621-629, 4 six-st'y bk. stores & flat, 25' x 78' 8"; \$100,000; o., Charles Naarden, 139 E. 104th St.; a., Schneider & Herter, 46 Bible House.

Third St., No. 27, six-st'y bk. store & flat, 25' x 69'; \$22,000; o., Hyman & Oppenheim, 103 Fourth Ave.; a., Schneider & Herter, 46 Bible House.

Eleventh St., Nos. 623-627, 2 six-st'y bk. stores & flats, 25' x 89' 6"; \$50,000; o., Leopold Kaufman, 35 Nassau St.; a., Schneider & Herter, 46 Bible House.

Eleventh St., Nos. 534-536, six-st'y bk. store & flat, 40' x 80'; \$35,000; o., Hyman & Oppenheim, 103 Fourth Ave.; a., Schneider & Herter, 46 Bible House.

Amsterdam Ave., nr. 164th St., 2 five-st'y bk. & st. stores & flats, 25' x 82' 4"; \$44,000; o., Alphonse

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(Apartment-Houses Continued.)

Hogenauer, 348 Willis Ave.; a., Henry Anderson,
1150 Broadway.Third Ave., cor. Wendover Ave., five-st'y bk. flat,
39' 5" x 95'; \$10,000; o., Thos. M. Smith, 3403 Third
Ave.; a., Schneider & Herter, 46 Bible House.One Hundred and Thirty-sixth St., nr. Willis
Ave., 4 five-st'y bk. flats, 25' x 82'; \$88,000; o., Gaines
& Roberts, 703 E. 135th St.; a., Harry T. Howell,
748 E. 138th St.Second Ave., cor. 127th St., five-st'y & base. bk.
flat; \$25,000; o., Leopold Hellinger; a., N. Langer,
276 Madison St.Fifth Ave., nr. 115th St., five-st'y bk. & st. apart.
& stores, 25' x 80'; \$20,000; o., William Cumming,
Jr., and Robert Ferguson, 121 Manhattan Ave.; a.,
G. F. Pelham, 503 Fifth Ave.Broome St., No. 9, six st'y & base. bk. & st. flat,
40' x 50'; \$28,000; o., Schneider & Bachrach, 31
Nassau St.; a., Geo. F. Pelham, 503 Fifth Ave.

EDUCATIONAL.

Boston, Mass. — Monroe St., nr. Warren St., Ward
21, three-st'y bk. school, 76' x 80', flat roof, steam;
\$50,000; o., City of Boston; a., J. Mulcahy; b., John
McNamara & Son.McKeesport, Pa. — Shaw Ave., three-st'y bk. & st.
school, 122' x 135', slate roof; \$80,000; o., School
District; a., McCollum & Ely, Washington.

FACTORIES.

St. Louis, Mo. — Michigan Ave. and Wyoming St.,
three-st'y bk. brewery, comp. roof; \$85,000; o.,
Union Brewing Co.; a., Fred Rautert, Chicago, Ill.

HOTELS.

Buffalo, N. Y. — Four-st'y bk. & st. hotel, 135' x
236'; \$100,000; o., Geo. B. Montgomery; a., Geo. F.
Newton, Tremont Building, Boston, Mass.; c., Wm.
Luther & Co., Mooney-Briehane Building.

HOUSES.

Ann Arbor, Mich. — Two-st'y & base. st. & fr.
dwelling, 42' x 44', shingle roof, steam; \$6,000; o.,
Charles W. Wagner; a., Geo. Scott, 4th & Detroit
Sts.Arverne, L. I., N. Y. — Storm Ave., cor. Ocean Ave.,
three-st'y fr. dwelling, 27' x 31' x 48', flat roofs, fur-
naces; \$11,000; o., John E. Carlson; a., A. J. O'Neill;
b., H. J. Ecklund, Oak Sq., Brighton.Boston, Mass. — Greenbriar St., nr. Park St., Ward
20, 2 two-st'y fr. dwellings, 28' x 49', pitch roofs, fur-
naces; \$9,000; o., a. & b., J. E. Wilbur, 299 Norfolk
St., Dorchester.Washington St., nr. Fairbanks St., Ward 25, 2
two-st'y fr. dwellings, 19' x 28' x 72', pitch roofs, hot
water; \$15,000; o. & b., A. Russell, on premises; a.,
A. W. Gould.Mt. Fern Ave., nr. Washington St., Ward 25, 2
two-st'y fr. dwellings, 27' x 31' x 48', flat roofs, fur-
naces; \$11,000; o., John E. Carlson; a., A. J. O'Neill;
b., H. J. Ecklund, Oak Sq., Brighton.Emond St., No. 29, Ward 20, 2½-st'y fr. dwelling, 30'
x 44', pitch roof, hot water; \$6,000; o., Mary A.
Bateman; a., C. J. Bateman, 7 Exchange Pl.Hancock St., nr. Winter St., Ward 20, two-st'y
fr. dwelling, 23' x 50', flat roof, furnace; \$5,000; o.,
W. A. Whittemore; a. & b., J. A. Cruickshank,
Carlos St., Dorchester.Carlisle St., nr. Centre St., Ward 24, two-st'y fr.
dwelling, 23' x 40', pitch roof, stoves; \$3,000; o., Julia
A. Fish; a. & b., M. J. Fish, on premises.Copeland St., Nos. 26 & 28, Ward 21, 2 three-st'y fr.
dwellings, 25' x 55', flat roofs, furnaces; \$11,000; o. &
b., Charles J. Johnson, 80 Monroe St.; a., J. Ma-
honey.Blue Hill Ave., cor. Savin St., Ward 21, 4 three-
st'y bk. dwellings, 21' x 23' x 48', flat roofs, furnaces;
\$30,000; o., Morris Frye, 129 Hanover St.; a., Chas.
H. Eastman; b., Thos. Brown.Wilmington Ave., cor. Nevada St., Ward 24, 2½-
st'y fr. dwelling, 28' x 32', pitch roof, furnace; \$5,000;
o. & a., E. E. Zeigler; b., L. C. Merrill, Wollaston.S. Walter St., No. 26, Ward 23, 2½-st'y fr. dwelling,
26' x 38', pitch roof, furnace; \$4,000; o., Jane H.
Adamson; a. & b., P. M. Brown, Rosindale.Beech St., nr. Westbourne St., Ward 23, 2½-st'y
fr. dwelling, 28' x 42', pitch roof, furnace; \$4,500; o.,

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st'y & base. bk. dwellings, 19' 9" x 46'; \$11,000; o., Geo.
F. Crawford, 434 Seventh St.; a., T. Bennett, 198
Fifty-third St.Sixtieth St., nr. 3d Ave., 8 two-st'y & base. bk.
dwellings, 20' x 45'; \$32,000; o., R. F. Buckley, 267
Seventh Ave.; a., J. G. Corneal, 5 Willoughby St.
Avenue C, nr. Bedford Ave., 2 two-st'y & base. bk.
dwellings, 32' 2" x 42' 6", shingle roofs; \$12,000; o.,
J. N. Shannon, 718 Broadway, Yonkers; a., L. Da-
nancher, 323 Rockaway Ave.Rutland Road, nr. Bedford Ave., 2 three-st'y &
base. bk. dwellings, 20' x 45'; \$16,000; o., W. V. Don-
nellon, on premises; a., R. Dixon, 213 Montague St.
Forty-sixth, Forty-seventh and Forty-eighth Sts.,
18 two-st'y & attic fr. dwellings, 18' x 37', shingle
roofs; \$48,000; o. & b., W. H. Reynolds, 40 Court
St.; a., B. Driesler, 1432 Flatbush Ave.Detroit, Mich. — Leyburn Ave., 2½-st'y bk. dwelling,
38' x 60', slate & comp. roof, furnace; \$7,000; o.,
Peter Katus, Jr., 1022 Champlain St.; a., A. Van
Deusen, 715 Union Trust Building.Clifford St., Nos. 167-69, bk. double dwelling; \$5,000;
o., Jas. Buchanan.2½-st'y bk. dwelling, 38' x 46', slate roof, hot water;
\$7,000; a., Joy & Barcroft, 432 Ferguson Building.
Lafayette Ave., two-st'y bk. dwelling, 37' x 52',
slate roof, furnace; \$5,000; o., Charles Jones; a.,
Chas. W. Koehler, 51 Buhl Block.

BUILDING INTELLIGENCE.

(Houses Continued.)

El Paso, Tex. — Two-st'y & base. bk. & st. dwelling,
46' x 64', shingle roof, hot water; \$10,000; o., Miss
Howard; c., Maydwell & McClintock.Flushing, L. I., N. Y. — 2½-st'y fr. dwelling; \$9,000;
o., Helen Newton; a., Chester Huntington.Katonah, N. Y. — 2½-st'y st. dwelling, 40' x 60'; \$12-
000; o., A. F. Avery; a., Frank E. Waite, Brewster.Noroton, Conn. — 2½-st'y fr. dwelling, 34' x 40'; \$8,000;
o., George W. Southwick, 147 Cedar St., New York
City; a., John S. Borgardus, Stamford.

STABLES.

Boston, Mass. — Boston St., rear No. 246, Ward 16,
two-st'y fr. stable, 21' x 34', pitch roof, stoves;
\$1,000; o., Dr. McIntire; a. & b., G. G. Williams, 21
Moseley Ave.

MISCELLANEOUS.

Boston, Mass. — South St., nr. Kneeland St., Ward
7, three-st'y bk. freight-house, 87' x 417'; \$20,000;
o., B. & A. R. R.; chief eng., Walter Shepard; not
let.

COMPETITIONS.

COURT-HOUSE.

[At Mineola, L. I., N. Y.]
Plans and specifications will be received by the
Supervisors of the County of Nassau on January 18
for the new Court-house and Jail to cost \$100,000.
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PROPOSALS.

STORAGE BATTERIES.

[At Fort Monroe, Va.]

U. S. Engineer Office, 166 Granby St., Norfolk, Va.
Sealed proposals for furnishing and setting up four
storage batteries at Fort Monroe, Va., will be received
here until January 24, 1899. THOS. L. CASEY,
Major, Engineers. 1203

BRICK, CEMENT, ETC.

[At Washington, D. C.]

Office of Washington Aqueduct, 2728 Pennsylvania
Ave., Washington, D. C. Sealed proposals for fur-
nishing and delivering at shafts of Washington Aqueduct
tunnel, brick, cement, sand, special castings and
bolts will be received here until January 26, 1899.
A. M. MILLEB, Lieutenant-colonel, Engineers. 1203

DRY DOCK.

[At Boston, Mass.]

Sealed proposals will be received at the Bureau of
Yards and Docks, Navy Department, Washington, D. C.,
until January 31, 1899, for the construction of
one dry dock of stone or concrete lined with stone.
MORDECAI T. ENDICOTT, Chief of Bureau. 1203

ELECTRIC LIGHT SYSTEM.

[At New York, N. Y.]

Sealed proposals for extending the Electric Light

PROPOSALS.

System at the Navy Yard, New York, N. Y., will be
received at the Bureau of Yards and Docks, Navy
Department, Washington, D. C., until January 14,
1899. MORDECAI T. ENDICOTT, Chief of Bureau. 1202

PIER.

[At Duluth, Minn.]

U. S. Engineer Office, Duluth, Minn. Sealed propo-
sals for substructure for north pier Duluth ship
canal will be received here until February 1, 1899.
CLINTON B. SEARS, Major, Engineers. 1203

STONE AND GRAVEL.

[At Tampa Bay, Fla.]

U. S. Engineer Office, St. Augustine, Fla. Sealed
proposals for furnishing and delivering at Mullett
Key and Egmont Key, Tampa Bay, Fla., broken
stone or gravel and random stone will be received
here until January 16, 1899. W. H. H. BEN-
YAUD, Lieutenant-colonel, Engineers. 1202

EXTENSION OF TIME.

[At Owatonna, Minn.]

The time for receiving bids for the new public
library building has been extended to February 1,
1899. B. E. DARBY, Sec. 1203

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[At Douglass, Ga.]

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JUDGE C. A. WARD, Chmn. Bd. Co. Commrs. 1204

Treasury Department, Office Supervising Architect,
Washington, D. C., December 20, 1898. Sealed propo-
sals will be received at this office until 2 o'clock P. M.
on the 19th day of January, 1899, and then opened,
for the low-pressure, return-circulation, steam-heating
and ventilating apparatus for the United States
Post-office building at Pottsville, Pa., in accordance
with the drawings and specification, copies of which
may be had at this office or the office of the Super-
intendent at Pottsville, Pa. JAMES KNOX TAY-
LOR, Supervising Architect. 1202

Treasury Department, Office Supervising Architect,
Washington, D. C., December 20, 1898. Sealed propo-
sals will be received at this office until 2 o'clock P. M.
on the 19th day of January, 1899, and then opened
for the labor and materials for the low-pressure,
return-circulation, steam-heating and ventilating
apparatus and pipe-covering required for the United
States Post-office building at Akron, O., in accordance
with the drawings and specification, copies of
which may be had at this office or the office of the
Superintendent at Akron, O. JAMES KNOX TAY-
LOR, Supervising Architect. 1202

BUILDING.

[At Washington, D. C.]

Proposals will be received at the office of Marsh &
Peter, associate architects, 1503 Pennsylvania Ave.,
until January 21, 1899, for materials for and con-
struction of the new building for The Evening Star
Newspaper Company. 1202

DORMITORY.

[At Phoenix, Ariz.]

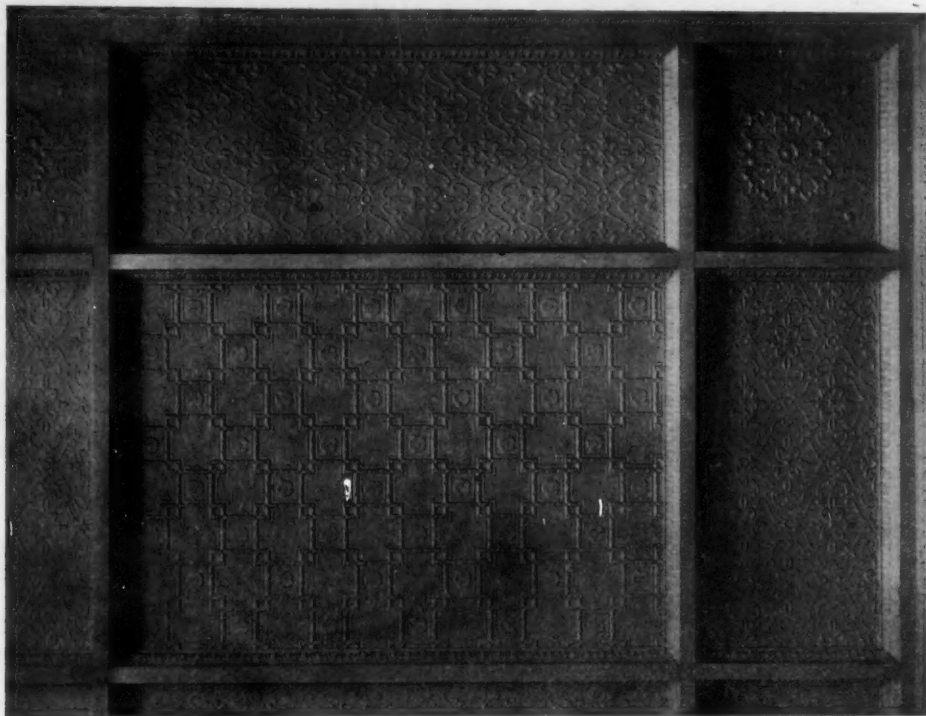
Bids are wanted January 25 for a dormitory; also
water and sewer system, at the U. S. Indian School.
W. A. JONES, Commissioner of Indian Affairs, De-
partment of the Interior, Washington, D. C. 1202

BROKEN STONE, SAND, ETC.

[At New London, Conn.]

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Henry F. Kilburn, Architect. 10 views

"PROGRESS CLUB-HOUSE," New York, N. Y.
Alfred Zucker, Architect. 11 views

"EXCHANGE CLUB-HOUSE," Boston, Mass.
Ball & Dabney, Architects. 12 views

"CENTURY CLUB-HOUSE," New York, N. Y.
McKim, Mead & White, Architects. 7 views

"COLUMBIAN CLUB-HOUSE," St. Louis, Mo.
Alfred F. Rosenheim, Architect. 13 views

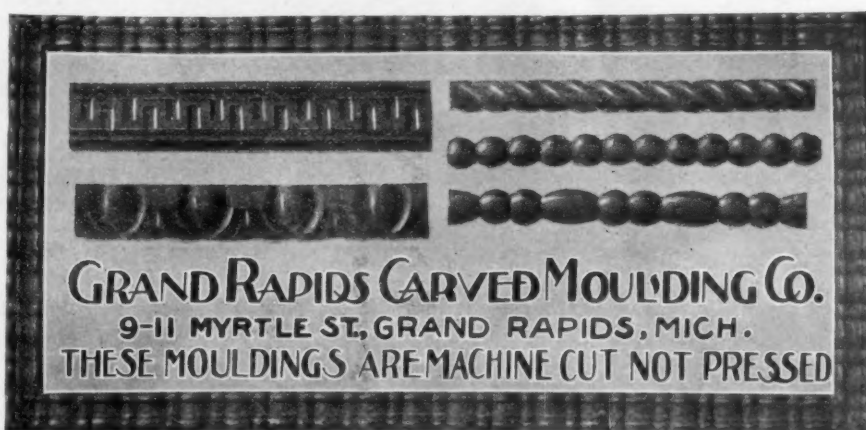
"MARYLAND CLUB-HOUSE," Baltimore, Md.
Baldwin & Pennington, Architects. 8 views

"GROLIER CLUB-HOUSE," New York, N. Y.
Romeyn & Stever, Architects. 5 views

"UNIVERSITY CLUB-HOUSE," Philadelphia, Pa.
W. Eyre, Jr., Architect. 3 views

"DUQUESNE CLUB-HOUSE," Pittsburgh, Pa.
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"ART CLUB," Philadelphia, Pa.
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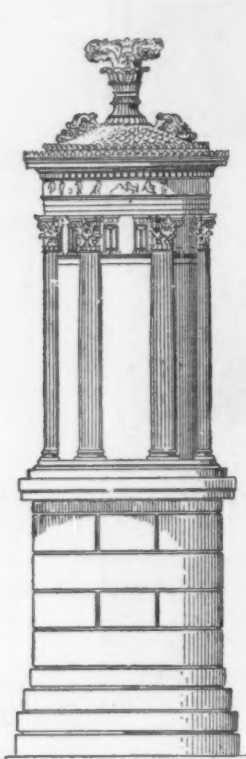
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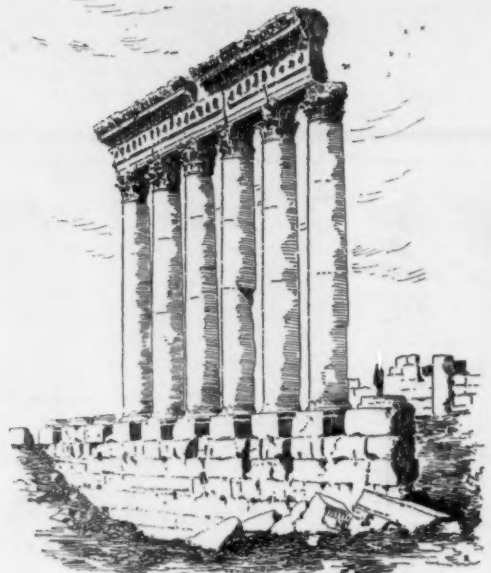
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Parthenon, Athens.



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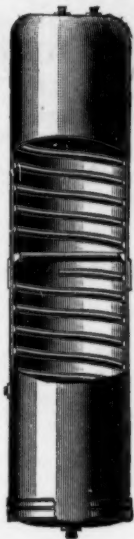
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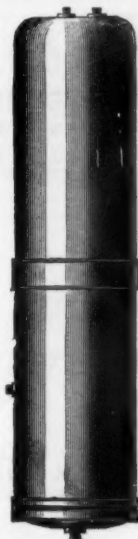
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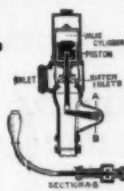
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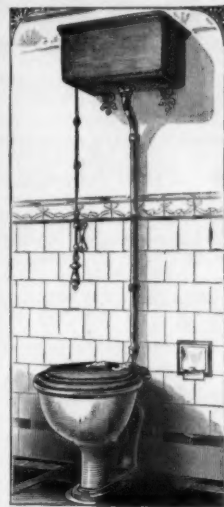
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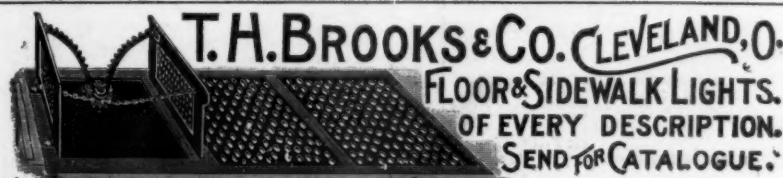
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