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A SCULPTOR of note in Boston died a few days ago, at an age when most artists have all their best successes yet before them, and Martin Milmore's native genius, joined with his persevering industry, gave promise of a future still more brilliant than his past. The two Milmore brothers, of whom the elder, Joseph, a sculptor of no mean talent, still survives, were brought to this country from Ireland by their widowed mother about thirty years ago. Both of them went through the ordinary course of a Boston school-boy's life, but Martin's natural bent showed itself even in childhood, and at the age of fifteen he was placed in the studio of Thomas Ball, where he kept himself constantly busy, studying, and practising the knowledge which he acquired. Most of his time for many years was devoted to portrait sculpture, but he found opportunity for the production of an ideal bas-relief, and a patriotic statuette, besides executing for the Boston Horticultural Association three huge granite statues, of Flora, Ceres and Pomona, which adorn the front of the building belonging to the Association. Although open to much criticism, these statues have perhaps all the character that committees who assign such inane subjects to artists have a right to expect; and they brought Mr. Milmore many other public commissions, among them being three Soldiers' monuments in different parts of Boston, and others in Fitchburg, Massachusetts, in Erie, Pennsylvania, and in Keene, New Hampshire.

ONE of the largest and most modern hotels in the South, the Kimball House at Atlanta, was totally destroyed this week by fire. The first discovery of the fire was at five o'clock on Sunday morning, but it soon increased beyond control, and the manager of the hotel ordered that the guests should be awakened. This order was effectually carried out, the servants breaking open the doors of the rooms; and in twenty minutes from the alarm the house was emptied. Forty minutes afterward the building was a heap of ruins. Some of the daily papers congratulate the guests on their "favorable opportunity" for escaping, and if the fire had originated anywhere but in the rear of the building, the consequences might have been much more serious, but it may be questioned whether people awakened from their soundest sleep by the bursting in of their doors, to rush precipitately into the street, leaving their clothes and baggage behind them, might not think with regret of the still more "favorable" conditions, in case of fire, which would be presented by a hotel built as most of those abroad, and a few in New York, are, and as all hotels should be. The structure is said to have cost six hundred thousand dollars, and to have contained one hundred and twenty thousand dollars' worth of furniture, and as the insurance amounted to little more than one-tenth of the value of the whole, the owners will have gained six hundred and fifty thousand dollars' worth of information about combustible building, which we hope they will impart to their friends upon occasion.

WE find mention in one of our exchanges of two remarkable cases of lead-poisoning which have occurred in France lately. In the more recent one a small village was attacked by an inexplicable and fatal disease, presenting symp-

toms similar to those caused by lead-poisoning, but having, apparently, a different origin, since no evidence could be discovered to show that lead had been taken into the system of any of the patients. A more thorough investigation, however, threw suspicion on the bread used, and the premises of the village baker and miller were subjected to an examination, which resulted in the discovery of a cracked millstone, repaired, by the economical ingenuity of the miller, by filling the crevices with melted lead, which was in course of time ground down and mingled with the flour. In the other case, which occurred in Paris, a baker had used for heating his oven, which was one of the old-fashioned brick variety, some refuse boards, which had been painted with white lead; and particles of the metal, apparently penetrating into the joints of the brickwork so far as not to be reached by the broom used for sweeping out the oven, had clung to the soft dough, and were distributed with the bread.

THE *Scientific American* mentions the decline in the price of copper, as likely to lead to the increased use of that metal in building. At present, the material for a copper roof costs, at the outset, only about twice as much as tin, and as the latter must be repaired and painted about once in three years, and in fifteen or twenty years must be renewed altogether, the copper, which never needs painting, and is practically indestructible, is much the cheaper material in the end. There are in Boston many copper roofs, put on about forty years ago, which show no signs of deterioration; and the metal is still much employed in that city for cornices, gutters and rain-water pipes, as well as for covering bay-windows, and in many other ways, in place of galvanized-iron, which is much inferior in beauty and durability, and not very much cheaper. The copper has the additional advantage of needing no paint, so that the delicate lines of artistic work are in no danger of being filled up, and the metal increases rather than diminishes in beauty, by the slow formation of a bluish-green patina over it. For flashings, as well as other portions of roof-work, copper is much superior to zinc or tin, and with the aid of a certain amount of lead, the most difficult problems in roofing can be successfully and permanently solved.

THE *Sanitary Engineer* mentions a case of a church, planned by an architect, but carried out without his supervision, in which his careful arrangement for the supply of fresh air, to be heated by furnaces in the basement, and withdrawn after use by an extraction chimney, heated by carrying up a pipe flue inside of it, was changed, under the direction of the building-committee, to a system without any provision whatever for the withdrawal of foul air; and subsequently, when experience had shown the impossibility of getting any warm air into the church without making a way for the cold air to get out, was modified by cutting holes in the floor and inserting registers, which were placed in communication with the cold-air box of the furnace; so that the body of air in the building simply circulated to and from the basement, renewing its warmth at each passage through the furnace chamber, but growing constantly more and more foul. The credit of this delectable arrangement is, we are quite sure, due to the furnace-man, rather than the building-committee. Not only is this method of increasing the heating efficiency of a poor furnace well known in that trade, but nothing is more common than to see the cold-air inlet in dwelling-houses made with a door opening into the cellar, for the express purpose of taking air from the cellar, instead of from the outside, in the coldest weather; and we know, indeed, districts in which there is generally no other air-supply to the furnace. The effect upon a person with weak lungs or nerves of being compelled to pass a winter in a house hermetically sealed by double windows, and furnished, so to speak, with a single charge of air for four months' use, may be imagined. There can be little doubt that many lives are annually sacrificed by this dangerous practice.

WE have observed with grief that the quoted price of shares in the Keely Motor Company has fallen of late to about one-third of that for which they were sold soon after the publication of those glowing letters from newspaper correspondents, describing a certain locomotive in process of

construction for the application of the principle; and we can hardly avoid the inference that the "theory of molecular vibrations" shows signs of being unequal to the task of hauling railway trains. We can, however, encourage the stockholders in this great enterprise to hope that if their enthusiasm for molecular vibrations should meet with final disappointment, another opportunity will before long be offered them for making a permanent investment of their spare funds, and, at the same time, for gaining additional financial experience. In the same city which produced the great discoverer of the art of letting loose molecular vibrations dwells a person who has discovered a "new mechanical law," "the application of which will enable him to increase a hundredfold the power of any machine, from a clock to a steamship, without using an ounce more fuel than usual, or driving the motive power any faster than ordinarily." A reporter of the *Philadelphia Record*, who waited upon the proprietor of this important invention, learned that the secret "could not at this time be disclosed," but was informed that the application of the new law "consisted in combining the action of the screw, the inclined plane, and one other form," the nature of which must not be further explained. It is, at least, something to be grateful for that we know two-thirds of the mystery. Hitherto, the combination of a screw and an inclined plane has hardly been thought of as an efficient mechanical device, and its application to clocks and steamboats is, we venture to say, wholly new; but, the way once pointed out, it cannot be doubted that the search for the remaining element of the grand discovery will be pursued with vigor.

WHERE is a great pleasure in gathering from the pages of *Le Génie Civil* those intelligent and impartial statements of the progress of the Panama Canal, which, for some reason, we seek in vain from the daily newspapers of the country most nearly interested in that great undertaking. The last number of that most excellent technical journal contains an account of the work already accomplished, and of the means at hand for use in future operations; the writer, who seems perfectly familiar with the subject, beginning with a short history of the most disastrous mistake which has yet been made on the Isthmus, the foundation of the ill-fated city of Gatun. It seems that the pioneers of the Canal Company, who were sent to prepare wharves and warehouses for the accommodation of the business necessary to the enterprise, found that of the six miserable piers of the port of Aspinwall, not one was available for their purpose, and were obliged to look for a suitable place for constructing new ones. The island of Manzanillo, on which Aspinwall is built, consists mostly of a deep and spongy marsh, the town, with the present wharves, occupying all the ground firm enough to build upon, with the exception of a narrow strip on the north side, at some distance from the town, and much too small to accommodate the warehouses and sheds which would be necessary. Moreover, Aspinwall has the reputation of being perhaps the most unhealthy city in the world, and the engineers felt themselves bound to care for the lives of the army of people who were to follow them, by selecting the most salubrious spot for their work which could be made otherwise suitable. As the island of Manzanillo was considered thus out of the question, there was no alternative but to seek a landing-place up the River Chagres, near the mouth of which the island lies; and about eight miles inland, M. Blanchet, the engineer in charge, found a little bay surrounded by hills, which seemed to him admirably adapted for the creation of an industrial town under much more favorable auspices than among the reeking swamps of Aspinwall. This place was Gatun. Except in one spot, the river was deep enough to allow steamers to reach the wharves, and the advantages of the new harbor seemed so great that a dredge was set at work to cut a channel, while the high ground overlooking the river was staked out and graded, and active building operations begun. No sooner was the ground broken than fevers attacked the workmen, who, it must be remembered, were for a time obliged to live and sleep either in the forest or in their unfinished houses. Some of the men died, and a panic seized the remainder; and the news of the unfortunate undertaking reaching the directors of the Canal Company, peremptory orders were sent that Gatun should be abandoned. Subsequent experience has shown that M. Blanchet's choice of the place was justified, but circumstances were then against him, and although he obeyed the order, he did not long survive his disappointment and mortification.

AS Gatun and Aspinwall are the only places on deep water which are touched by the Panama Railway, there was no choice, after the abandonment of the first, but to return to the other; and to make up for the deficiency of firm land available there, it was decided to fill in a tract on the southwest side of the island, large enough to give room for all the necessary buildings, and shaped to form a kind of breakwater, projecting into the harbor in such a way as to protect the mouth of the canal, which lies immediately behind it. The filling of this tract will require about four hundred thousand cubic yards of material, and until this is completed the administration of the canal is obliged to occupy temporary quarters in the town. It would seem most economical to combine the work of filling with that of excavation, by using the earth dredged from the mouth of the canal for building up the neighboring bank; but the material in this portion is mostly mud, filled with fragments of coral, and the healthfulness of habitations built upon such a foundation appearing doubtful, it was decided, in place of this, to bring clean, dry earth from the hills of Mindi, which are traversed by the canal about three-quarters of a mile from Aspinwall; and the first operations of excavation were accordingly assigned to that place. Stone for revetting the water-front of the new territory is obtained from a quarry on Kenny's Bluff, at a little distance from the city, and the work of transferring the Mindi Hills to the harbor of Aspinwall has been rapidly carried on. Between the new made land and the proposed mouth of the canal is the estuary known as the Folks River, which separates the island of Manzanillo from the shore; and the dredges of the Company are engaged in deepening this to form a practicable channel; while the excavation of the portion of the canal itself extending from the Folks River to Gatun is included in the contract made with Messrs. Huerne and Slaven, of San Francisco. The quantity of material to be removed from this portion of the canal is estimated at six millions of cubic metres, or nearly seven million yards, and according to the contract with Messrs. Huerne and Slaven, the whole should be completed in about two years and a half; but the observations of the correspondent lead him to doubt whether the terms of the agreement will be complied with.

MR. WYATT PAPWORTH, reviewing, in the *Builder*, Mr. R. F. Gould's "History of Freemasonry," brings forward some interesting information in relation to the church-building of the Middle Ages. The author of the History of Freemasonry has rather a mean opinion of that time, and warns his readers against "the exaggerated notions current concerning the piety and devotion" of the Middle Ages, "and the enormous cost and sacrifice required for the erection of mediæval ecclesiastical structures," saying that although great sums were spent upon a few important buildings, the outlay, even upon these, was spread over so long a period as to make the annual cost comparatively small. Thus, Lincoln Cathedral, which is estimated to have cost a sum equivalent to about five million dollars of our present money, was nearly a hundred and fifty years in building, so that, if equally divided, the annual expense of carrying on the structure would have been only about thirty-five thousand dollars; and the total value of all the ecclesiastical buildings in England at the time of the Reformation, which he estimates at about three hundred and twenty-five million dollars, represented the accumulated outlay of four hundred years. To these plausible representations Mr. Papworth makes the reply, which will please all lovers of mediæval art, that the fact of a hundred years having elapsed between the commencement of a building and its completion is by no means an indication that the work was carried on regularly throughout that period; on the contrary, the records show, not only that operations were often discontinued for long periods, but also that in many cases buildings sufficiently completed for occupation were entirely remodelled and rebuilt, sometimes several times over, before reaching the form in which they have since remained. In France the evidence of the widespread enthusiasm for ecclesiastical building which appeared at the end of the twelfth century is far more plain than in England. To say nothing of the convincing testimony of the buildings themselves, we know that the battle of Crecy, in 1346, gave the signal for the abandonment of all peaceful arts, not to be resumed again for a hundred years, and all the splendors of the French cathedrals are due to a movement which had nearly spent its force within a single century, and in less than two centuries had disappeared entirely.

WATER-CLOSETS.¹—XVII.

SHORT-HOPPER CLOSETS.



says: "A wash-out closet is in fact only a modified and improved form of hopper."

Thomas Smith's Closet.—The earliest patent for a closet of this type was issued by Great Britain to Thomas Smith, in 1842. The patentee claims as a novelty the branch from the supply-pipe (the closet being supplied from a tank), which is connected with the bottom of the trap. This branch from the supply-pipe is intended to thoroughly wash out any matter which might be in, or would otherwise remain in the trap. In this closet the trap, instead of being circular in cross-section, is rectangular. It has an inspection-cover on the crown of the trap, and the water is spread over the bowl by means of a fan.

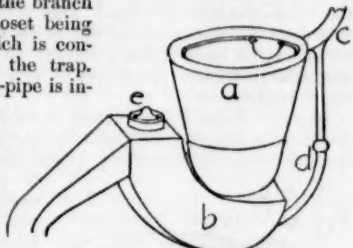


Fig. 170.—Thomas Smith's Closet.
a, Bowl. b, Trap. c, Supply-pipe.
d, Branch to bottom of trap from supply-pipe.
e, Inspection-hole.

French Short Hopper.

F. Liger² tells us that this closet (Fig. 171) was designed in Paris, in 1872, for use in public places, being modelled according to English patterns. He states "that the gases from the sewer are cut off by a siphon-trap." In public places where this closet had been introduced, it was made to operate by opening the doors. The closet is arranged so it can be supplied with water, either by means of a supply-valve or from a tank. The peculiarities of this closet consist in the branch from the main supply-pipe for flushing the trap, and in the partition of the trap being so placed as to form a screen, and hide, rather than get rid of, any disagreeable matter that might possibly remain.

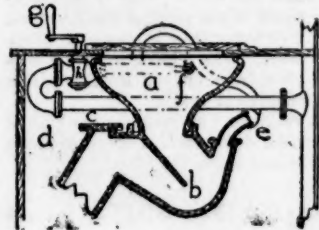


Fig. 171.
French Short-Hopper Closet.

a, Bowl. b, Trap. c, Inspection-hole.
d, Supply-pipe. e, Branch from supply-pipe connected with bowl. f, Opening into bowl. g, Lever opening supply-valve.

received patents from Great Britain in 1878, and from the United States in 1880, for a short-hopper closet which he has named the "Vortex." The novelty of this closet is based on the shape of the bowl and flushing-rim. The flushing-rim is so arranged as to throw a strong jet of water directly into the bottom of the bowl, this being also the bottom of the trap, by this means forcing whatever water or foreign matter there is through the trap into the soil-pipe. It will be

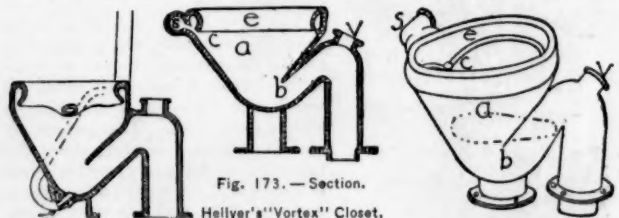


Fig. 172.—Section with Jet.
a, Bowl. b, Trap. c, Opening for jet of water. e, Flushing-rim.
s, Supply. v, Vent.

seen by the illustration (Fig. 172) that it is intended in some cases to have a branch from the main supply-pipe entering the bottom of the trap, as described in the Smith closet (Fig. 170). There are openings in the flushing-rim around the sides of the bowl, by which the surface of the bowl is washed. The trap is properly vented. This branch connecting with the bottom of the trap is unnecessary in the better forms of short-hopper closets, where they are flushed from a tank, through a properly-arranged flushing-rim.

Wm. Smith's Closet.—The "Siphon-Jet" closet, manufactured in

San Francisco, and patented in 1876 and 1878 by Wm. Smith, also depends upon the branch from the supply-pipe to cleanse the trap and force the waste matter into the soil-pipe. This closet is furnished in one piece of earthenware, or with an earthenware bowl and iron trap. It is connected with a tank, or may be connected directly with the supply-pipe, the flush being governed by a patent valve.

English Closet.—Baldwin Latham describes a short-hopper closet in which the flushing-rim is connected with the bottom of the trap. He says: "this form of closet with bye flushing-pipe was introduced to remedy the defect, which, as already referred to, attends the hopper-closet, that is the cleansing of the trap after the use of the closet." This evil mentioned by Latham has been remedied by properly arranged and devised water-supply and flushing-rims, which are now manufactured as a part of the better short-hopper closets.

Closets manufactured as described, with a branch from the supply-pipe connecting with the bottom of the trap, would be peculiarly susceptible to the evil which it is claimed sometimes takes place when the supply-pipe is attached directly to the bowl of the closet, a valve only intervening; viz., the liability of foul air or filthy water being drawn from the closet when a faucet is opened on some floor below, the supply-valve of the closet being open at the same time. For the reason stated care should be taken always to connect closets of this kind with a separate tank or cistern when—and they are simple and useful—they are used.

Hellyer's "Short Artisan Hopper."—This closet is composed of two pieces of earthenware, the bowl and trap, which are joined



Fig. 177.

Hellyer's Short Artisan Hopper.

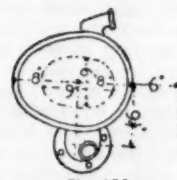


Fig. 178.

together by means of clamp-screws, putty or cement being put into the joint. The bowl of this closet is oval in shape, with its back edge nearly straight, so the bowl need not become foul by faecal matter dropping on it. This closet has a flushing-rim which serves its purpose well, and the trap is properly vented at the crown. In connection with his patent flushing-rim, Hellyer arranges an annular rubber band, in a groove made for the purpose on the top of the flushing-rim. The seat of the closet is intended to fit down on this band and thus prevent smells or cold air from coming into the room from beneath the seat. It is the custom in England to have the "tell-tale" pipe from the closet-safe run through the wall into the outer air. A draught through this pipe might become disagreeable to a person occupying the seat of the closet. This closet has an opening at the crown of the trap, to which a vent must be attached, and in use it is simple and effective.



Fig. 179.
Flushing-Rim.

d, India-rubber ring.
c, Flushing-rim.

Demarest's Short-Hopper Closet.—The J. L. Mott Iron Works manufacture a short-hopper closet which in appearance and in its manner of working is almost identical with the Hellyer short hopper. The novelty consists in the manner of connecting the bowl with the trap, and the trap with the vent-pipe, and in the Demarest patent flushing-rim (see Fig. 179). The top of the trap and the bottom of the bowl are both encircled by

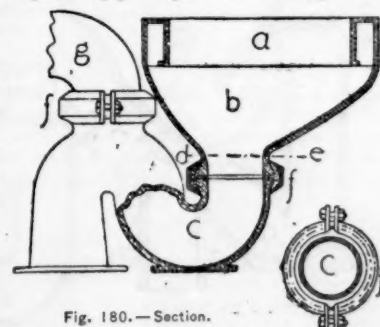


Fig. 180.—Section.
Demarest's Short-Hopper Closet. Fig. 181.
Section through line d-e.

a, Flushing-rim. b, Bowl. c, Trap. g, Vent-pipe.
f, Collar or clamp.

¹ Continued from page 65, No. 398.

² House Drainage and Sanitary Plumbing. Wm. Paul Gerhard, New York, 1882.

³ Fosses d'Aisance, Latrines, Urinoirs, et Vidanges. F. Liger, Paris, 1875.

a projecting ring or flange, over and around which a metal collar fits. This collar when bolted makes a very strong joint. The space between the collar and the joints has to be filled with putty or cement. The coupling for the vent-pipe is a two-inch zinc-coated iron quarter-bend, which has a hub on the free end, into which the spigot of the vent-pipe can be caulked. If a lead vent-pipe is to be used, a brass coupling must be connected with the trap, instead of the iron one described.

Roe's Closet.—Baldwin Latham, in his work on sewerage, illustrates two short-hopper closets. Mr. Latham states that in this closet exists the first instance of a vent-pipe being properly placed on the trap. The reader of the foregoing articles will probably recollect that the vent to the trap was used or invented in connection with the Wilkins closet forty years ago. Figure 183 is shown as an example of this class, in which the back is made straight, so faecal matter will drop directly into the trap, and not adhere to the sides of the bowl.

Carmichael "Wash-down" Closet.—Mr. W. P. Buchan, in 1879, invented a closet of this class, which he informs us is furnished in one

or two pieces of earthenware, the joint being made above the water-line.¹ This closet is supplied with a flushing-rim to wash the sides of the bowl, and also with a jet of water which strikes the water in the bowl so as to force it through the trap. The trap has an inspection-hole on top. This closet seems to have deservedly met with success in England, where there seems to be a tendency, which should be followed in

our country, to adopt short-hopper closets in preference to all styles or patterns. Mr. Buchan calls the short-hopper closets which have an outlet at the bottom wash-down closets, while those which have an outlet from the side he calls wash-out closets.

A. G. Myers's "Niagara" Closet, No. 2.—A short-hopper closet has been quite recently introduced into the market by A. G. Myers, of New York. This closet is made in one piece of earthenware, or it is furnished with a part of the trap separate from the bowl. It is flushed by carrying the water-supply through or against a fan. The bowl of this closet is waved or corrugated in circles parallel to the floor. The idea is that the water, coming in contact with the inequalities of the surface, will wash the bowl more thoroughly than would be the case if it were smooth. It appears to me that the under side of the wavy surface would not be washed at all, and if this is the case, more harm than good would be done by making a bowl in this manner. The trap in this closet has a hub for a vent-pipe, which is placed, in accordance with the suggestion of Hellyer, on the side of the trap nearer the soil-pipe than is usual. This position is intended to prevent foul matter from being forced up into, and lodging in the vent-pipe. It is claimed that the vent-pipe is sometimes made useless in this manner.

Owens's Closet.—Henry Owens, in 1878, invented a closet which is made in one piece of earthenware, and is designed so as to have either two traps or a trap and an offset between it and the soil-pipe. The

traps, and also the offset, have openings for vent-pipes. The closet with the double trap would have a confined air-space which could only

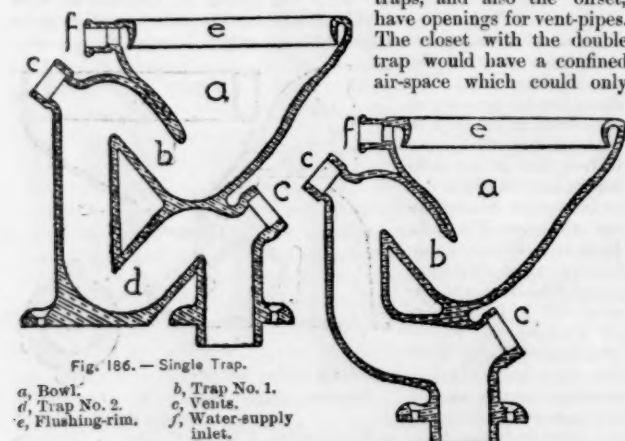


Fig. 186.—Single Trap.
a, Bowl.
b, Trap No. 1.
c, Trap No. 2.
d, Flushing-rim.
e, Vent.
f, Water-supply inlet.

Owens's Closet.

Fig. 187.—Double Trap.

be ventilated by an inlet as well as an outlet pipe for the air. I think

¹ Plumbing. W. P. Buchan, London, 1883.

as there is nothing gained by the double trap, the closet with the trap and offset is to be preferred.

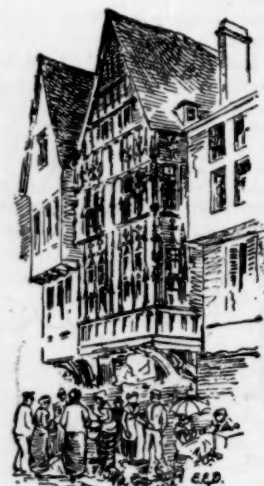
Waring's Siphon Closet.—This closet, which was designed by Mr. Geo. E. Waring, Jr., of Newport, R. I., has a very deep water-seal trap at the bottom of the bowl. The closet is set over a second trap, which is placed beneath the floor. In the lower trap a weir is formed. The contents of the bowl are siphoned out every time the bowl is used. From its shape it is necessary that this closet should be filled to within a short distance of the top of the bowl, before the necessary siphon action which empties the bowl can take place. This excessive amount, or, more properly speaking, the height to which the water rises in the bowl, is exceedingly disagreeable sometimes. The trap below the floor is in shape or form very much like the objectionable D-trap. The first trap by reason of its siphon action cannot have a vent-pipe in the usual position. The closet is gracefully formed in one piece of white earthenware.

Boyle's "Tidal Wave" Closet.—In the year 1882 a closet with the double trap was invented by J. E. Boyle. An air-pipe runs through the space between the two traps, up and through the tank. This air-pipe is governed by a valve which opens only when acted on by a pressure from below, so this vent-pipe would not interfere with forming of the partial vacuum, which would be necessary before the closet could be emptied by siphon action. When two-thirds of the service-box has run off, the vacuum is broken and the remaining third fills the bowl. The bowl and its double trap is manufactured in one piece of earthenware. The lower trap is properly ventilated. The closet must be supplied from one of Boyle's patent cisterns or tanks.

William Bunting, of New York, received patents from the United States, in 1878, for a closet in which the siphon action is created by a piston which works in a chamber situated above the trap.

FROM BAYREUTH TO RATISBON.—NOTES OF A HASTY TRIP.²—XIII.

CONCLUSION.



Market Place
Ratisbon
France.

THE interior of the Ratisbon Cathedral is rich in carvings, sepulchral monuments, and statues. A prominent object is a well in the south transept with a richly-carved basin and canopy of late Gothic work. The treasures of the sacristy are very numerous and very varied, beginning with a carved ivory comb of Celtic workmanship, and showing specimens of the best minor art of all later epochs.

The gem of the collection is an enamelled reliquary which seemed to me the most beautiful piece of goldsmith's work I had ever seen. It was in the shape of a sarcophagus with a steep roof. The framework and an elaborate cresting along the top were of delicately worked gold in the style of the fourteenth century, and the sides and top were of enamel, shading from deep purple into blue, and studded with golden figures of stags. Small windows, so to say, of crystal allowed the relics to be

seen. This splendid object, for which the Chapter has received more than one large offer from collectors, was found some years ago together with other valuable little works in a forgotten box in some subterranean room connected with the cathedral.

A small door leads from the north side of the apse into the old church-yard full of interesting monuments, and thence we reach the cloisters, which date chiefly from the fifteenth century, and show remarkable details of early Renaissance work. Some of the windows, round-headed with simple cusped mullions but no tracery, are framed in elaborate work which seeks to imitate the clustered window-shafts

² Continued from page 64, No. 398.

of Gothic days, by means of small swollen columns of classic design, interspersed with statues, and canopies, and mouldings of the most curiously composite sort. Opening from the cloisters is a very ancient little chapel, commonly called the "Old Cathedral," in the idea that it was the first structure on the Episcopal foundation. Its truer title is the Chapel of St. Stephen. A church is known to have been built on this spot in very early Christian, even Roman times. By some this is thought to be the original structure, while others hold that that was destroyed toward the end of the ninth century, and that this is merely a duplicate of its form. In any case it gives us one of the very oldest specimens of ecclesiastical architecture north of the Alps. It is extremely solid in spite of its small size. Two large, round-arched recessed compartments, each with a window in its head, make up the longer side. These compartments are divided by pilasters, with capitals too simple to throw any light on the date of the building. The apse is a shallow semicircular recess, and the roof is formed of two quadrilateral vaults without ribs, evidently later than the walls. An altar raised on three steps is extremely curious; being a plain, hollow block of stone broken near the base of its main side by a row of round-arched openings which seem to imitate transomed windows, and which allow the contained relics to be seen. But a few steps away is another odd little structure, the Chapel of All Saints; its plan is typically Byzantine—a square, from which opens on each side a semicircular recess almost equal in breadth to the whole width of the chapel. These are crowned with tiled roofs, and over the central structure rises a great eight-sided lantern, with its steep roof also tiled. An early Romanesque frieze of little semicircular arches with pilasters at the angles surrounds the tower, and a similar motive runs around the bays as well. From the outside it is thus an extremely beautiful, though simple little building. Inside it is perfectly plain without detail of any kind, but with traces of very old frescoes on the wall. It also has an altar of more usual shape, but still very early—a slab supported by a pier in the centre, and by columns with die-shaped capitals at either corner. It was probably a sepulchral chapel.

Not far from the cathedral, on the same little square, indeed, is the so-called "Old Parish Church of St. Ulrich," a most peculiar and interesting specimen of the transition style, dating from the middle of the thirteenth century; it seemed now to be a museum of antiquities, and was closed on the Sunday when we tried to see it. So all we knew of its interior was by looking through the windows, which process revealed, however, many not-worthy things. The plan of the church is a square; but by means of aisles enclosed so as to form side-rooms with galleries above, rather than true aisles, the nave obtains a length of twice its width. Round pier arches support the galleries; but those above the galleries are rather flatly pointed, and over these again rises the plain wall, characteristic of earlier days; broken only by small round-arched windows high up under the roof. The east end shows a very tall and slender pointed arch rising quite to the ceiling, beyond which is a narrow apse, finished with a single, tall pointed window, with an embryo rose above its two lights. On either side of the central arch is a round arch, rising high above a square raised gallery or rather *loge*. The main pillars are octagonal, and all the capitals show early Gothic foliage. The whole interior shows a curious combination of forms, as well as a plan unlike anything I had previously seen. The ceiling is flat, and outside the doors are round-headed with Gothic detail, while the windows are pointed. The exterior sculpture as well as the details throughout are very good. The ancient so-called Roman tower rising close by forced the apse to receive a square end, which further adds to the architectural peculiarities of this most interesting building. The treasury of the church contains a mass of valuable objects, among them a bishop's staff of buffalo horn, decorated with bands of true Celtic ornament, and dating undoubtedly from a pre-Carolingian time.

Still another very ancient church is the "Old Chapel." The first structure was erected in pre-Carolingian times, and the present one was built by our old friend the second Henry. Relics of his work are still to be traced under a mass of later additions coming down to the fifteenth century. The interior is "restored" in the Jesuit style. On the outside of the north portal are two most curious stone figures of the rudest, but most dramatic workmanship; one showing a penitent on his knees, the other an ecclesiastic weeping violently into a large pocket handkerchief; they evidently represent a confessional scene, and are locally said to portray St. Rupert and a certain Duke Theodo; if so, it seems rather hard that the only memorial of the latter in the popular eye should be this, which impresses us with a sense of his probably phenomenal iniquity. Truly, the evil that men do—or confess to—sometimes lives after them! It would take a long chapter even to hint at the interesting features, or describe the present motley aspect of any one of these Regensburg churches. Each is in itself a bewildering *résumé* of the course of architecture during many centuries, and their number is so great, moreover, that one can give but a glance to each. Our little guide-book noted twenty-three ecclesiastical buildings of great interest which still retain their ancient function; besides innumerable others which have been prostituted to secular uses and partly destroyed: relics of these, crypts or bits of cloisters, for example, are even found buried in some of the private houses of the town; and outside the city are many neighboring villages, each of which has some venerable remains to show. I cannot attempt to mention even the churches of prominent attraction. I must only give a word or two to those which are the most interesting of all; the old Scotch Church, the Dominican Church, and the

immense aggregate of buildings which goes by the general name of St. Emmeran's.

The first was founded by the "Scotch"—more correctly Irish—missionaries who early played an important part in the evangelization of Germany. Of all the many similar monastic foundations in the country this one longest preserved its existence, having been secularized only in the year 1862. The structure has been injured and repaired at different times, but the larger portion of it is of the twelfth century, while the towers and the apses of the aisles are still older. The nave is flat-roofed, but aisles and apse are vaulted. The details throughout are most curious, multiform, and interesting; it does not take an unduly vivid imagination to see in many of them traces of the Celtic ornamentation which was familiar to the earlier missionaries, and became perhaps a tradition in their community. The famous north portal is one of the riddles of architecture. The shafts of the deep doorway are richly decorated; but the mouldings of the great round arch are plainly finished, though elaborately varied in section. On either side of the doorway, the wall is covered with delicately ornamented arcades; and beneath and between these, scattered on the wall with small attempt at definite architectural arrangement, are a great number of the most strange and outlandish figures, men, animals and monsters. More trouble has been taken by the labor-loving and mystery-loving archaeologists of Germany to explain these sculptures than has ever been expended, probably, on any single part of any other building; but even to-day they seem no nearer to agreement, or, indeed, to definite individual decisions. Some find in the carvings a reproduction of the figures of the heathen mythology of the north; others, symbols of the philosophy of the great British teacher of the eighth century—Scotus Erigena; others again, think they are symbols of Christian doctrines or dogmas, placed here to impress the minds of the faithful before they entered the building; but these last, though their theory seems most probable in the abstract, would find it especially difficult, I think, to justify it by any explanation of the carvings. The mere architectural student, therefore, who cares more for visible forms than for hidden meanings, may content himself with admiring the rich effect of the doorway and the arcades, and marvelling at the fantastic decorations which surround them, and he may conclude, moreover, that no explanations are necessary beyond the known delight of early German artisans, which they shared with their cousins of Lombardy, in covering their work with the strange, picturesque, and phantasmal creations of their imaginations.

The Dominican Church is a most beautifully proportioned structure of the end of the thirteenth century, with tall, narrow windows, very simple in their tracery, but as graceful in shape as any I have ever seen. The building is comparatively plain throughout, as are all the churches of the poor Dominican order, but a specially interesting feature, nevertheless, is furnished by the consoles which support the vaulting ribs. These are of manifold and peculiar shapes, ranging from graceful vegetable forms to figures the most contorted and grotesque. They are especially conspicuous from the lack of other detail to divert the eye. Unfortunately, this fine interior, remarkable in Regensburg for being all of a piece, is now whitewashed throughout. Adjoining the church are the old collegiate buildings of the order, doubly interesting since Albertus Magnus taught in them for many years. His old school-room, with his professor's chair, may still be seen almost in its primitive condition, a low-ceiled, square apartment panelled with wood carved with mottoes. The carvings have been slightly restored in recent years, but the main aspect of the room is uninjured, and it is probably the oldest of the kind in Germany—the only direct evidence we have in the world, perhaps, of how the students of that century disposed themselves to receive instruction. Their rows of benches around the wall are also still existent.

And now I must give a word to St. Emmeran's, though it would be an impossible task to attempt to give any really clear idea of the extraordinary association of buildings which has grown up around the church. The Germans have a finely characteristic term which they can use in similar cases; they often speak of a *Baucomplex*, and I know of no place where the term is more literally applicable than here at St. Emmeran's; the churches, cloisters, chapels, crypts, towers, walls, court-yards, and other structures and parts of structures which are here collected together defy analysis when one is on the ground, or clear recollection later on. Some of the parts are in good preservation; others are partly ruinous and abandoned, or desecrated; others, again, were restored out of all recognition in the last century. Bits of every epoch from Roman days down to our own are heaped together in inextricable confusion. It is a hopeless labyrinth for the casual visitor, though I can imagine few more interesting tasks, had one time and knowledge, than to set oneself resolutely to work to puzzle out the medley and learn all it has to teach. The north entrance of the main church of St. Emmeran's is one of the oldest bits. We reach it through an open vestibule, or "Paradise" of the twelfth century, that replaces an earlier one destroyed by fire. Under the pointed vaults of this we find two great round-arched recesses, and in each of them a door. Curious sculptures adorn the piers, and in front of the central pier between the arches is an old stone seat, called the chair of the Emperor Henry II, but evidently even older than his time. We were unable to examine it closely, as the Kaiser's resting-place was occupied just then by a deaf old beggar woman who seemed to regard our little coin as a bribe to sit still rather than an inducement to rise, and with whom

we could not argue on account of a throng of church-goers. Illustrations show the chair to be a great T-shaped stone, the corners of the slab being further supported by two very archaic-looking lions. The back is a simple, heavy semicircular stone without the least ornamentation. Passing through this portal we find ourselves in a fine Romanesque structure, which has, however, been done up in the worst style of *Baroque* decoration. The various adjacent and connecting churches, chapels, and crypts with their endless treasures of sculpture of every sort cannot even be mentioned; but it would be a hurried account, indeed, which could omit to notice the beautiful cloisters, the finest, I think, I had ever seen in Germany. Scarcely two bays of the arcades are similar, and the various sides of the quadrangle date from various times, Romanesque and Gothic. The finest portion, I think, is that which shows transitional features, with slender pointed arches, supported on mid-wall shafts with very rich and heavy capitals. An arched doorway in this part is very curious. The recessed opening is so deep as to hold no less than eight orders of graceful columns supporting mouldings of strictly Romanesque design—with primitive forms, indeed, such as lozenges, zigzags, etc., which looked more Norman than German. The arch, however, was pointed in shape, while the naïveté and uncertain feeling of a new departure was shown by the fact that the ornamentation did not adapt itself properly to the pointed outline. It was awkwardly broken in the centre by the sharp angle of the arch, which looked, therefore, as though it had been, so to say, a round arch broken and pieced together at another angle. The late Renaissance palace of the princes of Thurn und Taxis is one of the most modern portions of this immense mass of varied buildings. Adjoining it, and planned right in the centre of the quadrangle formed by these lovely cloisters is a very recently-erected mortuary chapel for the family—an intrusive, ugly work which we resent as we resent no other addition to the architectural medley of the spot. If it would require a long chapter to treat of any single church in Ratisbon, it would require a whole volume to tell of the various buildings and parts of buildings which group around this church of St. Emmeran.

And then besides all the churches there are the Roman remains of the town, which are not inconsiderable, and a long series of public and private buildings, some of which have portions dating from the earliest Romanesque days. There is scarcely a house wherein old fragments of some kind are not incorporated, and we become perfectly *blasés* on the subject of the Romanesque relics upon which we pounce so eagerly in other places. Round-arched doorways greet us on every hand, towers with tiny coupled windows and immense breadths of plain brick wall, and porches, turrets and fragments of every sort. The hotel in which we stop, the famous *Goldenes Kreuz* in which so many royalists have housed, is an ancient private residence, with a tall tower that makes us think of the Italian towns. Some of these remains, especially the beautifully-carved round doorways which line the street called "of the Ambassadors," have had their details partly concealed by successive paintings; but a thousand bits of interest remain in almost uninjured condition. The *Rath-Haus* is a most delightful structure, with some features of extreme beauty, and of course its historical charm is great, but it is pointed Gothic of a rather late type, and so seems very recent in this hoary town. The great hall has a splendid range of windows along one side, which makes the chief feature in the outside view as well, and it contains many beautiful examples of ancient needle-work and weaving. But one grows tired of hinting at things which cannot be described—grows tired of trying to remember things which could only be glanced at, and not properly appreciated amid the mass of similar attractions.

I have already spoken of the difference in effect between Ratisbon and such a town as Würzburg, whose most visible stamp was given by the eighteenth century, but it is just as different in effect from Nuremberg. This latter is above all things bright, cheerful, picturesque, and fascinating even to those who care nothing for architecture in itself—only for its pictorial attractions; but Ratisbon cannot be called picturesque any more than it can be called gay and cheerful. It is stern, dark, forbidding, and its most peculiar structures have all the severity of earlier times. Of course picturesque structures will be found among the pointed buildings, and picturesque bits of various kinds in many places; but the general aspect of the town would not appeal to a painter's eye nor to the eye of a tourist uninterested in architectural relics, or in historical associations. To one who is so interested, however, I cannot praise its charm too highly. One would never think of comparing it with Rome—no two cities in the world could be more unlike; yet it gives one much the same feeling he has on Roman soil—the feeling that countless generations of active and powerful men have trod its streets, that each has used over and over again the materials supplied by earlier days, and each has left its more or less mutilated traces to be clearly read by the practised eye. As an abode of man, dating to really prehistoric times, rich with a varied and imposing history, and subsisting alive to the present moment, it is almost beyond comparison for interest and impressiveness. When a night's journey took us back to Dresden, when we awoke to find ourselves in a town which dates, practically, only two or three centuries back, we felt as though we had been reborn into a quite different world—the world of to-day as opposed to the world of the early Christian centuries.

I must not close this all too rambling and fragmentary tale of what a few brief weeks revealed in a few Bavarian towns without saying once again that no visitor should attempt to see such a town without pro-

viding himself with one of the excellent little local hand-books that are to be found in every place. Much assistance will also be given by a book on the "History of Art in Bavaria," written some years ago by Dr. Sighart. The author's critical taste is not always above reproach, perhaps;—he is too often carried away by indiscriminate enthusiasm. Especially, when he speaks of Munich, which was built by the royal house, to one of whose members his work is dedicated, he falls into sad endeavors to approve of its architectural monstrosities; but what we want and get from him is facts, not opinions, and his work is invaluable to the student, having done for Bavaria what has not been done with equal completeness and similar brevity for any province of Germany—having given an historical account of the development of art within its borders, from the earliest days down to the present moment. His illustrations are ample and well chosen, and no branch of art is too modest to come within his plan. Not only architecture, but sculpture, painting, MSS., glass, and the work of the minor craftsmen, are treated with commendable skill and fulness.

M. G. VAN KENSSELAER.

THE ILLUSTRATIONS.

UNITED STATES SIGNAL STATION, PIKE'S PEAK, COLO.



U.S. Signal Station, Pike's Peak, Colorado. 14,156 feet above sea level.

THIS is the highest building in the world that is inhabited during the entire year, and the highest signal station in any country, being 14,156 feet above sea level, and is regarded as of especial value for the study of electrical phenomena. The walls are two feet thick, and ten feet high, built of rubble from the stone found on the

peak, a sort of grayish-brown granite and an extremely hard stone. The mortar used was one part of Louisville cement to three parts of sand; the sand was obtained by screening coarse gravel formed by the disintegration of granite boulders and was "packed" on burros from near timber line, which is about 11,500 feet above the sea.

The water used in mixing the mortar was packed about five hundred feet up the side of the mountain. All the other materials were packed on burros from Manitou, nine miles by the trail, with an ascent of nearly 8,000 feet. No lumber over eight feet long could be packed up. The walls and ceiling are not plastered but sheathed with pine ceiling. The windows have all double sash. The rooms are ventilated by registers set into the ceilings, and an Emerson ventilator on the roof; the latter is of tin with standing seam, the tin being carried down on the face of the walls under the fascia of the cornice so as to prevent the wind getting under it.

A 2" x 4" plate is notched into the top of rafters and anchored to the stone walls by bolts three feet long. The building was put up in a little over two months at a cost of about \$5,000, and on the night of October 11, when nearly finished withstood a gale of eighty-six miles per hour, the heaviest wind recorded during the ten years that the signal service has had an observatory on Pike's Peak.

The building was designed by Mr. P. P. Furber, who has been representing Messrs. Peabody & Stearns in Colorado Springs.

WROUGHT-IRON GATES FOR THE MILITARY NATIONAL CEMETERY, ARLINGTON, VA. MESSRS. SMITHMEYER & PELZ, ARCHITECTS, WASHINGTON, D. C.

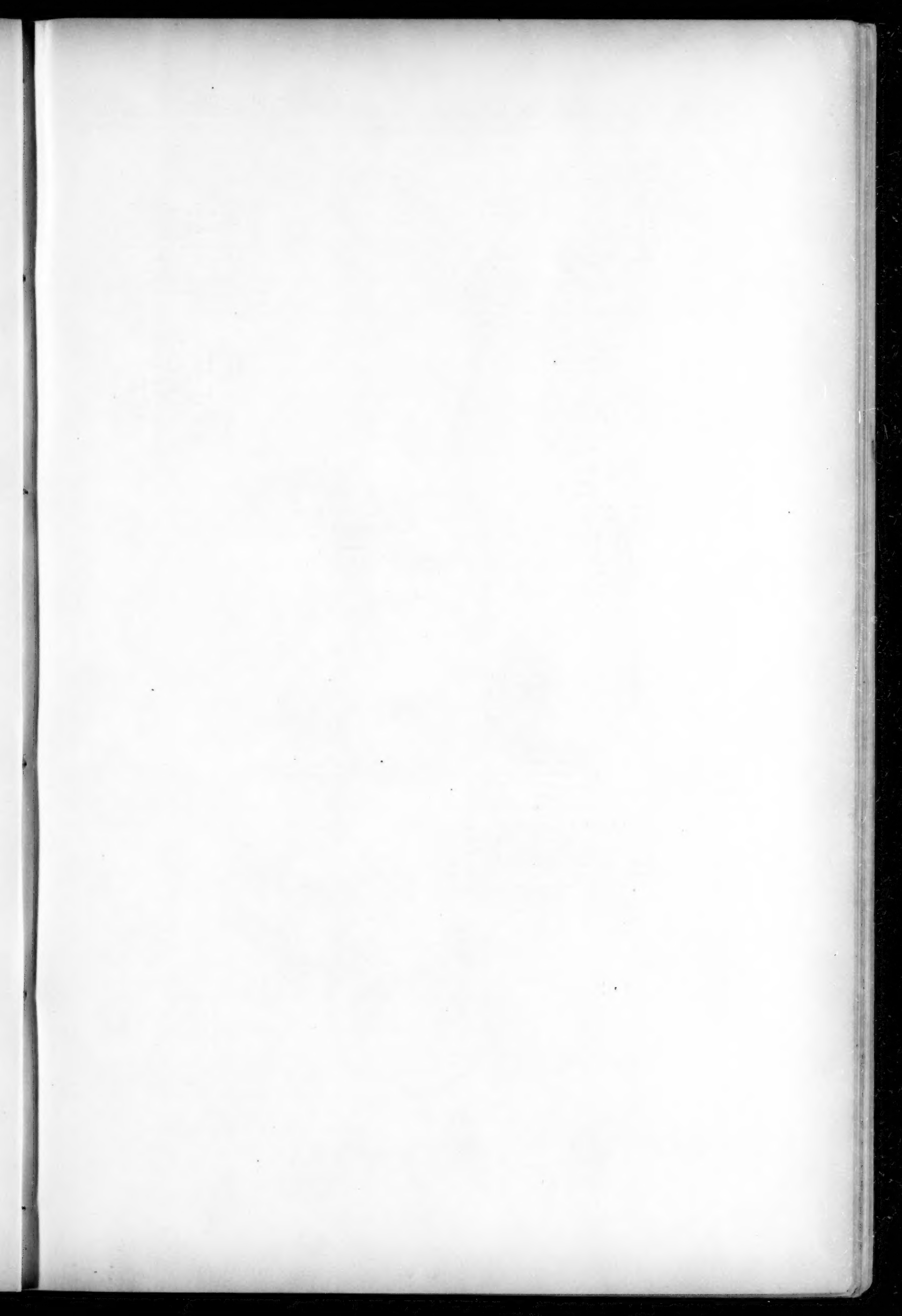
THESE two wrought-iron gates were made for the eastern and western entrances to the Military National Cemetery, at Arlington, Va., near Washington, D. C., where they now are. General M. C. Meigs, then Quartermaster General U. S. A. (1880), while in Europe saw and admired some magnificent bronze, and equally beautiful (and old) wrought-iron gates; on his return home he conceived the idea of giving the American wrought-iron workers a trial of skill, and having charge of the Military Cemeteries, he had these two gates designed and made for the cemetery at Arlington. Quite a number of parties put in their bids for them; they varied from \$5,000 to \$11,000; Messrs. Schneider & Sons, of Washington, were the lowest bidders, and they made them satisfactory to all parties.

ROOD-SCREEN AND CHOIR-SEATS FOR ST. STEPHEN'S CHURCH, PROVIDENCE, R. I. MR. HENRY VAUGHAN, ARCHITECT, BOSTON, MASS.

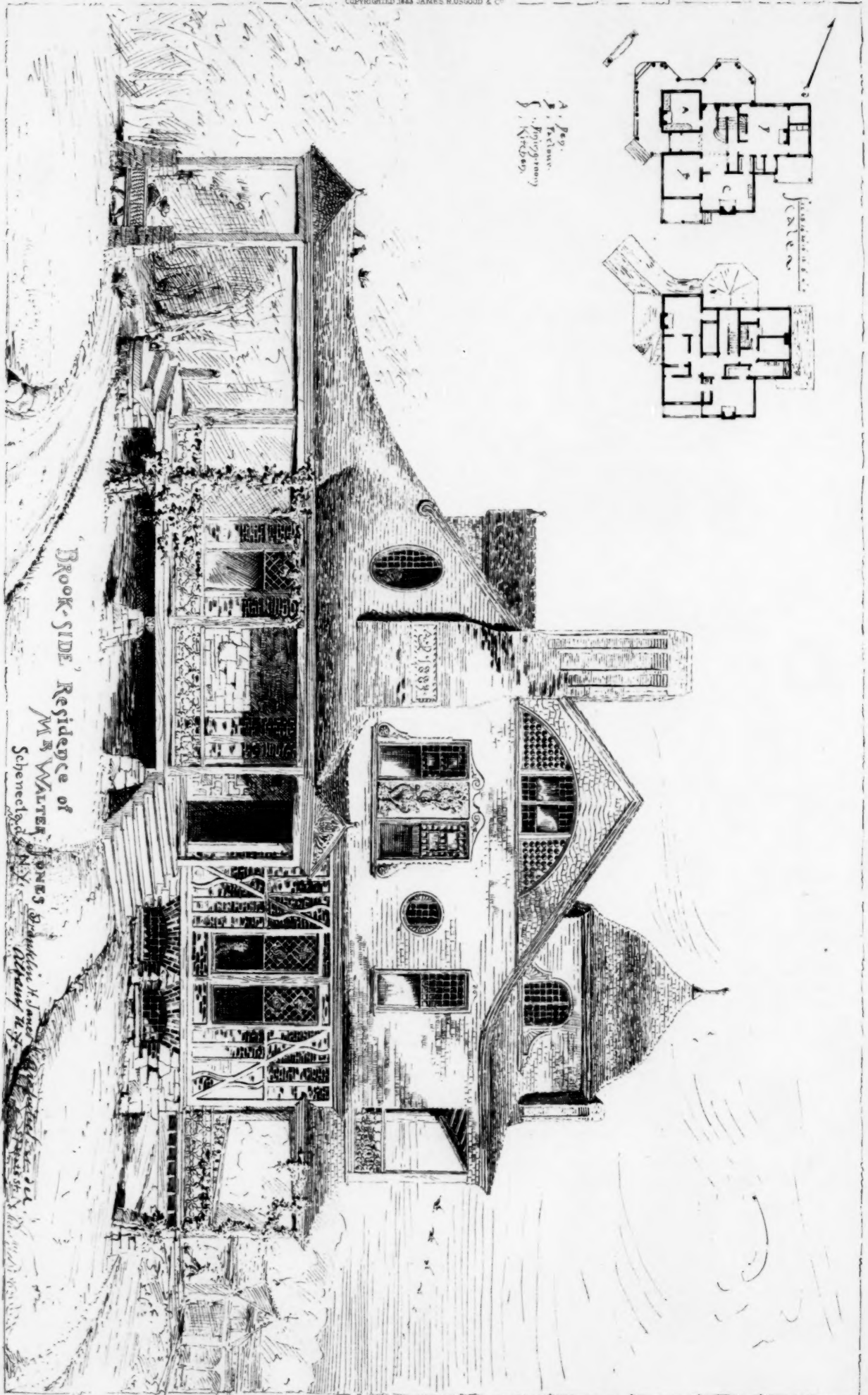
THIS screen is intended as a memorial of the late vicar of the church, and is to cost, with the reredos, which is not shown in the drawing, \$4,000. The cabinet-work was done by Irving & Casson, and the carving by Evans & Tombs, all of Boston.

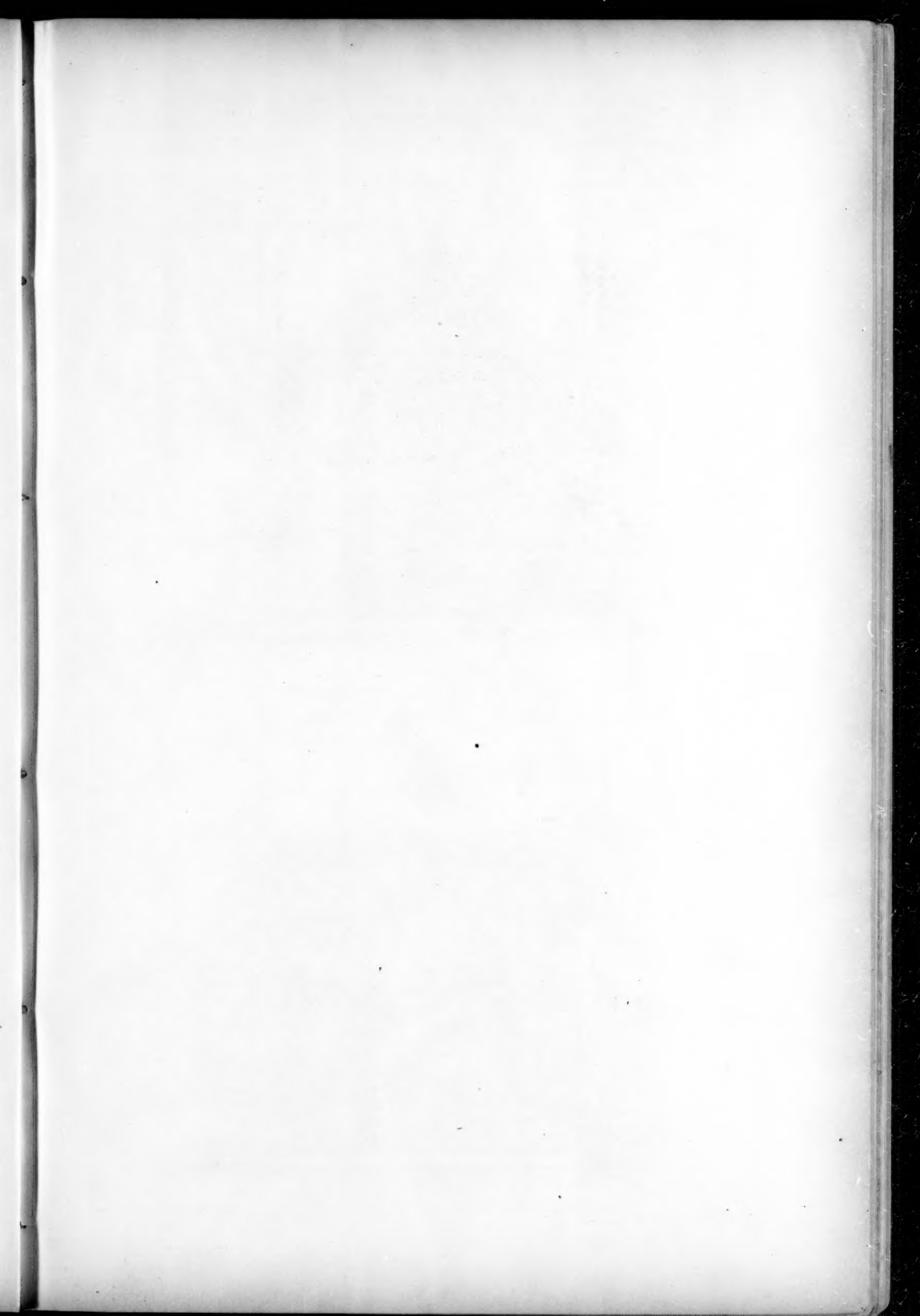
HOUSE ON WAYNE ST., DORCHESTER, MASS. MR. GEORGE MOFETTE, ARCHITECT, BOSTON, MASS.

"BROOKSIDE," HOUSE OF WALTER JONES, ESQ., SCHENECTADY, N. Y. MR. FRANKLIN H. JAMES, ARCHITECT, ALBANY, N. Y.



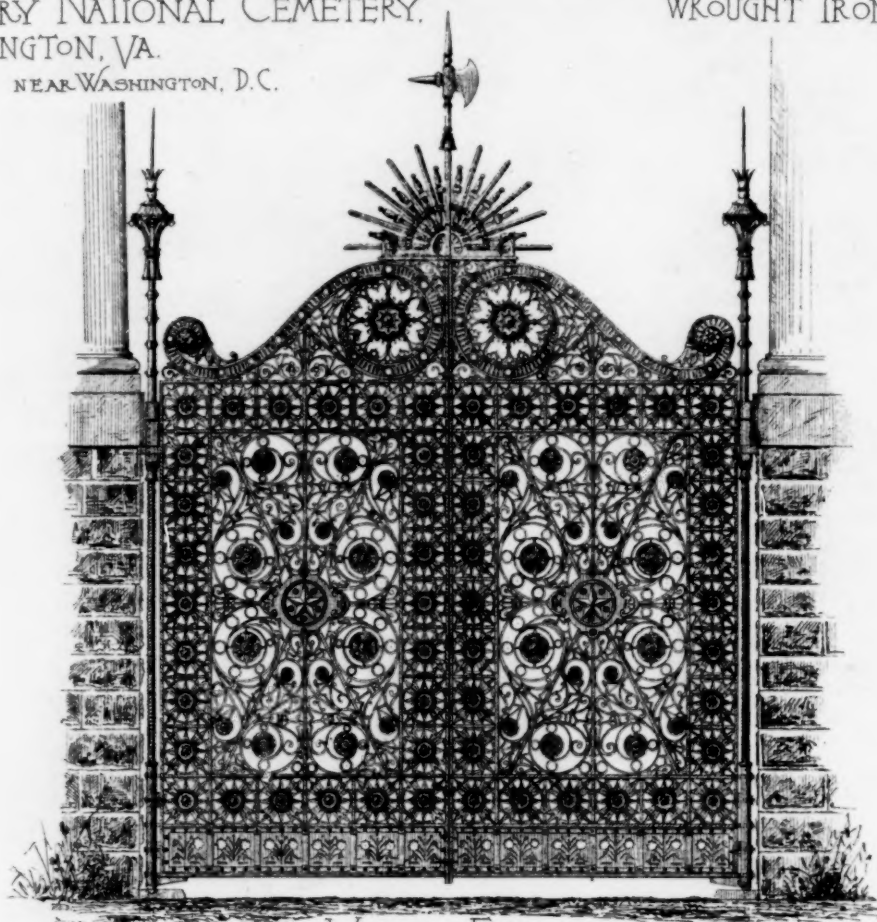
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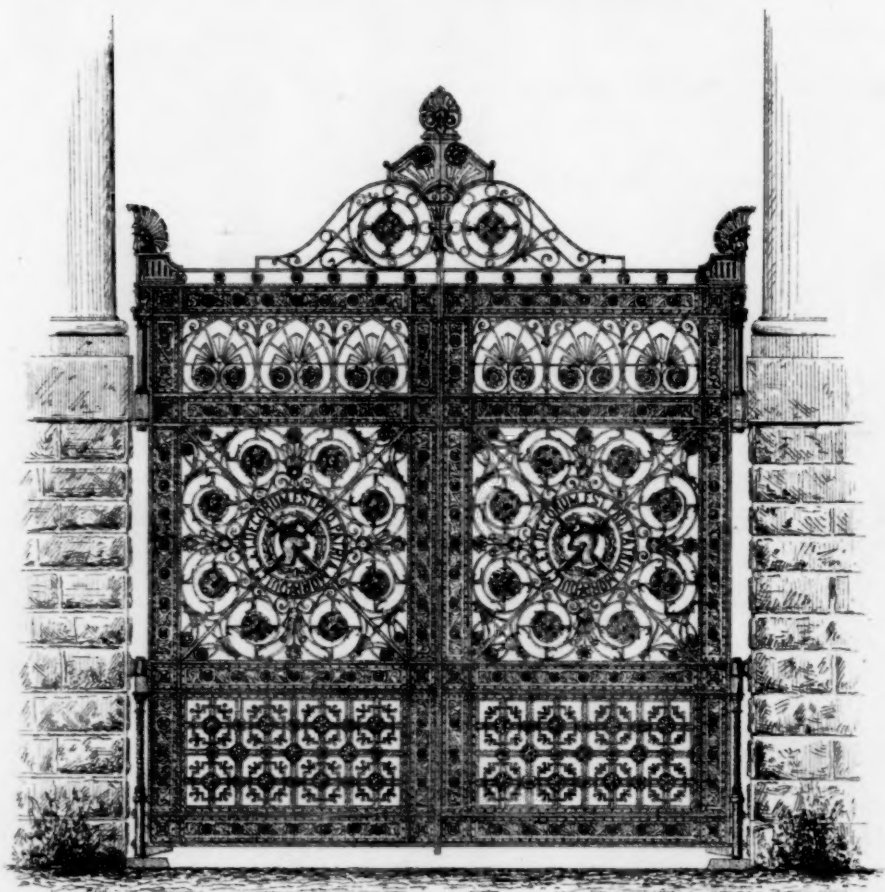


MILITARY NATIONAL CEMETERY,
AT ARLINGTON, VA.
NEAR WASHINGTON, D.C.

WROUGHT IRON GATES.

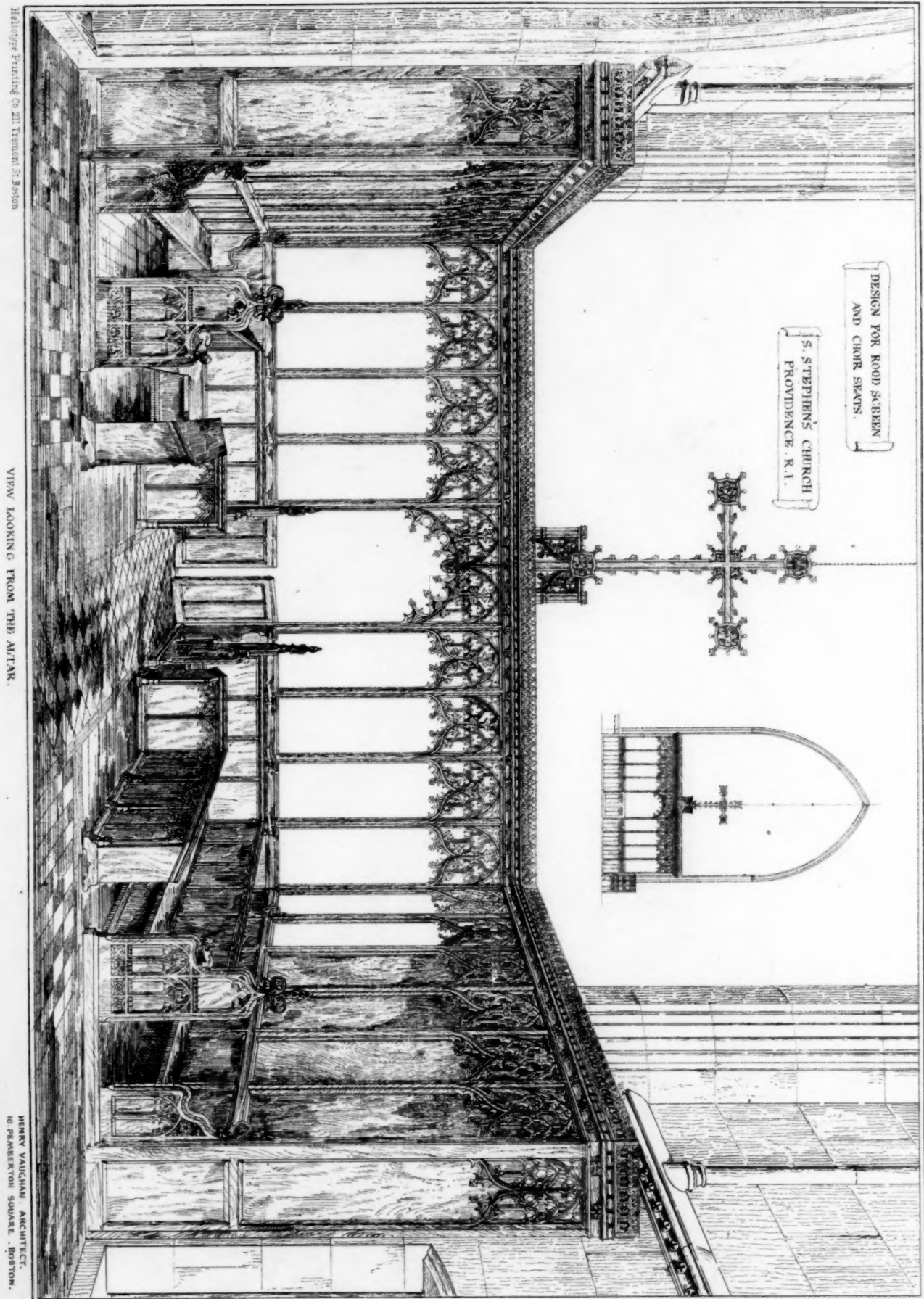


at Western Entrance



at Eastern Entrance.

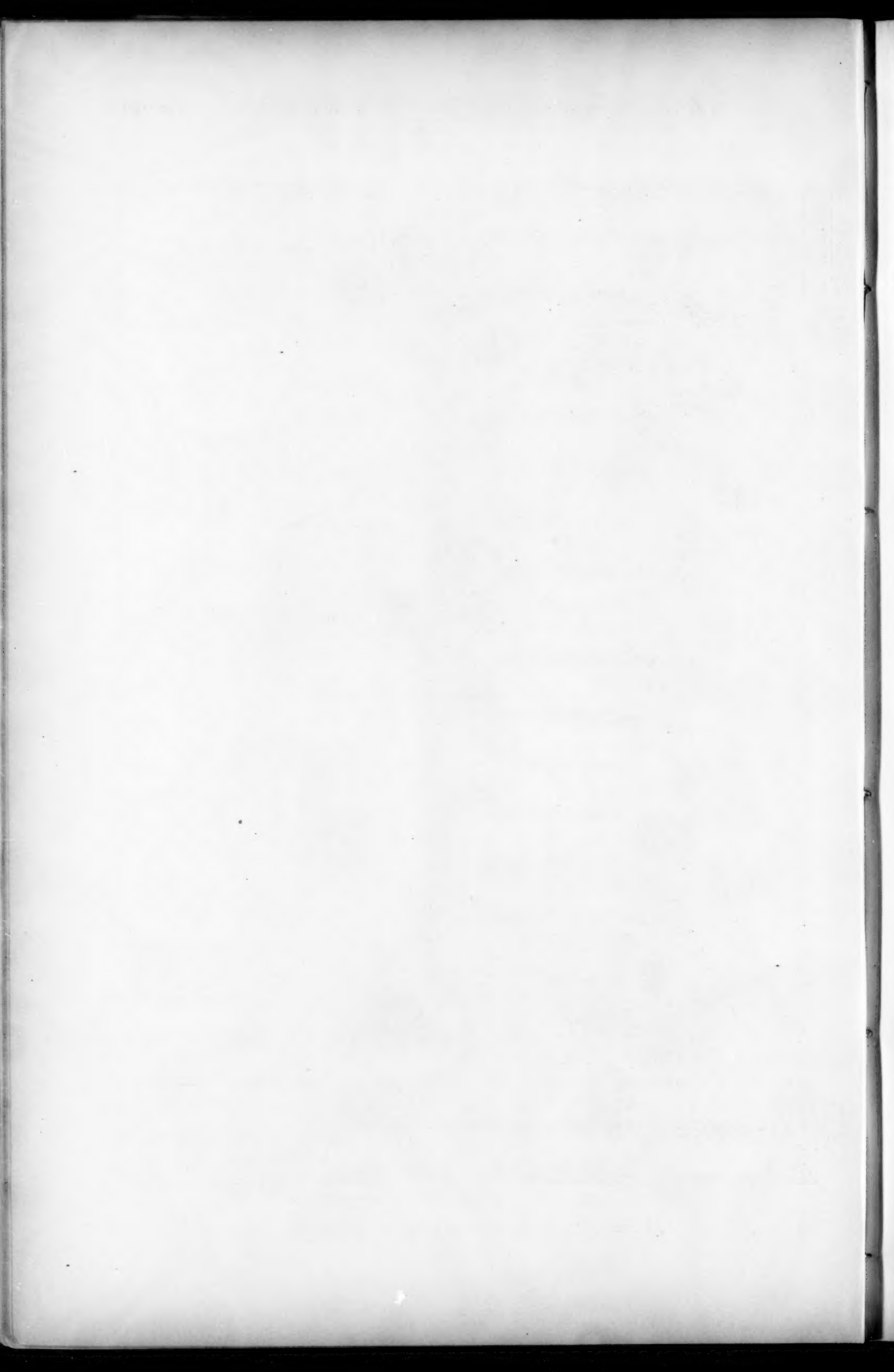
Smithmeyer & Pels, Architects.
Washington D.C.



VIEW LOOKING FROM THE ALTAR.

HENRY VAUGHAN, ARCHTCT.
10 FEMBERTON SQUARE, BOSTON.

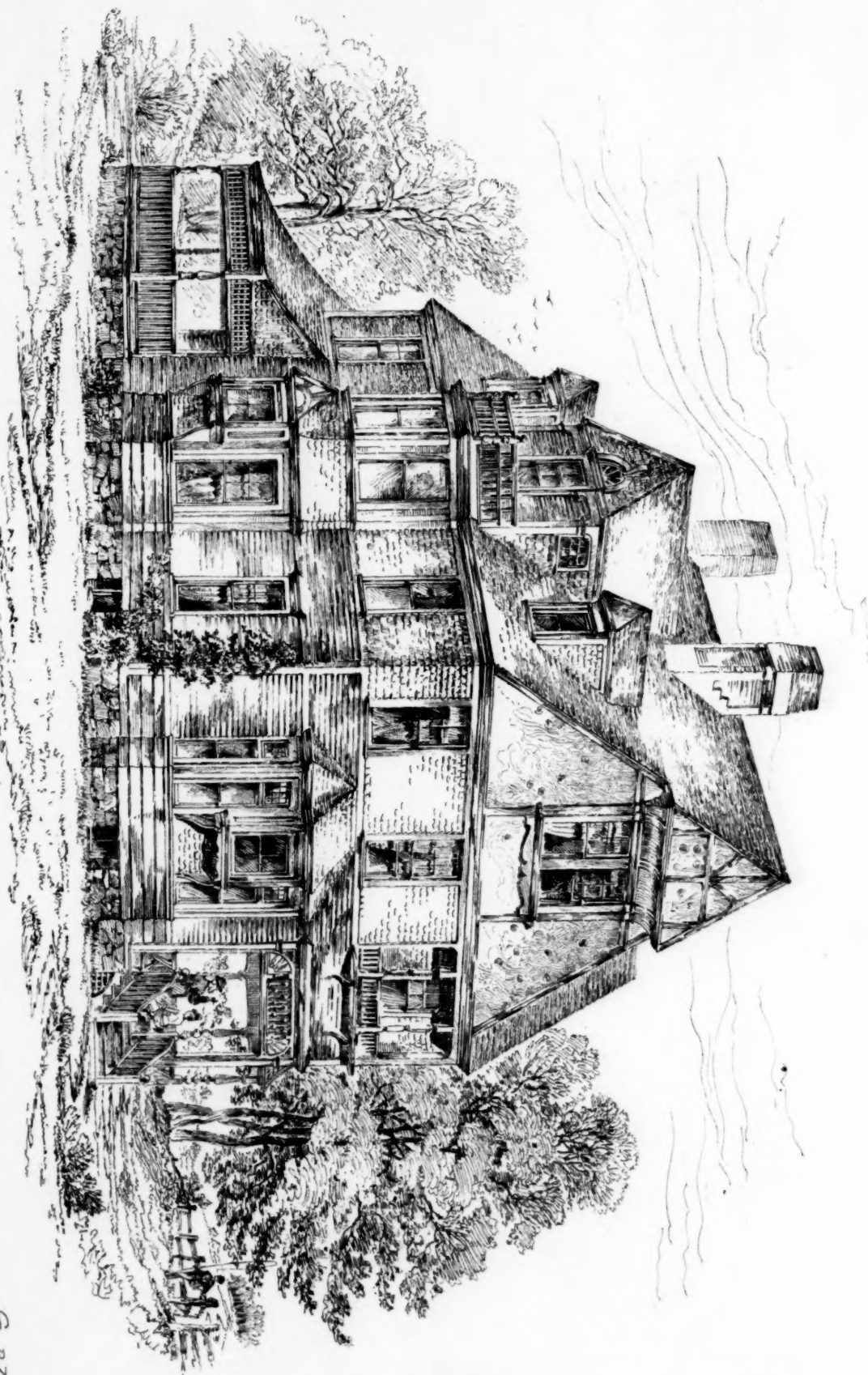
Engraved by J. H. Thompson, Boston.

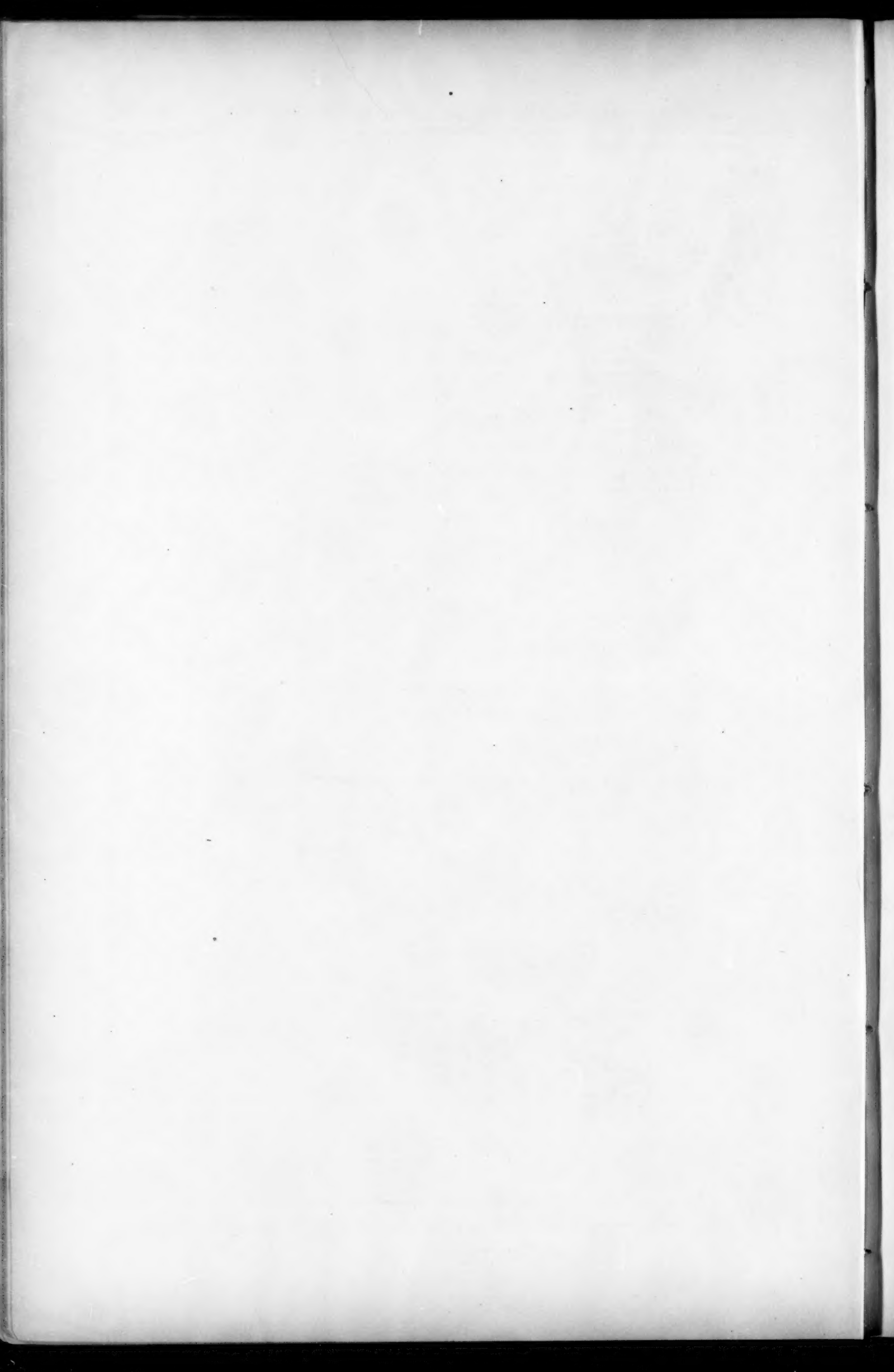


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HOUSE ON WAYNE ST. DORCHESTER DISTRICT... (Geo. Moffette, Archt., Boston, Mass.)

Geo. R. Johnson, Del.





THE SEWERAGE OF PARIS.¹—II.

FROM the foregoing summary it seems that a clear idea may be obtained of the applicability of Waring's system for the removal of household water and faecal matters. Paris may be divided into a certain number of local districts. These local districts would be drained of their domestic wastes by the pipe-sewers of Waring's system, and the product of each district could be delivered either by natural fall or by pumping — if that should be necessary for some districts — into one of the collecting sewers conveniently selected and having a sufficient minimum flow. If we suppose the daily discharge of the collectors, to-day 300,000 cubic metres, should be increased within a short time to 400,000 cubic metres, and that also the daily discharge of all the Waring drains would be for all Paris about 45,000 cubic metres, we see that these special affluents would carry, on the average, to the points of discharge only about eight or ten per cent of the present flow of the collectors which would receive them. Should an objection be raised thereupon, especially in view of the fact that the affluents contained only matters which have not yet entered into fermentation, it is to be met by the fact that the total removal of household and faecal matters by means of sewers must, for other motives, be absolutely prescribed.

How shall the Waring sewers be established in each district? These are details which we need not now consider. Where there are now no large sewers they cannot be otherwise placed than in the ground under the public streets. Where large sewers already exist, must they necessarily be placed within these? Some persons answer in the affirmative. But if private drains are not now connected, we doubt that they are right, and hold the matter in abeyance. It is, after all, a question of detail which in no respect affects the system, and which will receive a practical solution.

It is more interesting to consider the change that the proposed disposition will produce in the sanitary condition of the existing sewers.

Completely relieved of household waters and all faecal matters — for the public urinals and châteaux can be drained by the Waring system — the primary sewers will henceforth receive, aside from rain-water, only the water used for washing the public streets. Can they also be relieved of the waters of manufacturing establishments, including in the series the discharge of abattoirs, markets, and public baths and laundries?

It seems to me that this cannot be doubted. The flow of water to be considered is nearly constant, and indeed they can be received into these pipes with advantage, the diameters being increased as may be necessary, because they would increase the cleansing effect of the current.

In any case the percentage of nitrogenous matters in the whole system of primary and secondary sewers, and even in each collector above the junction with a Waring affluent, would be very greatly reduced. Furthermore, all the branches of the system corresponding almost to the total surface of the city would be entirely relieved of suspected germs.

We should have a complete change of condition, not only in this ensemble of sewers, from the point of view of cleanliness, but also for those regions of the city which lie above them in all that relates to healthfulness. As to the cleansing of the sewers, there would remain but one serious question: that of sand. But, independently of many other considerations, it is clear that in eliminating the solid matters conveyed by household waters and excremental liquids, which now soil these solid deposits, compacting them and impregnating them with foul odors — a difficulty which will be greatly increased after the delivery of all faecal matters into the sewers — we shall render the removal of the sand less disagreeable and therefore less costly.

The inlets of the primary and secondary sewers, which more or less always, but especially in summer, send out such offensive odors when the inverts of the sewers become dry, will be relieved of this objection, which so seriously affects the public health; and it will be useless to think of borrowing the trapped inlet-basins of Brussels, which even there are not irreproachable, and which would be inapplicable in Paris by reason of the greater abundance of street detritus.

The atmosphere in which the sewer gangs work, and to which they are acclimated, but which is nevertheless not without effect on their health, will become nearly as pure as the free air. The question of cleansing, already solved for the collectors, but so difficult in the case of the minor sewers, will be entirely transformed, and the work will become much more economical.

Let us add — and this is not one of the least of the advantages of Waring's system — that the drainage of Paris, so far as it is practically necessary, can be applied much more rapidly and with a considerable reduction of cost. There is now in fact a great extent of streets without sewers. Nearly all that are yet to be constructed are primary sewers, draining only the streets under which they lie. With the present idea of delivering all foul matters to the sewer (*tout à l'égout*) these sewers are indispensable. The use of Waring's system would allow them nearly all to be suppressed or their construction to be postponed to a distant day. Not that such sewers are absolutely

¹ Continued from page 67, No. 398.

without their use, especially in connection with the distribution of water; but the final ramification of the water-pipes could perfectly well be placed in the ground. As to the water used in washing the streets, there are but few points where they now have to run far in open gutters. We could therefore avoid constructing immediately almost the whole of these sewers. This would result in a considerable economy, which may be estimated, supposing the Waring sewers to cost from fifteen to twenty francs per metre, at not less than eighty to eighty-five francs per metre; and besides that, what an economy for householders in all that relates to branch connections!

In a recent paper, the Direction of the Works of Paris, estimating the length of sewers of only local interest still to be constructed at 343,429 metres, and the outlay required therefor at 35,000,000 francs, we estimate that at least 250,000 metres, and perhaps 300,000 metres of this length could be suppressed, at an economy of 80 francs per metre. This would be 20,000,000 or 24,000,000 francs, of which the necessity would be totally suppressed, or at least postponed for a long time. These figures are not to be disregarded. They add an important consideration to the adoption of the Waring drainage within the limits above indicated. And to whoever would charge this combination with complication, it may be replied that the specialization of functions that it secures is rather a progress. It is the specialization of organs and the localization of functions that characterizes the most perfected organisms. The objection seems to us without value.

There remains, however, one question in connection with this system: that of determining whether or not the augmentation of the percentage of nitrogenous matter in the waters of the sewer, as a result of the total removal of domestic wastes by this means, will not be in itself objectionable, either during the subterranean flow of the sewage or in connection with its purification.

As to purification we have nothing to say. As to the current in the sewers, by causing this increase in the percentage of nitrogenous matter in the collecting sewers which have a large flow — where organic matters rapidly carried forward will have arrived without fermentation — the objections will be much less than if the increase was produced within sewers of feeble current, where these matters have often ample time to enter into putrefaction.

Will these objections nevertheless exist? This is a point which we cannot decide; but we believe that they will at least be unimportant.

It may be further remarked that the circumstance described is not the only one that may ultimately be urged for the extension of Waring's system, which may be made to withhold from the collecting sewers themselves all domestic wastes.

If the progress of industrial chemistry succeeds in finding means by which artificial manure can be made from domestic wastes without the emanation of dangerous gases, and without the production of a foul liquid residuum, and under conditions which can cause no prejudice to the public health, it is quite possible that we shall be led to establish a system of complete and absolute separation between domestic wastes and the ordinary sewer water. The latter may continue to flow to the purification fields; but the former will be sent directly to factories, where they will receive their chemical treatment.

It is not at all necessary to insist on this rational point of view, which, however, it was necessary to indicate as a part of the complete question. The industrial progress referred to may never be attained, or we may have to wait long for it. Should it be attained, and should the absolute separation referred to become necessary, we should have to regret, because of the provisional discharge of the Waring drains into the collectors, only an insignificant wasted expenditure. We might almost everywhere in effect place within the present collecting sewers the collecting pipes of Waring's system, the dimensions of which, even for all Paris, would not exceed narrow limits.

We may, then, in all that relates to the expulsion from Paris of all its foul wastes, go on without fear in the way above proposed.

It seems essential, so far as relates to the discharge of household wastes and faecal matters, to substitute the sewers of Waring's system for our primary sewers, which carry an insufficient flow of water.

It is the object of the present paper to call attention to this point, believing that the considerations that are here developed constitute a reason for hastening the practical trial of Waring's system, as asked for by the Second Sub-Commission. This will be for the moment our only conclusion.

WATER-PROOF AND OTHER SPECIAL PAINTS AND VARNISHES. — The *Neueste Erfindungen* says that the water-proof preparation of G. Gehring, in Landshut, is prepared by melting together 60 parts of paraffine, 15 parts of wax, and 30 parts of palmitate of alumina made by precipitating a solution of palm oil soap with alum. The stone, metal, or wood that is to be water-proofed is warmed to 140° or 200° Fah., and then coated with the melted mixture. For fabrics he employs a mixture of 60 parts of paraffine, 20 parts of palmitate of aluminum, and 10 to 15 parts of yellow wax dissolved in linseed varnish, to which is added from 6 to 15 parts of oil of turpentine.

A. Riegelmann, in Hanau, has patented a rust protector which consists of ordinary oil paint mixed with ten per cent of burned magnesia, baryta or strontia, besides mineral oil. This neutralizes the free acid of the paint, and the alkaline reaction protects the iron from rust.

To prevent iron from rusting in the ground it is painted over with a mixture of 100 parts of resin, 25 parts of gutta-percha, 50 parts of paraffine, and 20 parts of magnesia, besides mineral oil. A temporary paint for the movable parts of machinery contains twenty or thirty per cent of magnesia or burnt dolomite, with some vaseline added to prevent drying.

orders misapplied (though they may be correct so far as implicit adherence to rule goes) by persons who have had no real feeling for architectural proportion, till they have become more or less of a byword.

This study of proportion is a fascinating one, but it also is very dangerous, unless the student will take nothing for granted — will accept no formula without testing it to the utmost, without bringing all his artistic judgment to bear upon the question, whether the adherence to such a formula, whatever it may be, has been the cause of the beauty of proportion in the buildings it lays claim to. I confess that the little power of observation I have been able to bring to this subject has not always been encouraging for the formulæ.

Plutarch would have us believe that the right-angle triangle gives us a magic proportion, because the sum of the square of the two lesser sides forming the right angle equal the square of the third subtending it, as 3, 4, and 5.

The Egyptians appear to have based their architecture largely on the equilateral triangle. The Greeks also held by the equilateral triangle in their Doric porticos, the base of the triangle being equal to the distance between the centres of two columns, having one intermediate, or between the exterior of two such columns and its apex touching either the upper or the under side of the abacus of the intermediate, according as they wished their order to be elegant or robust.

It is also very singular that if we let fall a perpendicular from the apex of an equilateral triangle on to its base, and use this perpendicular for our height, and take the diagonal of the square of one of the sides of the same triangle for our width, we get exactly the two principal dimensions of the front of the Parthenon, taking its width at half-way up its angle columns, which also gives the angle of its architrave. Further, that where these diagonals cut the lower edge of the architrave, you get the position of the axes of the third and sixth columns; the intercolumniation of the six central columns being all equal, you can then mark off their axes and discover the true intercolumniation between angle columns and the second and seventh, which intercolumniation is considerably reduced to give strength to the corners of the building. The diagonal also cuts the axes of the second and seventh columns into two equal portions, either of which gives the modulus which fixes the relative proportions of this wonderful building, one module being the height of the pediment and cornice, half a module of the height of frieze and architrave combined.

I must confess to finding that the equilateral triangle seemed to have been allowed to dominate the proportions of many of the finest French churches. At Vezelay, for instance, you will find it permeating the principal features of the longitudinal section in a wonderful manner (see page 231, in Vol. I. of V. le-Duc's "Dictionary"). In Bourges also you will find that the proportion of the church is based on one grand equilateral triangle, the base being the floor-line from the inside of one outer side wall to the other, and the apex exactly touching the apex of the transverse rib of the nave vault. In other instances, however, the equilateral, if it exists at all, starts from outside the aisle walls with its apex under the transverse rib of the nave, showing that the designer cared for the figure merely as a basis of strength, and not for any artistic value it might have, as in such a case it is manifestly impossible for an observer to take in the three points of the triangle at one and the same time.

It is clear, both from its having been so often insisted on by those most competent to judge, and from one's own experience, that it is proportion which is finally the most satisfying element of good architecture. In youth it is the clever bit, the original turn, which has been given to ordinary details, the *jeu d'esprit* exhibited by the artist, which fascinate us; but as we grow older, subtlety of proportion enchains us more. This faculty of enjoyment in the shape of things depends, I am inclined to think, not so much on our having lost the vitality of youth, as on the education of the eye. I would not disparage the study of the fancied laws of proportion. They are interesting; but the practical architect must rely on something more stable. What should we say of the sculptor who relied on his power of producing a masterpiece simply by his knowledge of the length and other dimensions of every bone? He must have his sense of the beautiful to make his knowledge of anatomy useful to him as a sculptor. In architecture we have, as a rule, no absolutely fixed dimensions to guide us, except those somewhat elastic ones based on the requirements of the case; and the constant quantity the size of the human figure. So that even more than in the case of the sculptor it appears to me we are dependent on our sense of the beautiful, quickened by observation, to guide us on our way. In order to see how fallacious a guide the rules of proportion, which we fancy have guided our predecessors, may become in the hands of those who would press them overmuch into their service, it is only necessary to look at some of the examples of the designs based on these proportions. It is impossible to believe that their authors would not have done much better without such leading-strings. This is true even of features in the same vertical plane, as the doors, windows, strings, pilasters, and cornice of an otherwise unbroken façade; but how utterly fallacious do such rules of proportion become when the features to be bound by them do not come in the same vertical plane; when the apex of the equilateral triangle of which the ground-line of your buildings is the base, is the top of a clock-tower, let us say, at a considerable distance behind the front, or when the apex of your triangle is some point only seen in the interior of your cathe-

dral, while the extremity of its base are points only to be seen on the outside. And yet those illustrations may be seen in the works of one of the most learned writers on architecture in modern times.

If in the former case, that of the campanile rising behind the front, the grouping of the composition was perfect when seen on paper in geometric elevation, it must of necessity be imperfect in the real edifice, when the lower part of the campanile comes to be hidden by the upper parts of the more adjacent façade.

Let it not be supposed that proportion is limited to the difference between the height and breadth of your window or door openings, or the number of diameters which go to determine the altitude of your columns, or the depth of the entablature above them. Beautiful proportion should pervade everything, from the shape of your blocks of stone in the otherwise unbroken surface of your walls, to the outline of your building itself. But again, the shape of each feature must be considered as parts of larger features, and these again of the whole mass. The diagonal of a square one side of which gives the width, is generally considered a satisfactory height for a pane of glass, but there are cases where a square or double square would be more appropriate and better satisfy our æsthetic sense. The proportion of everything is of course affected by its height from the eye and by its surroundings, as a window by the nature of the architrave or of her decoration which encases it. The same façade, if broken vertically by pilasters, will give an entirely different effect of proportion to what it would if without the pilasters it were banded by numerous strongly defined string-courses.

The painter and sculptor allow themselves some freedom in the proportions of the human figure according to the impressions they wish to convey, and so may we, notwithstanding the rules of Scamozzi and Palladio, vary the proportions of our orders to a certain extent out of deference to their position, or the effect we wish our building to produce; and this we may be the more sure of because we find the Greeks were before us in this exercise of artistic liberty. The great advantage, however, in our being somewhat emancipated from the slavery of rule is that this exercise of liberty will cause us to think. Let nothing be done simply because it has always been done before, because in architecture, at any rate, the conditions of things are perpetually changing, so that a doorway which was simply perfect where you first saw it, in Verona for instance, is positively painful when you reproduce it line for line in the Strand.

You cannot study the work of your predecessors which pleases you too closely. Get to know why it pleases, what there is in it incidental to its surroundings, what of inherent beauty; sketch it and measure it, live with it, visit it in early morning, in the shades of evening; get to know it as you would the mind of your dearest friend; but do not pull it up by the roots to plant it elsewhere. That red marble griffin basking in Verona's sunshine would in all probability cut but a sorry figure if reproduced in Portland-stone, in the shade of some club-house in Pall Mall.

As one example of what may be done by the training of the eye to give delicacy and refinement to form, I may mention *entasis*. Nobody would neglect this in a classical column. The Five-Order-mongers have taught us this at any rate, and few would forget it in their spires; but a slight inclination inwards is not out of place in the otherwise vertical lines of towers when used in moderation. The vertical line of buttresses between the strong slopes of the weatherings are, I fancy, the better for a very slight batter, and all features such as pinnacle and spire lights around a central spire must sympathize with the direction of the spire, or appear to be most unpleasantly antagonistic to it, in fact appear to be falling outwards. Nothing I know of gives more refinement and grace to a building than attention to these points.

Another is the proportion of the spaces into which your building is divided by strings and other horizontal features. However monotonous your building may have to be in the setting out of its voids, the artist-architect can always contrive some variety in his spaces measured vertically, and some happy results are in that way attainable, even when your superimposed stories may be of the same height.

It is to you that we must look for progress in the future. Believe me, there is little to be done without enthusiasm and when are we to experience enthusiasm if not in our youth? It is true that there are many enthusiastic men of mature age; but if we take the trouble to look back at these men, we shall find that they have not gradually become warm in their love for their art and for all that enchants them in the art of the past, but were so from their youth onwards. Take Scott and Street for examples.

With your enthusiasm cultivate also the critical faculty. Take nothing for granted. Whether your study be a building of the past of universally acknowledged excellence, or one of to-day, neither accept the one nor despise the other, without the exercise of your reasoning faculty. Analyze, compare, and discuss the work of your masters and contemporaries. Does such a building lack rhythm and repose; what would have saved it? Does it appear to want dignity; what would have imparted that to it? Are there features about it which appear to be useless? — are you sure that they could have been dispensed with? Is there no hidden requirement which these apparently useless features fulfil? If there is none how would the work have looked without the features in question? Take your pencil and try. Is that column too heavy for its superincumbent load? Draw one better adapted for that load. Does a window appear not to fit happily the space left for it beneath the vaulting or curved roof

principal? Design a better, taking care at the same time, that it becomes the gable externally as well as your original does. Does a finial appear too large for the gable it surmounts? Draw the gable with one which, in your opinion, would become it better — be more in sympathy with its lines, giving it greater apparent altitude and refinement. Thus if, in the work of others, any detail jars on your susceptibility, you will learn, it may be, how to avoid such incongruities in your own work.

On the other hand, learn to discover the secret of what most pleases you in other men's work. Have a mind always open to receive agreeable impressions. One of the most potent spells which architecture exercises on the imagination arises from a sense of mystery which sometimes, by good fortune, pervades it. Where you find this, discover by what means this precious quality has been arrived at. It is not, I know, always possible to secure it; but, happy is the artist, the exigencies of whose plan will allow of it. Fortunate are you if, on entering your room, the visitor does not at once discover every nook and corner of it. Fortunate are you if you need not flood it with an equal intensity of light. It is the happy apportioning of light and shade which constitutes the great secret of architectural effect. It should be, however, our constant effort to secure this chiaroscuro, without sacrificing one iota of real convenience thereto. But, in fact, the skilful manipulator of light will often conduce to his most brilliant effects of light by leading the spectator to it through a somewhat gloomy portal or corridor. Much work, and good work, too, is seen to the greatest advantage in a subdued light. It should be our care, also, that our artificial lighting should contribute to this effect of mystery — to this happy alternation of light and shade. I am aware that in this matter we have not an unthinking public with us. It is difficult — impossible, to persuade most people that the charm they experience in some architectural effects is entirely dependent on the partial gloom which they appear to hold in such unconquerable abhorrence, and which, if any sacrifice of convenience were involved, they would justly so hold.

Instances will occur to all of you of impressive interiors. If you seek to analyze the source of their impressiveness you will find, if I mistake not, that it is a sense of there being much beyond what the vision actually takes in at one time, which fascinates you. Two buildings specially impress me in this way. One is St. Mark's, Venice, and the other much nearer home, is our own Abbey-church of Westminster. The view from the west end of the eastern window of the choir, with its incomparable glass, at a giddy height, in an atmosphere always more or less blue when seen against the more adjacent choir screen, is heavenly in its mystery. And though those white marble commonplaces which line the walls and ruthlessly conceal, or, still worse, cut away, thirteenth-century loveliness so alien to their own uncouthness, do their best to destroy the awe which overcomes one on entering its portals, yet when past the white horrors in the transepts, and once in the ambulatories, what an endless succession of mysterious pictures meet one at every step till they culminate in that, to me, most impressive of all effects of light and shade, the view of the ascent into the Chapel of Henry VII, under the chantry of Henry V, which overarches the way. Get rid of the shade thrown by the chantry in the middle distance of your picture, and what would become of that deservedly favorite subject?

Then there is another source of architectural effect exemplified in that ambulatory — the added interest to be obtained by occasionally building off the right angle. The square east ends of our churches are dear to the English ecclesiologist; but I confess myself to be altogether carried captive by the perpetually unfolding beauties of a French *chevet*, where each step is a fresh surprise, and where, though order and symmetry are distinctly discernible, no wall seems built parallel to any other wall. In Westminster, an English church on a French ground-plan, this changeableness is accentuated by the glorious mediæval monuments which are crowded together in every available space in this corner of the church: but the constant change of direction in the plan ought to convince those who are so hard to convince that by merely occasionally departing from the right angle in our plan, a charm and individuality may be given even to simpler buildings of an otherwise commonplace character. Of course, I need hardly tell you that this, when attempted, must be done with extreme caution, and with an evident regard to the convenience and requirements of the case. The masters of our art in the Middle Ages never attempted eccentricity, nor must we. Our picturesque effects must never be secured at the price of utility, nor by the sacrifice of needful light.

In conclusion the remarks you have been so indulgently listening to may be summed up thus: that as nineteenth-century architects we must look to it that our reason, our intelligence, our cultivated good taste, rather than the rules of archaeological tradition, should be brought to bear upon the new materials and new refinements of our age; that as artists in the present day we shall probably be wiser to give grace to our buildings by refinement of proportion, rather than by redundancy of ornamentation; that this refined sense of proportion must be the outgrowth of careful observation; that we should be careful to make repeated studies in perspective of our designs to secure this coveted grace and refinement of outline and proportion from every point; and that, above all, we should take nothing for granted, but carefully analyze the work of our predecessors and contemporaries, in order that we may unsparingly apply the same process to our own work — proving all things and holding fast only to that which is good.

AN ENGLISH DOLLAR.

SAVANNAH, GA., August 4, 1883.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Gentlemen,—A friend handed me an English coin, of which the enclosed sketches are free-hand copies, and asked for any information concerning them that I could give. Being unable to give him any information in the premises, I made a rough copy to send to you, thinking perhaps that you or some of your numerous correspondents could give the history of the coin. The owner has shown it to some English and Scotch gentlemen here, some of whom stoutly denied that there ever was an English dollar, until convinced to the contrary by an inspection of the silver piece.

Very truly yours,

JOHN J. NEVITT.

[The sketch shows a coin with head of George III on one side, and inscription: "GEORGIUS III. DEI GRATIA REX"; and on the reverse, an oval band with a crown above it, encircling a figure of Britannia seated, with cornucopia and shield. On the upper part of the band is inscribed: "FIVE SHILLINGS," and at the bottom, in the same lettering, "DOLLAR." Around the whole is the inscription: "BANK OF ENGLAND, 1804." Some of our readers, more familiar with dollars than ourselves, may perhaps recognize this coin.—EDS. AMERICAN ARCHITECT.]

THE ANNUAL CONVENTION A. I. A.

PITTSBURGH, PA., August 7, 1883.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Gentlemen,—Can you please inform me whether the sessions of the American Institute of Architects, which will be held at Providence and Newport this month, are open to members of the profession outside of the Institute? and also the date of meetings. An answer will very much oblige

Yours respectfully,

GEO. S. ORTH.

[It is, we believe, customary to invite all the local members of the profession in the place where the Convention is held to attend the sessions of the Convention, and architects from other places, presenting to the committee of arrangements letters of introduction from any member of the Institute, would undoubtedly be cordially received.—EDS. AMERICAN ARCHITECT.]

NOTES AND CLIPPINGS.

Is ASPHALT COMBUSTIBLE?—A summons taken out by Mr. Watson, district surveyor of St. George's, against Mr. Way, builder, for covering a concrete flat with asphalt at the house No 4 Half-Moon Street, Piccadilly, was brought before Mr. de Rutzen at the Marlborough Police Court yesterday. Mr. Watson said he found a flat at the house in question covered with concrete and asphalt. He considered asphalt an inflammable material, because it melted and partly burned when a piece of it was held in a gas jet, and that as it dropped it would set light to anything combustible near it. Mr. Cubitt Nichols, architect, said he was engaged on the buildings in Half-Moon Street. He considered asphalt, as used in the pavements and for flats, the best incombustible material, and safer than a lead covering. Professor Attfield, F. R. S., stated that he had analyzed and tested asphalt. It contained a small portion of bitumen, which, if extracted, would burn. About ninety per cent of all asphalt was earthy matter, which would put out flame far better than water. In cross-examination, the witness said that in any case asphalt would not convey fire. After further evidence Mr. de Rutzen stated that he was clearly of opinion that asphalt was incombustible within the meaning of the Act, and dismissed the summons.—*Pall Mall Gazette*, July 20.

CINCINNATI'S CHIEF ENGINEER'S REPORT.—The report for the year 1882, of Mr. H. G. Hanley, Chief Engineer of the city (which has just been issued), contains much that is of public importance, and from it we make a few extracts. The total expense of the engineer's office was \$29,941.10. Total amount for bridges, \$17,387.78. The city contains 237.89 miles of improved streets and alleys, and the total amount spent in construction and repair was \$113,706.78. The total number of miles of unimproved streets and alleys, 203. There are six parks in the city containing 539.06 acres, the care of which cost \$13,202.68. The area of the city is 24 square miles. The city contains 221.42 miles of gas-mains, of which 29,157 lineal feet were laid during 1882. The total cost to the city for gas during the year was \$176,728.54. All gas-mains are laid by a corporation, from whom the city buys its gas. Number of gas-lamps burning December 31, 1881, 6,390. Average cost per lamp for 1882, \$27.20. Average price of gas per thousand feet, \$1.440. Number of new lamps erected during the year, 106. Of sewers there are of all kinds 54.45 miles, of which 3.76 miles were built during the year. It appears that only one-sixteenth of the city, or about one and one-half square miles of territory is sewered; about 70,000 of our population are afforded sewer privileges, while the remaining 200,000 have to trust to cesspools and night-carts to carry off (as is estimated) 3,200,000 cubic feet of human excreta, not to mention kitchen and bath-room wastes. There has been lately a public awakening on the subject of sewerage, and the aid of the State Legislature is expected to assess a tax of one mill on the city tax-duplicate for five years, which will afford a revenue of \$150,000 per year for five years, to be expended for new sewers. The city has to pay for sewerage all excess over \$2.00 per foot, as up to that amount is assessed upon the abutting property. The total cost of new sewerage including the city's proportion was \$22,807. It is expected to spend about \$600,000 during the year for sewers. This amount will include the city's proportion as well as assessments. Of the water-works department (owned by the city) A. G. Moore, Esq., Superintendent, the following will be of interest: Average daily consumption, 19,524,848 gallons; population as per U. S. census, 280,000; gallons of water per capita, 69; miles of iron pipe in use, 201.62; number of service branches, 24,858; total area of supply-mains, square inches, 2,552,54; total area of service-mains, square inches, 12,349; number of meters, 792; number of hydraulic elevators, 385; capacity of reservoirs, gallons, 106,500,000, maximum pumpage, gallons, 48,000,000; net annual water-rent receipts, \$507,501; net annual expenses, 212,682.

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

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

BUILDING PATENTS.

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

- 282,517. DOOR-LOCK. — J. Jonas Helsing, San Francisco, Cal.
 282,541. WALL-PAPER. — Henry Lobdell, Troy, N. Y.
 282,560. CARPENTER'S BEVEL. — Charles E. Overend, Portland, Oreg.
 282,562. LIGHTNING-ROD. — Theodor H. Patee, Greencastle, Ind.
 282,567. HEATING-DRUM. — Dwight S. Richardson, Brooklyn, N. Y.
 282,574. HINGE. — Alfred L. Scranton, Western Springs, Ill.
 282,576. HINGE. — Amos Shepard, Plantsville, Conn.
 282,583. BEVELLING-INSTRUMENT. — Laroy S. Starrett, Athol, Mass.
 282,603. NAIL. — Wm. Z. Bean, Boston, Mass.
 282,607. HASP-LOCK. — John C. Boggs, Auburn, Cal.
 282,636. RAT-PROOF BUILDING. — Joshua Hicks, Sandford, Ind.
 282,641. SKYLIGHT. — Peter H. Jackson, San Francisco, Cal.
 282,663. SHUTTER. — Irving Paine, Hornellsville, N. Y.
 282,697. COMBINED CHAIR, KNEE AND TRUSS BRACKET. — Jno. H. Bohd, Weehawken, and Alfred DeBovoise, West Hoboken, N. J.
 282,703. FIRE-ESCAPE. — Michael Collins, Pittsfield, Mass.
 282,712. TOOL-HANDLE. — John S. Fray, Bridgeport, Conn.
 282,716. ADJUSTABLE WINDOW-SCREEN. — George W. and Wm. H. Gordon, Detroit, Mich.
 282,726. CHIMNEY-FLUE STOPPER. — Jonathan R. Higgins, Lima, O.
 282,740. FIREPLACE. — David S. Lee, Poorman, O.
 282,763. ELEVATOR. — Edwin L. Parker and Samuel Peterson, Queensville, Ind.
 282,792. BENCH-DOG. — Wm. H. Stannard, Lyme, Conn.
 282,800. VENTILATOR. — Daniel B. Taylor, St. Louis, Mo.
 282,807. PRESERVING AND PROTECTING PILES. — David H. Valentine, Brooklyn, N. Y.
 282,813. FIREPLACE GRATE. — Stewart Watt, Barnesville, O.
 282,817. SAFETY-STOP FOR ELEVATORS. — William Whitely, Housatonic, Mass.
 282,822. SMOKE AND FLAME OUTLET FOR BUILDINGS. — Chas. A. Willard, West De Pere, Wis.
 282,831. DEVELOPING OR TRACING MACHINE. — Frank Aborn, Cleveland, O.
 282,858. SPRING-HINGE. — L. M. Devore, Freeport, Ill.
 282,876. CISTERN-ATTACHMENT FOR WATER-CLOSERS. — Jas. Foley, Brooklyn, N. Y.
 282,892. FIRE-ESCAPE. — Henry Hitchcock, Genesee, Mich.
 282,905. ELEVATOR-HATCHWAY GUARD. — Emerick Kiss, New York, N. Y.
 282,928. SASH-HOLDER. — Frank L. Rosentreter, Cleveland, O.

SUMMARY OF THE WEEK.

Baltimore.

- ADDITION. — Mr. George Archer, architect, has prepared drawings for the Brush Electric Company, for a two-story brick addition (front), 36' x 60', to their property, No. 40 East Monument St., to cost about \$5,000; John Waters, builder.
 BUILDING PERMITS. — Since our last report twenty-five permits have been granted, the more important of which are the following: —
 Edward Valk, three-story brick building, s w cor. Pratt and Regester Sts.
 John Kern, three-story brick building, n s Lafayette Ave., between Arlington and Carrollton Aves.
 Lewis H. Robinson, 9 three-story brick buildings, e s Park Pl., cor. North Ave.
 E. H. Webster, 5 three-story brick buildings, s e cor. Washington and Madison Sts., fronting on e s Washington St.
 Henry Reier, 3 three-story brick buildings, w s Mount St., n of Lexington St.
 Edmondson Estate, to rebuild Nos. 221 and 223 Baltimore St., s s e of Charles St.
 John Kuper, 11 two-story brick buildings, e s Calhoun St., between Pratt and McHenry Sts.; and 14 two-story brick buildings on n and s Kuper St., between Calhoun St. and Woodyear Alley.
 Peter Platt, two-story brick stable in rear n e cor. Lanvale and Mount Sts.
 Alfred Sweeney, 2 three-story brick buildings, s w cor. Ridgely and Fremont Sts.
 Alex. Kiegan, three-story brick building, n s Lexington St., between Eutaw and Howard Sts.
 Mary Vane, three-story brick building, w s Fremont St., n of Presman St.

Boston.

- BUILDING PERMITS. — Brick. — Winthrop St., Nos. 29 and 31, Ward 5, for E. J. & Isaac Klous, 2 dwells., 22' x 30', three-story flat; ell, 19' 9" x 31' 7"; Dennis McGillouddy, builder.
 Newbury St., cor. Exeter St., Ward 11, for Proprietors Hollis-street Meeting-House, church, 84' x 100', one-story pitch; Woodbury & Leighton, builders.
 Federal St., No. 394, for Boston Fire Brick Company, manufacturing building, 60' and 70' x 108', four-story flat; Wm. G. Preston, architect; Woodbury & Leighton, builders.
 Wood. — Wheatland Ave., near Washington St., Ward 24, for John Galvin, 4 greenhouses, 18' x 100', one-story pitch; Joseph P. Shaw, builder.
 Mt. Pleasant Ave., near Forest St., Ward 20, for Otto R. Reed, dwell., 22' x 31' and 16' x 16', two-story pitch; Otto R. Reed, builder.
 Union St., near Foster St., Ward 25, for John Dargon, dwell., 24' x 33' and 15' x 18', two-story pitch; Pierce Quirk, builder.
 Sheldon St., near Ashland St., Ward 23, for J. Henry Littlefield, dwell., 20' x 30' and 12' x 15', two-story pitch; Alexander Rogers, builder.
 Border St., No. 282, Ward 1, for Wm. F. Green & Son, carriage-shed, 15' x 20', one-story pitch; James Quirk, builder.
 Washington St., near Valentine St., Ward 21, for Mrs. John Mahony, 2 dwells., 21' x 40' and 15' x 20', three-story pitch; Samuel Rantlin, builder.
 Union Ave., Ward 23, for Michael Mahony, stable, 14' x 20', one-story pitch; J. B. McKay, builder.
 Washington St., near Williams St., Ward 23, for Andrew Doyle, dwell., 22' x 30', two-story pitch.
 Greenwich St., near Commercial St., Ward 24, for John Holland, dwell., 2' x 25', two-story pitch; Edward Porter, builder.

Brooklyn.

- MEMORIAL CHAPEL. — The members of Christ Church Society, on Bedford Ave., are to build a memorial chapel to the late Rev. A. H. Partridge.
 BUILDING PERMITS. — Fourth Ave., w s, 80' x Pacific St., three-story brick dwell., tin roof; cost, \$7,000; owner, Robert Hutson, Pacific St., near Fourth Ave.; architect, M. J. Morrell; builders, P. J. Carlin and J. S. McKee.
 Adams St., s s, 175' e Broadway, three-story frame dwell., tin roof; cost, \$3,500; owner and builder, Chas. Meyer, 51 Varet St.; architect, J. Herr.
 Dupont St., No. 71, n s, 200' e Franklin Ave., three-story frame double tenement, gravel roof; cost, \$4,300; owner, Ferdinand Bock, 246 Franklin St.; architect, F. Weber; builders, I. Reed and A. Lange.
 Park Ave., s s, 287' e Marcy Ave., 3 three-story frame double tenements, gravel roofs; cost, each, \$2,000; owner and builder, Geo. Sutton; architect, T. F. Thomas.
 On the pier north from Jerusalem St., one-story frame freight-shed, gravel roof; cost, \$8,000; owners, Cushman & Co.
 Dean St., s s, 160' w Troy Ave., three-story basement brick building, tin roof; cost, \$30,000; owner, Howard Colored Orphan Asylum, Dean St., near Troy Ave.; architect, W. A. Mundell; builders, C. Cameron and Wright & Brook.
 Vanderbilt Ave., s s, 320' s Willoughby Ave., one-story brick greenhouse, glass roof; cost, \$8,000; owner, Chas. Pratt, Clinton Ave.; architect, E. L. Roberts; builders, J. Loch and Lord & Burnham.
 Oakland St., n e cor. Freeman St., three-story frame store and double tenement, gravel roof; cost, \$4,500; owner, Abner Ross, on premises; architect, F. Weber; builders, J. Cashman and A. Van Dien.
 Broadway, n w cor. Lewis Ave., three-story frame store and dwell. and three-story frame flat, tin roofs; cost, \$9,000; owner, John Kramer, Floyd St.; architect, T. Englehardt.
 Broadway, s s, 200' e Ninth St., four-story brick double flat, tin roof; owner, C. Douseman, Broadway, cor. Division Ave.; builder, M. Smith.
 Third Ave., e s, 20' n Fortieth St., 2 three-story frame tenements, tin roof; cost, \$4,000; owner, Michael Hantrehan, Fifth Ave., cor. Twentieth St.; architect, F. Ryan; builders, Spence Bros.
 Twenty-seventh St., s s, 300' w Fourth Ave., 2 three-story frame tenements, gravel roofs; cost, \$5,000; owner, John Kenney, 202 Twenty-first St.; architect, P. Kelly.
 Ninth St., n s, 97' 10" e Sixth Ave., 2 three-story and basement brownstone front dwells., tin roofs and cornice; cost, each, \$11,000; owner and builder, John Doud, 389 Ninth St.; architect, L. J. Wells.
 Ninth St., s s, 775' 9" w Second Ave., one-story frame factory and rolling-mill, asbestos roofing; cost, \$16,000; owner, Russell Iron Co., 11 Pine St., New York; architect and builder, J. Roberts.
 Fifty-second St., s s, about 180' e Fourth Ave., 3 two-story frame dwells., tin roofs; cost, each, about \$600; owners, Jas. Bower, Wm. Higgins and Wm. E. Thompson, Fifty-third St., near Fourth Ave.; architect, J. Bower; builders, Bower & Thompson.
 St. James Pl., e s, 100' n Gates Ave., three-story brick dwell., tin roof; cost, \$10,000; owner, Mrs. Garbut, 147 St. James Pl.; architect, A. Hill; builder, B. Linikia.
 Watworth St., s e cor. Park Pl., three-story and basement brick factory, gravel roof; cost, about \$10,000; owners, Hitchcock, Dermody & Co., on premises; architect, I. D. Reynolds; builders, P. R. Kelly and G. F. Chapman.

Chicago.

- HOUSES. — Mr. Theo. Karls has prepared plans for 2 three-story dwells., 40' x 70', for Mr. M. Brand, on Erie St., to cost \$15,000.
 Messrs. Burling & Whitehouse, architects, have completed plans for 4 two-story dwells., to be built for B. Sheldon, on St. Clair St., to cost \$20,000.
 Mr. L. D. Lanthus is building 5 two-story dwells. on California Ave., to cost \$20,000; W. Striplin, architect.
 STORES AND FLATS. — B. G. Olsen, architect, has completed plans for three-story store and flats, for Mr. C. C. Lee, 50' x 70'; cost, \$22,000.
 Bauer & Hill, architects, have completed plans for three-story flats, 40' x 110', to be built for Mr. Edward Foster; cost, \$30,000.
 Mr. C. O. Hanson, architect, has completed plans

for 2 two-story flats, 44' x 63', to be built on Fowler St., for Mr. N. F. Quales; cost, \$10,000.

HOTEL. — Mr. W. A. Furber is architect for a four-story hotel and stores, for Mr. D. W. Potter, to be built on East Chicago Ave.; cost, \$10,000.

BUILDING PERMITS. — A. F. Mueller, two-story dwell., 1053 West Adams St.; cost, \$4,000.

L. P. Dean, three-story and basement dwell., 591 West Monroe St.; cost, \$6,000; architect, W. L. Carroll; builder, W. H. Madden.

Mrs. F. Schell, 2 two-story dwells., 3010 and 3012 Groveland Park Ave.; cost, \$7,000; architect, W. Arrnd; builder, Chas. Cheile.

John Azgren, two-story store and dwell., 699 Larabee St.; cost, \$3,000; architect, John Otto; builder, Chas. Lindstrom.

R. O. Fitz, two-story dwell., 262 Maxwell St.; cost, \$3,200.

E. Goodridge, two-story dwell., rear 83 South Peoria St.; cost, \$3,200.

George L. Frank, two-story store and dwell., 320 North Ave.; cost, \$3,500.

John Belz, 2 two-story dwells., 645 and 647 North Robey St.; cost, \$12,000; builder, Geo. Hinchliff.

John Sullivan, two-story dwell., 331 Lincoln St.; cost, \$3,500; architect, B. Hoganson.

Albert Inges, two-story shop and dwell., 490 North Wells St.; cost, \$2,000.

N. T. Quales, 2 two-story flats, 54 and 56 Fowler St.; cost, \$10,000; architect, C. O. Hanson; builder, H. Hagenow.

F. P. Keilmann, three-story store and flats, 220 Lincoln Ave.; cost, \$10,000; architect, Jno. Bruhurs; builder, T. Nehls.

Daniel Freeman, two-story dwell., 48 Gano St.; cost, \$3,000; architect, Jas. H. Morse; builder, D. Freeman.

Geo. Bodner & Bro., three-story flats and barn, 436 and 438 East Division St.; cost, \$17,000.

Chicago Manual Training School, four-story training-school, 349-353 Michigan Ave.; cost, \$20,000; architect, A. S. Beeman; builders, Agnew & Cox.

Peter Roth, two-story flats, 411 Twenty-sixth St.; cost, \$4,500.

Val Mueller, three-story store and dwell., 504 Larabee St.; cost, \$7,000; architect, H. Serks; builder, Chas. Hellmann.

Fred. Grend, three-story flats, 325 North Clark St.; cost, \$6,000; architect, T. Karls; builder, B. Reifullanger.

Ed. Foster, three-story and basement flats, 519-527 Belden St.; cost, \$30,000; architects, Bauer & Hill; builder, G. Loeffler.

Geo. Gunther, two-story store and dwell., 1473 Thirty-fifth St.; cost, \$4,000.

Henry Schade, two-story flats, 505 Larabee St.; cost, \$6,000; builder, Aug. Newmann.

Jacob Deutsch, dwell., 72 Evergreen Ave.; cost, \$4,000.

Christ. Minch, three-story store and dwell., 3165 Archer Ave.; cost, \$8,000; architect, R. W. Ruehl; builders, King & Dennith.

C. C. Lee, three-story store and flats, 464 and 466 West Madison St.; cost, \$22,000; architect, B. G. Olsen; builder, W. F. Grant.

E. C. Howard, 2 two-story dwells., 14 and 16 Kedzie Ave.; cost, \$5,000; architect, C. C. Howard.

Christ. Hartsel, two-story dwell., 866 West Twenty-first St.; cost, \$6,200; builder, Wm. Egebrocht.

C. H. Foster, three-story dwell., 3133 Calumet Ave.; cost, \$6,000; architect, C. Chapman; builders, Bodmer & Bro.

Joseph Page, three-story dwell., 210 Bissell St.; cost, \$3,000; architect, J. Schneider; builders, K. & Westphal.

E. S. Dreyer, 2 two-story dwells., 823 and 825 North Clark St.; cost, \$20,000; architect, H. M. Hanson; builder, Geo. Sries.

Wm. Kerfoot & Co., 5 cottages, 331 to 345 North Robey St.; cost, \$10,000.

W. D. Kerfoot & Co., 6 cottages, 332 to 342 Hoyne Ave.; cost, \$11,400.

Cincinnati.

BUILDERS BURY. — The President of the Builders' Exchange, Elwood Cuzey, says he has never known builders to be so pressed with work as now. The activity began immediately after the February flood, being caused so early in the season by the necessity of repairing injured buildings and replacing those which were washed away. By the time that work was done, the regular building season opened. The number of new buildings proposed to be erected has exceeded the ability of the trade to erect. There have been no troublesome strikes, and contractors and mechanics are having the most profitable summer which they remember.

Denver, Col.

BUSINESS BLOCKS. — Colorado Mortgage and Improvement Co., five-story store and brick building, 100' x 125', Larimer St.; cost, \$150,000; J. W. Roberts, architect.

G. G. Symes, three-story brick business block, 50' x 125', Champa St.; cost, \$26,000; W. H. J. Nichols, architect.

George Tritch, five stores, 40' x 75', Seventeenth St.; cost, \$6,000.

M. D. Curvigan, two-story brick business block, 50' x 60', Lawrence St.; cost, \$5,500.

DENVER ORPHAN HOME ASYLUM. — Two-and-one-half-story brick building, 50' x 54', Page St.; cost, \$10,000; W. H. J. Nichols, architect; Norton & Le Duc, builders.

DWELLING. — W. H. Lyon, two-story brick dwell., 45' x 65', Glenarm St.; cost, \$10,000; Wm. Quayle, architect.

MACHINE SHOPS. — H. N. Nichols & Co., Wynkoop St.; cost, \$10,000; Hallack & Howard, builders.

New York.

FACTORY. — Messrs. Jas. Pyle & Son will have built a seven-story factory, first story iron, above brick and stone, 80' x 90', to be built from designs of Mr. Thos. R. Jackson, on the s w cor. of Greenwich and Vestry Sts., to cost \$100,000.

WAREHOUSES. — For Mr. E. K. Ely, 4 six-story brick warehouses are to be built on the west side of Greenwich St., 129' n of Canal St., covering a plot of

ground 80' x 139'. The cost will be about \$100,000. Mr. Jno. McIntyre is the owner.

BUILDING PERMITS.—*Sixty-fourth St.*, s. s., 120' w Fourth Ave., 2 four-sty brownstone front dwell., tin roofs; cost, \$20,000; owner, Thos. Reid, 327 West Fifty-seventh St.; architect, John Prague; day's work.

Eighty-second St., n. s., 73' w Third Ave., four-sty brick tenement and store, tin roof; cost, \$6,000; owner, Patrick Corbett, 634 Broadway; architect, Wm. Baker; builder, Thos. Bennett.

Third Ave. Nos. 191 and 193, seven-sty brick factory, tin roof; owner, Peter A. Cassidy, 118 East Forty-fifth St.; architect, Chas. Sturtevant.

Fifty-sixth St., s. s., 250' e Seventh Ave., 2 three-sty brick stables, tin roof; cost, \$12,000; owner, Miguel Garcia, 63 Broadway; architect, Robert Mook; builders, A. A. Andrews & Son and W. Germond & Co.

Ninetieth St., n. s., 220' e Fifth Ave., four-sty brownstone front dwell., tin roof; cost, \$50,000; owner, Mrs. Marian S. Warshing, 1628 Second Ave.; architect, John C. Burne.

Clark St., No. 20, five-sty brick factory, tin roof; owner, Lewis Moore, 25 Vandam St.

South Fifth St., No. 131, five-sty brick factory, tin roof; cost, \$17,500; owner, Mrs. Kuniyunde Ode, 19 Charlton St.; architect, J. M. Grenell; builder, O. E. Ferrine.

One Hundred and Fortieth St., s. s., 159' 10' e Third Ave., 2 four-sty brick tenements, tin roofs; cost, \$12,000; owner, Geo. A. Haggerty, 803 Third Ave.; architects, Thom & Wilson.

ALTERATIONS.—*Fifth Ave.*, No. 111, is to be connected with the adjoining residence on the n. e. cor. of Fifth Ave. and Eighteenth St., and extensive alterations and improvements made by the owner, Mr. August Belmont.

Vanderwater St., Nos. 17 to 28, repair damage by fire; cost, \$40,000; owner, Geo. Munro, 15 West Fifty-seventh St.; architect, John Corrojo; builders, R. L. Darragh and Edmund Gridley.

Philadelphia.

BUILDING PERMITS.—*Tackamania St.*, s. Orthodox St., 2 three-sty dwell., 14' x 39'; Amos H. Taylor, contractor.

Kimball St., w Twenty-first St., 10 two-sty dwell., 14' x 27'; Robert Kaighn, owner.

Queen St., w Thirty-sixth St., 6 three-sty dwell., 16' x 32'; C. C. Linnehan, contractor.

Effingham St., n. w. cor. Tasker St., 2 two-sty dwell., 16' x 35'; Wm. Rowan, owner.

Dauphin St., w Tenth St., two-sty dwell. and stable, 17' x 40'; A. Kurtz, owner.

North Front St., rear of Nos. 210 and 214, four-sty addition to bakery, 21' x 100'; Richards & Shourds, contractors.

Thirty-third St., cor. Columbia Ave., one-sty addition to hotel, 30' x 70'; J. B. Doyle, contractor.

North Front St., No. 1741, second and third story addition to building, 20' x 50'; E. Schmidt, contractor.

Hanley St., bet. Wharton and Reed Sts., 4 two-sty dwell., 15' x 30'; A. M. Green, owner.

Paletorp St., bet. Somerset St. and Lehigh Ave., 2 two-sty dwell., 16' x 38'; Valentine Lent, contractor.

Seventh St., n. Cumberland St., 2 two-sty dwell., 15' x 45'; H. M. Housekeeper, owner.

Franklin St., n. Cumberland St., 2 two-sty dwell., 15' x 45'; H. M. Housekeeper, owner.

Kensington Ave., n. Adams St., three-sty dwell. and store, 17' x 50'; Dickson Bros., contractors.

Germania Ave., 2 two-sty dwell., 16' x 48'; H. L. Lovett, contractor.

McAlpine St., bet. Locust and Walnut Sts., two-sty dwell., 16' x 62'; J. Drummond, owner.

Sixth St., n. Venango St., two-sty dwell., 16' x 45'; James Dorff, contractor.

Coghall Ave., bet. Lehman and Rittenhouse Sts., 4 two-sty dwell., three 14' x 28', one 18' x 47'; D. S. McNabb, contractor.

Lambert St., n. Diamond St., 18 two-sty dwell., 16' x 42'; J. N. Pattison, owner.

Sixteenth St., bet. Wharton and Reed Sts., 17 three-sty dwell., 16' x 42'; Hall & Garrison, owners.

Nevada St., No. 1127, two-sty dwell., 16' x 42'; C. E. Duffe, owner.

Ontario St., e Eighteenth St., 2 three-sty dwell., 18' x 48'; H. A. Miller, contractor.

Guard College Grounds, building, 125' x 150'; W. F. Wilkins, contractor.

Forty-eighth St., s. Westminister St., two-sty dwell., 18' x 45'; Lewis Schmidt, contractor.

Dorrence St., No. 1526, two-sty dwell., 16' x 38'; Samuel Haddock, owner.

Nicolson, one-sty machine shop for Midvale Steel Co.; T. H. Dean, contractor.

Leiper St., n. Allen St., three-sty dwell., 40' x 40'; Wendell & Smith, contractors.

Bridge St., e Melrose St., one-sty factory, 30' x 36'; Wendell & Smith, contractors.

Tacony St., w Kennedy St., two-sty dwell., 18' x 48'; R. C. Foster, contractor.

Thirty-fourth St., n. Race St., 2 three-sty dwell., 22' x 74'; W. W. Borzorth, contractor.

C St., No. 2813, two-sty dwell., 16' x 45'; D. C. Schuler, contractor.

Oxford Road, bet. Pennsylvania and Franklin Sts., Frankford, two-sty dwell., 16' x 41'; Chas. Sluger, owner.

Brown St., No. 328, two-sty stable, 16' x 30'; Lewis Walter, contractor.

Bethlehem Pike, n. w. New St., three-sty dwell., 40' x 40'; W. C. Mackie, contractor.

Adrian St., No. 1520, three-sty dwell., 18' x 28'; Shegog & Quigley, contractors.

Canal Bank, s. Green Lane, two-sty addition to storehouse, 33' x 73'; J. A. Davis, contractor.

Market St., Nos. 3809 and 3811, two-sty addition to stable, 21' x 30'; B. Jacobs & Son, owners.

Bridge St., bet. Richmond and Orchard Sts., two-sty store, 17' x 33'; Amos W. Linn, contractor.

Pharo St., No. 757, two-sty dwell., 15' x 28'; G. W. McCaffrey, owner.

St. Louis.

BUILDING PERMITS.—Seventy-seven permits have been issued since our last report; twenty-three are for unimportant frame houses; of the rest those worth \$2,500 and over are as follows:—

George Hannibal, 2 adjacent two-sty brick dwell.; cost, \$5,000; Goesse, architect; Goesse & Remmers, contractors.

Goesse & Remmers, two-sty brick dwell.; cost, \$5,500; Goesse, architect; Goesse & Remmers, contractors.

Mrs. E. G. Furstern, two-sty brick dwell.; cost, \$3,700; J. B. Legg, architect; R. F. Park, contractor.

Fred. Paulmann, double two-sty brick dwell.; cost, \$4,500; Peipers, architect; Daniel Paulus, contractor.

Wm. Cropp, two-sty brick dwell.; cost, \$4,000; H. Ellermann, contractor.

R. N. Newberry, two-sty brick dwell.; cost, \$3,000; R. N. Newberry, contractor.

M. Bernheimer, two-sty brick warehouse; cost, \$30,000; A. Grable, architect; sublet.

Our Lady of Mount Carmel School Association, two-sty brick school-house; cost, \$3,900; James Gillick, contractor.

St. Louis Mutual House Building Co. No. 3, two-sty brick dwell.; cost, \$3,800; Ed. Mortimer, architect; Remmers & Thomsen, contractors.

John Baur, two-sty brick dwell.; cost, \$3,460; Ed. Mortimer, architect; J. H. Dunlap, contractor.

John Baur, two-sty brick dwell.; cost, \$3,460; Ed. Mortimer, architect; J. H. Dunlap, contractor.

Henry Bonstede, two-sty brick warehouse; cost, \$8,000; Wm. Bourmans, architect; D. J. Dempsey, contractor.

Fritz Brunte, two-sty brick dwell.; cost, \$2,500; H. Hagen, contractor.

Isaac H. Walker (N. Y. City), 2 adjacent two-sty brick dwell.; cost, \$7,500; W. M. Walker, architect; J. E. Donnelly, contractor.

Isaac H. Walker (N. Y. City), 4 adjacent two-sty brick dwell.; cost, \$15,000; W. M. Walker, architect; J. E. Donnelly, contractor.

Wm. Daman, two-sty brick dwell.; cost, \$5,000; Slicer, architect; Wm. Daman, contractor.

Washington.

BUILDING PERMITS.—The following permits for new buildings valued at \$3,000 or over have been issued since last report:—

Two two-sty brick dwell., S St., bet. Twelfth and Thirteenth Sts., n. w. for Geo. Francis; cost, \$17,000; P. M. McCartney, builder.

Three-sty brick dwell., N St., near Connecticut Ave., n. w. for Asa Whitehead; cost, \$5,000.

Two-sty brick dwell., Massachusetts Ave., bet. Sixth and Seventh Sts., n. w. for R. L. Ford; cost, \$5,000; E. S. Frederick, architect; J. C. Yost, builder.

Three-sty brick store and dwell., Connecticut Ave., bet. L and M Sts., n. w. for W. D. Peachy; cost, \$10,000; C. H. Reed, Jr., architect.

Four-sty brick college, to be known as Columbian University, cor. Fifteenth and H Sts., n. w.; cost, \$75,000; W. M. Poindexter, architect; W. C. Morrison, builder.

Three-sty brick dwell., Massachusetts Ave., bet. Seventeenth and Eighteenth Sts., n. w. for A. O. Aldis; cost, \$15,000; Hornblower & Marshall, architects; Dearing & Johnson, builders.

Two-sty brick store and dwell., Eighth St., bet. D and E Sts., s. e. for David Naekman; cost, \$4,400; C. C. Meads, builder.

Three-sty brick dwell., Eleventh St., bet. K and L Sts., n. w. for G. W. Uternekke; cost, \$6,500.

Three three-sty brick dwell., Massachusetts Ave., bet. Fourteenth and Fifteenth Sts., n. w. for Commodore Sicard; cost, \$12,000; David T. Cissel, builder.

Two three-sty brick dwell., M St., bet. Seventeenth and Eighteenth Sts., n. w. for K. C. Packer; cost, \$12,000; F. G. Atchison, architect; Crawford & Deggs, builders.

Three-sty brick dwell., Fifth St., near F St., n. w. for Jas. L. Morris; cost, \$5,000; Z. Downing, builder.

Two three-sty brick dwell., Twenty-first St., bet. L and M Sts., n. w. for Mary A. Deggs; cost, \$7,000; Daniel Murray, builder.

General Notes.

AURORA, ILL.—S. F. Hobbs, Treasurer, received, August 13, proposals for building the Aurora Cotton Mills.

BROOKLINE, MASS.—Alterations are being made on Mr. P. Olsen's house, on Corey Hill, at an expense of \$7,000; O. F. Smith, architect.

COHOES, N. Y.—It is the purpose of the people of St. Joseph's Catholic Church (French) to erect on Simmons Island a fine convent, to cost from \$60,000 to \$75,000.

CROWN POINT, IND.—Brick almshouse; J. C. Cochran, architect, Chicago; cost, \$16,000.

Also, a store for Warren Cole; cost, \$4,500.

Also, a block of stores, 27 and 29 Michigan Ave., for O'Neill Bros.; cost, \$25,000.

DANVILLE, VA.—A building for "the Danville College for Young Ladies" is being built, at a cost of \$20,000; Albert West, Richmond, Va., architect.

MANASQUAN, N. J.—Bids are now being made on the plans for the new school-house prepared by Frederick B. White, architect, of New York. The building is to be of brick, 82' x 96'.

MANAYUNK, PA.—James M. Preston is building a large four-sty storehouse on the River Road, to be used in the future for a mill site.

MERIDEN, CONN.—The Charles Parker Company is building a new brick factory, 60' x 100'.

MIDDLEBORO, MASS.—The new organ-factory is to be located on land of Joseph L. Pease.

MIDDLETOWN, CONN.—The Wilcox, Crittenden & Co. Corporation is about to build a workshop, 60' x 80'.

Contracts are about to be let for a Chapter-House for the Middletown Chapter of Alpha Delta Phi, to be erected on the corner of High and Cross Sts., near the college buildings, to cost about \$18,000; architect, Chas. S. Edgerton, of Albany, N. Y.

MT. CARMEL, PA.—The corner-stone of the new Church of God, at this place, was laid August 12.

NEWTON, MASS.—Mr. O. F. Smith, of Boston, is the

architect of a house for Dr. Sylvester. It measures 38' x 42', two-sty, hip roof.

NORTHAMPTON, MASS.—W. F. Pratt & Son have just finished plans for the brick and stone storehouse to be built on the hospital grounds. It will be three stories high, with a basement. The main part will be 32' 6" x 96', with two ells, 22' 6" x 23'.

PRINCETON, N. J.—Mr. F. B. White is preparing plans for the new Whig Hall, to cost \$30,000.

ROXBURY, MASS.—Messrs. Rotch & Tilden are the architects of a brick and frame building for Mrs. Ellen M. Gifford. It measures 35' x 55', and is to be used as a sheltering-home for animals.

SAN FRANCISCO, CAL.—Mr. Charles Crocker has authorized a builder to draw upon him for the sum of \$10,000, to restore the Golden Gate Park conservatory, which was destroyed by fire nearly a year ago.

VERGENNES, VT.—The Vermont Shade Roller Company have decided to rebuild their factory. The new building will be 60' x 128', two stories high, with a brick front.

YONKERS, N. Y.—A brick primary school, about 70' square, is to be erected on Hamilton Ave., from designs of Messrs. D. & J. Jardine, of New York. Yonkers will have a new opera-house on Warburton Ave. Its cost will be \$30,000.

LATEST.

Brooklyn.

BUILDING PERMITS.—*Thirteenth St.*, s. s., 170' e Seventh Ave., 10 two-sty brick tenements, tin roofs; cost, each about \$3,500; owner, M. A. Wood, 78 Fifteenth St.; architect, F. McCormack; builders, Brammer and McCormack & Wood.

Greenpoint Ave., 170' e Oakland Ave., three-sty brick double tenement, tin roof; cost, \$7,000; owner, O. McCarren, Greenpoint Ave.; architect, J. Mulhall; builder, J. Rooney.

Kingsland Ave., w. s., 100' n Herbert St., three-sty frame double tenement, tin roof; cost, \$5,000; owner, Thos. Farrell, 13 Division St.; builder, K. Ferguson.

Halsey St., n. s., 100' w Reid Ave., 3 two-sty and attic brownstone front dwell.; cost, each \$3,300; owner, architect and builder, Essex Roberts, 1637 Atlantic Ave.; mason, P. Donlan.

Myrtle St., n. s., 100' e Evergreen Ave., two-sty frame tenement, tin roof; cost, \$3,300; owner, Geo. Schoener, 12 Stagg St.; architect, F. Holmberg; builders, A. Gramann and J. Rueger.

Vanderbilt Ave., e. s., about 150' s Greene Ave., two-sty brick stable, slate and tin roof; cost, \$10,000; owner, C. N. Hougland; architects, Parfitt Bros.; builders, T. B. Rutan and Morris & Selover.

Park Pl., s. s., 100' e Broadway, two-sty frame tenement, tin roof; cost, \$3,500; owner, Adolph Volkert, Park Ave.; architect, F. Holmberg; builder, J. Rueger.

Wolcott St., w. s., 160' n Conover St., three-sty frame double tenement, tin roof; cost, \$4,000; owner, Cooper, Conover St., cor. Sullivan St.; architect and builder, C. Detsfelsen.

Himrod St., n. s., 140' e Evergreen Ave., 2 two-sty frame dwell., tin roofs; cost, \$2,500; owner, architect and builder, Ernest Loerch, 61 Himrod St.; carpenter, J. Rueger.

Fifth St., No. 268, e. s., 60' North Fifth St., four-sty brick store and double tenement, tin roof, iron cornices; cost, \$5,000; owner, Fritz Westphal, 89 North Fifth St.; architect, A. Herbert; builder, J. Schoch.

Eighteenth St., n. s., 325' e Eighth Ave., three-sty brick factory, tin roof; cost, \$6,000; owner, Pacific Tucking Co.; architect, M. Thomas; builders, J. F. Nelson and L. W. Seaman, Jr.

New York.

BUILDING PERMITS.—*Seventy-third St.*, s. s., 275' w Ninth Ave., three-sty and basement brownstone front dwell., tin roof; owner, Robt. W. Marsh, 481 Washington Ave., Brooklyn; architect, M. C. Merritt.

West Thirty-second St., Nos. 251 to 261, one-sty brick church, gravel and tin roof; cost, \$20,000; owners, Board of Trustees of the Gospel Tabernacle, Albert B. Simpson, 331 West Thirty-fourth St.; architect, A. Namm; builder, Chas. R. Hadden.

Sixteenth St., w. s., 410' e Ave. C, three-sty and attic brick hospital, slate and tin roof; cost, \$50,000; owner, City of New York (Board of Health, 301 Mott St.); architect, Chas. C. Haight.

Fifty-sixth St., n. s., 100' w First Ave., one-sty coal-shed, gravel roof; cost, \$3,000; owner, Walter Shriver, 116 Fourth Ave.; architect, A. B. Ogden; builder, Geo. T. Dollinger.

Fifty-second St., n. s., 275' w Sixth Ave., 3 three-sty brick stables, tin roofs; cost, about \$12,000; owners and builders, McCafferty & Buckley; architect, R. W. Buckley.

One Hundred and Forty-Sixth St., n. s., 116' 9" e Third Ave., four-sty frame tenement, tin roof; cost, \$7,500; owner, Theo. Ebeling, 474' n Third St., architect, Adolph Pfeiffer.

East Ninety-Second St., Nos. 156 and 158, 2 five-sty brick tenements, tin roofs; cost, \$13,000; owner, Catherine Fetrlich, 148' w One Hundred and Twenty-Fifth St.; architect, D. J. McKee; builder, John Fetrlich.

Tenth Ave., n. e. cor. Nineteenth St., 3 five-sty brick tenements and stores, and 1 four-sty brick tenement, tin roofs; cost, \$18,000, and 1, \$15,000; owner, Edward Conlon, 111 Albany Ave., Brooklyn; architect, Elbert D. Howe.

Washington Ave., No. 1345, two-sty frame dwell., tin roof; cost, \$4,500; owner, Patrick Connor, 1347 Washington Ave.; architect, W. W. Gardner.

Third Ave., w. s., 144' e One Hundred and Sixty-Sixth St., three-sty brick tenement and store, tin roof; cost, \$9,000; owner, Emil Wendler, 1095 n Third Ave.; architect, W. W. Gardner.

ALTERATIONS.—*Canal St.*, No. 60, four-sty brick extension, tin roof, new stone front and internal alterations; cost, \$4,000; owner, Siemon Liebowitz, 75 Hester St.; architect, Wm. Grant.