



THE AMERICAN ARCHITECT AND BUILDING NEWS

Vol. LXXIX

SATURDAY, MARCH 14, 1903

Public Library No. 1420
WASHINGTON, D. C.



SUMMARY:—

Chicago Contractors determined to prevent Sympathetic Strikes.—The Impending Iron-workers' Strike.—The American Window-Glass Association to use Glass-blowing Machines.—Resignation of the Boston Commissioner of Buildings.—Death of Richard M. Upjohn, Architect.—Brunswick, Me., to establish a Town Forest.—Sheep and Cattle vs. Trees and Lumber.—Some Opposition to replanting Cut-over Timber-land.—The Pennsylvania Railroad's Offer of a Site for the New York Post-office.—The Oxy-Acetylene Blow-pipe as a Burglar's Appliance.	81
NOTES ON IRON AND STEEL CONSTRUCTION.—XV.	83
ROMAN AND ROMANESQUE FRANCE.—VI.	84
SOME PRINCIPLES THAT MAY BE GUIDES FOR THE APPLIED ARTS.	85
ILLUSTRATIONS:— National Commercial Bank, Albany, N. Y.—Plan and Section of the Same.—The Porte de la Gardette and the Tour de Constance, Aiguesmortes, France. Additional: Temple of the Nymphs, Nimes, France.—The Roman Baths, Nimes, France.—Palais de Longchamps, or Museum of Fine-Arts, Marseilles, France.—Casino, Cannstadt, near Stuttgart, Württemberg.—House of T. M. Armstrong, Esq., Pittsburgh, Pa.—House of George E. McCague, Esq., Pittsburgh, Pa.—Detail of Banking-room: National Commercial Bank, Albany, N. Y.	87
COMMUNICATIONS:— "The Result of an Arbitration."—American Caen Stone.	87
NOTES AND CLIPPINGS.	88

by public opinion, and would certainly be considered carefully, and, very probably, favorably, by the contractors, where threats and violence would only lead to ill feeling and misery all around.

AS an example of the way in which tyranny and folly, on the part of either employers or employed, bring sure retribution, it is stated that the American Window-Glass Association, after the eventful career familiar to our readers, in the course of which it first destroyed competition by a corrupt bargain with the glass-blowers' union, and then, in its turn, was attacked by the union, has finally broken with its men, and has given notice that its factories will be temporarily closed, to reopen shortly with glass-blowing machines, which will not only take the place of the workmen who have abused their power, but will work so cheaply that hand-blown glass cannot compete with the machine product; and, apparently, the members of the window-glass blowers' union, who, for so many years, have not only extorted enormous wages, but have refused to admit any new member to the union, which meant, practically, to the trade, except a Belgian, or a near relative of a member, and, even then, only on payment of an admission fee of five hundred dollars, will now have to seek what employment they can find in other vocations.

THE Boston Commissioner of Buildings, Mr. John S. Damrell, has resigned his office, after holding it for about twenty-seven years. Although it is known that his resignation was requested by the Mayor, there is no suspicion that it was asked for on personal grounds, the reason of the Mayor's action being understood to be his opinion that the building-laws had been violated with the knowledge of deputy inspectors, whom Commissioner Damrell considered it his duty to defend. While all architects interested in Boston work will regret losing from the Building Department an official at once so courteous and firm as Captain Damrell, they will certainly support the Mayor in his determination to see the building-laws enforced. Although the Boston building-law is not so clear as it might be, and is by no means faultless, even where it is clear, justice requires that it should be enforced with perfect uniformity. There have been complaints for years, not only in the profession, but among builders, that the enforcement, or rather, perhaps, the interpretation, of the law was far too much a matter of caprice among inspectors and officials. It is, undoubtedly, necessary to allow a certain amount of discretion both to officials and inspectors, but the discretion of the Boston Department of Buildings has been very extensive, and has been occasionally exercised in what appeared to architects an unreasonable manner. Mr. Hugh Montague, one of the Deputy Inspectors, has temporarily taken Captain Damrell's place, and the whole building community of Boston will be interested in whatever changes may follow.

IN the death of Richard M. Upjohn, the profession of architecture in this country loses one of its most valued members. Mr. Upjohn was the son of Richard Upjohn, the famous architect of Trinity Church, in New York, and of many other buildings in the English Gothic style, of which he was probably the most accomplished master who ever practised in this country. The son, Richard M., was born in Shaftesbury, Eng., in 1828, but was brought to this country by his father the next year. He was intended for one of what were then called the learned professions; but, after preparing for college, his father concluded to take him into his office. Some years later, the father and son formed a partnership, which, under the style of R. and R. M. Upjohn, was long conspicuous in the profession in New York, although the elder Upjohn, being in feeble health, left the management mainly to his son. The latter became in this way practically the sole architect of the Madison Square Presbyterian Church, in New York, which has just been sold, for demolition, to a life-insurance company, and of many other churches and buildings, including the Mechanics' Bank, in Wall Street, which was completed in 1858, and was one of the first examples in the city of construction with iron beams and brick arches. Perhaps the best of his churches of

THE most interesting development of the season in connection with labor matters is the increased courage with which employers everywhere seem to have determined to resist unreasonable demands on the part of the unions, particularly in the building trades. The first of May is the day sacred, we might almost say, to strikes, and some troubles of the kind may generally be expected at that season; but the contractors have, in several instances, given warning that they will not submit to such dictation as has been forced upon them in years past. In Chicago, where, after a disastrous war, followed by peace, the unions have of late shown a disposition to be unreasonable again, the Building Contractors' Council, including a large part of all the contractors in the city, has resolved to sign no agreements with unions that do not contain a clause prohibiting sympathetic strikes, or any limitation of the amount of work that a man shall do in a day; or that do not permit the employment of apprentices and the unlimited use of machinery, or that deny to contractors the right to employ or discharge any man at pleasure. The best and most sensible of the unions themselves have already adopted these principles, so that the agitators and mischief-makers, finding the employers arrayed solidly in front of them, and a movement, which is daily increasing in strength, in favor of reason and honesty among union men in their rear, are not likely to be able to keep up the struggle very long.

IN New York, where a strike of the structural iron-workers is threatened, an association has been formed among the building-contractors and the iron-manufacturers, representing a capital of more than a thousand million dollars, to resist the demands of the men. What these demands are does not appear, but it is to be hoped that some way out of the difficulty may be found. An appeal to the brute force of millions is always to be regretted; and, although the power of wealth is too real to make it probable that the men can successfully resist it, there is something cruel and un-American in the employment of mere money to crush a movement among working-people, instead of the reason and conciliation which people had hoped were to take the place of force in labor struggles in this country. It may be observed, however, that reason and conciliation are necessary on both sides, and a calm statement on the part of the men of requests for higher pay, or shorter hours, or anything else of the sort, coupled with the expression of a disposition to avoid injuring their employers' interests unnecessarily, and showing that the increased cost of living made a corresponding increase of wages essential, would be supported

this period is the Central Congregational Church, in Boston, built in 1864. Although this is rather French than English in character, it is a very beautiful building. Later, Mr. Upjohn was selected in competition as the architect of the Connecticut State Capitol, at Hartford, his most important building, and one of the most interesting architectural objects in the country. The dome, which is two hundred and sixty-nine feet high, and fifty-six feet in diameter, is all of marble, and is still without a rival in this country. Both outside and inside, the structure is richly adorned with Gothic detail, carved in marble, and, although not large, it still attracts great attention. Mr. Upjohn was one of the original members of the American Institute of Architects, and for a long time President of the New York Chapter of the Institute.

THE town of Brunswick, Maine, the site of Bowdoin College, deserves the credit of having been the first Eastern municipality to establish a town forest. Some years ago, an energetic young graduate of the College persuaded the authorities to set apart a waste tract, of about a thousand acres, belonging to the town, for planting, and to appropriate a hundred dollars a year for planting and maintaining it. The appropriation was last year reduced to fifty dollars; but, in the meantime, twenty thousand white-pine trees have been set out. In fifty years from now, these trees should be worth at least a hundred thousand dollars; and, from natural seeding, three or four times as many more, of better quality, would be growing up among them to replace them. It is often said that the care of forest land is expensive; but the aboriginal pine forests of New England never had any care, and the older a forest grows, the less care it needs, as the underbrush, the fatal element, dies out as the high trees which shade it thicken. It is fortunate that Brunswick contains a community of such exceptional intelligence that its experiments are likely, not only to be well carried on, but carefully recorded; and we may hope that other New England towns, most of which hold vast areas of land, forfeited for non-payment of taxes, will follow its example, and thereby lay up for future generations a valuable property, which may be sorely needed to pay off the debts which we are so ready to lay upon our children.

AN illustration of the way in which tariff laws affect every detail of the national life is to be found in the fact, which is every day becoming more apparent, that, next to the newspaper publisher, the worst enemy of the forest industry of the United States is the protected sheep; and, next to him, the ox, whose flesh and hide are given artificial value by the tariff. We need not go over the familiar ground of the taxation of the wearers of woollen clothes, and of boots and shoes, for the benefit of the owners of herds of sheep and cattle; every one knows the arguments on both sides of this question by heart; but there is new food for thought in the observation that these protected animals are not only eating out the contents of the poor man's pocket-book, but are devouring the timber which his grandchildren will need to build their houses with. It is notorious that sheep destroy all the young trees that they can reach in their ranges; but, worse than this, the raising of them, under high protection, is so profitable that even the lumbermen, and the officials of forest States, discourage the replanting of forests, on the ground that it is more profitable to use the denuded timber lands for pasturage. The Secretary of the Pacific Coast Lumber Manufacturers' Association, for example, advises the owners of forest land which has been cut over not to replant it, but to use it for raising stock; and a former Governor of Wisconsin, after remarking that the supply of pine lumber in that State will be exhausted in about ten years, is reported to have said that he did not believe in replanting any of the waste tracts, as they were more valuable for "pasturage and cultivation."

EVIDENTLY, people who reason in this way are not likely to do much to restore the forest industries of the country; and, sooner or later, the farmers in river valleys, whose supply of water has been diminished by the denudation of the forests above, as well as the community at large, which will surely suffer from the extinction of American lumbering, must make themselves heard. It is hardly probable that the forests have much to fear from the demands of "cultivation." There

is now plenty of unoccupied farming land in the country, without exterminating the forests to get more. In New England, the farm lands of the last generation, close to an inexhaustible market, are being rapidly covered with second-growth pines, which, small, knotty and inferior as they are, form a more profitable crop than farm products; and it is the sheep, with its highly protected fleece, which is, undoubtedly, destined to range, in place of the farmer, over the ruined Northwestern forests, unless it is kept out by some efficient means. The most effectual proceeding for this purpose would be to stop taxing the people of the United States for its benefit. In Scotland, even without a protective tariff, the sheep has displaced man himself, hundreds of houses having been torn down, and their inhabitants dispersed, in order that the landlord's flocks might graze over the ruins; and in this country, where the gentle animal's fleece is richly gilded with money taken from the pockets of the poor, he is more to be dreaded than anywhere else.

THE Pennsylvania Railroad has made to the Government a curious offer, which is likely to be accepted. The Government desires to build a new Post-office in New York, and the railroad company offers to convey to it a suitable lot, in an advantageous location, for about one-third what a similar lot would cost anywhere in the neighborhood, and about one-half the actual cost to the railroad of the property, on condition that the railroad company shall have the right to construct tunnels under the building. As the Pennsylvania Railroad brings into New York about forty per cent of all the mail received there, it is obviously very much for the advantage of the Post-office to have the mail-cars run under the receiving-station, so that the bags can be hoisted by elevators directly into the sorting-room; and there seems to be no reason whatever why the arrangement should be rejected. The New York Central Railroad brings into New York about fifty per cent of the mail received, and the Government Commissioners ask for power to make with it an arrangement similar to that with the Pennsylvania road. There can hardly be any objection to this; but, as the Pennsylvania tunnels will, presumably, connect, sooner or later, with those of the Central road, it seems as if the same post-office might be made to do for both, with great advantage in economy and convenience.

WE do not suppose that we have a very large number of burglars among our subscribers, while we certainly have a good many subscribers who are interested in methods of circumventing burglars; so we need not, perhaps, hesitate to call attention to a new and efficient method of opening safe doors, which science has placed in the hands of those skilful enough to use it. It will be remembered that, not long ago, successful experiments were made in melting holes in safe doors by means of an electric current. The burglars soon heard of these experiments, and in several recent instances, have utilized the suggestion to make an entrance into bank vaults, bringing current from electric light or trolley wires in the neighborhood. Still more recently, it has been discovered that an oxy-acetylene blow-pipe can be made, the flame of which has a far higher temperature than that of the oxy-hydrogen blow-pipe, and will burn a hole through a steel plate in a few seconds. Burglars would find it inconvenient to carry cylinders of compressed oxygen about with them; but a blow-pipe fed with air is not very inferior in power to one supplied with oxygen, particularly if the air is heated before being blown into the gas-flame; and a portable acetylene lamp, with hot-air blast attachment, could be put up in neat and attractive form for burglars' use without difficulty, and the confederate could carry extra carbide in a bag. Thus equipped, a gang would be independent of a supply of electricity for its operations, and could, apparently, bore holes at its leisure through vault doors.

THE best defence for vault doors against this new engine, as well as against the electric arc, is, obviously, some form of non-conducting concrete, protecting the structural portions of the door. The concrete would have to be covered with a metal shell; but, with a stout screen of this sort outside a thick layer of Portland-cement concrete, with metal lathing imbedded in it, to prevent its being cut away in large pieces, a bank vault would not have much to fear from either acetylene blow-pipes or electric arcs.

NOTES ON IRON AND STEEL CONSTRUCTION.¹—XV.

It is the purpose in this article to demonstrate the process for finding the stresses in the several members of a framed structure by means of the graphical solution. In the previous article it was shown how to obtain the reactions for a frame, either by calculating the moments or by graphical methods. It is important that these means for determining reactions should be clearly understood, from the fact that the stress diagram for determining the internal stresses of a frame cannot be drawn unless the reactions are accurately determined, both in direction and amount. The directions of the internal forces of a frame are always known from the fact that they are represented in the frame by the members, and the structure being designed in outline, the direction of these members is determined. The amount of the internal stresses is, however, to be found, but it is necessary before proceeding with the stress diagram to lay out the frame diagram. This diagram having been accurately drawn, the next step is to determine all of the external forces acting upon the frame, which includes the loads and their resultant reactions. The frame diagram being in this manner completed, the stress diagram may be drawn, and when the stress diagram has been finished, the amounts of all the stresses in the several members are known, and also the kind of stress that exists in the members—that is, whether tensile or compressive.

In order to describe clearly the method of laying out stress diagrams for framed structures, assume the problem consisting of the determination of the stresses for the roof-truss shown in Figure 107. The frame diagram is first accurately drawn to scale, as shown in the figure; the vertical loads are fixed by the roof-area supported at

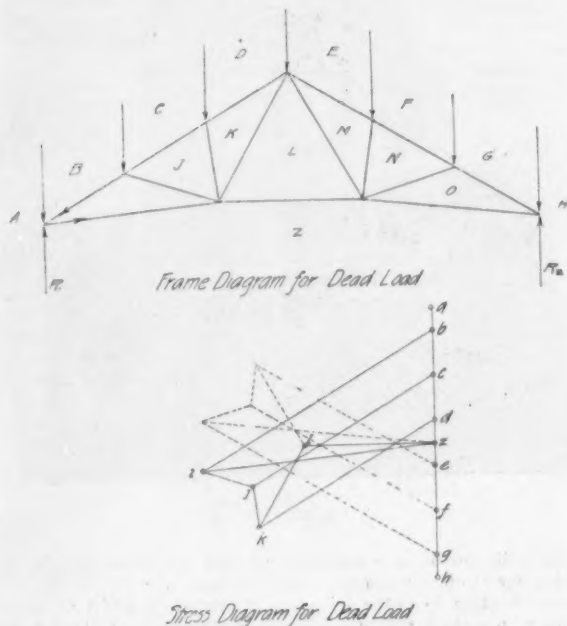


Fig. 107.

each panel-point, and the weights of the roof-covering, to which is added the snow-load, if the truss is of a span not exceeding 40 or 50 feet; for a truss over this length it is usual to draw a separate diagram for the snow-load.

In lettering the frame diagram it is customary to use capital letters, the letters being placed in the spaces between the several forces acting upon the frame and the several members of the frame. A systematic method of lettering the frame is to commence at the left-hand reaction, or abutment, follow around the frame to the right, and then commence in sequence at the left-hand end of the structure, marking the several spaces alphabetically in the order in which they occur. The letter Z usually denotes the space between the two reactions.

Commence the stress diagram by laying out to any scale where a unit of lineal measurement represents a number of pounds, the load-line ab, bc, cd, de, ef , etc., until finishing with the point h ; the length of the line ab represents the amount of the load AB , while bc equals to scale the amount of the load BC . Since the truss is symmetrically loaded, the point Z will lie midway between h and a ; so that hz and za will by scale equal respectively the amount of the reactions R_1 and R_2 . After the load-line has been laid out in this manner, commence the stress diagram at the left-hand end of the truss by drawing from the point b a line parallel with the member BI indefinitely, and from the point z draw a line parallel with the member IZ ; at the point of intersection of these lines will be located i , and by scale bi will equal the stress in the member BI , while the line zi , upon measurement, will give the amount of stress in the member IZ . The amount of the stresses around the joint $ABIZ$ hav-

ing been obtained, it is only necessary to determine what character of stresses exists in the different members: Whether the stresses are compressive or tensile can readily be determined by tracing the polygon of forces around the joint; the polygon of forces around the joint $ABIZ$ extend in the stress diagram from a to b , from b to i , from i to z , and from z back to the point a . It will be noticed that in tracing this closed figure, the direction of the line represent-

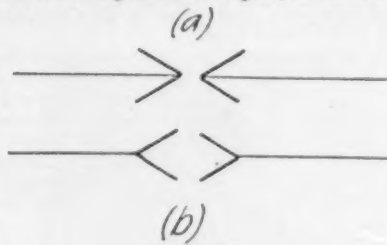


Fig. 108.

ing the stress in the member BI was from b to i , or downward, so that an arrow as marked upon this member in the frame diagram will point towards the joint; the line in the stress diagram representing the stress in the member IZ is traced in a direction from i to z , or upward, so that the arrow in the frame diagram is pointing in a direction away from the joint; these arrows determine the character of the stresses, for where the direction is towards a joint, the member is in compression, whereas when the arrow representing the direction of the stress is away from the joint, the stress in the member is tension. Any difficulty in remembering the particular direction that represents either stress is obviated by the simple means illustrated in Figure 108. At (a) is shown a member where the arrows act away from the joint, while at (b) is illustrated a member with the arrows acting towards the joint. The first represents tension and has the appearance of a piece of material being subject to a pull at either end, where it parts or gives way at the centre, while the latter seems to indicate a material being pushed together, under which stress the inclination is to swell or bulge the material at the middle.

In proceeding with the stress diagram, from inspection of the frame diagram it will be found that the joint $IJKLZ$ cannot be analyzed from the fact that there exist at this point four unknown forces, and it is impossible by the ordinary method of graphical statics to analyze any joint of a frame where there are more than two unknowns; there are, however, only two unknown forces around the joint $BCJI$, for the stress in the member BI has been determined, and there remains only the stresses in the members CJ and JI . To analyze these joints, therefore, draw from the point c , a line parallel with CJ , and from i a line intersecting the first parallel with the member JI ; the point of intersection will give the point j . The polygon of forces around the point $BCJI$ will extend from c to j , from j to i , from i to b , and from b back to the point of commencement c . Having analyzed this joint one of the unknown forces

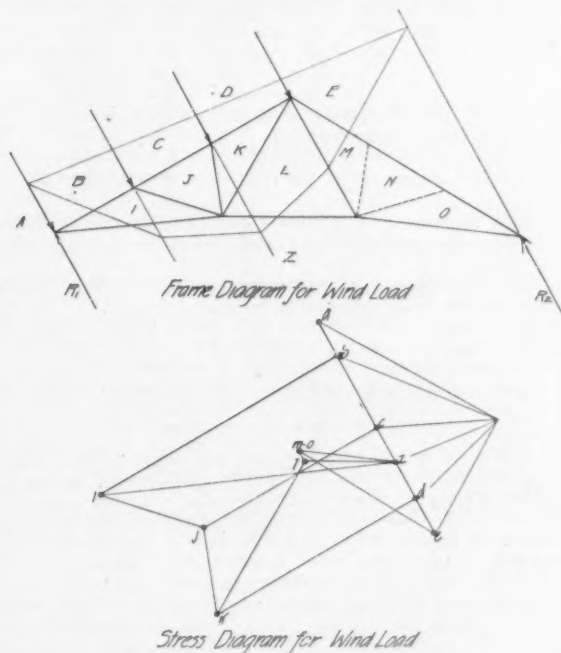


Fig. 109.

about the joint $IJKLZ$ has been determined, but another must be found by first analyzing the joint $CDKJ$. To proceed with the analysis of this joint, draw from the point d a line parallel with DK , and from the point j a line parallel with KJ , the point of intersection being marked k , and since a closed figure is thus described, the polygon of forces is completed, and extends from c to d , d to k , k to j and from j back to c . Only two unknown forces now exist around

¹ Continued from No. 1417, page 60.

the joint $IJKLZ$, and the analysis of this joint may be executed by drawing from the point K an indefinite line parallel with the member KL , and from the point z a horizontal line which is parallel with the member LZ ; the point of intersection l is thus found. The stresses in all of the members to the left of the centre line have now been determined, and as the truss is symmetrically loaded it is hardly necessary to proceed with the other half of the diagram. The portion of the diagram which represents the stresses in the right-hand half of the truss is shown by the dotted lines.

The dead-load diagram for the truss having been completed, the stress diagram for the wind-load acting upon one side may be drawn as shown in Figure 109. In this diagram, since the reactions are co-incident with the line of action of the loads, the polygon of external forces will lie within the line ae and will extend from a to b , from b to c , from c to d , and from d to the point e . The reactions, being calculated by the method of moments previously described, are represented by ez and za . No difficulty is encountered in drawing this diagram, for when the joints $ABIZ$, $BCJI$ and $CDKJ$ have been analyzed the joint $IJKLZ$ may be solved.

In drawing the stress diagram it will be found that when the wind acts upon the left-hand portion of the truss, the members MN and NO are useless, and that lines in the stress diagram representing the members EM , OZ and ML satisfactorily close the diagram.

The diagram for the snow-load on one side and the wind upon the other is shown in Figure 110. The reactions are first obtained by either the graphical method or by the method of moments as described previously, and the diagram drawn as designated. From

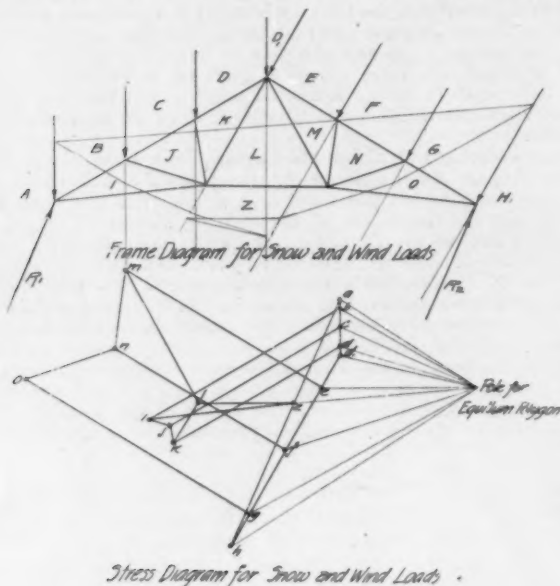


Fig. 110.

these three diagrams the maximum stress in any member of the truss may be obtained, and the members and connections designed accordingly.

In the next article will be treated the graphical analysis of stresses for trusses where three unknown forces meet at a joint.

M. M. SLOAN.

[To be continued.]

ROMAN AND ROMANESQUE FRANCE.¹—VI.

NIMES AND AIGUESMORTES.

AS a sub-title to notes upon Nîmes, one might without fear of contradiction, add "the Beautiful." Few cities of its size contain so many buildings which are perfect in their respective characters as the Maison Carrée, the Amphitheatre, the Temple of Diana and the Roman Baths; and if we add the Pont du Gard, that most impressive of bridges, which is only a short distance from the city, and which gave it a pure water-supply, we shall have a list of splendid examples of Roman architecture which few cities can rival.

Fergusson calls the Maison Carrée "one of the most elegant temples of the Roman world, owing, probably, a great deal of its beauty to the taste of the Grecian colonists long settled in its neighborhood." It is small but comely, for the elegance of its details cannot fail to strike every one who sees it. Formerly assigned to the reign of Augustus, it is now dated somewhat later; and if the modern interpretation of the inscription be correct, it may have been erected in the reigns of Marcus Aurelius and Lucius Verus, the former a fitting ruler to whom so dainty, and yet so simple, a temple might have been dedicated. Foundations were discovered some years ago on either side of the temple which suggest that it formed the centre of a group of buildings, possibly the Forum of Nemausus.

¹ Continued from No. 1410, page 4.

The so-called Temple of Diana, now thought to be a Nymphæum, from its proximity to the Fountain or Source, is a square building divided into aisles with ribbed stone vaults. The aisle on the right on entering is almost intact. The details of the architecture and many of the fragments scattered about are unrivalled, and suggest Greek influence, by reason of their extreme beauty. It measures 65' x 70'. The Maison Carrée (which, by the way, is oblong), including the portico, measures 45' x 85'. From the little Temple of the Nymphs, the ground rises, and a series of terraces laid out into gardens of sub-tropical vegetation, with steps and balustrades, mount to the strange tower known as La Tourmagne, passing the Fountain which was the basin or reservoir for the water brought across the Valley of the Gardon by the magnificent Pont du Gard.

La Tourmagne is generally supposed to have been a mausoleum for some distinguished Roman family; but a number of other theories as to its origin have been held.



La Tourmagne, Nîmes.

The walls are of enormous strength and thickness, tapering upwards; externally octagonal. There was a podium with an external staircase leading up to the colonnade (?) above the podium. In the centre is a modern staircase leading to the top, from which a fine view of the flat country stretching down to the sea is obtained. The upper wall is built in a series of arcades.

When one contrasts the beauty of the Roman Baths at Nîmes with those of Bath, one cannot but feel how vastly superior the restoration of the former has been to that of the English city. Naturally the surroundings are totally different, those of Bath being choked by ugly houses, whereas at Nîmes all is open and cheerful and green. But there was no reason why the English baths should have been restored, and decorated with clumsy figures of Roman emperors.

The Pont du Gard can now be reached by railway to Remoulins, and then by carriage or on foot across the suspension-bridge, which was likened to, and called after, the dancer Taglioni by reason of its lightness and elegance, which strike no one but a native, for as the stranger walks along the road he has no thought but for the Roman wonder. It is impossible in words to express the effect upon the mind of this stupendous work, which recalls no building to equal it in grandeur and beauty. One comes upon it suddenly at the turn of the road, three bridges piled one upon the other spanning the hills on each side of the Gard, and bearing, formerly, the pure water of a spring at Uzès, seven leagues off, for the use of the population of Nîmes. The six lower arches cross the river; the eleven of the next tier bound the bridge built for passengers and traffic in 1747; the thirty-five above carried the water-course. It is interesting to walk along the aqueduct under the huge slabs of stone, 8' x 2' 6", which cover the top. No cement was used; the slabs were simply laid side by side the whole length of the aqueduct. This was lined with cement. The lower arches are formed of distinct bands, unconnected. The cement lining still remains within the aqueduct, and was the shape of a U, but the constant flow of water has made the rounded corners of the base square; that is to say, it has eaten under the sides of the U. This canal is barely 7 feet high, in some

places much less, and about 3 feet wide. The entire height of the bridge is 160 feet, the length of the highest part 882 feet. At Nîmes the end of the aqueduct was on the hill of the Tourmagne where the water emptied itself into the Bassin des Thermes. This beautiful relic of Roman art was built under the rule of Agrippa, son-in-law of Augustus. Fergusson sums up its magnificence thus: "Without the introduction of one single ornament, or of any member that was not absolutely wanted, this arrangement converts what is a mere utilitarian work into an architectural screen of a beauty unrivalled in its class."

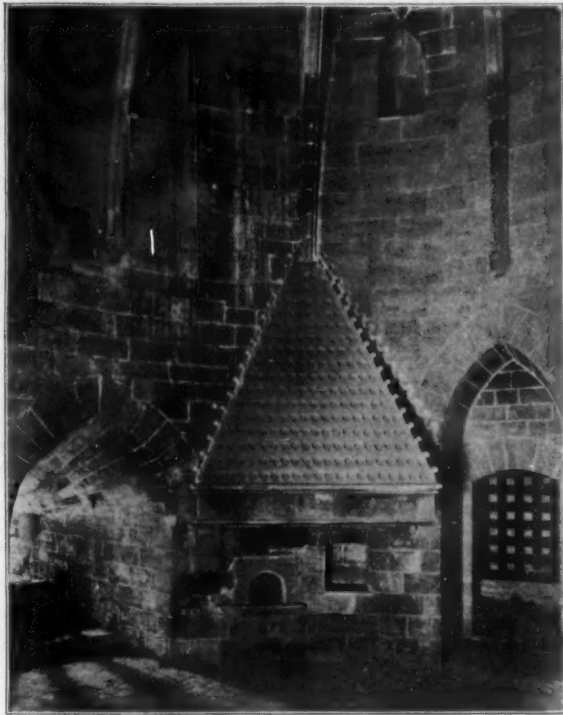
From Nîmes to Aiguesmortes is only thirteen miles, but it takes an hour and twenty minutes to accomplish the journey; the train stopping to take up and set down school-children, and for sheep sauntering along the line to get out of the way — the modern Aiguesmortians being no more hurried than their ancestors when St. Louis was king.

The way runs between fields and vineyards, upon land reclaimed from the ancient lagoons. Here and there are tamarisks, pools with rushes, poplars, cypress hedges and umbrella pines. The land is more cultivated than the Camargue, hence it loses in picturesqueness. Between the town and the sea are three zones of sand dunes surrounding the lagoons, the former having been the boundaries of the sea in prehistoric times; but the prevailing idea that in the time of the Crusades Aiguesmortes was absolutely a seaport is pure fiction. It was as far from the sea then as now. All the contemporary documents granting privileges to the town mention these salt-lagoons to the south, between it and the sea, and some of them bear the same names as now.

Although tradition makes the foundation of the town the work of Marius, there is no authentic history earlier than the building of the Tour Mafatère in the eighth century upon the site of the present Tour de Constance. About the same time a Benedictine abbey was founded half a mile from the tower called Psalmodi. This was destroyed by an incursion of Saracens in 725, and rebuilt in 788 by Charlemagne, who gave the Tour Mafatère to the monks. Soon a town was built near the fortress which took its name from the "dead," or stagnant, waters by which it was surrounded. In the twelfth century France possessed no port in the Mediterranean, and St. Louis, after obtaining Marseilles from his sister-in-law, the Countess of Provence, proposed to the Abbot of Psalmodi the exchange of Aiguesmortes for some land near Sommières. The exchange was made and the King endowed the town with various privileges — exemption from military service, from taxation and from the raising of loans; rights of fisheries, pasture and the chase, the establishment of municipal governors. Such concessions naturally brought a population. The only fortress was the tower, which had stood for five centuries in the midst of the marshes. St. Louis restored it, and

of the different branches of the Rhone and the formation of new lagoons) the port itself varied, in the time of St. Louis being at the east of the town, in the sixteenth century at the south. The rapidity with which a lagoon becomes cultivated land is shown by a part of the Étang du Repausset, which in the thirteenth century was 18 feet to 30 feet deep and is now a mass of vineyards.

The main produce of the country is salt, which is gathered from the surface of the marshes to the extent of 60,000 tons. Beyond



Fireplace in the Salle des Gardes, Tour de Constance, Aiguesmortes.

this and fishing, Aiguesmortes is a dead city, still surrounded by walls and turrets built under Philippe le Hardi, son of St. Louis, by Bocanegra, the Genoese, after the manner of the Eastern cities of Antioch, Damietta, Ascalon and St. Jean d'Acre, all of which have perished. Of the enclosure within the walls, much is waste land, the result of the diminution of population from 15,000 in the thirteenth century to 3,500 at the present time.

The detached tower (de Constance) was commenced by St. Louis, and served as a citadel. It is 90 feet high and 65 feet in diameter, and is surmounted by a turret. In the centre of each floor is a hole communicating with a reservoir below. In its prisons, many unfortunate Protestants were confined after the revocation of the Edict of Nantes.

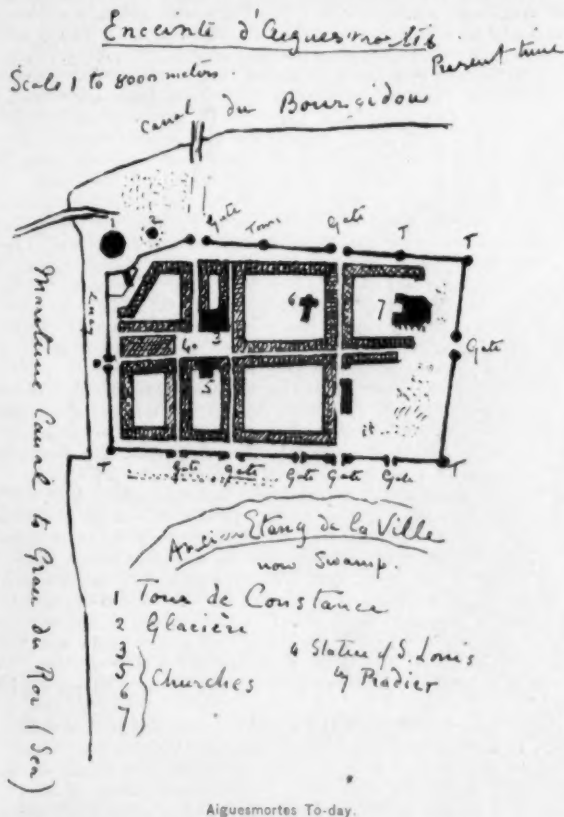
It was from Aiguesmortes that St. Louis, in 1248, embarked on his first crusade, with the Queen, 1,000 galleys containing 40,000 men and the sacred standard, the Oriflamme. The expedition was disastrous, and after suffering many losses from war and disease the King returned to France. But during the following twenty years, while governing his people with abounding wisdom and justice, he never ceased to cherish the idea of returning to Palestine. On July 1, 1270, he left France on his second crusade, full of enthusiasm and accompanied by a large following. But enthusiasm was not enough to dissipate misfortunes of various kinds, of which sickness was not the least. Embarking at Aiguesmortes, the fleet stood out to sea; but before sailing for the Holy Land, it touched at Carthage, and there St. Louis sickened and died of fever brought on by care and worry acting upon an enfeebled constitution. "And so," says his friend Joinville, "as God died for his people, likewise the sainted King Louis put his body in danger of death for the people of his kingdom."

S. BEALE.

SOME PRINCIPLES THAT MAY BE GUIDES FOR THE APPLIED ARTS.¹

ASKED to lecture here to-night, I have set myself, I fear, a somewhat difficult task in speaking to you of some of the principles that rule, or should rule, what are called the "applied arts." It were easy to cite examples of the arts, to describe the great works of the past, to catalogue the achievements that the mind of man has conceived and his hand has wrought. It were easy, I mean, to bring facts before you. It is not so easy to tell of ideals and principles that should guide, and should enlighten the mind of the designer or the doer. Yet all art is a thing to be sought after and to be learned, and it must needs have its principles. Nevertheless, in some sort

¹A paper by Mr. G. F. Bodley, R. A., read before the Society of Arts and printed in the *Journal* of that Society.



deepened the Canal Viel, which ran down to the sea at the Gran (passage) Louis. In the sixteenth century when Charles V met François I at Aiguesmortes, this canal was filled up and another used; and to-day, a third maritime canal leads up from the sea to the town. In the same way and for the same cause (the silting up

art is instinctive, spontaneous, and its happiest achievements are those that spring free, sudden, uninvited, the happy inspiration of the moment. It is not for all thus to conceive or thus to achieve. Rules are best for most of us.

Well, I am to speak to-night of some of the principles that may lead us into, and guide us along, the delightful paths of creative art, creative, for art is nothing if not creative. Are there any such principles? Is art only an inspiration? Or is it only imitative? It cannot be merely an inspiration, for it is certainly learned, fostered and nurtured and developed by laborious thought of the mind and by the patient labor of the hand, and by the traditions of the ages. It cannot be only imitative, for where, then, comes in the creative faculty? An inspiration may plant a seed; but the seedling will not reach perfection, untended and uncultivated.

Here then comes in the use of principles to direct the growth into right ways, to prune, to educe the good, and to root up and reject the bad.

This use, this carrying out, of principles in design, is not, indeed, the most poetical, or the most interesting department of the teaching of art. Far from it. It is rather the prose and the common-sense aspect of its initiative. It is very different from that "light that never was on sea or land," it is different from the glad surprise of the joyous thought of an artist's mind, the grand or the beautiful conception, innate with the added creative power of the hand eager to achieve. Rules and laws are but as schoolmasters, and have a manner of restraining and curbing.

But to go back to what I have said, are there any principles that may guide us along the path of art? I think there are. First and foremost, there is the principle of following Nature, Nature in her stately grandeur or in her calm beauty, Nature from the "human form divine" to the simplest flower or delicate, tiny shell; from the mighty mountain to the tender grass of the valley. In the highest arts, as in sculpture and painting, there is the obvious principle of closely and faithfully following Nature, not, indeed, without selection and judgment and feeling, and not, above all, without imagination. For we must touch all our art-work with human feeling and human thought. Nevertheless, the everlasting law for the arts of painting and sculpture is to be in complete harmony with Nature at her best, and to be faithful and true to her teaching. We know the superlative, the astonishing, truthfulness of Greek sculpture; how each fragment found, if it be part of a nude statue, for example, is as delicately modelled as the living flesh and skin-clothed muscles were, how drapery seems as if it were the very petrification of the light, delicate folds of the thin linen that draped the figure. I know not what is most remarkable about Greek sculpture, its beauty or its glad following of Nature. This, then, I would put as the primary rule and principle for all art, the following of Nature; and that not only in the forms and shapes of natural objects, but in giving to all things we make the very spirit of Nature. What lessons of delicate curve and strength and delicate modelling do we not find in the human figure? Sir Joshua Reynolds wrote: "It seems to me that there is but one presiding principle, which regulates and gives stability to every art. The works, whether of the Poets, Painters, Moralists, or Historians, which are built upon general Nature, live forever."

And this brings me to the next principle that I would mention, one indeed closely allied to that of truth to Nature. It is this, to endow everything we make with the expression of life, to give to all our hand-made productions, be they but the common utensils of daily life, be they but pots or pans, or be they crowns for kings and queens, the expression of life. In all the great days of art there was that expression (which, indeed, has a sort of divinity in it) given in all things made. You find it in Greek work; you find it in the work of the Middle Age, in all the civilized countries, when art was healthy and was growing gradually into the astonishing beauty that was produced in the great days of matured art. Everything, after its kind, was made, some more, some less, with an expression of life. In their nervous, graceful, or vigorous curves, in their kindly expression there was life. As you well know, many flowers have an expression, some of the most pleasing nature. They smile at you. Well, in the same way, the workers in gold or in silver, or other metal, or in china or pottery, gave an expression of life to the things they made, though the thing made had no exact resemblance in form to any natural object.

The thing, be it of the commonest type, be it your ink-pot, your chair or your table, or wine-glass, or be it a jewelled cross or a silver heart for a lady to wear on her breast; be it a sceptre for a king or a drinking-cup for a child, one and all had, in the best days of art, an expression, nay, as it were, an endowment, of life. The hand and the mind of man, their maker, had so endowed them. No doubt, it may require some imagination to see this, and some good things may have it but slightly, and some more, some less.

But now look at modern things of the kind I mean. Except some few made under better auspices, they are dead as the clay or the gold out of which they were made. In the one there is the beautiful curve, full of energy, or, it may be, of repose, or it is generous of a pleasing and a kindly expression. The other is dull, nay, dead, without expression; except indeed it be one of inane ugliness; and even that would seem to have come by chance, so much inanity there is in it. In the one the mind of a man who loved and enjoyed his work is reflected. In the other there is none of this. It is vacant, lifeless, hopeless. When you are at a museum of good old art-objects look at them and compare them with nearly all modern manu-

factures. If you have artistic perceptions you will readily see what I mean. And it is *this* that I mean, the mind, not alone the hand, of its maker has endowed the object with an expression; and following, in all reverence be it spoken, the Divine law of creation, he has breathed into it the spirit of life. Where this is done, we have, so far, a work of art. If it is not done, it is poor stuff at best. And it is not the richness or the poverty of the thing that brings this to pass; for the simplest object may have the expression of life, and, indeed, of beauty; and the richest may be wholly without it.

The late Lord Leighton used to have a small Greek lamp on the mantel-shelf in his studio. It was utterly simple in its lines, and without what you would call ornament, but it was not only beautifully designed, it was, to my eye, instinct with the expression of life. I have said that Nature was our guide; well, chairs and lamps, and the proverbial pots and pans, cannot be made like any natural object, or, if so made, they would be wrong, utterly wrong. But they and all things can, in different degrees and in different manners, symbolize life. Is it not this expression of life that makes conventional ornament not only bearable, but pleasant in its place and after its manner? You know how, in every style and manner of architectural art, conventional ornament has played a conspicuous, an important, nay, I may say, a delightful part. Well, why is this conventional ornament not only to be tolerated, but to be a real pleasure? I think, nay, I am sure, it is because in all good, intelligently designed conventional ornament there is an expression of life. It is this that gives the soul to art. Beautiful beyond compare are the forms of flowers, of leaves, of trees, of the very grass of the field. But more beautiful is their expression of expanding life, whispering, perhaps, and moving to the gentle air. And this expression you can give to the work of hand-made things, manufactures as we call them. I have mentioned the old testimony of the Creation. "He breathed into them the breath of life." And man, "whose breath is in his nostrils," so frail and passing, with so brief a life, can, if he will, endow his own handiwork, his own creation, with the very semblance of life. It is this that makes the lesser arts noble. And would not this and other principles raise manufactures that are made by the hand of man, directed by his mind — would they not take us, I would ask, into the region of Art? I do not mean into the region of high or fine art. Things may be made, and are made, by machinery, helped by the hand of man, without help from his mind. There is no art in such things, only ingenuity. Others may be made by machinery too, but directed by the mind of man. I mean such things as woven tapestries and carpets and other textile fabrics, and they come into the region of art. As we say of some things, "it is quite a work of art." We may truly say so of the best kinds of Eastern carpets, so beautifully made and so beautiful in their coloring.

Have you ever observed how the mind of a weaver of these Oriental carpets works with his hand? For example, when an orange-tinted wool comes against a red, it pales to a more golden hue; when it comes against a blue it will warm or deepen again. The orange against the red would have been hot and unpleasant looking. Alas! that these Eastern manufactures are so fast degenerating. Indeed, some kinds, or "makes," of carpets that have been beautiful for many centuries (we know some portrayed in the accurate pictures of a Van Eyck or a Memling) have, I am told, recently ceased to be made at all. I hope that Lord Curzon's good work in trying to maintain Indian manufactures may be of use. Not that much Indian furniture is really satisfactory in design. But the carpets and many other textile fabrics are beyond praise. They are delightful; and teach us how color should be treated in manufactures. They are works of art, most certainly. It is true that fine-art takes us into a higher region and to a nobler ideal. But here at this "Section of the Applied Arts," we are, I suppose, on somewhat lower, perhaps more useful, ground. But even in the weaving of carpets, in their palpitation of color, there may be this expression of life as well as in the drawing of their foliage or other ornament.

Another principle is that all our work should be beautiful. Would that we lived with beauty all around us, and had not the deteriorating influence of ugly things that crowd around us in their imbecility! How depressing are all ugly things! How delightful, how elevating, is the influence of a thing that is, in its beauty, "a joy forever," a thing that becomes almost a friend and a companion. And, why? Because it mirrors the mind of a man who has striven to give it an expression, innate with beauty. I should like a crusade preached against the profanity of ugliness, and to see ugly things publicly burned in one of our great, rich London squares! I suspect many ugly things would not have to be carried very far to feed the bonfire! Well! taste is growing; let it grow! I have used the phrase "profanity of ugliness." "In the beginning" all things made were pronounced to be "good." I think, therefore, my word "profanity" is not wholly unjustifiable! One could not call the ugly things I mean "good."

Another principle of art that I would mention is that of breadth of effect. It applies largely to artistic manufactures, or manufactures that might be artistic. Now, I cannot but think that in all art one thing greatly lacking in these days is this grand quality of breadth of effect. I venture to think so of much modern painting, whether of pictures or decorative work. In all the arts breadth of effect is a great quality. Here, again, look at Nature. The low-lying land and the grassy hills, are they not broad in color, in their vast expanse of green? Varied and gradated green, no doubt, as all Nature's coloring is gradated, but, broadly, green. And the sky, is not its great

dome at times all blue, gradated, indeed, again, to a silvery tint, where it touches the dark-green land? And the clouds, are they not at times all tints of gray, and at times all that beautiful color of solemn, subdued purple that we call inky, that is so beautiful against the green of the hill or of the trees? I am not forgetting the sunrise or the sunset; but those are but moments of exceptional beauty that linger but for a little while. And the green of the land may be sprinkled with flowers, but they are but as jewels on a robe of one tint.

The more subordinate the nature of decorative work may be the more broad it should be in its treatment. For example, mosaicwork for a vaulting or a wall is quite the best if it has few colors. You may have a gold background, and your figures may be, one all in shades of red, another all in shades of blues or greens; or a purple robe may be lined with green, colors that have a delightful affinity, and the result will be broad and satisfying. So in marble-work. Black and white, red and white, green and white, only those two colors together, will be more dignified than if other tints are intermingled, to the loss of breadth of effect. What is it that makes the difference between many new buildings and good old examples of architecture? It is not the charm of age, for that chiefly affects the color. Is it not that the old work has a noble breadth of effect and a unity of idea, restraint and an avoidance of all discordant elements? While of much modern work must we not say that vulgar confusion, and useless variety and display, take the place of sauvity of manner and a dignified and noble breadth of effect? For there is in old buildings a nice economy, not only of material, but of ornament, and there is a satisfying charm about most of them, of almost any period. The old architecture had stately manners. Too many of our new buildings have pretentious ways. I think it is from the lack of the principle of refinement and especially of a delightful breadth of effect that many things suffer nowadays. It is a principle that extends to literature. Unity of idea is a mark of a great poem or, indeed, of all good literature. But I am trespassing on to other land.

We live at a time in which there is a considerable feeling after a better and more beautiful treatment of designs for new buildings in our streets. They are certainly becoming more ornate, and more pains is being taken to make them more interesting than in days when the long unlovely streets, like Harley Street or Wimpole Street, were built. What seems missing in many, if not most, of these new street-fronts is a sense of greater dignity and restraint of character; more refinement and more breadth of effect. In one word, a higher conception and a more refined and broad, and a more reasonable carrying out of such conception. The great principle I have spoken of, refinement, is too often absent. Indeed, too many new buildings cannot but be designated as pretentious and vulgar, instead of being dignified and refined. It is a critical time for architecture. I hope we may see better work done, more thorough in the expression of the principles of truth and of a stately beauty, both in the humblest and the noblest buildings.

Another principle is that of delicacy. Look at the infinite delicacy of leaves and grass and flowers, and their infinite refinement of form and texture and of color, the gentle gradations, the melting of one color into another, so subtle, so delicate! Look at the passing cloud-shadow on the bare dawn, so gentle, so transparent. Look at the sea, with its purple and green and its soft-toned white, full of gentle shadow, slowly moving in the delicate curve of a cresting wave. In all Nature there is delicacy, and in all art of the finest kind delicacy has ever been a great principle. Compare modern jewelry with old. It is the delicacy of the one, and the coarseness of the other, that makes old jewelry delightful, and most of the modern contemptible. But I must pass on, though I could say much more on this point.

And now one word about color. I can only briefly touch on this. It is a large subject, and color is a thing so subtle, so delicate, so strange in its ways that it seems to be beyond rules and laws. For example, you may place one red against another, a crimson-laky red against an orange red; in other words, you may mingle your different reds together and always with happy result. Who has not seen the peasant children in Italy, in the shaded slums of the old town, it may be, or in the country under the bright sunlight? Their dresses are frequently, most frequently, reds of very different tints, scarlet and crimsons, and all harmonize. In pictures by the Old Masters you will find one figure in robes of one red, and side by side with it another in a robe of a totally different hue of the same color; all is harmonious. Now, try to do the same with different greens. You cannot. A warm, fruity green, beautiful in itself, will not harmonize with a cold, silvery green, though that too may be beautiful, most beautiful, in itself. I am speaking of decorative painting. Why is this? I can find no reason except that color is so delicate a thing that it is allowed to be free from laws, to be beyond rule, so that I am reminded of a volume of travel in which one of the chapters is headed "The Snakes in Iceland." You turn to the chapter, and all that is said about the subject is "There are no snakes in Iceland"; and so with the laws and principles for color. Indeed, I think there are none. Nevertheless, the eye can be trained, and the taste can be cultivated to love the beautiful in color, as in form. For everything is there the law to be beautiful.

Another principal, or should I say a desirable, practice is that of founding work on what has gone before. It is at times a charge made by somewhat shallow thinkers, if I may say so, that all work must be entirely original and absolutely new. Sir Joshua Reynolds did not think so of works of painting. He said the best work that had been done in the long history of painting was founded on the work

that had been already achieved. He says that such work will be the "most original, though it seems like a paradox to say so."

It is, indeed, but reasonable in the different departments of the arts, it is but natural, to found your work on that of the past. You have a thing to do; you have to design for a certain object. Well, you build, as it were, on the foundations of the past. But you see how this or that can be improved on, refined on, or strengthened. You see it with the eyes of your own mind, and conceive it afresh with your own imagination. You develop the original idea; you depart from it; or you give it a new character, a new clothing. In one word, you make it your own. Has not this been so in all the arts? Is it not thus that art hands on its spirit, which is immortal? If I were speaking to students of art, I should say, "Fear not to found your work on that of the past ages." Catch the spirit of beautiful work already achieved, and, as it were, grasp the torch from the hand of the doer of work in the past, and throw a newly-directed light with it, a light to fall on a new parting of the ways, ways that may lead to higher heights yet attained, and to pastures new. That is the way to utilize old traditions. You need not ignore them. Do not so; but use them as stepping-stones to still higher and nobler imaginings.

I could say much more of the guiding principles for art. I could tell you of the principle of strength, not only of strength of construction, but of strength of artistic expression. I could tell you of delicacy without weakness, and of power without coarseness; of truth (and, indeed, that should have had the first place). I could tell you of harmony and of the avoidance of all harsh and violent contrasts. I could tell you how the nature of the materials we use often controls the very first idea of a design; and of other characteristics leading to good and artistic work. But I should weary you. Indeed, I fear I have already done so. One word more, and it is this: While such principles as I have feebly touched on are, and should be, as it were, the by-laws of art-production, yet, in all the arts, a healthy, well-informed and well-cultivated imagination is beyond and above all rules.



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

THE NATIONAL COMMERCIAL BANK, ALBANY, N. Y. MESSRS. YORK & SAWYER, ARCHITECTS, NEW YORK, N. Y.

PLAN AND SECTION OF THE SAME.

THE PORTE DE LA GARDETTE AND THE TOUR DE CONSTANCE, AIGUESMORTES, FRANCE.

For this and following illustrations see article "Roman and Romanesque France" elsewhere in this issue.

Additional Illustrations in the International Edition.

TEMPLE OF THE NYMPHS, NIMES, FRANCE.

THE ROMAN BATHS, NIMES, FRANCE.

PALAIS DE LONGCHAMPS, OR MUSEUM OF FINE ARTS, MARSEILLES, FRANCE.

This view, which was referred to in the article on "Fortress Churches," should have been included in our issue for last week.

CASINO, CANNSTADT, NEAR STUTTGART, WÜRTTEMBERG.

HOUSE OF T. M. ARMSTRONG, ESQ., PITTSBURGH, PA. MESSRS. ALDEN & HARLOW, ARCHITECTS, PITTSBURGH, PA.

HOUSE OF GEORGE E. MCCAGUE, ESQ., PITTSBURGH, PA. MESSRS. ALDEN & HARLOW, ARCHITECTS, PITTSBURGH, PA.

DETAIL OF BANKING-ROOM: NATIONAL COMMERCIAL BANK, ALBANY, N. Y. MESSRS. YORK & SAWYER, ARCHITECTS, NEW YORK, N. Y.



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

"THE RESULT OF AN ARBITRATION."

1285-1287 BROADWAY, NEW YORK, N. Y.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Referring to Mr. F. A. Wright's contention in your issue of February 7, about the great principle of the ownership of architects' drawings and specifications and the ruling of the arbitrator that

"the client becomes the absolute owner and custodian of the plans until the house is erected," it would seem that the arbitrator has made a mistake in his rulings.

The profession of an architect is comparable to that of lawyer or a physician. In preparing the papers necessary for the trial of a suit no lawyer would think of allowing his client to claim ownership of these papers.

Similarly, any physician retains ownership of his prescriptions as "instruments of service" and only allows his patients to use these prescriptions under his immediate direction.

In like manner, the architect formulates his ideas by means of the drawings, specifications and details, often technically gathered together in the one term: plans; and these plans are his absolute property at all times, although, if so desired and as a matter of courtesy, *not right*, the architect often allows his client to have copies of the plans to file away as references, with the distinct understanding however, that these plans may not be used for duplication.

Yours respectfully, GEORGE MARTIN HUSS.

AMERICAN CAEN STONE.

BUFFALO, N. Y., March 3, 1903.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Can you give me any information in regard to the so-called American Caen stone which you mentioned some years ago, and which I believe was quarried in South Carolina? Is it being quarried yet and by whom is it sold?

Yours truly, E. A. KENT.

[We have not heard of the American Caen stone for some time. Perhaps some of our readers can give information in regard to it.—EDS. AMERICAN ARCHITECT.]



METAL BOILER-STACKS AND FIRE.—The writer can confidently assert, from a fairly extended observation, that there is no safe way of passing a metal boiler-stack through a wooden roof. Large timbers, asbestos packing, good ventilation, etc., are usually deemed sufficient, usually approved by insurance-men, and are sometimes, but by no means always, permanently successful. The tricky nature of baked wood exposed to intermittent radiant heat is such that no man can tell whether it will ignite at all or ignite in six months or ten years. The only sure method of fire-prevention where a metal boiler-stack passes through a roof is to make the roof all metal or tile, or equivalent, for a large section, say, about 8 feet square, with the stack passing through the centre of the special section of roof. Any flue from a brass-furnace or other closed-draught passage carrying hot gases, says Albert Blauvelt in the Machine Shop number of *Cassier's Magazine*, should be examined by feeling with the hand where the flue passes through the roof. It is a peculiarity of some such flues that although the hand may be placed on them without inconvenience at points relatively near the source of original heat, they may be much hotter, dangerously hot, in fact, near the free-air outlet of the flue. Whether this is due to a recombination of gases as the stream of heated gases reaches the fresh oxygen of the outer air is left to the conjecture of those who care to meditate thereon, but it is a fact that a flue may be cool near the furnace and very hot near the roof. Such flues can be cured by lengthening them so that the hot portion or part near the outlet is carried up or away clear of all woodwork or buildings.

BRICK CHURCHES OF NORTH ITALY.—The brickwork of North Italy may be studied in a large number of buildings in almost all the towns and cities in the valley of the Po, though at the same time other districts afford many remarkable examples. In Venice, Verona, Mantua, Piacenza, Cremona and Milan, and besides these in Pisa, Siena, Lucca and Bologna, most of the mediæval buildings are almost or altogether built of brick, and afford examples of almost every kind of use of the material, both by itself and in combination with stone and marble. Almost all the buildings display more or less sham construction. At Cremona there are examples of this in the transept fronts of the Cathedral, where an enormous screen-wall is carried up high above the roofs, and pierced with rose windows of elaborate character, but of no possible use. The east end of the church of San Fermo Maggiore at Verona is an instance of an apse treated in a similar way, each of its sides being surmounted by sham gables, the grouping of which, with the pinnacles between them, makes undoubtedly a most picturesque *tout ensemble*. The usual arrangement of the façades of these Italian churches is, however, fairly real and constructional. Buttresses of flat projection mark the internal divisions, and the real roof-lines (always of flat pitch) are strongly marked by elaborate cornices of moulded brick. The buttresses are generally carried up to, and are also finished by, these cornices, and above them are frequently light pinnacles. San Francesco, Pavia, affords a fine example of this type, applied to a church consisting of nave and aisles. Here the buttresses are some of them moulded, and some covered with brick tracery, and all finished with delicate circular brick-pinnacles. San Pantaleone, in the same city, is of the same type, but of five divisions in width, these divisions answering to the nave, aisles and chapels beyond the aisles inside. Of the treatment of the eastern ends of Italian churches those of Venice afford, perhaps, the finest examples. In that of Santa Maria Gloriosa dei Frari we

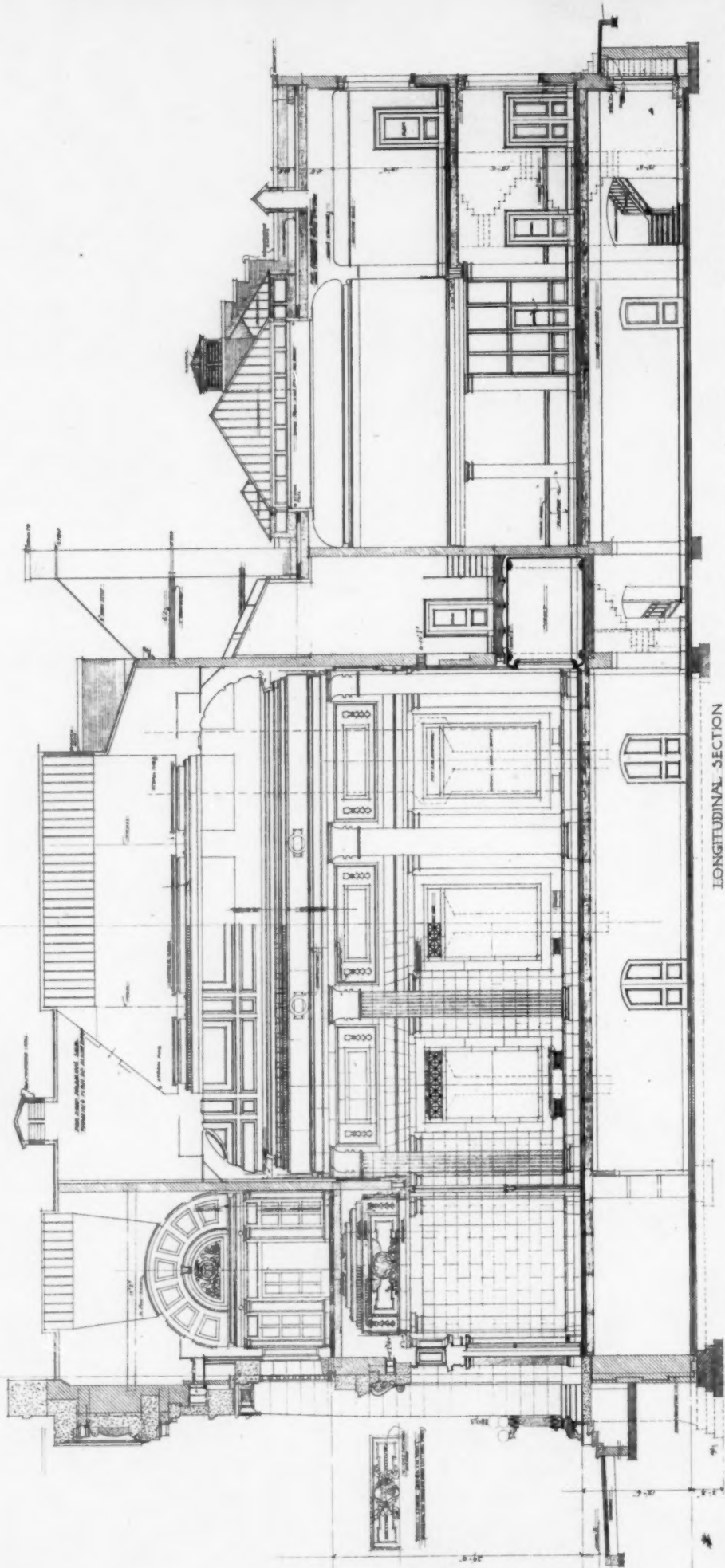
have a central apse lighted by two tiers of windows, and a series of chapels on the east of the transepts, each with two windows on the same level as the lower tier of the central apse. The division between the two stages of the latter is strongly marked by a bold cornice, occupying the place which in England would be held by a simple moulded string-course; and this is one of the ever-recurring evidences of the fact that the Gothic architects of Italy never so thoroughly and entirely shook off the old Classic traditions as did those of our own country. Another class of fronts very often seen is that in which it has been intended to cover the whole with marble; and in these cases the walls are first of all built very roughly in brick, with courses projecting at intervals for the sake of affording bond to the marble. In the majority of cases the marble-fronts have never been built above the base-mouldings, so that these rough unfinished fronts are quite characteristic of the country. In the vast church of San Petronio, Bologna (which if it had been completed would have been the largest church in Europe), we have one of these west fronts, and in Sant' Anastasia, Verona, another. Both these churches are, on other grounds, worthy of admiration.—*The Architect*.

A GREAT WATER-POWER DAM NEAR CONKLINGVILLE, N. Y.—Official announcement has been made of plans to build another great water-power dam in Northern New York. The announcement was made at Glens Falls on Saturday, February 21, at the dinner given to the members of the American Institute of Mining Engineers after the inspection of the dam of the Hudson River Water-power Company at Spier Falls, ten miles above Glens Falls. The new dam will be constructed by this Company and will be built of granite across the Sacandaga River. It is estimated that the new structure will flood an area forty-four square miles larger than Lake George. The dam will be built at Conklingville, in Saratoga County, near the point where the Sacandaga empties into the Hudson. The lake will be thirty-five miles long. In addition to affording power for commercial purposes, this lake will be utilized by the State Forestry Commission as a storage reservoir. The concern which is developing the water-power of the Hudson now has four sites, and practically controls the power situation in that region. The Spier Falls dam is nearly completed, the dam at Mechanicsville is in operation, and the two new sites at Ashley Falls and at Gay Falls will be developed at once. It is impossible to estimate accurately the amount of power that will ultimately be developed, but an estimate of a total of 100,000 horse-power is conservative.—*N. Y. Tribune*.

ARTIFICIAL MARBLE IN DENMARK.—The United States Consul at Copenhagen states that the lack of marble in Denmark has led to many attempts to produce a substitute which would equal in decorative effects the natural product and would not exceed it in cost. Some success has been achieved in the manufacture of this article in Sweden, but the thin slabs would not keep their shape, inclining to bend and warp. The veins were stiff and angular, and the soft transitions of color which make variegated marble a thing of beauty were wanting. A significant advance has been made in this industry in Denmark by a master-builder of Copenhagen named Sven Schongard, who is producing a stone of such delicate transition of tints and play of color that it is difficult to distinguish it from the natural product, while as to cost of manufacture it can compete with all other artificial marbles. The imitation of the more expensive species does not exceed in cost that of the cheaper ones. The inconvenience hitherto met with that the mass had to be greased to prevent adhesion (thereby destroying the crystalline surface characteristic of the genuine article) has been overcome. The process of manufacture is simple and easily learned, and the cost of the outfit is said not to exceed £35. The article can be produced in any form desired—columns, plain or fluted, and capitals—as readily as flat slabs. It is claimed that even pictures may be made of this material. It seems to have the durability of genuine marble, but its cost is only about one-tenth. At the present stage of the development of the industry, the maker is able to produce a slab about half an inch thick at a cost of about 7d. per square foot.—*Journal of the Society of Arts*.

A PATRON SAINT OF TINNERS.—St. Perran is the patron saint of tinnors, and is said by the London *Globe* to have invented their banner, a white cross on a black ground, symbolizing the black tin-ore and the white metal. Some think it was he who first taught the Cornish folk to "stream" for tin. But he lived in the fourth century after Christ, so it is difficult to reconcile this with the other legend of the Tyrians, who traded in Cornwall in the days of King Solomon. Be this as it may, St. Perran was a man of great local importance in his day, for many villages are called by his name, such as Perranzabuloe, Perranwortha, Perranuthnoe and Perranporth. There is a story that he sailed the seas from Ireland sitting miraculously upon a floating mill-stone, so perhaps his history is not to be entirely accepted without question. However, one evening when the holy man was cooking his supper he took a large, heavy black stone for one side of his fireplace. This primitive stone burned with intense heat and suddenly a stream of brilliant white metal flowed from the block of ore. The saint rejoiced and called the Cornishmen together that they might celebrate his discovery with feasting. They did with much zeal, consuming their national drinks of mead and metheglin in such quantities that "drunk as a Perraner" passed into a proverb that remains to the present time. This event took place on the second Thursday before Christmas, since called Picroun Day and still kept as the tinner's holiday.

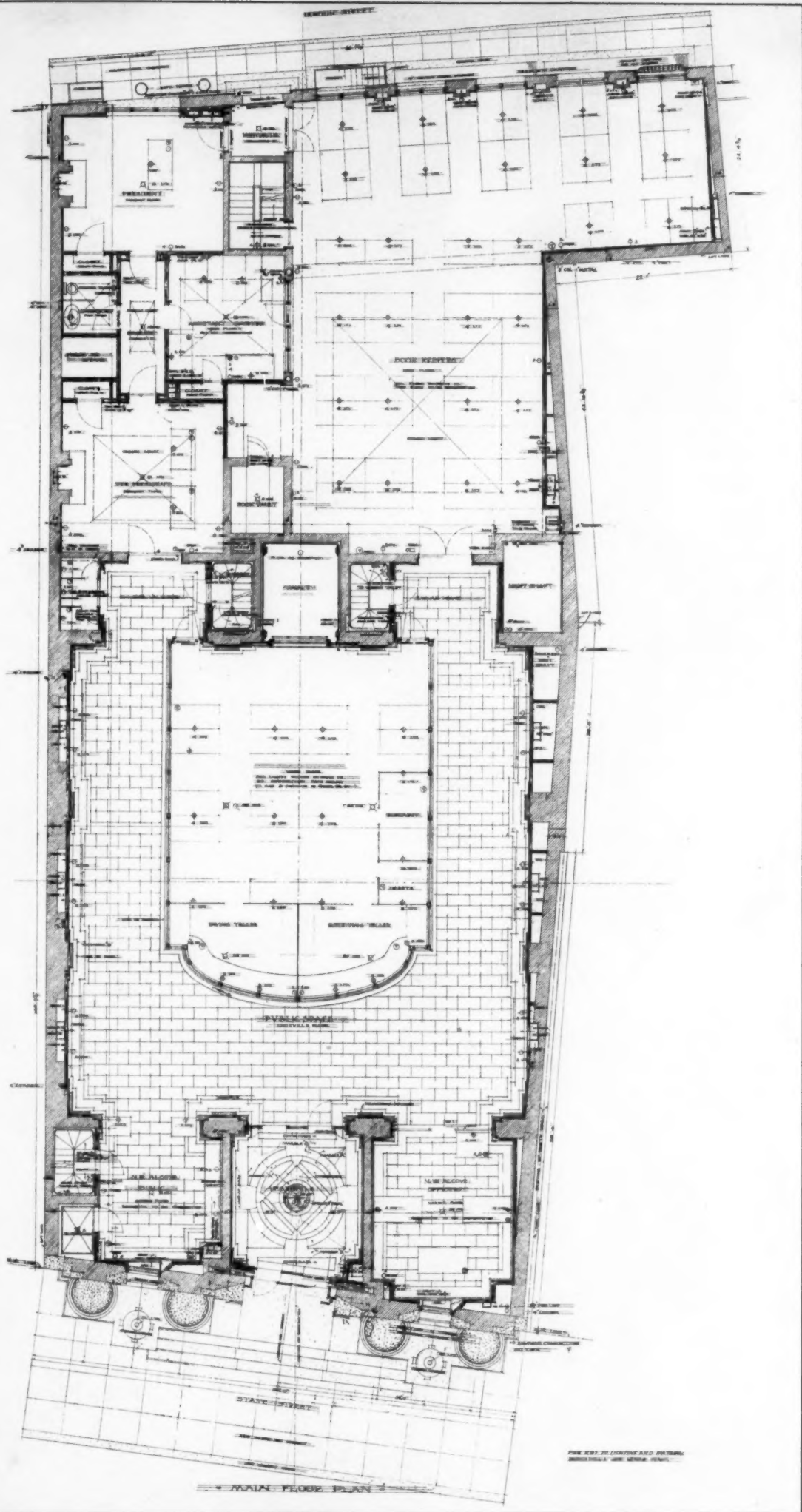
A GIANT REDWOOD TREE.—The record yield of timber from one tree is 80,000 feet from a redwood 30 feet in diameter, cut last year in California.—*Exchange*.



LONGITUDINAL SECTION

THE NATIONAL COMMERCIAL BANK
OF ALBANY - NEW YORK

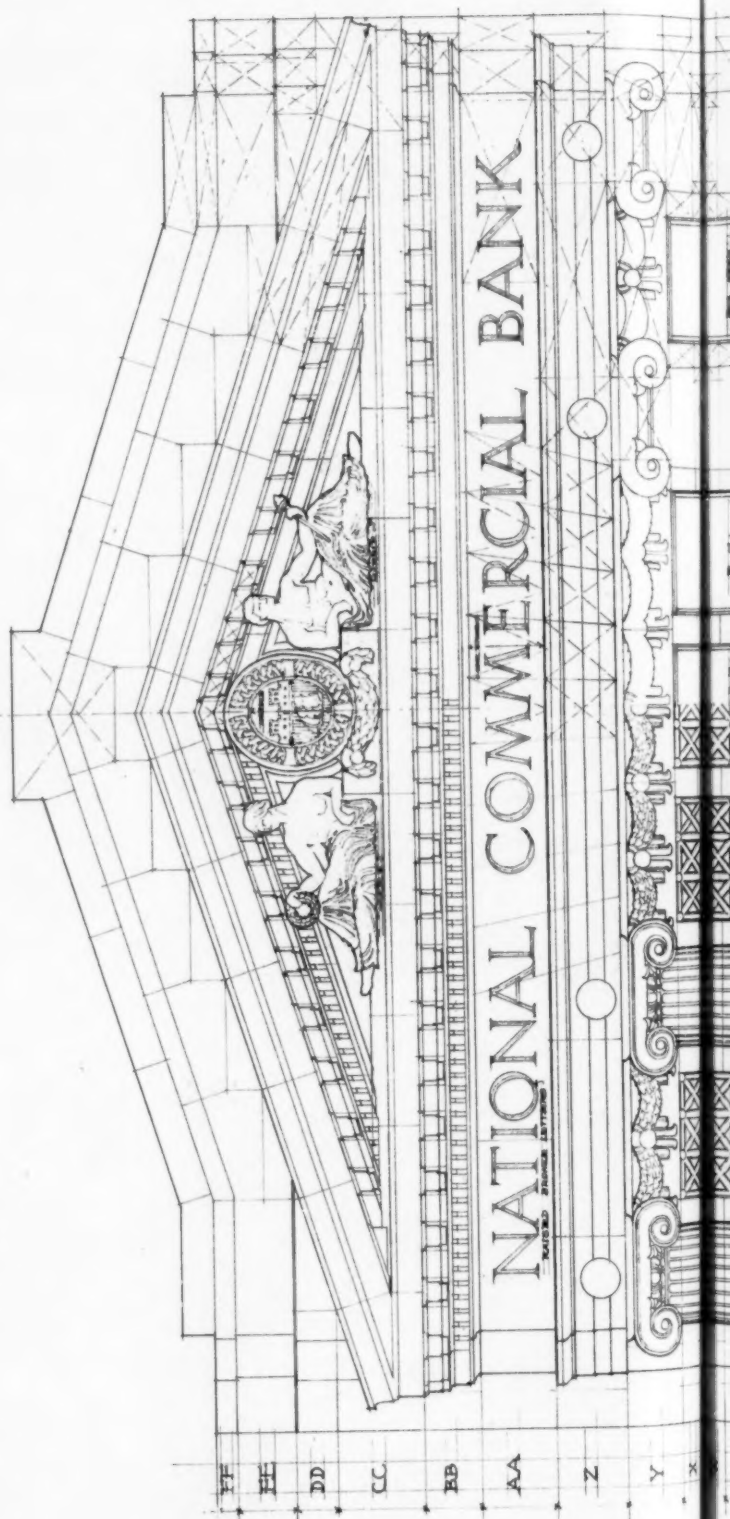
SECTION	MATERIALS	DETAILS
1	BRICK	1
2	CONCRETE	2
3	IRON	3
4	STEEL	4
5	WOOD	5
6	GLASS	6
7	PAINT	7
8	PLASTER	8
9	CEMENT	9
10	ROOFING	10
11	CHIMNEY	11
12	STAIRS	12
13	ELEVATOR	13
14	WATER	14
15	SEWER	15
16	HEATING	16
17	VENTILATION	17
18	ELECTRICITY	18
19	TELEPHONE	19
20	MAIL	20



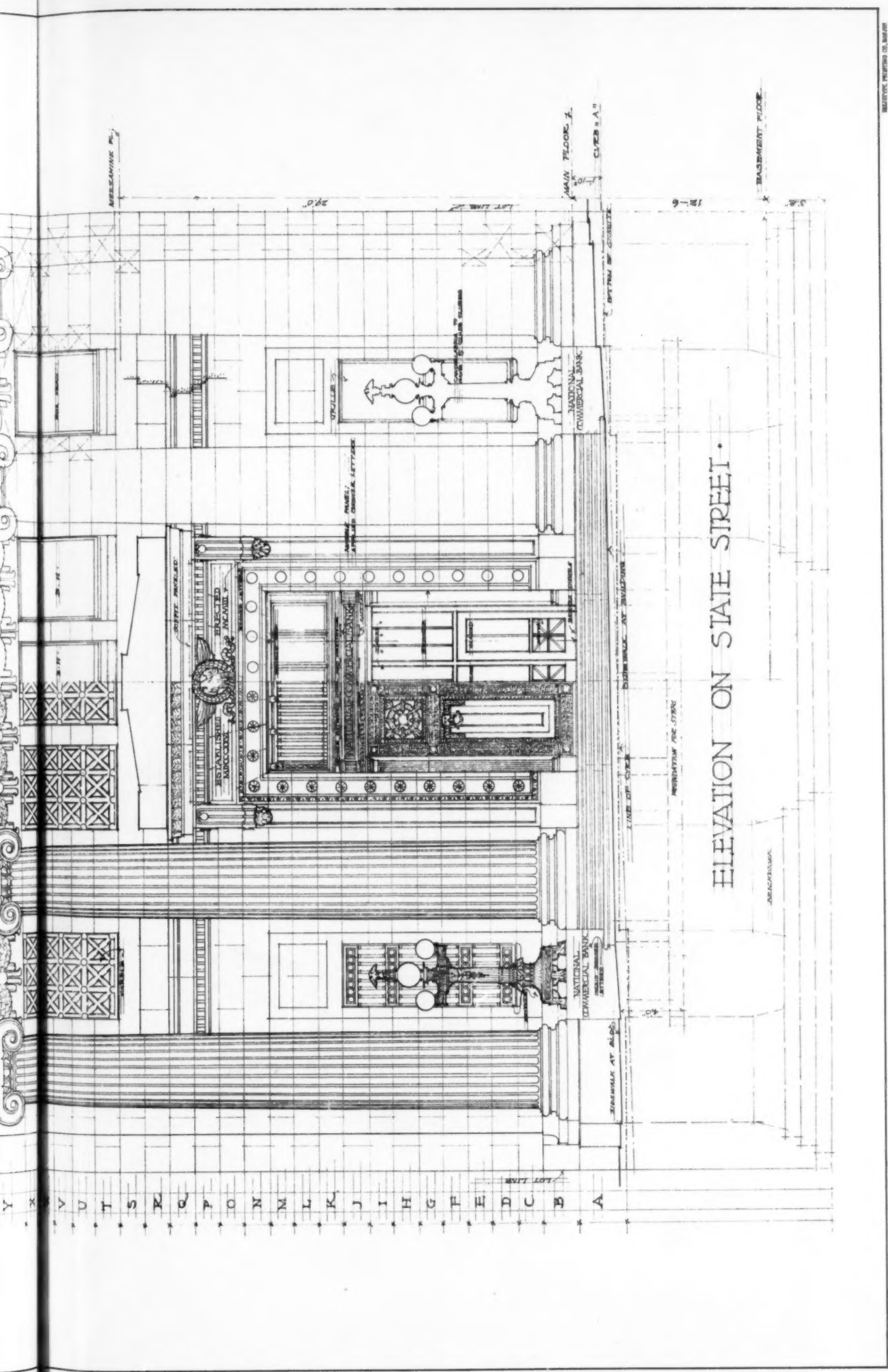
COPYRIGHT 1903 BY THE AMERICAN ARCHITECT AND BUILDING NEWS CO.

PLAN AND SECTION: NATIONAL COMMERCIAL BANK, ALBANY, N. Y.
YORK & SAWYER, ARCHITECTS.

The American Architect
Mar. 14, 1903.
No. 1420.

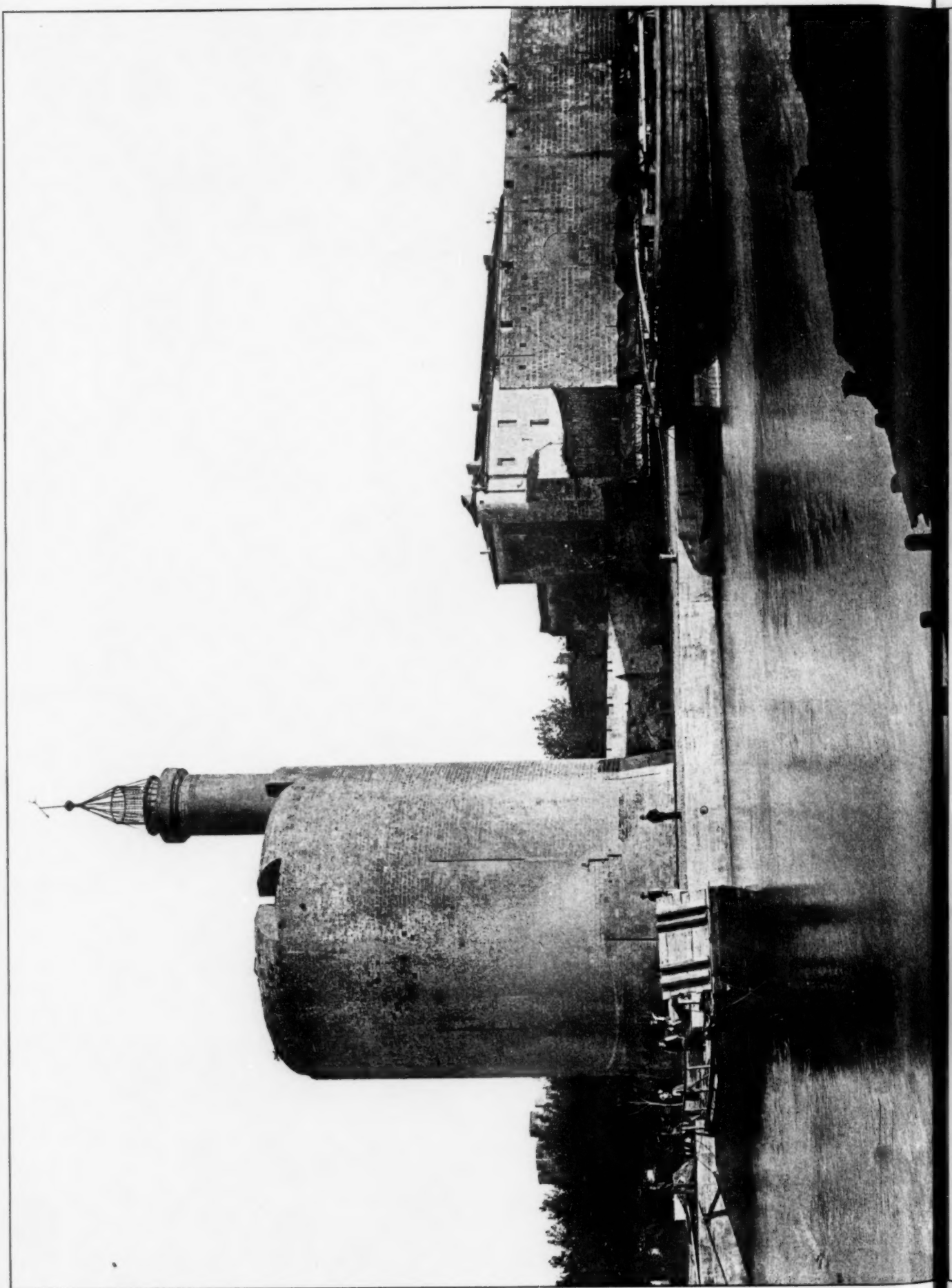


FF
FE
DD
CC
BB
AA
Z
Y
X

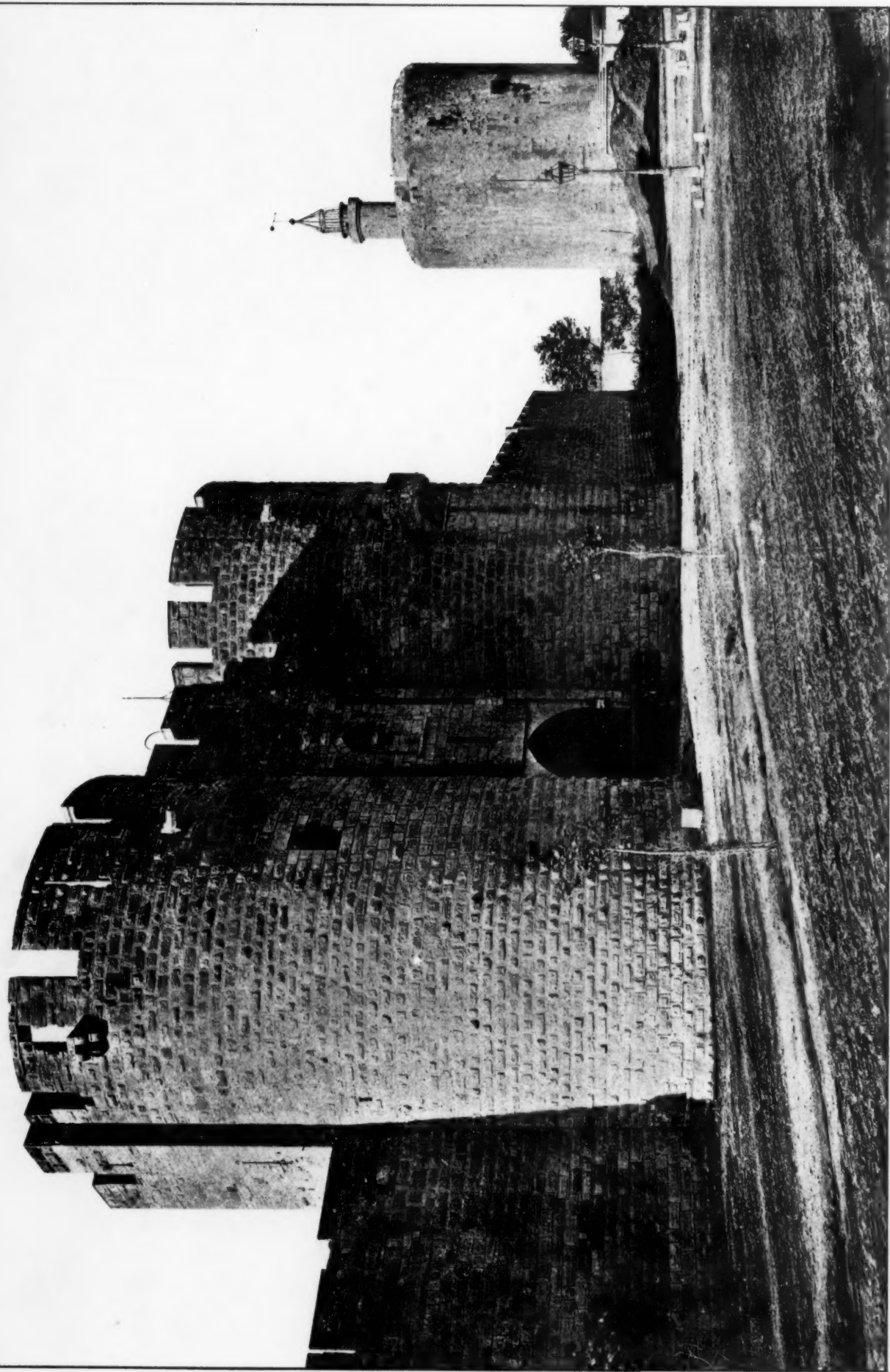


NATIONAL COMMERCIAL BANK, ALBANY, N. Y.
YORK & SAWYER, ARCHITECTS.

The American Architect
Mar. 14, 1903.
No. 1420.



TOUR DE CONSTANCE.



SEPTEMBER 1913 BY THE AMERICAN ARCHITECT AND BUILDING NEWS CO.

PORTE DE LA GARDETTE AND TOUR DE CONSTANCE, AIGUESMORTES, FRANCE.

The American Architect
Mar. 14, 1903.
No. 1420.

THE AMERICAN ARCHITECT AND BUILDING NEWS

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

VOL. LXXIX.—No. 1420.]

SATURDAY, MARCH 14, 1903.

PRICE, { INTERNATIONAL ISSUE, 50 CTS
REGULAR " 15 "

WHITTIER MACHINE CO.,

PASSENGER AND FREIGHT
ELEVATORS.

53 STATE STREET - - - BOSTON.

ELEVATOR SIGNALS

OF ALL KINDS

HERZOG TELESEME CO.

51 WEST 24TH ST., NEW YORK



ARCHITECTURAL INSTRUCTION.

BOSTON, MASS.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

DEPARTMENT OF ARCHITECTURE.

Options in Architectural Engineering and Landscape Architecture.

College graduates and draughtsmen admitted as special students.

SUMMER COURSES in Elementary Design and Shades and Shadows. Proficiency in these subjects will enable draughtsmen and students from other colleges to enter third year work.

For catalogues and information apply to
H. W. TYLER, Secretary,
Mass. Institute of Technology, Boston, Mass.

CAMBRIDGE, MASS.

HARVARD UNIVERSITY.

THE LAWRENCE SCIENTIFIC SCHOOL offers professional courses in Engineering, Mining and Metallurgy, Architecture, Landscape Architecture, etc. Students admitted by examination* and by transfer from other Schools or Colleges. Approved Special Students admitted without examination. New and enlarged equipment. For Catalogue apply to the Secretary, J. L. LOVE, 16 University Hall, Cambridge, Mass. N. S. SHALER, Dean.

LOOMIS FILTERS.

ESTABLISHED 1880.

Improved System. Simple and Effective.

LOOMIS-MANNING FILTER CO.,

Main Office: 402 CHESTNUT ST., PHILADELPHIA.
Boston. New York. Baltimore. Washington.

"THE AMERICAN VIGNOLA"

PART I

THE FIVE ORDERS OF ARCHITECTURE

BY

WILLIAM R. WARE

Professor of Architecture, Columbia University
Text and Plates, 86 pp., 9"x12" Price, \$3.00
AMERICAN ARCHITECT AND BUILDING NEWS CO.
PUBLISHERS

ITHACA, N. Y.

CORNELL UNIVERSITY

COLLEGE OF ARCHITECTURE

Offers a four-year course in Architecture leading to the degree of B. Arch.; also a two-year special course with certificate.

NEW YORK, N. Y.

**COLUMBIA UNIVERSITY,
IN THE CITY OF NEW YORK.**

SCHOOL OF MINES.
SCHOOL OF CHEMISTRY.
SCHOOL OF ENGINEERING.
SCHOOL OF ARCHITECTURE.
SCHOOL OF PURE SCIENCE.

Four years' undergraduate courses and special facilities for graduate work in all departments. Circulars forwarded on application to the Secretary of the University.

ST. LOUIS, MO.

**WASHINGTON UNIVERSITY
SCHOOL OF ENGINEERING AND
ARCHITECTURE**

Offers a four-year course in Architecture, leading to a degree of B. S. in Architecture.
College Graduates admitted to advanced standing or as special students.
FREDERICK M. MANN, Professor.

COLUMBUS, OHIO.

**OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING**

Offers four-year courses in Architecture, Civil, Electrical, Mechanical and Mining Engineering, and in Ceramics. Tuition free. For information address,
President W. O. THOMPSON, Columbus, Ohio.

FLYNT

BUILDING AND CONSTRUCTION CO.

GENERAL OFFICE, PALMER, MASS.

We contract to perform all labor and furnish all material of the different classes required to build complete

CHURCHES, HOTELS, MILLS, PUBLIC
BUILDINGS AND RESIDENCES.

Also for the construction of
RAILROADS, DAMS AND BRIDGES.

We solicit correspondence with those wishing to place the construction of any proposed new work under ONE CONTRACT, which shall include all branches connected with the work. To such parties we will furnish satisfactory references from those for whom we have performed similar work.

The WINSLOW BROS. COMPANY,

CHICAGO,

Ornamental Iron and Bronze.

PHILADELPHIA, PA.

**UNIVERSITY OF PENNSYLVANIA.
SCHOOL OF ARCHITECTURE.**
PROF. WARREN P. LAIRD.

BOOKS:

"Door and Window Grilles."

104 Plates: 10" x 14 1/2".

In Cloth, \$7.50.

In Portfolio, \$6.50.

AMERICAN ARCHITECT AND BUILDING NEWS CO.
Publishers.

BOOKS:

"Renaissance Fireplaces."

40 Gelatine Plates, on bond paper, 9" x 11".

In Envelope. Price, \$5.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.
Publishers.

BOOKS:

"Norman Monuments of Palermo."

Illustrated with 50 Plates: 13" x 17 1/2".

Price bound, \$10.00. Unbound, \$9.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.
Publishers.

BOOKS:

"The Library of Congress."

80 Plates, folio. Price \$5.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

ROBERT C. FISHER & CO.

Successors to Fisher & Bird,

MARBLE AND GRANITE WORKS

97, 99, 101 and 103 EAST HOUSTON STREET,

Established 1830.

NEW YORK.

Hardwood Exposed to the Weather



must be protected by an exterior varnish of the best quality or it will soon become white and weather beaten. For permanent satisfaction, specify

Spar Coating

For varnish booklet, write

EDWARD SMITH & COMPANY

Varnish Makers and Color Grinders

45 Broadway, New York

59 Market St., Chicago

Ball Bearing Hinges

In Wrought Bronze
and Steel



ALL FINISHES

Our new Catalog can be had for the asking.

The Stanley Works, Dept. C
NEW BRITAIN, CONN.
79 Chambers Street, NEW YORK.

CLINTON WIRE-CLOTH CO.

Sole Proprietors and Manufacturers of

WIRE LATH

DOUBLE TWIST WARP
STIFFENED (Iron Furred)
CLINTON CORRUGAT'D

Plain, Japanned or Galvanized.

The Most Perfect and Economic System of FIREPROOF Construction.

SEND FOR CIRCULAR.

BOSTON,
199 Washington St.

NEW YORK,
76 Beckman St.

CHICAGO,
137 Lake St.

FACTORY,
CLINTON, MASS.

FOR INFORMATION ABOUT

U. S. MAIL CHUTES

WHICH ARE

A necessity in Office Buildings and Hotels,
write to the sole makers.

THE CUTLER MFG. CO., ROCHESTER, N. Y.
PATENTED. AUTHORIZED.

"La Construction Moderne,"

A journal of whose merits our readers have had opportunity to judge because of our frequent reference to it and our occasional republication of designs that are published in it, is the most complete and most interesting of the French architectural journals.

The seventeenth annual volume is now in course of publication.

Subscription, including postage, 35 francs.

Each weekly issue contains, besides the illustrations included in the text, two full-page plates, which by themselves are worth double the amount of the annual subscription.

PRICE OF BACK ANNUAL VOLUMES,

:: 40 Francs. ::

Address for subscriptions and catalogues,
LIBRAIRIE DE LA CONSTRUCTION MODERNE,
18 Rue Bonaparte, Paris, France.

Established nearly 40 Years

.. THE ..

ARCHITECT

AND

Contract Reporter

Published Every Friday by P. A. Gilbert Wood

6 TO 11 IMPERIAL BUILDINGS
LUDGATE CIRCUS. LONDON, E. C.

PRICE, FOURPENCE

The "ARCHITECT AND CONTRACT REPORTER" has been established nearly 40 years; has a large and influential circulation; has been proved to be the best medium for advertising to Architects, Builders and Contractors; has the finest illustrations; and has been specially noted for its Art reproductions.

Send us six English 1d. stamps and we will mail you sample copy.

Send us post-office money order for 50 cents and we will send you the last six weeks' issues.

On receipt of \$6.35 we will forward for 12 months.

The YANTACAW Chemical Fire Extinguisher

NO Acid used, nor poisonous gas generated
Danger from explosion
Danger from Chemical or stream to person or fabric
Periodical recharging, testing or polishing.
Always in the accustomed place and ready for instant use.
No mechanism to become defective.
Can be recharged in from twelve to twenty seconds.
Much more powerful and efficient than carbonic acid gas machines.
Made in sizes capable of charging 25, 50 and 100 gallons of water without recharging.
With the twin Yantacaw a continuous charged stream can be obtained.



Send for descriptive booklet.

Yantacaw Mfg. Co., 802 Land Title Bldg., Phila.

Sizes 25 gals., 14 in. in height
Size 100 gals., 36 in. in height

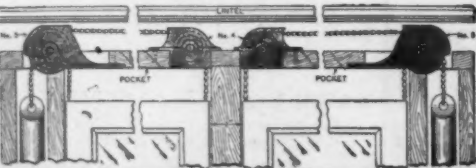
The United States Military Academy buildings at West Point are covered with TAYLOR OLD STYLE Roofing Tin. It is most favored for this class of work, because the best is required.

MADE ONLY BY
N. & G. TAYLOR CO.
PHILADELPHIA ESTABLISHED 1810

Grant Overhead Window Pulley

McQueen's Patents

Specified by the leading Architects of United States and Canada



Grant Roller Bearing Pulley

GRANT PULLEY & HARDWARE CO.

23 1/2 Warren St. NEW YORK

Send for
Catalogue

Part XI of the Georgian Period

THIS Part, which deals entirely with the Colonial Architecture of the Southern States, contains 24 pages of text, illustrated with 36 text-cuts, and 25 plates.

It is certainly as good as the preceding Parts, of which critics have spoken thus:—

Of Part IX.

"Brought out in a comprehensive and exhaustive manner, to a useful size, on fine paper, beautifully printed and well delineated."—*Building News*, London.

"Every part of which should be almost as interesting to Englishmen as to Americans."—*The Architect*, London.

"Fully up to its predecessors, both in letterpress and illustrations."—*The Architectural Review*, London.

"We are glad to reiterate our favorable opinion of the enterprise."—*N. Y. Tribune*.

"In repeated notices in these columns the great excellence of the collection has been pointed out."—*The Nation*.

"Needs only to be better known in order to serve a wider audience."—*N. Y. Times' Saturday Review of Books*.

"We can only express the hope that the publishers will continue the series."—*Journal of the Royal Institute of British Architects*.

Of Part VIII.

"In truth a work of superior excellence and great usefulness."—*Irish Builder*, Dublin.

"This great work."—*The Architectural Review*, London.

"Is especially happy in illustrating nearly every phase of the designer's art."—*N. Y. Tribune*.

"Is of great value as a record of a class of structures of great interest."—*The Builder*, London.

Of Part VII.

"The illustrations are extremely attractive."—*The Architectural Review*, London.

"Peculiarly attractive."—*Baltimore Sun*.

Of Part VI.

"Whether from the technical or the general aspect these half dozen portfolios seem quite indispensable."—*Review of Reviews*.

"A peculiarly fascinating and instructive work."—*N. Y. Tribune*.

"One of the most delightful as well as valuable contributions to the study of American architecture yet published."—*Springfield Republican*.

Of Part V.

[Clippings lost.]

Of Part IV.

"This valuable publication grows in interest with every succeeding number."—*N. Y. Evening Post*.

Of Part III.

"The further progress of this work only increases our admiration for the serious spirit and thoroughness with which the work is inspired."—*Art Interchange*.

"One of the most important American works on architecture is, and will remain for some time, this work that is gradually taking definite shape."—*The Nation*.

Of Part I.

"A set of models of inestimable value."—*Art Interchange*.

American Architect & Building News Co., 211 Tremont St., Boston

Topographical Index of Advertisers.

[For pagination, see Alphabetical Index on Cover 2.]

CONNECTICUT.
Bridgeport, Droure Co., The G.....[Sash Opener]
New Britain, The Stanley Works.....[Wrought-Steel Rails]
New Milford, Bridgeport Wood Finishing Co., The.....[Paints, etc.]
Stamford, Yale & Towne Mfg. Co.....[Locks]
Waterbury, Benedict & Barnham Mfg. Co.....[Beaded Nickel Seamless Tubing for Exposed Plumbing]
London, The Architect and Contract Reporter.....[Magazines]
ILLINOIS.
Chicago, American School of Correspondence.....[Architectural Schools]
Chicago & Alton Railway.....[Railroad Cars]
Chicago, Crane Co.....[Valves]
Northwestern Terra-Cotta Co.....[Terra-Cotta Tiles]
Taylor, J. W.....[Photographs]
Walker, Dudley.....[Art Photographs]
Wilks Mfg. Co., S.....[Hot-Water Heaters]
Winslow Bros. Co., The.....[Ornamental Iron and Bronze]
MAINE.
Rockport, Rockland-Rockport Lime Co.....[Lime]
MARYLAND.
Baltimore, Valls & Young.....[Stylights]
MASSACHUSETTS.
Boston, Amer. Mason Safety Tread Co.....[Stair Tread]
Bartlett Lumber Co.....[Redwood Lumber]
Boston & Albany R. R.....[Railroad Broad Gauge Iron Stalls & Vase Works]
Broad Gauge Iron Stalls & Vase Works.....[Stable Platforms]
Butcher Polish Co.....[Floor Polish]
Cabot, Samuel.....[Dyeing, Quilt Carve, Hugh, (Stone Carving and Modelling)]
Campbell, Walter M., E. A., (Doors, Windows, etc.)
Carter Ink Co.....[Ink]
Columbian Marble Quarrying Co.....[Marble Dealers]
Couch Co., S. H.....[Telephones]

MASSACHUSETTS.
Boston, Craig, David.....[Clean-out Crawford Specialty Co.]
Dadmun, Leon E.....[Photography (Architectural and Commercial)]
Erickson Electric Equipment Co.....[Electrical Contractors]
Folsom Snow Guard Co.....[Snow Guards]
Fowler, Herbert.....[Ornamental Plastering]
Gallagher & Munro Co.....[Plasterers]
Gurnsey Heater Mfg. Co.....[Hot-water, etc.]
Halotype Printing Co.....[Art Printing]
Howard Clock Co., The E.....[Clocks]
Jager Co., Charles J.....[Engineers]
Johnson & Co., H. A.....[Portable Cement Lombar & Co., A. F.....[Architectural Ornamentation]
Lunt, Moss & Co.....[Water supply Goods]
Makepeace, B. L.....[Blue Prints]
Marble Co., W. F.....[Brass Finishers]
Massachusetts Institute of Technology.....[School]
Means & Thacher.....[Paints]
McKay & Woolner.....[Contractor and Builder]
Morrill & Whitton Construction Co.....[Masons and Builders]
Redding, Baird & Co.....[Stained Glass]
Samson Cordage Works.....[Sash-Cord]
Sleep, Elliot & King Co.....[Modelling and Ornamental Plaster]
Smith-Warren Co.....[Windows (Fireproof)]
Spaulding Print Paper Co.....[Blue Prints]
Standard Fire-escape & Mfg. Co., Fire-escape Sturtevant Co., B. F.....[Fan System]
Van Noorden Co., E.....[Stylights, Metal Whittier Machine Co.....[Elevators]
ONTARIO.
Oshawa Wire Cloth Co.....[Metallic Lathing]
PRINCE EDWARD ISLAND.
Primer Building & Construction Co.....[Building Contractors]
MICHIGAN.
Detroit, Berry Brothers, Limited.....[Shaw-Walsh Northern Engineering Works.....[Cranes]
MISSOURI.
St. Louis, Washington University School of Engineering and Architecture.....[School]
NEW JERSEY.
Camden, Monroes Metal Shingle Co.....[Metal Shingles]

NEW JERSEY.
Jersey City, Dixon Crucible Co., Jos.....[Graphite]
Paterson, Fawcett Rolling Mill Co.....[Structural Iron]
Perth Amboy, Perth Amboy Terra-Cotta Co.....[Terra-Cotta Tiles]
NEW YORK.
Irvington-on-Hudson, Lord & Barnham Co.....[Conservatories]
Ithaca, Cornell University.....[School]
Jamestown, Art Metal Construction Co.....[Art Metal Work]
Long Island City, Richey, Browne & Donald.....[Ornamental Iron and Bronze]
N. Y. City.
Alsen's Cement Works.....[Cement]
American Iron Bridge Co.....[Steel Structures]
American Sheet Steel Co.....[Galvanized Iron]
Associated Expanded Metal Co.....[Expanded Metal]
Atlas Cement Co.....[Cement]
Columbia University.....[School]
Deane, E. Eldon.....[Colorist]
Elevator Supply and Repair Co.....[Electric Signals]
Fisher & Co., Robert C.....[Marble]
Frank, L. F.....[Reflectors]
Grant Pulley and Hardware Co.....[Pulley (Overhead)]
Hagen, Claude L.....[Stage Architect and Carpenter]
Hayes, George.....[Metallic Lathing]
Herzog Telephone Co.....[Elevator Signals]
Hitchings & Co.....[Greenhouses]
Jackson & Co., Wm. H.....[Grates]
Jonkins Bros.....[Valves]
Jones, T. W.....[Fences]
Kent-Costigan.....[Rugs (Carpets)]
Mott Iron Works, The.....[Iron Work]
Neschel Asphalt Co.....[Asphalt]
New Jersey Zinc Co.....[Zinc White]
New York Belling and Packing Co., Ltd.....[Interlocking Rubber Tiling]
N. Y. Metal Ceiling Co.....[Metal Ceilings]
Okonite Co., Ltd.....[Insulated Wire]
Otis Elevator Co.....[Elevators]
Pitt, W. R. (Inc.).....[Folding Gates]
Quimby, W. E. (Inc.).....[Electric Pumps]
Rider-Erickson Engine Co.....[Hot-Air Engines]

NEW YORK.
N. Y. City, Sargent & Co.....[Builders' Hardware]
Smith & Co., H. B.....[Steam Heat]
Smith & Co., Edward.....[Varnishes]
U. S. Mineral Wool Co.....[Mineral Wool]
Van Kannel Revolving Door Co.....[Revolving Doors]
Warren Chemical & Mfg. Co.....[Asphalt Roofing]
Williams, John.....[Wrought Metal]
Yale & Towne.....[Hardware (Art)]
ROCHESTER.
Cutler Mfg. Co.....[Mail Chests]
TROY.
Globe Ventilator Co.....[Ventilators]
Troy Laundry Machinery Co.....[Washing Machines]
OHIO.
Canton, Berger Mfg. Co., The.....[Metal Ceilings]
Cleveland, Tyler Co., The W. S.....[Ornamental Iron and Bronze]
Columbus, Kinneer & Gager Co., The.....[Metal Ceiling]
Nelson Co., The C. T.....[Capitals (Corrals)]
Ohio State University.....[School]
Marietta, Introstile and Novelty Co.....[Introstile]
Salem, Mullins, W. H.....[Architectural Metalwork]
West Cleveland, Cudell, F. E.....[Traps]
PENNSYLVANIA.
Ambler, Keady & Mattison Co.....[Magnesia Covering]
PHILADELPHIA.
French & Co., Samuel H.....[Mortar Colors]
Loomis Filters Improved System.....[Filters]
Merritt & Co.....[Lockers (Expanded Metal)]
Merchant & Co., Inc.....[Roofing Plates]
Morse, William & Co.....[Elevators]
Taylor Co., N. & G.....[Roofing Tin]
Thorn, J. S. Co.....[Sheet Metal]
University of Pennsylvania.....[School]
Yanickaw Mfg. Co.....[Fire Extinguisher]
PITTSBURGH.
National Fireproofing Co.....[Fireproofing]
Standard Sanitary Mfg. Co.....[Porcelain]
Examinable Ware.....[Examinable Ware]
Wisconsin Graphite Paint.....[Graphite Paints]
YORK.
Vapor Heating Co.....[Heating Apparatus, Steam]



The Kinnear Stamped Steel Ceiling, Sidewall

etc., has held its place in the front for years. It has no equal in construction or design.

Catalogue and prices furnished upon request.

The Kinnear & Gager Co.
Manufacturers
(New Plant) 236 Mt. Vernon Ave.
Columbus, Ohio
Eastern Warehouse and Office
No. 125 Broad St., Boston

"COHESIVE CONSTRUCTION."

An Essay on the Theory and History of Cohesive Construction.

By **RAFAEL GUASTAVINO, Architect.**

Price, \$1.25.

[Now Ready: The Second Volume of the "Topical Architecture" Library]

"Door and Window Grilles"

104 Plates: 10 in. x 14½ in.

Uniform with the first volume ["Italian Renaissance Doorways"] of this Library

MARCH 22, 1902

THE next time you pass along the streets of one of our large cities, note what rapid progress is making in the use of wrought-metal grilles, screens and gates of various kinds for the ornamental protection of doorways and the window-openings of lower stories.

The great interest shown in this particular form of artistic artisanship just now is our reason for devoting the second volume of this Library to door and window grilles.

PRICE: Bound in Cloth \$7.50
In Portfolio 6.50

American Architect and Building News Co.
211 Tremont Street, Boston

CODE OF PRACTICE FOR SUB-ESTIMATING AND SUB-CONTRACTING

Adopted by the Master Builders' Association of the City of Boston, Aug. 2, 1894.

ARTICLE I.

Obligation of Principal Contractor to Sub-Contractor.

A principal contractor is under obligation to treat upon an equal basis all estimates which he "receives" prior to putting in his own bid. Estimates must be considered as "received" when they come into a principal contractor's possession, either by his direct solicitation or by being accepted by him. The opening of a bid, knowing it to be such, constitutes receipt of the same.

A principal contractor is under no obligation to use a bid which he has not solicited, accepted, or received, but if he does not wish to use the estimate of a sub-bidder he should decline it, if proffered personally, or should return it unopened if sent to him by mail or otherwise. The retention of a bid should be construed as a receipt of the same.

A principal contractor, when making up his estimate, is not entitled to receive bids from sub-contractors if he is at the same time making himself their competitor by figuring their portion of the contemplated work. It is legitimate for a principal contractor to figure all portions of work, depending upon no one for what are usually known as sub-estimates, but it is not legitimate for him to receive bids from others for sub-work if he is himself figuring those portions independently.

ARTICLE II.

Award of Sub-Contracts.

The principal contractor having been awarded a general contract should immediately award the sub-contracts to the lowest bidder in each branch.

ARTICLE III.

Penalty for not Awarding Contract to Lowest Sub-Bidder.

A principal contractor failing to award a sub-contract to the lowest sub-bidder to whom he is under obligation as previously provided should be liable to pay damages to the said lowest bidder, in amount not less than ten per cent of the amount of the estimate.

Payment of such damages will not relieve the principal contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

ARTICLE V.

Payments to Sub-Contractors.

Unless the contracts made with sub-contractors otherwise provide, payments during the progress of the work should be made by the principal contractor to the sub-contractors upon the same basis of payment, in relation to amount of work performed, as is prescribed in the contract made by the principal contractor with the owner.

Final payment to a sub-contractor should be considered as due at the expiration of thirty days after the completion of his work and its approval by the architect or owner, unless otherwise provided by the sub-contract or agreement.

ARTICLE VII.

Obligation of Sub-Contractor to Principal Contractor.

Should a sub-contractor refuse to contract at the amount of the estimate he has given to a principal contractor who has used the said estimate in good faith, he then should be liable to the said principal contractor for damages in amount not less than the difference between the amount of the estimate which was submitted by him and the amount at which the principal contractor may be obliged to contract the work.

Payment of such damages will not relieve the sub-contractor from liability to discipline under provisions of Article X of the By-Laws of this Association.

ARTICLE X.

Bids to Architects or Owners.

When bids for separate departments of work on a building are solicited by the architect or the owner, they should be submitted with the understanding that they are direct estimates, for which direct contracts are to be made by the owner with the lowest bidder, and no other disposition of such bids should be permitted without consent of the bidder submitting the same.

Sub-bids should be given only to the principal contractors who are estimating the work in question, and should not be left with architects or owners for the inspection and information of principal contractors. Sub-contractors must understand that bids thus left with architects or owners are in great danger of losing their confidential character, and that if they so leave them they cannot claim protection or redress under the first article of this Code.

SUGGESTIONS.

Members of this Association having sub-contracts to let, or material to buy, should, as far as may be consistent with business principles, deal only with members of the Association, or at all events give their fellow-members an opportunity to compete, and then give them the preference, other things being equal.

All bidders should take cognizance of the danger they may be subjected to through the practice, so prevalent in some architects' offices, of making change in plans or specifications, or in both, during the progress of estimating. Correction of this pernicious practice can only be obtained through refusal by contractors to estimate under such conditions.

A true copy.

Attest:

WM. H. SAYWARD,
Secretary, M. B. A.

"THE AMERICAN VIGNOLA"

The Five Orders of Architecture

By WILLIAM R. WARE, Professor of Architecture, Columbia University

Text and Plates, 86 pp., 9"x12". Price, \$3.00

AMERICAN ARCHITECT & BUILDING NEWS CO., Boston, Publishers

The Heliotype Printing Co.

LITHOGRAPHERS, ETC.

211 Tremont Street
Boston

FAC-SIMILE REPRODUCTIONS IN COLOR
OR MONOCHROME A SPECIALTY



Lithography
Heliotype
Color Printing
Photogravure
Maps, Plans, etc.

BEST WORK ONLY
PROMPT DELIVERY
REASONABLE PRICES

WRITE FOR ESTIMATES

[Published February 7, 1903]

PART XII

**“THE
GEORGIAN
PERIOD”**

[PRICE \$6.00]

Containing 47 plates—gelatine, half-tone and line—10" x 14", 36 pages of text enlivened by 64 cuts, and the index for the third Volume.



This Part completes the third and final Volume of a work that critics have agreed to hold worth doing and to have been well done. We ourselves believe it to be a work of real value to the practising architect, for whose daily needs we have prepared it.



In the past we have done all that we could to enable subscribers to procure the work at the lowest practicable cost, and in future will accommodate purchasers in the matter of distributing payment over a reasonable period of time so far as we find it businesslike to do so.



As previously announced, the work now becomes a net publication at \$60.00.



AMERICAN ARCHITECT & BUILDING NEWS CO.

211 Tremont Street, Boston

STANDARD FOR RUBBER INSULATION.



TRADE MARK.
WILLARD L. CANDEE, Mgrs. GEO. T. MANSON, Gen'l Supt.
H. DURANT CHREVER, Sec'y. W. H. HODGINS, Sec'y.

OKONITE INSULATED ELECTRIC LIGHT WIRES

Are pronounced by leading Architects to be SAFE, DURABLE and EASILY ADJUSTED for the inside wiring of PUBLIC and PRIVATE BUILDINGS.

CANDEE WEATHERPROOF WIRES, OKONITE WATERPROOF TAPE, MANSON PROTECTING TAPE.

—SOLE MANUFACTURERS—

THE OKONITE CO., LTD., 253 BROADWAY, NEW YORK.

ESTABLISHED 1868
SKYLIGHTS HAYES METAL LATHING & CO.
71 8TH AVE. NEW YORK.
FIREPROOF WIRE-GLASS WINDOWS.

TRADE MARK **Everlastins** MARK
READY MIXED RED PAINT
Guaranteed the cheapest, most durable and absolutely the best for Buildings, Structures and all work that needs paint.
MEANS & THACHER, 6-8 CUSTOM HOUSE ST., BOSTON
Sole Manufacturers. Sample and prices on request

The Yale Lock.



The Yale Cylinder.

Its operation and development are interestingly described in a little folder which will be sent on request.

The Yale & Towne Mfg. Co.
9, 11 and 13 Murray St.,
New York City.

9361-19



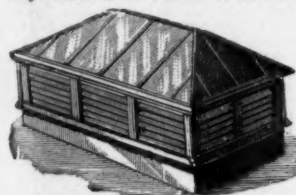
DIXON'S DRAWING PENCILS are perfectly uniform and uniformly perfect; eleven degrees of hardness and softness. Ask for booklet 14.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

The Lovell Window AND Shutter Device

FOR FACTORIES, MILLS, FOUNDRIES, ETC.

THE BEST APPARATUS ON THE MARKET FOR OPENING AND CLOSING MONITOR SASHES.
A LINE OF SASH 500 FEET LONG CAN BE OPERATED FROM ONE STATION IF DESIRED. Adapted to any kind of SASH or WINDOW.



Send for descriptive Leaflet.

MANUFACTURED ONLY BY

THE G. DROUVE CO.
Bridgeport, Conn.

Manufacturers and erectors of all kinds of Sheet Metal Architectural Work. Work erected in all parts of the country. Satisfaction guaranteed. Estimates cheerfully furnished from plans and blue prints. Correspondence solicited.



80-Paged Illustrated Catalogue of over 250 Designs of Superior

WEATHER VANES, TOWER ORNAMENTS, CHURCH CROSSES, FINIALS, Etc., Etc.

Mailed to any address for 2-cent stamp—half the postage.

T. W. JONES, Manufacturer,
18 FLETCHER ST., NEW YORK.

BOOKS:

"Monumental Staircases."

40 Gelatine Plates on bond paper, 9" x 11".
In Envelope. Price, \$5.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.
Publishers.

BOOKS:

"Cathedral of St. John the Divine."

Designs submitted in the First Competition.

57 Plates, folio. Price \$5.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

When the Name

-MERCHANT-

Is stamped on a sheet of roofing tin it means the very best of everything is there—

IN THE PLATE

—not in the advertisement

MERCHANT & CO., Inc.

PHILADELPHIA

New York

Brooklyn

Baltimore

Chicago

HITCHINGS & CO.,

Established 50 years

HORTICULTURAL ARCHITECTS AND BUILDERS

and largest manufacturers of

GREENHOUSE HEATING AND VENTILATING APPARATUS.



The highest awards received at the World's Fair for Horticultural Architecture, Greenhouse Construction and Heating Apparatus. Conservatories, Greenhouses, Palmhouses, etc., erected complete with our Patent Iron Frame Construction.

Send four cents for Illustrated Catalogue.

233 MERCER STREET, N. Y. CITY.

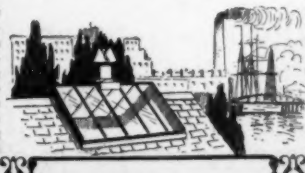
VAN NOORDEN'S

Sheet Metal Skylights

You know the name; the name tells the story—Van Noorden's. It means the most light, non-leaking, non-sweating, fireproof and self-ventilating. Great strength with lightness assured. Superior to all other kinds. Catalogue tells the story; full data is yours when you request it.

E. VAN NOORDEN CO.,

944 Massachusetts Ave., Boston.



JENKINS IMPROVED AUTOMATIC AIR VALVES

Suitable for high or low pressure. Take no more room than an ordinary air cock. Endorsed by the leading steam experts as the best made and the quickest working. All genuine stamped with our Trade Mark.

JENKINS BROTHERS, New York, Boston, Chicago, Philadelphia

Send for
Samples

**SAMSON SPOT CORD**

is our Extra Quality SASH CORD

The colored spot is our trademark

Samson Cordage Works, Boston, Mass.

WARREN'S TRINIDAD ASPHALT

ROOFING "ANCHOR BRAND" PAVING

THE BEST MATERIAL FOR

WARREN CHEMICAL & MFG. CO., 170 Broadway, N. Y.

CRANE VALVES

ESTABLISHED 1855

ELECTRIC HOUSE SERVICE PUMPS

WILLIAM E. QUIMBY

[Incorporated]

141 Broadway, New York

CHICAGO
EDWARD YEOMANS
1141 MONADNCK BLDG.

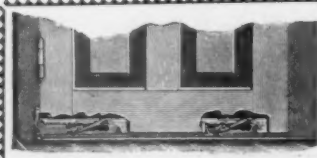
NEW ORLEANS
SAFETY ELECTRIC MFG. CO.
303 MAGAZINE ST.

NATIONAL FIRE-PROOFING CO.

PITTSBURGH
PHILADELPHIA

NEW YORK

BOSTON
CHICAGO



Our Booklet

tells in detail all about The Introstile—"the perfect door strip." Thresholds not necessary. Saves fuel, keeps house cosy, quiet and clean.

Write for illustrated booklet.

The Introstile & Novelty Co.
Marietta, Ohio.

One important advantage furnished by our Counter and Metallic Cabinet work is the large number of improved labor-saving devices we incorporate in it. Being the largest manufacturers in the country of fine filing devices we combine with the most artistic furnishings the most practical appliances for handling all classes of books and papers. Our equipments ensure convenience, economy of space and security. Wooden ones don't. That is why they are so rapidly being superseded.

ART METAL CONSTRUCTION CO.

152 Gifford Ave., Jamestown, N. Y.

ASPHALT FLOORS, ROOFS, SIDEWALKS AND CARRIAGE-WAYS

Of Public Buildings, Hospitals, Warehouses, Stables, Cellars, etc.
Laid with VAL de TRAVERS ROCK ASPHALT,
DURABLE, FIREPROOF AND IMPERVIOUS.
For estimates and list of works executed, apply to
THE NEUCHATEL ASPHALT CO., Limited,
285 BROADWAY - NEW YORK.



Boston Office: 48 Congress St., Room 24.

"CONSERVO"

WOOD PRESERVATIVE

For Posts, Sills, Stable Floors and all Woodwork that is exposed to decay
SAMUEL CABOT, Sole Manufacturer, BOSTON

BINDING.

The Standard Binding of the American Architect is a Cloth binding, which varies in color for the several editions, as follows:—

For the Regular Edition - - Maroon.
" " International Edition - Blue.

The REGULAR EDITION is bound in Semi-annual Volumes.

The INTERNATIONAL EDITION is bound in Quarterly Volumes.

The price for binding is \$2.00 per volume, Semi-Annual or Quarterly. Any variation from our standard practice will entail an increased charge. In every case the Plates are bound all together at the back of the volume to which they belong—the double Plates being mounted upon guards.

Volumes sent to us for Binding will be treated according to this system, unless instructions of a contrary nature are given at the time the work is placed in our hands.

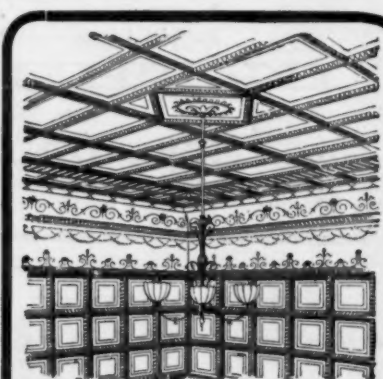
Conservatories,

Greenhouses,

Vineries, Etc.

Designed, erected and heated. Catalogue, also special plans and estimates, on application.

LORD & BURNHAM CO.,
1133 Broadway - - - New York City.



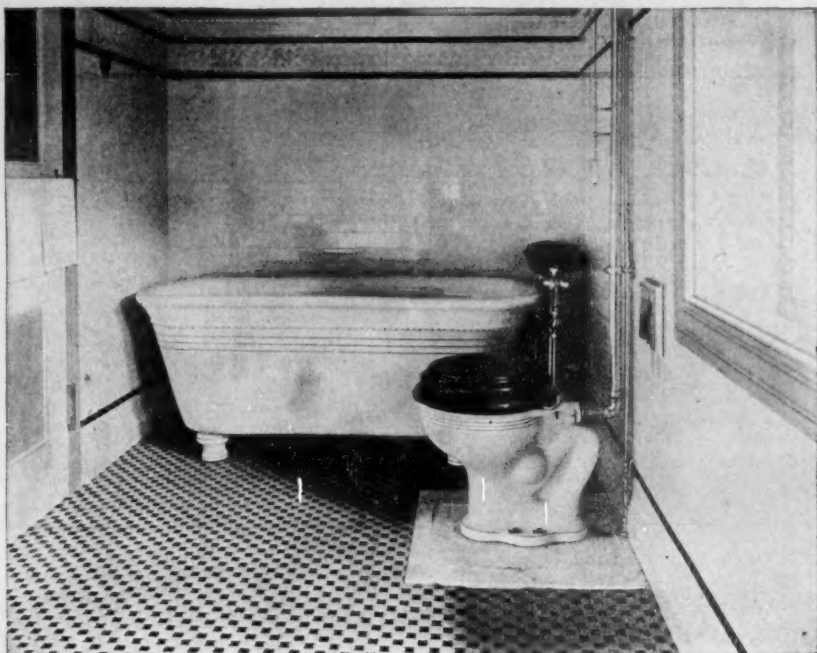
BERGER'S

METAL CEILINGS

Are symmetrical and pleasing to the eye and command the admiration of all. They can be used in all classes of buildings, are easy to apply, and highly ornamental. They don't shrink, crack, get water-soaked, or fall off. They are safe and sanitary. Their durability makes them the most economical ceilings in existence. Our "Classified Designs" embrace a variety of styles, and there is no building that we cannot match in its style of architecture. Send for our booklet "A New Idea in Metal Ceilings," 'tis free.

The Berger Manufacturing Co.
CANTON, OHIO

New York Office: 210 E. 23d St., New York, N. Y.
New England Branch: 178 Federal St., Boston, Mass.



INTERLOCKING RUBBER TILING

as laid by us in the bath-room of a Philadelphia gentleman. Noiseless, non-slippery, sanitary. Cleans perfectly; always bright and fresh. The only tile floor that servants can stand on without making the feet sore. A perfect floor for offices, banking-rooms, libraries, hospital wards, cafés, bath-rooms, billiard-rooms, vestibules, halls, church aisles, piazzas, etc. Laid directly on wood, stone, concrete or iron. Call or write.

New York Belting & Packing Co., Ltd.

New York 25 Park Place
Philadelphia 724 Chestnut St.
Chicago 150 Lake St.
St. Louis 411 No. 3d St.
San Francisco 509-511 Market St.
London, Eng. The B. & S. Folding Gate Co., 19 to 21 Tower St., Upper
St. Martin's Lane, W. C.
Baltimore Baltimore Rubber Co.
101 Hopkins Place.

Smith's Shutterless Automatic Closing Fire-Proof Metal . . . WINDOWS . . .



Our sliding sashes can be made to pivot to permit cleaning from inside of building if desired.

Are the BEST FIRE-PROOF WINDOWS of ANY KIND in the world to-day. They are absolutely FIRE and WEATHER PROOF. They SAVE INSURANCE, REQUIRE NO SHUTTERS, INCREASE and better DIFFUSE LIGHT, cannot be distinguished from the best woodwork, are the ONLY sliding sashes that

CLOSE AND LOCK AUTOMATICALLY

when subjected to a mild degree of heat, and are made in FOURTEEN DIFFERENT STYLES for OFFICE, HOTEL and APARTMENT buildings, FACTORIES, WAREHOUSES, Etc.

WE OPERATE NINE LARGE FACTORIES

Write for Catalogue and information to

SMITH-WARREN CO.
93 Federal St., BOSTON, MASS.

PERSPECTIVES RENDERED

IN PEN-AND-INK AND WATER-COLOR,
WALTER M. CAMPBELL,

8 Beacon St., Boston, Mass.

MASON SAFETY TREAD

The All-Metal Stair Protection

Adopted for New York Subway

AMERICAN MASON SAFETY TREAD CO., BOSTON

J. W. TAYLOR'S PHOTOGRAPH SERIES OF AMERICAN ARCHITECTURE

324 Dearborn Street, CHICAGO, ILL.

E. ELDON DEANE,

Architectural Colorist and Draughtsman.
63 Seymour Building, Fifth Ave., cor. 42d St.
NEW YORK CITY.

Masonry in Modern Work

A "Prolegomenos" on the Function of Masonry in Modern Architectural Structures.

By R. GUASTAVINO, ARCHITECT.

Price, Paper Cover, 30 Cents.

For Sale by the AMERICAN ARCHITECT.



THEATRE VENTILATION

TO BE SUCCESSFUL MUST BE POSITIVE

The air must be distributed with the utmost refinement, the temperature must be automatically controlled and the vitiated air must be immediately removed.

The Fan System insures these results. It is the system which we have perfected during an experience of 30 years, and which we are completely equipped to design and install.

B. F. STURTEVANT CO.
BOSTON, MASS. NEW YORK CHICAGO PHILADELPHIA LONDON 314

CALIFORNIA REDWOOD LUMBER

Approved by Leading Architects
and Makes the Best

SHINGLES PORCH COLUMNS
CLAPBOARDS SASH
FINISH DOORS

BARTLETT LUMBER COMPANY
ROOM 409, EXCHANGE BLDG., STATE ST., BOSTON, MASS.

ROCKLAND-ROCKPORT LIME COMPANY

Plants Located at Rockland, Rockport and Thomaston, Maine

Manufacturers of the best grade of "State of
Maine Lime."

Rail shipments made direct from works to
any point desired

Prompt shipments also made in cargo lots to
any port on the Atlantic coast

This Company owns and has in com-
mission six steel barges and an ocean
going steel tug, by means of which the
New York Market is promptly supplied
with fresh lime at all times

MAIN OFFICE

ROCKLAND, MAINE

New York Office

Greenpoint Avenue and Newtowne Creek, Brooklyn, N. Y.

Orders for both rail and water shipment will receive prompt and careful attention

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

power-house, a machine-shop, an office-building and
a chemical laboratory. Cost, \$100,000.

Centreville, Md.—C. P. Walters will begin in
the course of two weeks building three large stores for
E. M. Forman, on Commerce St. Work on the
Queen Anne's and Centreville National Bank build-
ings will commence about the middle of the month.
The demand for brickmasons is greater than the
supply at present.

Chicago, Ill.—A new open hearth furnace plant,
blooming mill and finishing mill will be constructed
at an estimated cost of \$3,000,000 at South Chicago,
by the U. S. Steel Co.

A three-million-dollar hotel building is planned
for erection upon the site now occupied by the
Victoria, on Michigan Ave. It is reported that
Eastern interests have been made parties to the
deal and Levy Mayer is in charge of the negotia-

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

tions pending between the promoters and the Mc-
Cormick estate, which owns the property involved.

Cleveland, O.—Two school-houses are to be erected,
one at Brandon St., near Paul St., and the other at
Harvard St. and Marcelline Ave.; probable cost,
\$40,000 each.

It is reported that the Board of Education has
decided to erect the following structures: two-
story school on Doan St., at a cost of \$65,000;
two-story brick school on Mound St., \$60,000; two-
story brick school on Locust St., \$34,000; 18-room
school at Willson and White Aves., \$89,000; an
addition to the Sackett School, \$36,000.

Dallas, Tex.—The Dallas Scottish Rite Cathedral
Assoc. has organized to erect a Masonic Temple at
Harwood and Wood Sts.; probable cost, from \$75,-
000 to \$100,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Grinnell, Ia.—Andrew Carnegie has given Iowa
College \$50,000 toward the erection of a library.

Hannibal, Mo.—A site has been selected at Broad-
way and 11th St., for the erection of a \$25,000 high
school.

Homestead, Pa.—The Carnegie Steel Co. will erect
an additional 140-inch plate mill and improve the 32-
inch mill and the boiler plant; all at an estimated
cost of \$1,135,000.

Lancaster, O.—Lincoln Fritter has had plans pre-
pared for a three-story brick building to be erected
at High St. and 1st Ave.; cost, \$50,000.

Litchfield, Conn.—The Litchfield Springs Co.,
capitalized at \$1,000,000, owns a large tract of land
which fronts on Bantam Lake. The erection of a
combination hotel and sanatorium, which will be
used as a resort for health and rest, will shortly
be undertaken.

Lorain, O.—The U. S. Steel Co. will erect here two
additional blast furnaces with accessory works, addi-
tional rolling mills, and a new tube and pipe mill,
at an estimated cost of \$8,616,096.

Lynn, Mass.—The Thomson-Houston Electric Co.
has plans out for a big steel and brick factory on
Fairchild St., 500' x 120', and there are rumors
afoot that the company intends erecting an im-
mense factory, 800 feet long, on the marshes, where
turbine engines will be manufactured.

McKeesport, Pa.—The entire rebuilding is to take
place of the present rolling mills and tube and pipe
mills of the U. S. Steel Co., together with the addi-
tion of one new blast furnace, an additional Besse-
mer converter and the installation of a new water
and power plant; all at an estimated cost of \$9,265,-
662.

New York, N. Y.—Plans have been filed for altera-
tions to the eleven-story office-building No. 34 Pine
St., owned and occupied by the Hanover Insurance
Co., to cost \$175,000.

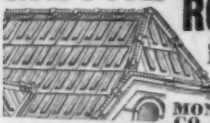
The New York and New Jersey Railway Co.,
which will operate trolley cars through the tunnel
now being built under the North River, will have a

PAINT THAT LASTS

Many of the most eminent chemists and painters of the country to-
day admit that there is no painting compound that will last like silex,
zinc and lead ground in strictly pure linseed oil. Pure lead alone
chalks quickly; lead and zinc will flake or peel; Breinig's Lithogen
Silicate Paint and Lithogen Lead made of silex, zinc and lead,
outlast everything else. Sole Manufacturers, The Bridgeport Wood
Finishing Co., New Milford, Ct., New York, Chicago, Philadelphia.

SILEX ZINC LEAD

METAL SHINGLE-ROOFING



Best for house
of hard, fire-proof.
Easily laid. Cheaper
than slate or wood.
Prices, catalogue and
testimonials FREE.
**MONTROSS SHINGLE
CO., Camden, N. J.**



Architectural Sheet Metal
Ornamental Work
Cornices, Skylights
Tile Roofing
Statuary

Send for illustrated
catalogue.
Architects' special
designs accurately
produced in sheet
metal.

Write for our prices.

W. H. MULLINS

107 Depot St.
SALEM, - OHIO

PASSAIC ROLLING MILL CO.,
PATerson, N. J.

Steel Beams

4 inches
to
20 inches
deep.

ALL STRUCTURAL SHAPES.

NEW YORK OFFICE 45 BROADWAY.
Boston Office, No. 31 State St.

EXPANDED METAL LOCKERS

and WARDROBES OF METAL

Should be included in
your specifications.

MERRITT & CO.

1011 Ridge Avenue, PHILADELPHIA

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

terminal at Hoboken, near the ferry, and another at the Pennsylvania Railroad Company's ferry in Jersey City.

H. J. Hardenberg has drawn plans for the proposed home of the Harmonie Club, which will be built on the south side of 69th St., just east of 5th Ave. It will be five or six stories high.

The 2 four-story houses Nos. 15 and 17 W. 18th St. have been sold, and the owner intends to erect a ten-story store and loft building.

Isaac and Max S. Boehm have bought the property at the corner of 96th St. and Madison Ave. An apartment-house and two American basement dwelling-houses will be built on the premises.

Clinton & Russell, 32 Nassau St., are preparing plans for a fifteen-story office-building to be erected on the triangular plot at the junction of Beaver, Wall and Pearl Sts. for the Century Realty Co. and William F. Havemeyer. The general contract has been awarded to the Remington Construction Co., 115 Broadway.

Mrs. J. R. Drexel recently purchased the property at Nos. 1 and 3 E. 62d St., on which a new house will be erected for her. The work of razing the present buildings will be begun about May 1, and it is expected that her new house will be ready for occupancy October 1, 1904.

New city buildings, costing nearly \$7,000,000, have been authorized by the Board of Estimate with the stipulation that, while only the preliminary work shall begin at once, the actual undertakings will start on July 1.

The Board of Estimate has authorized the expenditure of \$3,000,000 for the new Bellevue Hospital, and an amount sufficient to enable the Board to have architectural plans drawn and to provide for all work of a preliminary character has been appropriated.

The Jauncey Co. will erect an eight-story office-building on the southeast corner of Wall and Water Sts. Clinton & Russell, 32 Nassau St., will probably be the architects for the new building.

Orange, N. J.—It is reported that the Woman's Club of the Oranges has formed a corporation to erect a new club-house. The sum of \$14,000 has been secured, and after the increase of that amount to \$20,000 the club will begin the work of construction. Several sites are under consideration and it is not yet decided whether the new building shall be located here or East Orange.

Philadelphia, Pa.—The Equitable Warehousing Co., capital \$250,000 will erect a five-story brick warehouse at 5th and Willow Sts.

The time for submitting competitive plans for the new building for the Bucks County Historical Society has been extended until April 1. A number of architects are preparing plans.

Henderson Bros. have secured the contract for erecting the smallpox pavilion of the new Municipal Hospital for Contagious Diseases, to be erected on the Macalester Farm. Cost, \$140,000.

Twelve three-story dwelling-houses will be built by H. H. Heist, 1417 W. Allegheny Ave., at Colwyn St. and York Road at an estimated cost of \$40,000. They will be constructed of brick and stone and have slag roof, hot air heat, open plumbing, etc.



Schiff Mansion, Fifth Ave., New York.

Structural Steel

FOR EVERY
PURPOSE

**American
Bridge
Company**

OF NEW YORK

Engineers and
Contractors

Buildings

EXPANDED METAL

For Fireproofing and Concrete Construction

ASSOCIATED EXPANDED METAL COMPANIES

Room 1209, 256 Broadway
NEW YORK

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Plans and specifications have been drawn by Edwin P. Durang for a new wing to St. Agnes Hospital, Broad and Mifflin Sts., and for extensive alterations to the present structure. Improvements will cost about \$175,000 and architect has all details in hand and will soon invite estimates on general contract.

It is stated that E. S. Rodley has had plans prepared for 9 dwelling-houses which he will erect at 11th St. and Lehigh Ave. Stearns & Castor are the architects and designs call for three-story houses, 18' x 60', to cost \$90,000. Work to start soon.

Philippi, W. Va.—The contract for the erection of the court-house here has been awarded to John P. Conn, of Uniontown, Pa., for \$125,000.

Pittsburgh, Pa.—Plans have been approved for the 2 schools to be erected at Braddock Ave. and Waverly St., and Sheridan Ave. and Fair Oaks St., at a cost of \$100,000 each.

It is stated that Joseph Ramsey, Jr., president of the Wabash Railroad Co., has approved the plans for the new station in this city, and the contract for its construction has been awarded to the George A. Fuller Co., of New York. The structure is to be completed in ten months and will cost over \$1,000,000.

D. L. Clark Co. expects to erect a twelve-story building at 5th Ave. and Huey St., at a cost of \$100,000.

It is stated that Jacob Weiskircher will erect a \$50,000 hotel at 5th Ave. and Locust St.

Plymouth, N. H.—A new high-school building is to be erected at a sum not to exceed \$40,000. The site selected will be purchased from the Webster estate and is northwest from the present State Normal school building.

Reading, Pa.—Arrangements are being made for the erection of a stone and brick high school, to cost \$225,000.

San Francisco, Cal.—The San Francisco Railroad, terminal and ferry companies have secured more than 76 acres, comprising between 60 and 70 blocks, at a cost of \$1,000,000, for a freight terminal. As the greater part of this property is submerged at high tide, it will cost \$2,000,000, it is said, to improve it.

Seattle, Wash.—Hastie & Dungan, of Spokane, have received the contract for the erection of the Hotel Standler, to be a four-story brick structure, costing \$120,000.

Snow Hill, Md.—The Snow Hill Basket Manufacturing Co. has been organized. The factory will be established at once and will begin business as soon as the building can be erected and the machinery installed. It will give employment to about 250 or 300 hands.

St. Louis, Mo.—Charles A. Ball, secretary of the New York Commission for the World's Fair, and C. L. Daggett, of the New York State Architect's office, have been here looking over the site for the New York building at the fair. It is estimated that the building will cost about \$60,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Toledo, O.—Wallack Bros. will probably erect a six-story addition to the Jefferson Hotel; cost, \$130,000.

Isaac Kaender is having plans prepared for a three-story brick warehouse to be erected at Short and Huron Sts., at a cost of \$20,000.

Turner, Me.—By the will of James M. Leavitt, a retired millionaire of Brooklyn, N. Y., who died recently, the Leavitt Institute at this place receives \$40,000.

Wilkinsburg, Pa.—It is stated that A. A. Quintette will erect an apartment of four stories, to cost \$25,000. Architect, A. Dudgeon & Sons.

HOUSES.

New York, N. Y.—E. Sixty-first St., Nos. 55-59, three-sty' & attic st. front dwell. & stable, 50' x 57', tile roof; \$75,000; o., Lewis Nixon, 43 Cedar St.; a., Ernest Flagg, 35 Wall St.

Forest Ave., nr. Home St., 4 three-sty' bk. dwells, 20' x 54'; \$32,000; o., Crockett & Hamilton, 2 E. 58th St.; a., W. C. Dickerson, 3d Ave. & 149th St.

Park Ave., nr. 183d St., 4 two-sty' fr. dwells, 18' x 44' each; \$14,000; o., William Hodgson; a., J. J. Vreeland.

Morris Ave., nr. Home St., 2 two-sty' & base. bk. dwells, 16' 8" x 50'; \$15,000; o., Herman Waner; a., W. C. Dickerson.

OFFICE BUILDINGS.

New York, N. Y.—Broadway and Thirty-fourth St., five-sty' bk. office with store, 31' 11" x 50' 6" irregular; \$40,000; o., H. Siegel; a., W. H. Hume & Son.

STORES.

New York, N. Y.—Mott St., No. 5, six-sty' bk. loft & stores, 25' x 77' 7" & 97' 11"; \$25,000; o., Essie Silverstone, 188 Park Row; a., Richard Rohl, 128 Bible House.

TENEMENT-HOUSES.

New York, N. Y.—Broome St., cor. Norfolk St., six-sty' bk. tenement, 45' 1" x 50' 2"; \$60,000; o., Samuel Barkins, 123 Bowery; a., Alfred E. Barkins, 1 Union Sq. W.

One Hundred and Eleventh St., nr. Broadway, six-sty' bk. tenement, 87' 11" x 100'; plastic slate roof; \$150,000; o., Lorenz Weiher, 76 E. 86th St.; a., Moore & Landseidel, 148th St. & 3d Ave.

Seventh St., nr. Lewis St., six-sty' bk. tenement, 40' x 84' 6"; \$40,000; o., Ignatz Roth, 21 W. Houston St.; a., Jacob H. Amster, 875 Washington Ave.

Amsterdam Ave., cor. 107th St., six-sty' bk. tenement, 50' 7" x 90'; plastic slate roof; \$125,000; o., Wm. J. Casey, 1944 or 1949 Seventh Ave.; a., Neville & Bagge, 217 W. 125th St.

Fourth St., nr. 1st Ave., six-sty' bk. tenement & stores, 49' 9" x 83' 2"; \$40,000; o., Hillman & Golding, 231 Henry St.; a., Sess & Smallheiser, 23 Park Row.

One Hundred and Twelfth St., nr. Amsterdam Ave., eight-sty' bk. tenement, 50' x 80' 11"; plastic slate roof; \$175,000; o., Frank Woytack, 1311 Third Ave.; a., Neville & Bagge, 217 W. 125th St.

"BENEDICT-NICKEL"
Seamless Tubing
for high-class exposed
plumbing. "White metal
clear through."
BENEDICT & BURNHAM MFG. CO.
Waterbury, Conn.
New York, 255 Broadway
Boston
172 High Street



Manufactured by
DAVID CRAIG, BOSTON, MASS.

BUILDING INTELLIGENCE.

(Tenement-Houses Continued)

Barratto St., nr. Home St., five-st'y bk. tenement, 25' x 88'; \$20,000; o. Graham & Lytle; a. Harry T. Howell.

E. Eighth St., Nos. 376-378, six-st'y bk. tenement, 39' 7" x 84' 0"; \$40,000; o. J. R. Simpson; a. Bernstein & Bernstein.

PROPOSALS.

Treasury Department, Office of the Supervising Architect, March 4, 1903. Notice is hereby given that the time for opening the bids for the enlargement (including plumbing, heating apparatus and electric conduits and wiring) of the U. S. Post-office, etc., at Minneapolis, Minn., has been extended from March 19, 1903, to 3 o'clock P. M. April 6, 1903. JAMES KNOX TAYLOR, Supervising Architect. 1420

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 7, 1903. Notice is hereby given that the time for opening the bids for the completion of the U. S. Post-office building at Richmond, Kentucky, has been extended from March 23, 1903, to 3 o'clock P. M. April 8, 1903. JAMES KNOX TAYLOR, Supervising Architect. 1420

Treasury Department, Office of the Supervising Architect, Washington, D. C., March 7, 1903. Notice is hereby given that the time for opening the bids for the construction of the extension to the U. S. Post office at Kalamazoo, Michigan, has been extended from March 24, 1903, to 3 o'clock P. M., April 9, 1903. JAMES KNOX TAYLOR, Supervising Architect. 1420

CONSTRUCTION, HEATING, PLUMBING, ETC.

[At Fort McRee, Fla.]
Bids are wanted March 31 for constructing, including heating, plumbing and electric wiring 1 lavatory; also plumbing 1 set officers' quarters and 1 barrack building at this post. W. E. COLE, Q. M., Fort Barrancas, Fla. 1420

CONSTRUCTION.

[At Ames, Ia.]
Bids will be received March 26 by the Board of Trustees of the Iowa State College for erecting, except heating, plumbing and electric work, a four-story stone central building, a judging pavilion, 3 greenhouses and an addition to agricultural hall. Proudfoot & Bird, architects, 712 Crocker Building, Des Moines. 1420

GRANITE.

[At Boston, Mass.]
Sealed proposals will be received at the office of the Light-house Engineer, No. 23, Pemberton Square, Room 1017, Boston, Mass., until March 26, 1903, for furnishing and delivering granite for the proposed light and fog signal tower on The Graves, entrance to the new Broad Sound Channel in Boston Harbor, Mass., in accordance with specifications, copies of which, with blank proposals and other information may be had upon application to LIEUT. COL. W. S. STANTON, U. S. A., Engineer Second Light-house District. 1420

GRADING, ETC.

[At Muncie, Ind.]
Bids will be received March 23 by the Common Council for improving a portion of Penn St. by grading and macadamizing the roadway and constructing a 5-foot cement sidewalk; also for grading and constructing 5-foot cement sidewalks on a portion of Grant St. R. G. HICKOK, City Clk. 1420

COURT-HOUSE.

[At Condon, Ore.]
Bids will be received March 31 by the Co. Court for erecting a brick court-house. Chas. H. Burggraf, architect, Albany, Ore. EDW. DUM, Co. Judge. 1420

HOSPITAL.

[At Cherokee, Ia.]
Bids will be received March 24 by E. Hornbrook



Copyright 1903, by Dudley Walker.

ART PHOTOGRAPH

From human life at its very height. Pictures the joy of living; breathes with American spirit. The successful blending of girlish grace and masterful strength.

The way to own one of these beautiful art photographs, which are not process reproductions but are 9x7 1/2 inch photographs mounted on double mats, worthy of and ready for framing, is to send 25 cents in coin together with the name of the publication in which you read this advertisement to Dudley Walker, 506 Monadnock Building, Chicago, Illinois. On the back of the mat an eyelet is provided so that "Her First Run" may be immediately hung without further inconvenience or expense.

PROPOSALS.

for erecting a hospital, including heating, plumbing, lighting plant, etc. C. F. Lueder, archt., Cherokee. 1420

PIPE, PIPE-FITTINGS, ETC.

[At Mare Island, Cal.]
Bids will be received March 24 at the Bureau of Supplies and Accounts, Navy Dept., Washington, D. C., for furnishing at the Navy Yard, Mare Island, Cal., a quantity of pipe, pipe fittings, cement, valves, etc. A. S. KENNY, Paymaster Gen., U. S. Navy. 1420

MASONIC TEMPLE.

[At Chillicothe, O.]
Bids will be received March 20 by D. H. Roche, Pres. Masonic Temple Co., for furnishing material and erecting a Masonic Temple, including heating, plumbing, electrical work, sewer, ironwork, etc. 1420

COURT-HOUSE.

[At Trenton, Mo.]
Notice is hereby given that sealed bids will be received at the County Clerk's office, Trenton, Mo., until March 23, 1903, for all of the labor and materials required in the erection and completion of a court-house, also jail and jailor's residence, located at Trenton, Grundy County, Mo., in accordance with the plans, details and specifications prepared and furnished by George A. Berlinghof, of Beatrice, Neb., acting superintendent for said Grundy County, and now on file at the office of the County Clerk. Bids or proposals for the steam heating apparatus, plumbing and gas-piping to be separate and distinct from the building bid. GEORGE A. BERLINGHOF, Superintendent. 1420

SCHOOL.

[At Cleveland, O.]
Bids are wanted March 30 for furnishing material for erecting a school on Sumner St., including plumbing, gasfitting, sewers, etc. STARR CADWALLADER, School Dir. Bd. of Educ. 1421

SCHOOL.

[At Grand Forks, N. D.]
It is stated that bids are wanted April 1 for erecting a school. J. B. DE REMER, Herald Building. 1421

WALKS AND ROADS.

[At New Bedford, Mass.]
Office Constructing Quartermaster, 209 Thames St., Newport, R. I. Sealed proposals will be received

PROPOSALS.

here until April 6, 1903, for constructing granolithic walks and macadam roads at Fort Rodman, New Bedford, Mass. Information furnished on application. CAPT. THOMAS H. SLAVENS, Qr. Mr. 1421

HOTEL.

[At Bemidji, Minn.]
H. E. Brinkman will receive bids until April 3 for the erection of a three-story brick hotel from plans by J. Friedlander, architect, of Grand Forks, N. D. 1421

BUILDINGS.

[At Alexandria, La.]
Bids are wanted March 31 for erecting 2 three-story main brick buildings, 36' x 180', and several one, two, three-story brick buildings for the Colored Insane Asylum. W. W. WHITTINGTON, JR., Sec'y Bd. of Administrators of the Insane Asylum for the Colored People of State of Louisiana. 1421

PUMPS, CONDENSER, ETC.

[At Xenia, O.]
Bids will be received April 9 by the Trustees of Ohio Soldiers' and Sailors' Orphans' Home for furnishing, erecting and installing hot water circulating pumps, condenser, expansion tank, vacuum pump, pipe and fittings, pipe covering, etc. ORIN C. BAKER, Financial Officer. 1422

CEMENT.

[At Wheeling, W. Va.]
U. S. Engineer Office, Wheeling, W. Va. Sealed proposals for furnishing and delivering about 32,000 barrels of American Portland cement for Ohio River dams will be received here until March 23, 1903. Information furnished on application. W. E. CRAIGHILL, Capt., Engrs. 1420

BUILDING.

[At Charleston, S. C.]
Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, until April 4, 1903, for constructing a brick and steel building for machine, boiler and blacksmith shops, Navy Yard, Charleston, S. C. Appropriation, \$342,000. Plans and specifications can be seen at the Bureau or the navy yard named, or will be furnished by the Bureau upon deposit of \$50 to secure their return. MORDECAI T. ENDICOTT, chief of bureau. 1421

BUILDING.

[At New York, N. Y.]
Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, until March 28, 1903, for constructing an addition to building No. 41 at the Navy Yard, New York. Estimated cost, \$25,000. Plans and specifications can be seen at the Bureau, or will be furnished by the Commandant of the navy yard named upon deposit of \$15 to secure their return. MORDECAI T. ENDICOTT, chief of bureau. 1421

BRIDGE.

[At Washington, D. C.]
U. S. Engineer Office, 2001 I St., N. W., Washington, D. C. Sealed proposals for construction of a highway bridge across Potomac River at Washington, D. C., will be received here until March 27, 1903. Information furnished intending bidders on application. CHAS. J. ALLEN, Lt. Col., Engrs. 1421

POWER HOUSE.

[At Merrill, Pa.]
U. S. Engineer Office, Wheeling, W. Va. Sealed proposals for building a power house, except foundation, at Dam No. 6, Ohio River, near Merrill, Pa., will be received here until March 27, 1903. Information furnished on application. W. E. CRAIGHILL, capt., engr. 1421

HOSPITAL.

[At Fort Lincoln, N. D.]
Office of Chief Q. M., St. Paul, Minn. Sealed proposals will be received at this office until March 23, 1903, for the construction of a hospital at Fort Lincoln, N. D. Plans and specifications may be seen and blank proposals with full instructions, had upon application here, or at the office of the Constructing Quartermaster, Bismarck, N. D. GEO. E. POND, C. Q. M. 1420



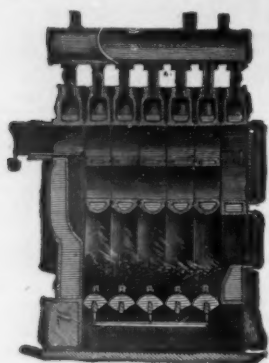
**RICHEY
BROWNE
& DONALD**

**IRON AND
BRONZE**

Stairs
Elevator Enclosures
Entrance Doors
Bank Counter Railings
Grilles, etc.

Borden and Review Aves.
Long Island City, N. Y.

Elevator Enclosures, Townsend Building, New York City, C. L. W. Eidlitz, Architect.



THE H. B. SMITH CO. 133-135 ...
Centre Street,
New York.
MANUFACTURERS.

Steam and Water
Heating Apparatus,

Factory: Westfield, Mass.

ESTABLISHED 1853.

Send for Catalogue.

NEW YORK, PROVIDENCE,
PHILADELPHIA.

"The American Vignola"

The Five Orders of Architecture

BY

WILLIAM R. WARE

Professor of Architecture, Columbia University

Text and Plates 86 pp., 9"x12"

PRICE, 3.00

American Architect and Building News Co.
PUBLISHERS



BUTCHER'S BOSTON POLISH
is the best finish for
FLOORS . . .

Interior Woodwork and Furniture

Circulars Sent on Application
For Sale by Dealers in Painters' Supplies

MANUFACTURED BY THE
BUTCHER POLISH CO.

356 Atlantic Ave., Boston, Mass.

Our No. 3 Reviver is a Superior Finish for Kitchen and Piazza Floors

Are You Going Abroad this Year?

If you are, you could not better prepare yourself to benefit fully by the opportunities than by reading the series of papers enumerated below, which have appeared in the American Architect from time to time. As these notes of travel have been written by architects and architectural students they are far better for your purpose than guide-books. They are full of hints as to how to travel at small cost; how to reach points of interest; how to avoid overlooking things worthy of observation.

"Hints on Travelling."—Four papers, beginning with No. 999.

"An Architectural Knockabout. I."—Seven papers [Illustrated], beginning with No. 706.
[This series is out of print.]

"An Architectural Knockabout. II."—Eight papers [Illustrated], beginning with No. 908.

"Everyday Italy."—Four papers [Illustrated], beginning with No. 1051.

"A Trip Abroad."—Five papers, beginning with No. 312.

"An Editor's Trip Abroad."—Fourteen papers, beginning with No. 548.

"A Run Through Spain."—Fourteen papers [Illustrated], beginning with No. 779.

"An Architect's Journey in Europe."—Nine papers [Illustrated], beginning with No. 50.

"An Architectural Summer School Abroad."—Ten papers [Illustrated], beginning with No. 1127.

"Spanish Architecture."—Thirteen papers [Illustrated], beginning with No. 407.

"A Corner of Old France."—Four papers [Illustrated], beginning with No. 1289.

"Italian Cities."—Thirteen papers [Illustrated], beginning with No. 637.

"A Splendid Trip," and "Sketches on the Wing."—Two papers [Illustrated]. Nos. 183 and 125.

We earnestly advise any intending traveller to read the above mentioned papers, most of which we can still supply.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

MINERAL WOOL

FIRE, SOUND and VERMIN PROOF INSULATOR.

Samples and Circulars Free.

U. S. Mineral Wool Co., 143 Liberty Street,
NEW YORK.

"Italian Renaissance Doorways"

104 PLATES, 10 x 14 1-2 inches

Uniform with the second Volume ["Door and Window Grilles"] of the Topical Architecture Library.

Price, bound in Cloth . . . \$7.50
" in Portfolio . . . 6.50

American Architect and Building News Co., Publishers
211 Tremont Street, Boston

Professional Ethics.

The following . . .

. . . CODE OF ETHICS . . .

Prepared in Conformity with the Best Standards of Practice, and Recommended to its Members by the Boston Society of Architects, was . . .

ADOPTED BY THE SOCIETY, FEBRUARY 1 . . . 1895. . .

SECTION 1. No Member should enter into partnership, in any form or degree, with any builder, contractor, or manufacturer.

SECTION 2. A Member having any ownership in any building material, device or invention, proposed to be used on work for which he is architect, should inform his employer of the fact of such ownership.

SECTION 3. No Member should be a party to a building contract except as "owner."

SECTION 4. No Member should guarantee an estimate or contract by personal bond.

SECTION 5. It is unprofessional to offer drawings or other services "on approval" and without adequate pecuniary compensation.

SECTION 6. It is unprofessional to advertise in any other way than by a notice giving name, address, profession, and office hours, and special branch (if such) of practice.

SECTION 7. It is unprofessional to make alterations of a building designed by another architect, within ten years of its completion, without ascertaining that the owner refuses to employ the original designer, or, in event of the property having changed hands, without due notice to the said designer.

SECTION 8. It is unprofessional to attempt to supplant an architect after definite steps have been taken toward his employment.

SECTION 9. It is unprofessional for a Member to criticise in the public prints the professional conduct or work of another architect except over his own name or under the authority of a professional journal.

SECTION 10. It is unprofessional to furnish designs in competition for private work or for public work, unless for proper compensation, and unless a competent professional adviser is employed to draw up the "conditions" and assist in the award.

SECTION 11. No Member should submit drawings except as an original contributor in any duly instituted competition, or attempt to secure any work for which such a competition remains undecided.

SECTION 12. The American Institute of Architects' "schedule of charges" represents minimum rates for full, faithful and competent service. It is the duty of every architect to charge higher rates whenever the demand for his services will justify the increase, rather than to accept work to which he cannot give proper personal attention.

SECTION 13. No Member shall compete in amount of commission, or offer to work for less than another, in order to secure the work.

SECTION 14. It is unprofessional to enter into competition with or to consult with an architect who has been dishonorably expelled from the "Institute" or "Society."

SECTION 15. The assumption of the title of "Architect" should be held to mean that the bearer has the professional knowledge and natural ability needed for the proper invention, illustration and supervision of all building operations which he may undertake.

SECTION 16. A Member should so conduct his practice as to forward the cause of professional education and render all possible help to juniors, draughtsmen and students.

NEW ENGLAND MATERIAL-MEN AND CONTRACTORS.

BLUE PRINTING.

B. L. MAKEPEACE,
345 Washington St., Boston, Mass.
CHAS. E. MOSS,
Rapid Printing Papers,
38 Broad St., Boston.

CHURCH MEMORIAL WINDOWS.

REDDING, BAIRD & CO.,
83 Franklin St., Boston, Mass.

CONTRACTOR & BUILDER.

McKAY & WOOLNER,
19 Harvard Place, Boston, Mass.
WILLIAM L. RUTAN,
1016 Tremont Bldg., Boston.

DOORS, WINDOWS, ETC.

E. A. CARLISLE, POPE & CO.,
2 Sudbury St., Boston, Mass.

ELECTRICAL CONTRACTORS.

ERICKSON ELECTRIC EQUIPMENT CO.,
280 Devonshire St., Boston.

FIRE-ESCAPES.

STANDARD FIRE-ESCAPE & MFG CO.,
120 Milk St., Boston, Mass.

MARBLE DEALERS.

COLUMBIAN MARBLE QUARRYING CO.,
(L. M. Glover, Agent)
220 Devonshire St., Boston, Mass.

MASONS AND BUILDERS.

MORRILL & WHITON CONSTRUCTION CO.,
35 Federal St., Boston, Mass.

MODELLING AND ORNAMENTAL PLASTER.

SLEEP, ELLIOT & KING CO.,
351 Cambridge St., Boston.

PLASTERERS.

GALLAGHER & MUNRO CO.,
166 Devonshire St., Boston, Mass.

ORNAMENTAL PLASTER-INC.

HERBERT FOWLE,
43 Bristol St., Boston, Mass.

PHOTOGRAPHY (Architectural and Commercial).

LEON E. DADMUN,
169 Tremont St., Boston, Mass.

PORTABLE OVENS.

H. A. JOHNSON & CO.,
224 State St., Boston, Mass.

ROOFING DUCK.

C. H. BATCHELDER & CO.,
234 State St., Boston, Mass.

SASH CORD.

SILVER LAKE CO.,
78 Chauncy St., Boston.

SEAM-FACE GRANITE.

GILBRETH SEAM-FACE GRANITE CO.,
Park Row Building, New York
176 Federal St., Boston.

STABLE FIXTURES.

BROAD GAUGE IRON STALL & VANE WORKS,
33 Elm St., Boston, Mass.

STONE CARVING AND MOD-ELLING.

HUGH CAIRNS,
48A Sudbury Street, Boston.

TELEPHONES.

S. H. COUCH CO.,
156 Pearl St., Boston, Mass.
(Send for Circular A.)

WATERPROOF CELLARS.

FRANK B. GILBRETH,
Park Row Bldg., New York.
176 Federal St., Boston.



Otis Elevators

Standard the world over.

Automatic Electric Elevators

with push-button control. Safe and simple in operation.

Electric Dumb Waiters

with push-button control.

Hydraulic

Electric

Steam

Belted

}

Passenger or

Freight

Elevators

for every service

OTIS ELEVATOR COMPANY
71 Broadway, New York
Branch offices throughout the country.

BRONZE

JNO. WILLIAMS
BRONZE FOUNDRY AND WORKS
WROUGHT IRON WORKS
544 to 556 WEST 27th STREET, NEW YORK

WROUGHT IRON

BINDING.

The Standard Binding of the *American Architect* is a Cloth binding, which varies in color for the several editions, as follows:—

For the Regular Edition - - - - - Maroon.
" " International Edition - - - - - Blue.

The REGULAR EDITION is bound in Semi-annual Volumes.

The INTERNATIONAL EDITION is bound in Quarterly Volumes.

The price for binding is \$2.00 per volume, Semi-Annual or Quarterly. Any variation from our standard practice will entail an increased charge.

In every case the Plates are bound all together at the back of the volume to which they belong—the Double Plates being mounted upon guards.

Volumes sent to us for binding will be treated according to this system, unless instructions of a contrary nature are given at the time the work is placed in our hands.

THE
Northwestern Terra-Cotta Co.
Manufacturers of
Architectural Terra-Cotta.

WORKS & MAIN OFFICE:
Cor. Olybourn & Wright-wood Avenues.

CITY OFFICES:
Room 1118 Bookery Bldg
cor. La Salle & Adams St

CHICAGO.
Estimates given on application. Send for Catalogue and Samples.

PERTH AMBOY
TERRA-COTTA COMPANY,
—OF—
PERTH AMBOY, NEW JERSEY.
OFFICE, 160 Fifth Ave., NEW YORK.

BOSTON AGENTS:
WALDO BROS., 102 MILK STREET.

THE
LIBRARY of CONGRESS,
WASHINGTON, D. C.

Architects: Smithmyer & Pelz:
P. J. Pelz; E. P. Casey.

Twenty Gelatine Plates, in Portfolio,
14" x 16 1/2".

PRICE - - \$5.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

Cathedral of St. John the Divine.

NEW YORK, N. Y.

Illustrations of the competitive designs for the great Protestant Episcopal Cathedral, now building on Bloomingdale Heights, New York

In all, fifty-seven plates [loose], 14 x 20 inches, printed on plate-paper.

PRICE, \$2.50 PER SET.

American Architect and Building News Co.,
BOSTON, MASS.

[See Alphabetical Index on Cover 2 for Pagination.]

CLASSIFIED ADVERTISEMENTS.

[Advertisers can be indexed only under a single head free of charge.]

ARCHITECTURAL METALWORK. Mullins, W. H., Salem, O. ARCHITECT'L ORNAMENTATION. Lombard & Co., A. P., Boston ART METALWORK. Art Metal Construction Co., Jamestown, N. Y. ART PHOTOGRAPHY. Walker, Dudley, Chicago, Ill. ASPHALT. Nuchatel Asphalt Co., New York... ASPHALT ROOFING. Warren Chemical & Mfg. Co., N. Y. BLUE PRINTS. Makepeace, B. L., Boston... Moss, Chas. E., Boston... Spaulding Print Paper Co., Boston... (eow) BRASS FINISHERS. Marble Co., W. P., Boston... BLOCKS (Red Oxide) Wisconsin Graphite Co., Pittsb'g, Pa. BRONZEWORX (Ornamental). Risher, Brown & Donald, Long Island City, N. Y. Trier Co., The W. S., Cleveland, O. Winslow Bros. Co., The, Chicago, Ill. CAPITALS. Lombard & Co., A. P., Boston... CAPITALS (Carved). G. T. Nelson Co., The, Columbus, Ohio	CARVING. Lombard & Co., A. P., Boston... Waddell Mfg. Co., Grand Rapids, Mich. CEMENT. Aisen's Cement Works, N. Y... (eow) Atlas Cement Co., New York... CLEAN-OUT. Craig, David, Boston... CLOCKS. Howard Clock Co., The E., Boston... COMPOSITION ORNAMENT. Lombard & Co., A. P., Boston... CONSERVATORIES. Lord & Burnham Co., Irvington-on-Hudson, N. Y. CONTRACTING. Flynt Building & Construction Co., Palmer, Mass. Rutan, William L., Boston... CONTRACTOR AND BUILDER. McKay & Woolner, Boston... Rutan, William L., Boston... CORDAGE. Sawyer Cordage Works, Boston. (eow) CRANES. Northern Engineering Works, Detroit, Mich. CUPOLAS (Foundry). Northern Engineering Works, Detroit, Mich. CUTLER PAT. MAILING SYSTEM. Cutler Mfg. Co., Rochester, N. Y.	DEAPENING QUILT. Samuel Cabot, Boston, Mass... DOORS (Steel Rolling). Kinneer Mfg. Co., The, Columbus, O. DOORS, WINDOWS, ETC. Carlisle, Pope & Co., E. A., Boston... DRAUGHTSMAN. E. Eldon Deane, New York... ELECTRICAL CONTRACTORS. Erickson Electric Equipment Co., Boston... ELECTRIC SIGNALS. Elevator Supply & Repair Co., New York... ELEVATORS, ETC. Morse, Williams & Co., Philadelphia. Otis Elevator Co., New York... Whittier Machine Co., Boston... ELEVATORS (Foundry). Northern Engineering Works, Detroit, Mich. ELEVATOR SIGNALS. Herzog Telesense Co., New York... ENGINEERS. Jager Co., Charles J., Boston... ENGINES (Hot-Air). Rider-Erickson Engine Co., New York... FAN SYSTEM. Sturtevant Co., B. F., Boston, Mass.	FILING DEVICES. Art Metal Construction Co., Jamestown, N. Y... FILTER. Loomis-Wanning Filter Co., Phila., Pa. FIRE-ESCAPES. Standard Fire escape & Mfg. Co., Boston... FIRE EXTINGUISHER. Yantacaw Mfg. Co., Philadelphia, Pa. FIREPROOFING. Associated Expanded Metal Co., New York... National Fireproofing Co., Pittsburg, Pa... FIREPROOF LATHING. Haves, Geo., New York... FIREPROOF SHUTTERS. Kinneer Mfg. Co., The, Columbus, O. FLOOR POLISH. Rutcher Polish Co., Boston... FOUNDRY EQUIPMENT. Northern Engineering Works, Detroit, Mich... GALVANIZED IRON. American Sheet Steel Co., New York... GATES. Wm. R. Pitt, New York... (mob) GRATES, ETC. Wm. H. Jackson & Co., New York... GREASE (Graphite). Wisconsin Graphite Co., Pittsb'g, Pa.
---	--	---	---