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THE Boston Manufacturers' Mutual Fire Insurance Company sends out, in response, as it says, to an increasing number of applications from engineers and architects, an interesting circular on mill, or "slow-burning," construction, in which the method of building, which countless tests in actual practice have shown to be the best for factories, is clearly described, while a judicious warning is given against the delusive constructions, mainly composed of boxed beams and seven-eighths sheathing, elegantly varnished, which are frequently imposed upon real-estate owners. Among architects, the name of mill-construction has come to be understood as indicating something very good for its proper purpose, but to be used with judgment in general practice; and the new circular will help both them and their clients to make suitable discrimination. Excellent as twelve-by-twelve girders, supported by wooden posts, and covered with three-inch plank, are for factories, hospitals, and many other buildings, experience has shown that they do not answer well for dwelling-houses, school-houses, hotels, or large stores. In dwelling-houses, the effect of the shrinkage, checking and twisting of the heavy timbers upon fine finish is very serious, and it is impossible to prevent sound from being transmitted in an annoying manner through the floors. In school-houses, the transmission of sound is still more troublesome; while the construction of solid timbers, excellent as it is for resisting the light fires of a factory, is inadequate to the repression of the fearful conflagrations which are fed by the enormous masses of combustible goods collected in large retail stores. Of course, buildings of the latter classes can be made fire-resisting in other ways, particularly by the use of iron. For large school-houses and stores, nothing but a construction of protected iron and masonry is really suitable, and it is so easy, by the use of metal-lath and plaster, to secure dwelling-houses against the comparatively small risks to which they are exposed, that we hope, before many years have passed, to see the use of wooden laths for supporting plastering universally prohibited. Many of the details of mill-construction are applicable to all kinds of building, and the various circulars relating to the subject, issued by the Boston company, in which nothing is asserted which long experience has not proved to be true, are most valuable to all architects.

THE Tenement-house Committee of the New York Charity Organization Society proposes to hold an exhibition next winter, devoted to improvements in the planning and construction of tenement-houses, working-men's cottages, model lodging-houses, public baths, laundries, cooking-schools, and so on. In connection with the exhibition, conferences and public discussions are to be held in relation to these subjects, and it is said that a competition of architects will be invited for the best plan for laying out a city block, two hundred by four hundred feet, with model tenements, made up of independent units, but combining as many advantages as possible of light and air, cheerfulness, economy of construction and convenience of arrangement. Our readers will at once think of the Shattuck competition, in Boston, for designs for a very similar group of buildings, and those who intend to take part in the New York competition will find the Shattuck plans, which, it will be remembered, were very fully illustrated in our pages, interesting to refer to, and in view of this impending competition we may publish a few more of the Shattuck designs, having interrupted the series through fear of overloading the patience of our subscribers. The New York committee intends to show plans of foreign buildings of the kinds referred to, many of which exist in all parts of Europe.

THE *Evening Post* gives some figures in regard to the income derived by the city of New York from privileges leased to private individuals in the Central Park, and the *Monde Moderne* gives similar figures in relation to the Bois de Boulogne, in Paris. Unlike the great Parisian park, the Central Park has many buildings in it, but most of these bring in no revenue. There are, however, a few structures, which, although belonging to the city, are regularly leased. Among these is the McGown's Pass Tavern, which is let for five per cent of the gross receipts. The Casino brings in a rent of nine thousand dollars a year, and the Arsenal restaurant twenty-five hundred dollars. The dairy building is leased for five per cent of the gross receipts, and ten per cent of the gross receipts is paid for the merry-go-round; the proprietor of the donkeys pays five per cent of his receipts, and the lessee of the swings pays the same. The new miniature railway pays ten per cent, and the goat carriage monopoly five per cent. The Cream-candy Company pays five per cent for the privilege of selling candy in the Park; the American Swan-boat Company pays two hundred and fifty dollars a year for the use of the lake for its swan-boats, while the proprietor of the row-boats pays seventeen hundred and fifty dollars for his share in the monopoly. The boat privilege on Harlem Meer brings in two hundred dollars, and one thousand dollars is received from the stage service.

IN the Bois de Boulogne, a large rental is derived from the two race-courses, those of Longchamps and Auteuil, the former of which brings in forty thousand dollars a year, while the latter produces thirty thousand. In addition to these, the Skating Club pays four thousand dollars a year for the exclusive use of a small pond enclosed by a fence, and the Polo Club pays twenty-four hundred for the use of a part of the Training-Field connected with the Longchamps race-course. These form the principal items of revenue from the Park, but the various restaurants and cafés bring in a total rent of about thirty-seven thousand dollars; certain small ponds, from which ice may be taken, are let for the winter to contractors at a total rent of forty-four hundred dollars; the fishing is farmed out at six hundred dollars, and about four hundred dollars is received annually from the sale of young ducks, eggs and so on. Hay is also sold, and brings in, on an average, more than three thousand dollars a year, including, however, the profits of the dairy and cafés in the Pré-Catelan. The privilege of letting boats and carrying on the restaurant on the Island brings in eighteen hundred dollars a year. Taking all sources of profit together, the total revenue of the Bois de Boulogne, exclusive of the Jardin d'Acclimatation, which is under independent management, averages about one hundred and seventeen thousand dollars a year. The expenses are one hundred and twenty-eight thousand, so that it is very nearly self-supporting. The largest item of expense is for watering and repairing the roadways, which costs sixty-one thousand dollars a year; gardeners' work and expenses of administration take twenty-nine thousand, and repairs and alterations to buildings and fences, materials for these and other works, uniforms for the Park police, and food for the ducks, swans and other aquatic fowls and animals consume the rest.

OUR old friend, Dr. de Bausset, has, as the newspapers inform us, formed a company to construct and operate airships, on the principle, we suppose, which he has so long advocated, of displacing the weight of air necessary for floating

the craft by means of huge exhausted cyclinders, and obtaining forward motion by means of propellers, driven by engines employing liquefied air or carbonic acid for generating power. Many years ago, after going carefully over Dr. de Bausset's calculations, we came to the conclusion that they were correctly made, but that the excess of floating capacity over the weight of the craft and the engines was rather small for actual practice, in which success is generally dependent upon a liberal margin for contingencies; but he seems either to have modified his scheme, or to have convinced people enough of its practicability to hire an office in New York, issue a prospectus, and prepare to sell stock to raise money for commencing operations. According to the prospectus, the company hopes to have vessels ready for carrying passengers to the Paris Exposition next year, but it is not yet announced that this hope is certain of fulfilment. Meanwhile, however, a California company is said to be advertising the establishment of an aërial line which will take passengers from San Francisco to Paris regularly next year. The machines to be used for this purpose are described as being quite different from the de Bausset "aëroplanes," but whether they will be more efficient remains to be proved.

AS we are firm believers in the practicability of navigating the air, and think that, a hundred years hence, our descendants will reflect with astonishment on the blindness of a generation which could not do what millions of little birds are doing continually, and which was condemned, in consequence, to travel slowly and painfully over rocks and stones, and among reefs and waves, instead of floating swiftly through a sea without waves, rocks or storms, which has any and every spot on the earth as a harbor, we are always interested in attempts to solve the problem of flight, but we must confess that we have never yet heard of an attempt which seemed to us to promise success. The trouble with all the schemes which have come to our notice has been that their authors have applied the principles and methods of navigating the sea, or of travelling on the land, to the totally different problem of flying through the air. In Dr. de Bausset's aëroplane, as we are told, thirty-two vertical turbines, fastened under the vacuum-cylinders, and propelled by electric-motors, taking current from dynamos, driven by compressed-air engines, are used to lift the machine into the atmosphere, liquid air being used as a source of power. It is strange that it does not occur to some one that by taking liquid hydrogen instead of liquid air, and letting it expand directly with the cylinders, just as much lifting power could be obtained, and the whole enormously heavy, cumbersome, dangerous and expensive paraphernalia of engines, dynamos, motors and turbines, with all their supports and connections, could be dispensed with. More than that, by using hydrogen in the cylinders, instead of a vacuum, the tension of the hydrogen would so far balance that of the atmosphere that the enclosing material might be of varnished silk, instead of steel plates, and a further enormous saving made in that way of weight and cost, as well as of danger, for the risk of collapse of the exhausted cylinders would be something serious. It is obvious that it is just as easy to carry a supply of liquid or compressed hydrogen on an aërial voyage as it is to take a reserve of liquid air or carbonic acid, or of coal, or of stored electricity, and the hydrogen will give directly all the buoyancy required, without the intervention of any turbines, dynamos, engines or machinery whatever. When once buoyancy is secured, the rest of the problem is easy. A contrivance which can rest on the air at any desired height, and can raise itself vertically at pleasure, does not need complicated machinery to drive it in any direction. A child sitting on its sled on the top of an icy hill does not need any machinery to make it descend the hill swiftly, nor does a hawk, poised high above the ground, need a propeller to drive it through its beautiful downward circles. With the child, as with the bird, the labor comes in reaching the height from which it is to descend, and the method of doing so, in aërial navigation, by displacing air by a lighter gas, is so well known that there is something ridiculous in the attempts to supersede it by vertical turbines, or by rushing horizontally, at headlong speed, under conditions which could never be made available in practice. It is true that nature may have developed birds or fishes by natural selection out of quadrupeds, but the process must have been a slow one, and for us to attempt to give aërial qualities to railroad trains and turbines is as absurd as it would be to starve a greyhound and put paddles on its paws, in the hope of enabling it to fly through the air, or to fasten an artificial tail on a fish for the same purpose. Nature has worked out the problem for us, and has shown us that wings, not paws or tails, are adapted for flying, and what we need now is to study a machine with strong, well-balanced and adjustable wings, which can be depended upon to withstand the rough treatment of actual use, especially of landing and starting. To lift such a machine into the air is not difficult, and the problem is then simply to coast down in the required direction. It is evident that there is almost no limit to the speed which can thus be attained, while the rapidity of the flight, and its direction, can be modified at will. With a reserve of liquid hydrogen, a new ascent can be made at any time, and a new flight begun, but it is probable that, from an elevation of two or three thousand yards, hundreds of miles could be traversed, at a moderate speed, before a new ascent would be necessary. Timid people might, perhaps, be reassured by having the machine driven along horizontally by a propeller and engine, using, perhaps, the waste hydrogen, mixed with air; but, with proper means for changing the position of the wings, this would not really be necessary.

THE *Revue Industrielle* gives a startling account of the spread of alcoholism in the manufacturing district of Normandy, particularly in Rouen, the capital. In 1890, the total consumption of alcohol in the city was, in round numbers, six litres per head per annum. In 1897, the consumption had risen to sixteen litres, or nearly three times what it was seven years before. Men and women of all professions, as we are told, drink. In one factory, which employs two hundred men, there are only fifteen who can walk ten rods through the streets without stopping to drink; workmen on buildings habitually consume three or four "bistouilles" a day, the "bistouille" being a mixture of two large glasses of brandy with a cup of coffee; and even laborers begin their day with one or more glasses of brandy, diversify it by visits to the nearest "cabaret," and conclude it with a general and protracted absorption of alcohol, the whole party meeting in the cabaret, and each paying for drinks all around. The most degraded men are those who work at the wharves. They earn five or six cents an hour in unloading vessels, but hurry to the cabaret as soon as they have any money in their pockets, and return to their work only when the money is gone. They, we are told, spend only four or five cents a day for food, all the rest of their earnings going for drink. On the railroads, the case is even worse, considering the responsibility which rests upon railroad servants. For every trip, a provision of brandy or rum is laid in, which serves for consumption while travelling. This is supplemented by visits to the cabarets at stopping-places, while, on the arrival of the train at its destination, the whole train-crew, including the conductor, brakemen, engineer and fireman, meet in a saloon to celebrate the event. They have some reason for doing so, if the train has arrived safely, for alcoholism is not favorable to the accurate reading of signals, or the comprehension of orders. Not long ago, a train on the Western Railroad, which occupies the Norman territory, came to a stop in the middle of the fields. The conductor went forward to see what was the matter, and found that the engineer was suffering from a hallucination. He imagined that he saw a house across the track, just in front of the locomotive, and nothing would induce him to continue his journey. It is not very unusual to have trains run at full speed past stations, and the *Revue Industrielle* hints that the accident which occurred a few years ago in the Paris terminus of the Western Railroad, where a train ran at full speed into the station, across the platforms and through the rooms beyond, until the engine broke through the front wall and fell into the street, could be accounted for without much difficulty. Among the sailors, the case is, if possible, still worse. The Iceland and Newfoundland fishermen are permitted by law to provide themselves with alcoholic drinks without paying any tax. Under this regulation they can get all the brandy that they want for eight cents a quart, and their wives enjoy the same privilege, of which they avail themselves liberally. One can imagine the advantages, both to fishing-vessels and steamers, of providing the sailors who fish on the Banks of Newfoundland, in the track of the Atlantic liners, with an ample supply of cheap liquor, but the demoralization begun on the fishing-vessels has spread to the Norman sailors generally; so that the Rouen merchants have been compelled to think seriously of manning their ships with foreigners, notwithstanding the impediments which the law places in the way of doing so.

SOME FRENCH ROOD-SCREENS, OR JUBÉS.

Escutcheon from the Monument to Alexander III, Moscow, Russia.

EARLY in the Middle Ages it became the custom to place at the entrance of the choir, in churches, a large cross, or rood, either suspended from above, or, preferably, planted upon a beam, or *trab*, thrown across the nave to support it. The beam had this advantage, that it permitted the introduction of the accessory figures of St. John and the Virgin, and even of a whole series of sculptures representing the scene of the Crucifixion. When in the thirteenth century certain changes in the ritual led to the multiplication of the choir stalls and to the erection of screens shutting off the clergy from the common people in the nave, this beam was brought down to the top of the screen, which at the same time was made to carry the *ambones* or reading-desks, which had formerly stood on either side of the chancel. The raised gallery thus formed was called in England the "rood-screen," from the crucifix which surmounted it, but in France it got the name of *jubé*, from the first word of the benediction pronounced from the reading-desks, *Jube, Domine, benedicere*.

This gallery being thus considerably wider than the wall that carried it, was balanced upon it and further supported by corbels, or by a miniature imitation of vaulting, and access to it was had by means of a staircase which frequently played a conspicuous part in the design of the screen itself.

Small altars were sometimes placed on either side of the doorway, but more often, in order that the view of the high-altar might be cut off from the people in the nave as little as possible, large openings were made on either side of the central one, and all three were filled with open tracery or with balusters. Sometimes the only solid portion of the screen was a series of piers, carrying the weight. But even the most open designs proved ultimately so great an obstacle that most of these screens have been replaced by iron grilles or low railings. The *jubés* have either been destroyed or used to enclose chapels.

Somewhat similar screens were erected also between the choir and the ambulatories, to close the spaces not filled by the stalls.

The fragments that still remain of this most interesting species of church furniture are of the greatest value. They are interesting, they are valuable, not only from the motives employed in their design, but as showing the readiness of the Renaissance workman to change his details in order to suit his material. The material and the methods of working it seem to have dictated the forms to be used. Thus in Brittany, a granite country, we have details quite different from those used in the stone screens which the wealthier parishes adjoining could import; while at Villemaur, in a wooden shingled church, the *jubé*, which is of oak, exhibits still another architectural treatment. But the general composition was much the same, even the advent of the Renaissance having but little effect on the main features of designs.

The crowning gallery, the most characteristic feature in both Gothic and Renaissance examples, is supported by a series of vaults springing from the cornice of the wall of the screen, while its front is decorated with reliefs or with a few standing statuettes, the subjects usually taken from the scene of the Crucifixion. The spacing of the miniature supporting vaults is determined by the piers, or supports of the wall, the intervening spaces, as before mentioned, being filled with tracery or balusters resting on a panelled wainscot. The door is similarly treated and the staircase in some examples is enclosed by a continuation of the wainscot, baluster and piers. Upon the ornamentation of this framework all the ingenuity of those imaginative Gothic workmen of the fifteenth century was expended, and when the Renaissance brought about a change in architectural forms, the substitution of classical details, or what they thought to be classical, seemed to lend additional impetus to the imagination.

As a study in the evolution of the style there can be found no more valuable examples than these screens. Upon the late Gothic designs, here and there appears a Classical moulding, a carved baluster, as at Evreux, or a few arabesque ornaments — all marking a timid excursion into a new field. In later work, as at Fécamp, there is shown a stronger hold on the Classic forms. But they are still merely a veil over a Gothic core. Here and there a rent reveals the Goth, — a crocket in a pediment, diagonal lines in the decoration of the panels, intersections in place of mitres at corners and bases, a multitude of Gothic traditions which in this feature never entirely disappear. Indeed the Renaissance made but slow progress in this as in all ecclesiastical work. The churches were still Flamboyant when the châteaux, without exception, were building in the new style. Even when they had become almost Classical, their chapels still exhibit late Gothic details.

Destruction, alteration and restoration have played sad havoc, and the list of screens still remaining intact is but a meagre one. Chârtres still preserves fragments of the early Gothic screen which was replaced by the famous Renaissance examples. Notre Dame at Paris has also fragments of a thirteenth-century *jubé*. Albi, Troyes and Brou have preserved theirs in perfect condition. Their tracery, the carving, and penetration are marvels of stone cutting.

Among the smaller churches there are examples of stone screens of the time of the Renaissance at St. Croix (Quimperlé), St.-Florentin (Yonne), Limoges and Rodez; in wood in the same style at Lamballe, Faouet, Villemaur, Arques, Luyères and Appoigny. All of these are true *jubés*, with gallery, staircase and reading-desks. While of chapel screens also a great number have been destroyed, there still remain admirable examples in the cathedrals of Laon, Evreux and Fécamp, as well as in the smaller churches of Chaource, Guèraude, Buon en Bresse.

The drawings illustrating this subject [See Illustrations] are the results of several excursions. The notes were necessarily incomplete, but the rough sketches have been redrawn with every effort to preserve the character of the work and to keep it free from the personal element in draughtsmanship. W. T. PARTRIDGE.

FINDS IN THE FORUM.

AS we are coming to an end of clearing out the "Tholus" in the Regia, the "finds" in it, few as they are, seem to me sufficient to enable it to tell its own story. Over thirty "styli," or bone pens, have come out of the mud of two thousand five hundred years. They are in perfect condition, as I have proved. But why so many pens? And again, why is the "Tholus," or store pit, so carefully coated with cement inside, and what is the reason which can account for that outer rim, with the dark, putty-like clay filling up the interspace between the two circles? Simply this: The "Tholus" was used as the corn-bin of the Pontifices. Into it the corn was emptied from the jars in which it arrived, very few fragments of which, however, have got into it. A clerk must have stood by keeping tally of the number of jars received and emptied therein. Occasionally, looking over the edge to see the cavity filling up with grain, the stylus he used to put behind his ear, being of smooth bone, slipped and fell, and buried itself in the wheat, until to-day! The thick wrapping of clay was doubtless intended to keep the "Tholus" cool and free from percolations.

A singularly interesting find has since come out of it — namely, fragments of the finely-moulded well-head, or mouth, of it, on the lip of which is the word "Regia." It is made of a superior kind of highly-crystalline "travertino." The Regia was a building seventy feet long and forty-two across, its southeastern termination forming an obtuse angle instead of a rectangle. In one of its three chambers was a hall of convocation, where the Sacred College of Pontiffs met for deliberations. It also contained a "sacrarium," or shrine, wherein were kept the sacred spears of Mars, and a "sacrarium" of Opis Consivæ, a goddess who was represented as a matron holding a loaf in her left hand, as if ready to assist the needy. As she was the Goddess of Earth, people paid their homage to her in a sitting posture. But more remains to be discovered on the site of the Regia, in its central region, and it is clear that literature will be enriched by the discoveries I have been enabled to watch over hour by hour and retail to your readers.

The history of the buildings in the Forum can only be known, and that merely approximately, by intimate knowledge of styles, and, above all, by close familiarity with its various levels. The Forum we have all known, it is not too much to say, has been chiefly a late imperial and mediæval Forum. Beneath it lies Classic, Republican and Etruscan Rome. For what was originally an extensive marsh lying between the Palatine, Esquiline and Capitoline hills became drained by the skill and science of Etruscan engineers. Thenceforward monuments began to accumulate, and presently the soil began to rise by the process of additions and improvements. This continued until the fall of the Empire, and even later, until neglect, desertion and destruction caused it to rise far more rapidly, and it became, first, a rubbish heap for the city, then a quarry for the popes and princes, and, finally, a precious and sacred mine for the archæologist.

As nothing illustrates the early rise of the ground more vividly than intimacy with the "Black Stones," and the exploration now proceeding around and under them, I shall make no excuse for here saying something about the locality and the monumental objects contained in it.

The first fact that strikes the student is that the black pavement above does not observe the same orientation as the tufa pedestals and other objects below. These latter observe the more ancient and more correct orientation, whereas, to put it as simply as possible, the pavement, like the Curia (St. Adriano) in front of it, and all the imperial buildings in the Forum, use the N. E. for their N.

There is proof at hand, however, that this was not always so with this black marble pavement. Under the rough travertino frame which binds it, an earlier and similar in part is seen to survive, and it was oriented a few points more in harmony with the pedestals, etc., below. The question at once suggests itself, Has the pavement been raised and relaid? The answer will be in the affirmative. It has been at one time in peril of being lost among the monuments which raised the surrounding area. For this reason it has been lifted about two feet bodily, and in relaying it the engineers of the Empire have oriented it in keeping with the imperial edifices around.

In consequence of this, on descending under the stones, we see at once that originally the pavement must have rested on the flattened or truncated tufa cone, which we met with there nearly under its centre. Any who recollect the famous tomb of Aruns, near Ariccia (commonly called that of the Horatii and Curiatii), will call to mind the flattened cones which rise at the four corners of its vaulting. The other truncated cone is precisely similar to them. Within a couple of feet south of the cone stands the quadrangular inscribed "cippus," with bevelled edges. The inscription of it, though of extremely archaic (semi-Etruscan) character, is in Latin, and the word "Kalatorem" is plainly to be read on one of its faces. No sooner is one in that recess with a candle than one perceives that the tufa base lines, with sharp edges, run straight on into the yet unexcavated ground westward, toward the south end of the Arch of Septimius Severus.

There will, quite probably, be found other such cones, and possibly other inscribed cippi. But as this cippus is broken at the east face of its top, and the inscriptions are imperfect, there is reason to think it may be more ancient than its fellow objects, and has been simply utilized there as a support. I humbly incline to believe otherwise, and that it will be found to be most intimately connected with the religious history of the spot. But the soil around and formerly immediately under the black pavement has its own story to tell, and I have no doubt that story relates to some great and especial national expiatory occasion. The reasons will duly appear.

First of all, the whole of this central portion of the ancient "Comitium" now being explored rests upon an artificially constructed bed made of lumps of chocolate-colored tufa. On the top of this lies fourteen inches of riverine gravel, formerly thought to be natural to the spot, but now ascertained to have been deliberately brought thither from the Ponte Molle, or the Janiculum. It entirely stops with the republican tufa wall immediately east of the pedestals, which was the wall of the Comitium, running north and south.

To this gravel succeeds a layer of the most interesting character, one foot in thickness, and of a dark brown color. It is a layer entirely composed of sacrificial material. From it have come the bones of eighty-five sheep, the jaws (calcined) of a young bull, and bones of goats and boars; terra cottas, including a beautiful plaque, found last week, representing a horseman attending to his horse, in low relief, and a portion of a beautiful painted vase, in Græco-Campanian style; ten little bronze figures, four inches high, archaic and quasi-Egyptian in model, and a similar but rougher one representing an augur with his "lituus," or divining-wand; more than a hundred stone weights, some rounded, some square, all pierced; some bone dice in perfect preservation, though stained green by having been in contact with bits of bronze; hundreds of fragments of miniature clay and terra-cotta votive bowls and cups, and, finally, fragments here and there of the black marble which supplied the pavement some two and one-half feet above it.

Thus it would appear that every object found there has been consecrated on some great expiatory occasion, and even the chips of the precious marble have been purposely mingled with the sacred ashes and votive offerings, and the whole then solemnly and deliberately poured around this group of ancient monuments, this "locus religiosus," this legendary tomb of the founder of Rome — the "locum funestum" of Festus! On the top of this again occurs a one-foot layer of tufa, succeeded by débris and accumulation, and, finally, by the travertine paving of later times. Practically, therefore, there are six layers in all, averaging one foot in thickness apiece.

The question now comes with full force upon us: What events in early Roman history are known which might have occasioned such proceedings as a great national expiatory offering in the Comitium? The answer is: At least, there were two such events. First, there was the expulsion of the Kings; secondly, the sack of the city by the Gauls; on both of which occasions the sacred shrines in the Forum suffered and had to undergo wholesale repair and reconsecration at the hands of the Pontifices. To one or other of these historical crises we may confidently refer the methodical condition of the area inclosing these ancient monuments, and described above; that is, to the sixth or to the fourth century B. C. Meanwhile we must patiently watch the progress of the workmen as they tunnel westward, following up the lines of construction, which (as I mentioned previously) can be observed running toward the south angle of the Arch of Severus. Perhaps, before many days, I may be able to report additional unknown treasures.

The "Tholus" in the Regia is now quite cleaned out, and from the last pailful of mud came a number more "styli," making over fifty in all, but, what was even more strikingly interesting, there lastly turned up also a black bone "tabella," or writing-tablet, six inches by four in size, somewhat worn down at one corner by the thumb of the holder, and still showing scratches where the wax once spread upon it had been penetrated by the sharp point of the stylus. The specimens of the stylus are very beautiful; some are short and stubby, others long and graceful; some have been favorites with their owners, others scarcely used at all. Their appearance almost seems to suggest to one the characters of their respective users, the stewards, or attendants of the Sacred College of Pontifices, the Vatican of B. C. — *Rome correspondence of the London Globe.*

THE UTILIZATION OF WASTE.[1]

THE purpose of these notes is to suggest the importance of utilizing what we consider as waste, instancing a few applications, with the expectation that others will present, in more or less detail, means which are or which may be used to transform refuse into articles of value.

Without detracting from the credit deservedly given to the person who causes "two blades of grass to grow where one had thrived before," or to another who contributes to "make the desert blossom as the rose," prominent places among the benefactors of mankind may be claimed for those who utilize what is or what has been considered as waste.

Webster defines the noun waste, in the sense of the present discussion, as "lying unused, unproductive, of no worth." Applying this definition, the man or woman who reclaims what is unused, converts to good purposes that which is unproductive, or brings value to that which is esteemed as worthless, benefits mankind, and adds to the material wealth of the world.

What is the waste or refuse of one industry may be and often is the raw material of another, but the extent to which such waste can be used is influenced by local conditions. It is comparatively easy to point out waste in nearly every process of manufacture, in our homes, and in our method of living, but to correct this is, in many instances, impracticable. We recognize how great the waste is in all departments of industries and in our households, and few realize how much is being done toward utilizing this refuse material. But with all that has been accomplished, there is a wide field to be covered before we reach the Utopian condition where a useful purpose is found for all that is now waste or considered as such. The many scavengers who extract value from the proceeds of the city dump-heaps in waste-paper, rags, old leather, coal, bottles, or old metal, probably represent the most popular notion of the utilization of waste-products, a utilization more important than is ordinarily appreciated, and representing gross money value which would appear fabulous. The army engaged in this reclamation is large and its scouts appear at every dump, upon the scenes of every fire before the embers are cooled, or assail our homes to collect whatever of apparent value may be obtainable.

The late Colonel Waring asserted in a magazine article that in the present state of knowledge the refuse from a city of 50,000 inhabitants possesses sufficient commercial value for the municipality to derive revenue from the sale of the privilege of collecting it. The facts that old rags and paper enter into the production of other paper, that scrap-iron and other metals are transformed by the cupola or furnace into new forms, that leather-scraps are useful in chemical manufacture, apparently cover the extent of popular knowledge, unless the legend is accepted that old paper, tin cans, and bottles are the most nutritious food for goats. An inventor of a pulverizing apparatus, in inviting attention to his invention, asserted that his machines were employed to reduce old bottles, broken crockery, etc., into impalpable powder as a constituent of a well-advertised scouring soap. The city waste is of enormous proportions, and the refuse from homes and manufactories is great. In addition to the manufactures or special industries which depend upon the waste of others for raw material, there are those which are profitable only because their waste is put to some useful purpose. In some instances the original product is now the by-product, and what was formerly refuse represents the greater proportion of value.

The possibilities of utilizing waste in a single direction were suggested by a visit to a large button-works in Connecticut, where I was informed that ninety tons of buttons had been made in one month. It is impossible to suggest the number of buttons represented by ninety tons, or to imagine the multitude of stitches required to fasten them to clothing, or even to guess at the number of "swears" which were encouraged by the failure of individual buttons to maintain their responsibility. The material used to produce these buttons was the remnants of the sheets of tinplate from which the bottoms and caps of cans for blacking and other boxes had been cut. After the button blanks had been punched from this tinplate, the small triangles of metal connected by iron threads were compressed in a form under a drop-hammer and subsequently shipped away to be made into sash-weights.

Some of the prominent utilizations of waste products which are well known to-day are in connection with the fuel-supply. In the production of charcoal from wood there are large volumes of acetic vapors which, when condensed, are of considerable value. By charring the wood in ovens or retorts and conveying the vapors to condensers and stills, the products are charcoal, pyroligneous acid, tar, and uncondensable gases of considerable thermic value. These gases are used as fuel, the tar is merchantable, and from the pyroligneous acid methyl alcohol, acetic acid, and various commercial acetates are produced. The influence of locality is quite marked in this utilization, for at some iron-works many thousand cords of wood are annually converted into charcoal, the pyroligneous acid as a by-product being made into acetates and wood-alcohol. At other works the wood is charred to secure the pyroligneous acid, the charcoal being a by-product, but most of the wood cut for charcoal is charred and no effort made to collect the acetic vapors.

The principle holds in regard to the manufacture of coke. As a

[1] A paper read before the Engineers' Club of Philadelphia, May 20, 1899, by Mr. John Birkinbine and published in the *Proceedings* of the Society.

rule, the products of distillation from the coal while being coked pass off into the air as dense smoke and are wasted, but at a number of localities in this country and abroad the volatile matters are condensed and commercial ammoniates, tar, and gases of calorific value are utilized. It is claimed that, in addition to the commercial by-products from coking, ten tons of average bituminous coal, incondensable gases, equivalent in calorific value to one ton of coal, result.

A liberal portion of the coal-supply of Philadelphia to-day is made up of sizes which were considered unmerchantable, and which were consigned to the waste-heaps within a few years. Now this coal finds a ready market and piles of refuse are being reworked to secure the smaller sizes of coal available, and in some cases the refuse from the washeries (which is mainly disintegrated shale) is utilized to fill the portions of the mines which are worked out. Coal-waste was considered of sufficient importance to have a State Commission appointed to investigate it a decade ago. Special furnaces, grates, etc., to utilize this small coal are designed, and there is wide-spread interest in smoke abatement. The disintegration and washing of inferior coal to produce coke, the employment of the gas-producer, are incidental to the utilization of what otherwise would be wasted.

A prominent American utilization is the cotton-seed. Throughout the cotton belt of this country numerous mills are operated which convert the cotton-seed, formerly left in piles to rot or to be burned when sufficiently dry, into oil and food for cattle. Cotton-seed mills are features of many Southern town, and are sought for as industrial developers by municipal promoters. The cornstalk, whose only functions appeared to be to contribute to the manure-pile or to serve as food or bedding for cattle, seems destined to find a considerable utilization in producing cellulose. The pith of the cornstalk is treated to produce this remarkable product, the balance being transformed into compressed cattle-food.

In the iron industry there are numerous applications in utilizing waste or refuse, including the production of cement, mineral-wool, paving blocks, or monolithic paving, from blast-furnace cinder; the remelting or converting of unmerchantable masses of metal, ladle-sculls, crop-ends, shearings, punchings, filings, etc.; the re-rolling of rails; the utilization of blast-furnace gas to heat air, produce steam, etc.; the restoring of the exterior heat of an ingot by means of a soaking pit, and the sinking of scrap in forges and furnaces; the almost universal generation of steam by waste heat, etc., in mills, etc.

One need not be classed as old to recall the scum which covered every stream draining a gas-works. The resulting tar, the ammoniacal liquor, the coke, are all now put to use, and from the former some marvellous products result. We would hardly expect the sweetest substance known, or the nearest imitation of the flavor of the vanilla-bean to be coal-tar products, nor do the marvellous aniline colors suggest coal as their ancestor. The petroleum industry abounds in interesting surprises of products made from what were formerly waste, which some of our members can describe better than the writer. Many carbons used in electric engineering are formed of what was a waste product from petroleum distillation, or from gas retorts.

The various systematic methods of exploiting mines and applying timber supports to the workings permit of obtaining a larger proportion of mineral from a given area, and the application of chemistry to metallurgic process aids in extracting from what was formerly waste rock much that is of value. The chlorination, the cyanide and other processes, recover precious metals from what until late years was considered unproductive rock.

The condensation of fumes resulting from roasting ores, the treatment of acids or liquors which have performed their purpose in manufacturing processes, are instances of the utilization of waste. The mining city of Butte, Montana, is now demanding some process which will utilize the sulphurous fumes from the smelters, which make life in that city undesirable — a waste product which some day will represent great value, but which now demands large expenditures to get rid of.

Water strongly impregnated with copper is pumped from the copper mines, passed over old scrap-iron, to which it adheres, and in this way large quantities of fine copper are recovered. The blue billy, which is a by-product in the treatment of iron pyrites for the manufacture of sulphuric acid, is an important portion of the charge of many blast-furnaces, and the silicate of iron left after abstracting copper from cupriferous pyrites has a similar use.

The lumber industry supplies numerous instances of refuse utilization, and in many localities the proportion of slabs, strips, etc., fed to the "hells" is much below what prevailed a few years ago. The cores cut from pump-logs are made into pillars or round posts, the slabs are cut into box-boards or lath, shingles, etc., and sawdust compressed with a cementing medium is also formed into imitations of carving. A number of minor wood-working industries rely upon the waste from sawmills, and in the mills the effort to reduce the loss in sawdust has developed the band saw with its narrow "kerf." At some Swedish iron and steel works sawdust and sawmill refuse are gasified, the gas, after being freed from moisture, being used as fuel.

Instances of utilization might be multiplied, but those mentioned may suggest to some present various means employed in special industries to convert to a useful purpose what was refuse. The admission that in our modern steam-engine only a modicum of the calorific energy stored in the fuel is used, shows that a wide field is still before us in reducing waste. The water-powers which are being utilized demonstrate how great is the power which has been permitted to go to waste, and which in many cases may be conserved. Perhaps enough has been said to suggest how numerous are the utilizations of refuse, and how many are the opportunities for future advances. That there is a use for everything we all admit; that practical use can be made of everything will depend largely upon local conditions. But it is evident that the industry or municipality or home which is able to obtain the greatest value from what under normal conditions is wasted most nearly approaches this ideal.

DISCUSSION.

MAX LIVINGSTON: I made some notes while listening to Mr. Birkinbine. The first thing occurring to me was tin scrap, one of our waste products. Years ago the river-bank was lined with tin scrap. To-day we do not find any. In fact, we have more demand for scrap tin than we can furnish. Coming to the petroleum industry proper, in 1865, or the early sixties, it was common to run our residuum, also the naphtha, into the river. At that time I was located at Pittsburgh, and we found the Allegheny River a very convenient receptacle. The lumbermen would bring their rafts down the river, and by the time they reached Pittsburgh they would be beautifully painted. To-day this tar is a most valuable product. It furnishes us the paraffin oil for lubricating purposes, the valuable wax which has revolutionized many industries, and the residuum of the tar gives us coke for carbon points, and, under certain conditions, asphaltum. This asphaltum is used for roofing, also for paint. Benzine or naphtha it is not necessary for me to talk about. We all know by the daily papers the accidents placed to its credit, which, however, are due invariably to carelessness. As stated, this benzine was formerly run into the river, and on one occasion set the river on fire. In regard to the disposal of the tar, an incident comes to my mind. It was in the early days of the direct-acting pumps. Such pumps were expensive and rather scarce, and one pump had to do service for different purposes. We had in our refinery a shower-bath; it simply depended on the turning of the cock as to what kind of a bath one would get. I know one day I got a beautiful tar-bath, and could not get the tar out of my hair for three or four weeks.

Looking backwards twenty-five years, it seems, in the light of industrial improvements, to be delving into ancient history, though what I want to say is not exactly to the point in regard to waste. It occurs to me just now that an acquaintance of mine living in Pittsburgh had to go to a hospital in New York. He brought his boy over to New York last week, and the most wonderful thing that that boy observed in New York was a street-car run by horses. He had never seen anything like this, and considered it a most wonderful improvement. I really don't know that I can add anything more to what Mr. Birkinbine has said.

MR. BIRKINBINE: The utilization of tin scrap is one of those questions which have been discussed and a good lot of money spent to know whether the tin was worth saving or not. Probably Mr. Livingston can tell us some of the forms they cut it into.

MR. LIVINGSTON: Our tin scrap consists of very narrow strips, hardly wider than one-eighth of an inch. As it is ordered cut to the sizes needed, the pieces are too small for making buttons. The scrap is used in a very simple way, being melted down and molded into sash-weights. In regard to the wax, it is used for many purposes. A very large demand comes from the manufacturers of chewing-gum, paper, and matches, and particularly from candle-makers. It is also deemed valuable for impregnating yellow pine used in house construction.

HARRISON SOUDER: What is the object in saturating the pine?

MR. LIVINGSTON: I suppose it is for the purpose of giving it a glossy appearance and keeping out moisture. Referring to the use of sewage for fertilizer reminds me of a by-product in the petroleum industry that is now very important for making fertilizers — namely, sludge acid. In years gone by we were very anxious to pay parties to take our sludge acid away. To-day it is a source of revenue.

THE PRESIDENT: For what is it used?

MR. LIVINGSTON: For making fertilizer.

THE PRESIDENT: Also for mineral paints?

MR. LIVINGSTON: No. In the manipulation of the sludge acid we obtain a tar which formerly was a great nuisance to us; at present it is utilized as fuel.

JAMES CHRISTIE: It is a common charge to make against Americans that we waste what many other people would utilize. I think there is very little doubt that this is true to some extent. It usually occurs that where nature is very bountiful, the people naturally become wasteful. Where the struggle of life is very intense, and the pressure is very great for the means of existence, materials that would elsewhere be wasted are utilized. Aside from the minor economies of life and the purely personal habits of society, we observe, in this era, attempts to utilize materials hitherto wasted which involve the employment of large capital, combined with trained intelligence, for a successful effort. No man desires to spend a dollar for the

purpose of saving ninety-nine cents, and this is a frequent result from attempts at the utilization of sewage; and we know of instances where private enterprise has been supplemented by public funds for the purpose of making it profitable. The economic disposal of sewage is a vital problem of the present and of the future, for, aside from the economies that may result from its utilization, the most important question is the sanitary one; and it is not definitely known yet if any proper disposal of sewage can be accomplished without a financial outlay exceeding any result in profit.

Mr. Birkinbine has just referred, among other matters, to the losses incurred in the ordinary methods for the production of charcoal and coke, more especially of coke. The waste of fuel-gas, so plainly visible from the old bee-hive ovens, is avoidable by the modern system of coking coal in the closed retort. By-products of fuel-gas, tar, and sulphate of ammonia are recovered by the later coking process. Although this method, as yet, produces but an inconsiderable proportion of the coke output, yet its effects are observed in the reduced market value of sulphate of ammonia. Another product, hitherto entirely waste, is the slag from blast-furnaces. It is largely used now everywhere as a substitute for stone in concrete. It is an excellent material for this purpose, being much lighter than ordinary stone, and entirely fireproof. In the granulated form it becomes an excellent substitute for sand for cement mortar, and in many parts of the country, where sharp bar-sand is neither abundant nor cheap, it can be used advantageously. Another excellent substitute for sand for the same purpose is ordinary coal-ashes, and this has been used to some extent with satisfactory results.

The vacant lots of our city suburbs are frequently disfigured by the dumpage of oyster-shells. Now, oyster-shells make an excellent top-dressing for macadam roads, making less dust than ordinary stone; and we have in the northern end of the city a road with an oyster-shell top-dressing subjected to heavy traffic, and giving good results.

The exhaust from steam-engines constitutes a serious nuisance in all our cities, and, incidentally, involves a waste which could be prevented. The successful application of the cooling tower to the condenser renders it possible for steam-users to run their engines condensing without paying large water bills. In the textile mills of this city it is a common practice to operate engines with several pounds' back-pressure on the exhaust steam, for the purpose of utilizing the exhaust for heating purposes. With the compound-condensing engine, steam of about the right pressure and temperature can be taken from the receiver, thus furnishing it at little cost for the purpose required, and, at the same time, allowing the use of condensing engines.

Harrison Souder: We have all heard of the utilization of sewage as material for fertilizing farms. I have never heard of using it as a water-power. I have often thought of this matter in connection with some of the city works — the Pennsylvania Avenue subway, for instance, where there are some large sewers carrying considerable quantities of water and sewage at high velocities. Now, of course, the amount of water and sewage varies in quantity, but my observations show that these variations are not very large in certain main sewers, and my idea was that you could put in a specially constructed water-wheel which would allow the heavy sewage matter to pass and yet not obstruct the operation of the wheel. This wheel could operate an electric motor, and, in times of high water, you could charge storage-batteries, which could operate when the sewage flow was much less. I don't know whether sewage has ever been utilized in this way, but it struck me as being feasible.

ARCHITECTS' FEES.

THE mock modesty which is one of the national failings is exemplified often in the payment of fees for professional services. Barristers and physicians cannot recover money for their work unless they were employed under exceptional conditions. The President of the College of Physicians would lose his case if he brought an action for visits to an invalid; but if he were to charge ten guineas for a modicum of Epsom salts or a small box of bread pills, the law would respect his claim. A lawyer might be able to charge as much for a sheet of foolscap on which an opinion was inscribed, but the Bar Committee would not recommend the experiment. Both professions have to suffer through the existence of a fallacy which is based on an erroneous belief about the custom in ancient times. There never was a time when the skilled adviser was under any obligation to render services without any return. When by a refined hypocrisy the dealings and by an accepted fiction the payment were not above board, many evils arose, as is always the case with transactions which are veiled. One of the excuses made for the misconduct of Lord Bacon is that in his acceptance of bribes he was not unique, for other judges had also itching palms. Yet in his day the members of the Bar formed an exalted class, and were supposed to be inspired by lofty motives. The practice of receiving fees was supposed to be a toleration of the humble offerings of clients' gratitude, and in all cases did not cease when the advocate was raised to a higher position. The clergy complain of worse treatment than either lawyers or physicians, and the ease with which it is assumed that the offer of more than a nominal sum for some of the functions in which they have to take part would be an offence is one of the causes of the poverty which afflicts many excellent ministers.

Architects cannot count on the sympathy which is felt for clergymen, lawyers and doctors. Their use is not generally recognized. It is very rarely that the services of an architect are dictated by an Act of Parliament. A trustee runs less risk by going direct to a builder than by obtaining the aid of an architect and surveyor. As a rule English law expects something material to be supplied in business transactions whenever money has to be paid. The architect prepares plans and other documents, but he only lends them, and his ownership never ceases. In spite of all of the cases which have come before the Courts, the architect's position is not yet clearly understood. A lawyer may enjoy the dinners given by architects, and occasionally assist at a meeting, but he is apparently unable to realize the whole extent of the work which is paid for by a commission of five per cent on the outlay. He sees a large number of houses and other buildings which resemble one another, and he concludes that one set of plans can be readily adapted to serve for all. If he should be engaged in building cases, and is compelled to glance at specifications and conditions of contract, he takes it for granted they are like many legal documents drawn from printed forms by writing-clerks. He admits the existence of an organization in every office, but the more perfect it becomes the less is the need for skilled services. Whenever a barrister delivers an address in a case in which an architect is concerned, or when a judge deals with evidence, it is easy to perceive that he believes in routine as the basis of the architectural profession.

As long as there is a belief of that kind, however erroneous it may be, it affects the judgment. Routine means, to some extent, mechanical production, and all who have had experience with lawyers know how difficult it is to convince them of the mental labor which designing involves. The best building is commonly supposed by them to be only an adaptation of another building, or of several, a feat which can be accomplished by assistants who receive modest salaries. A barrister engaged by an architect is therefore disposed to compromise from the opening of the case, for he has the conviction that whatever sum is offered will pay for the services which were rendered, and he knows there is a general prejudice which no logic can overcome. The extent to which prejudice can go was exemplified by the late Lord Bramwell, a judge who generally was dominated by common-sense and indisposed to hair-splitting. Yet when a man who was without the connection with a church which once sitting on a free seat might confer implored the committee not to entrust the restoration of the building to the architect appointed, because he was a Wesleyan, and was bound to tamper with it and cause irreparable damage, his lordship held the letter was not a libel. When we recall the fate of many actions for fees in which architects were plaintiffs, one must wish that what Mr. Justice Bailey said about barristers' fees should be no less applicable in all commissions to architects: — "They are to be paid beforehand, because they are not to be left to the chance whether they shall ultimately get their fees or not, and it is for the purpose of promoting the honor and integrity of the Bar that it is expected all their fees should be paid when their briefs are delivered." The honor and integrity of the Bar would, we presume, be difficult to uphold if the payment of fees were deferred to an indefinite time, but what would be the effect on barristers of such a vicissitude as has fallen on the plaintiff in Start *v.* West Mersea School Board, a case which came to an end on Saturday last? Mr. J. W. Start, of Colchester, was in 1897 asked by the Chairman of the Board to prepare plans for the enlargement of the West Mersea schools. As economy was desirable, it was arranged that a clerk-of-works was not to be employed. The additional labor was to be undertaken by the architect, who was, moreover, to accept a reduced fee of 4½ per cent. Here we may remark that any concession of that kind is not advantageous to an architect should an action arise. It confirms the notion that fees are elastic, and it is only necessary for a client to be resolute in order to have them reduced. The drawings were prepared, and the usual procedure followed. Tenders were received in due course, but they were found to be larger in amount than was anticipated. The School Board declared that the understanding with the plaintiff was to have the expense of the enlargement limited to 3,000*l.*, and afterwards the reduced sum of 2,000*l.* was fixed. On that condition the appointment rested, and when it failed the liability of the School Board came to an end. Plans were obtained from another architect, according to which the work was carried out. Mr. Start's plans being of no avail the Board declined to pay for them. The jury showed some consideration for the architect. He claimed 473*l.* 5*s.* 8*d.*, and in a case of the kind it is generally considered allowable to charge for attendance at meetings, consultations, etc., which otherwise would be included in the percentage which is agreed to be paid by equitable clients. The jury considered the plans to be of some use, and as it is well for a Board to be assured about the necessity of restricting their projects, definite information on that subject is worth paying for. The jury were not unreasonable in awarding plaintiff 150*l.*, or less than a third of the amount claimed.

The School Board might well have been content with their success. But one of those pleas was set up which are always received with disfavor by English judges, although bound to admit them. It was contended that there could be no right to recover any sum because

the contract was not under the seal of the School Board. We have several times warned our readers about the danger which lurks in the ruling case, Hunt *v.* Wimbledon Local Board. But it must be admitted that to demand a sealed document would in many cases be taken as a slur on the good faith of a public body, and an architect in consequence might be placed in a precarious position. If a contract must be sealed, and is not, it ceases to be a contract. Vainly plaintiff's counsel maintained that the uses which the plans served were completed, and therefore the money was owing for a benefit already derived and a contract that was executed. Mr. Justice Wills could only express his regret that the plea was raised, for he could not sympathize with it. There is not, probably, one experienced judge who would differ from his lordship. But the law cannot be set aside by those whose duty is to administer it. Mr. Justice Wills admitted there was no express contract between the parties, and, indeed, one is rarely entered into in such cases. Architects have to be satisfied with resolutions which are recorded in a minute-book, and of which copies are not always given. His lordship could only set aside the verdict of the special jury and give judgment for the School Board.

The case is not uncommon. In its circumstances it corresponds with a great many which occur throughout the country. There is a competition which is not announced. When, as in West Mersea, the erection of a building is contemplated, or an alteration of it, sketches and drawings are prepared in the expectation that one day they may be useful. Their existence becomes known to those who are in any way responsible for the building, and if one architect is superseded another is ready to take his place, and unless the town is very small there are several available. At one time an architect in Mr. Start's position would, after the receipt of the tenders, be asked to modify his plans, and to turn to account the experience about cost. But private and public building-owners have so many interests to satisfy, they now prefer to give a chance to as many architects as possible. In that way they believe all the advantages of competition are gained without expense and trouble to themselves. — *The Architect.*

ILLUSTRATIONS

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

TRANSEPT AND NAVE: SETTLEMENT CHURCH OF THE HOLY TRINITY, EAST 88TH ST., NEW YORK, N. Y. MESSRS. BARNEY & CHAPMAN, ARCHITECTS, NEW YORK, N. Y.

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

OTHER illustrations of this interesting group of buildings may be found in our issues for July 8 and 15.

SCREEN AND LOFT, VILLEMAUR, YONNE, FRANCE.

THIS wooden rood-loft is to be found in church that dates from the thirteenth to the sixteenth century.

GOTHIC SCREEN IN THE CATHEDRAL, EVREUX, EURE, FRANCE.

RENAISSANCE SCREEN IN THE CATHEDRAL, EVREUX, EURE, FRANCE.

THIS and the preceding plates illustrate an article on Rood-lofts to be found elsewhere in this issue.

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

SUCCESSFUL DESIGN FOR THE FIRST BAPTIST CHURCH, LEFFERTS PARK, BROOKLYN, N. Y. MR. FRED C. WATSON, ARCHITECT, GLOUCESTER, MASS.

THE ROMAN BATHS AT TRIER, PRUSSIA. RESTORATION BY M. BOUTRON, ARCHITECT.

THIS plate is copied from *La Construction Moderne.*

[Additional Illustrations in the International Edition.]

THE MORNING CHAPEL AND CLOISTERS: SETTLEMENT CHURCH OF THE HOLY TRINITY, NEW YORK, N. Y. MESSRS. BARNEY & CHAPMAN, ARCHITECTS, NEW YORK, N. Y.

[Gelatine Print.]

PORCH TO HOUSE OF MR. SHERMAN, 8 WEST 55TH ST., NEW YORK, N. Y. MR. R. H. ROBERTSON, ARCHITECT, NEW YORK, N. Y.

[Gelatine Print.]

DETAIL OF RENAISSANCE SCREEN IN THE CATHEDRAL, EVREUX, FRANCE.

ELEVATION OF SCREEN IN L'EGLISE DE LA TRINITÉ, FÉCAMP, SEINE INFÉRIEURE, FRANCE.

DETAILS OF SUNDRY SCREENS IN THE SAME CHURCH.

Too late to make the needful correction, we note that Mr. Partridge has neglected to sign each of this delightful series of drawings. Those which are to appear later will bear his name.

"RAWDON HOUSE," HODDESDEN, ENG. MESSRS. ERNEST GEORGE & PETO, ARCHITECTS.

HOUSE OF J. E. GOODBODY, ESQ., LIMERICK, IRELAND. MR. R. FOGERTY, ARCHITECT.

"FRIEDENSTHAL," NORBITON, ENG. MR. S. W. CRANFIELD, ARCHITECT.

CORRECTION. — By some inexplicable oversight this plan of Stillman Hall published last week was omitted from its proper place.

B. Bath.
C. Corridor.
Cl. Closet.
D. Dining-room.
D. D. Duty and Dispensary.
D. R. Doctor's Room.
D. S. Duty and Service.
D. W. Dumb-waiter.
L. Linen.
Lav. Lavatory.
M. R. Matron's Room.
O. A. C. Open-air Corridor.
O. Office.
P. Patients.
Pa. Passage.
R. Rotunda.
S. Sink.
Sh. Shaft.
St. Sterilizing.
V. Vestibule.
W. Ward.

COMMUNICATIONS

[*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.*]

CORRECTION: THE ARTHUR BROOKS BAS-RELIEF.

NEW YORK, N. Y., July 31, 1899.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — In your publication of July 29, 1899, Mr. Bruce Price is credited with the architecture of the monument to the Rev. Arthur Brooks. We would say that we are responsible for the architectural part of the monument.

Yours very truly, BRITE & BACON.

NOTES & CLIPPINGS

AN ARCHÆOLOGICAL QUARREL OVER SUSA. — Nothing is more persistent than archæological jealousies, and when Assyriologists have a row it always is of a rancorous kind. The English explorers at Susa, in Persia, complain of the "French pin pricks." The old capital of the Chaldean Kingdom, which is Susa, has been given up to a "Delegation Scientifique Française en Perse." An archæological Marchand was there, and arranged a treaty between the French and Persian Governments. The French have the exclusive right to carry on researches in Persia, but the stipulation is that half of the finds are to

belong to Persia. As the relics are dug up they are sent to Teheran and there shared. The Persian Government puts no value on such finds, but only on the money they will fetch, and so sells its quota to dealers. Of course, much that is valuable will be scattered by this method. The interest which centres in Susa consists in this, that it was once the most important city in the Old World, and that compared with it, Babylon and Nineveh were as if of yesterday. It was then the great nucleus of prehistoric civilization. In the British Museum the Susa incident becomes secondary to the Fashoda one. — *N. Y. Times.*

The Cascade Tunnel. — Assistant Engineer Gordon of the Cascade tunnel of the Great Northern, in Eastern Washington, says that work on the big undertaking is progressing most favorably and, with no accident, the contractors expect to have their work completed in less than eighteen months. During the past month several thousand dollars of new rock-excavating machinery has been put to work. A portion of this is of the most improved pattern, and on Monday of last week made a world's record in burrowing a hole of the size of the tunnel. In twenty-four hours an advance of 62 feet was made. Each day marks an increase in the length of the hole, from either end, of about fifty-five feet. Within a short time, work on the construction of the big electric plant at the eastern end of the tunnel will be begun. The plant when completed will be one of the most complete and gigantic motive-powers in the world. New electric engines will be especially constructed to convey the regular trains through the tunnel, which itself will be beautifully illuminated for the entire distance by incandescent-lamps. Stations on either side will control traffic through the hole, which, aside from being the largest in the world, will be a novel picture, and one of the most interesting sights to be found along the line of the Great Northern Road. — *Seattle Post-Intelligencer, July* 13.

British Chalk. — "One of the most important of the few British products at present largely used in this country is chalk," said a wholesale dealer in the article to a representative of the *Star*. "It comes from the banks of the River Thames, and between 175,000 and 180,000 barrels of the material are consumed in the United States annually. In its crude form remarkable flint fossils are sometimes found, usually the remains of fish. The process of manufacture from the natural state to that of a form when it can be utilized for commercial purposes is simple. When received at the English mill the chalk is put into great machines and ground in water. It is then floated off into vats of clear water, where all the impurities and foreign substances are precipitated, the water being afterward drawn off by a series of filtering operations, and the soft residuum dried by steam heat and exposed to the air. The substance is then reduced to a powder of different degrees of fineness by grinding in a burr mill and belting, when it is ready to be packed in barrels and shipped for use. In America the largest consumers of chalk are the rubber-goods manufacturers. Rubber in its crude state being sticky, unmanageable and available only for very simple purposes, becomes vulcanized and hardened by adding to it chalk while it is hot, thus rendering it suitable for the various uses to which it is put. A large quantity of chalk is also employed in the preparation of paint and putty, being termed whiting when in this form." — *Washington Star.*

The Monastery of Monte Cassino, Italy. — Monte Cassino, which the Archduchess Stephanie of Austria recently visited, in fulfilment of a vow, is perhaps the most famous abbey in the world, and was founded by St. Benedict, in 529, who, in a fine religious fury, pulled down the Temple of Apollo, smashed, with holy disregard of art, the statues, demolished by fire the grove of Venus, and established the Order of the Benedictine Monks, some of whom accompanied St. Augustine to England when he went there at the command of Pope St. Gregory I to convert the "barbarians." The abbey was destroyed by the Lombards, set on fire by the Saracens, ruined by the earthquake of 1349, and demolished, except the high-altar designed by Michael Angelo, in 1649, to be rebuilt for the fourth time in 1727 in more ornate fashion. Numbers of saints and several popes have been Benedictines of Monte Cassino, among the latter Pius VII, so disrespectfully treated by Napoleon I, and several kings have retreated there to join the brotherhood; for instance, Charlemagne, whose remains are still venerated there, although it is known that he died in France. Through the Middle Ages the Cassinesi, as the Benedictines from the abbey are called, were found everywhere; on the battlefield, in diplomacy and in theological discussions, being at the same time feudal lords, soldiers, literary men, ascetics — a little of everything. Their greatest merit is having been a beacon of science, art and literature through the darkest ages. In fact, the chief sight of the abbey is still the library, composed of 30,000 of the rarest volumes. — *Boston Transcript.*

How Buildings are stolen. — "It is, speaking literally, little short of amazing how many of a class we call 'property-jumpers' flourish, year in, year out, by boldly taking possession of houses, furnished and unfurnished, the owners of which have gone away — gone away without appointing any agent, in most cases — and it need hardly be said that these rogues get the biggest hauls in our teeming cities," says an English writer. "Not long ago there was tried a man who had actually pulled down two complete villas in one of the busiest residential parts of London, and sold every stick and stone of the materials for a handsome sum without the owner having the faintest idea of what was going on. And, speaking of this trick, all London builders and agents could tell you of one man who, some five years ago, artfully chose, with his confederates, nearly a score of houses and buildings that were empty, sold the materials of these for ready money to various house-breaking firms — of course, I mean house-demolishing firms — and then disappeared. The demolishers had so little idea that they were not working for the real owners that quite half the properties had been levelled with the ground before the swindle was discovered." — *Exchange.*

The Destruction of the Como Electrical Exhibition. — So rapid was the spread of the fire at the Como Silk and Electrical Exhibition that in thirty-five minutes from the first outbreak the whole building, covering some 16,000 square yards, was entirely destroyed. At ten minutes past ten yesterday morning an apparently accidental contact of two electrical conductors in the neighborhood of the marine section set fire to the marine gallery. An attempt was immediately made to use fire-hose, but for a few minutes the pumps refused to work, and when they were got into working order the fire had become unmanageable. Proceeding with incredible rapidity along the marine gallery to the central rotunda, the flames in a few minutes entirely enveloped the exhibition building, which was constructed of wood throughout. At 10:20 the rotunda fell in; at 10:30 the principal façade tottered and came down with a crash. Immediately afterwards the immense boilers used for driving the dynamo exploded. Two compressed-air gasometers likewise blew up. At 10:45 the whole exhibition, valued at nearly £500,000, was utterly destroyed. Fortunately, at the moment of the outbreak few visitors were in the building. The alarm being promptly given, all, including the attendants and workmen, were able to escape. No lives appear to have been lost. Salvage operations were practically precluded by the rapid spread of the flames, the only objects saved being a painting and Volta's sword of honor from the Volta exhibition, and a few pieces of silk from the silk gallery. All the large exhibits, as well as the exhibition building, were covered by insurance, but many small exhibitors are reported to be ruined. The news of the disaster created consternation throughout the country. King Humbert and General Pelloux immediately telegraphed expressions of sympathy. If an endeavor should be made to rebuild the exhibition large help would probably be forthcoming from the King, the Government, and the public generally. Keen regret is expressed for the loss of the invaluable Volta records, which constituted an important feature of the exhibition. The great electrician's original instruments and contrivances, his correspondence with Aldini, Humboldt, Gay Lussac, Galvani, and Banks, his note-books and records of experiments are all destroyed. The exhibitions of fine arts and of sacred art are, fortunately, preserved intact, but several valuable tapestries placed in the main building are completely lost. — *Rome Despatch, London Times, July* 11.

Proposed Demolition of the Great Wall of China. — It is somewhat remarkable that when China is on the eve of the introduction of Western methods of engineering, she should be threatened with the demolition of the most important engineering work she possesses, namely, the Great Wall, which, stretching from the sea at the 120th degree of longitude, and fringing the northern part of the empire to the 100th degree, stands as a monument to one of the greatest rulers China ever had. Erected 200 years before Christ, for the purpose of keeping back the warlike Tartars, the Great Wall of China is older by three centuries and a half than the walls of Hadrian and Antonine in our own country. These latter were insignificant in comparison with the Chinese work, neither of them being nearly 100 miles in length, while the engineering feat of the Emperor Shih Hwangti extends from the shores of the Gulf of Pe-chi-li to the remote inland Chia-yu barrier gate, a distance of 1,200 miles. The British walls have almost disappeared, being only traceable here and there by green mounds or shapeless fragments of masonry, except at a few points which owe their preservation to the care of the archæologist. The hand of time, aided sometimes by the hands of the utilitarian builder, who has found some parts of the walls convenient quarries, has slowly but surely removed almost the whole of the work of the Roman engineers. Shih Hwangti did his work in a most substantial manner, for his wall remains to-day in almost perfect condition. The conservative tendencies of the Chinese saved it from the ravages of the builder, and it has stood for centuries, not only as a wonderful monument of human industry and patience, but also a symbol of the immobility of Chinese civilization. The wall proved to be of no avail to keep off the invader; and probably its demolition may be intended to show, now that China has made a start in Western civilization, he means to make up for her stationary condition during the past 2,000 years. It is stated that an American engineer is *en route* to China on behalf of a syndicate of Chicago millionaires, on whose behalf he is to take a share in the expected big contract to be given out by the Chinese Government for the demolition of the wall. It is further stated that one French, two British, and three German firms are also bidding for the work, payment for which is to be ample in the shape of rich concessions; so that out of the ruins of the wall there may arise great engineering and industrial works, which may change the whole future of China. — *Engineering.*

The Duty on an Antique Limoges Ewer. — The board of classification of the United States general appraisers announced, July 17, a decision regarding the duty on a ewer and basin, of Limoges ware, imported by George J. Gould. The articles were imported more than a year ago. The ewer and basin were valued at $14,000, and the collector assessed a duty of 60 per cent under paragraph No. 95, act of 1897, which relates to decorated china. The importers decided that the goods should be classified under paragraph No. 454, which imposes a duty of 20 per cent ad valorem upon paintings in oil or water-colors not especially provided for. The articles, however, are made of copper and are covered with fusible enamel, and the board decides that they should be classified under paragraph No. 159, as articles of iron, steel or other metal, enamelled or glazed with vitreous glasses. The duty under this paragraph would be 40 per cent under the code of customs procedure. However, as the imports did not come under paragraph No. 159, the protest is overruled, and the assessment of duty is affirmed. Mr. Gould will have to pay about $8,400 duty, nearly $3,000 more than would have been assessed if his agents had not made a mistake in their protest. The goods, which were made in the sixteenth century, were long ago delivered to Mr. Gould. — *Boston Herald.*

S. J. Parkhill & Co., Printers, Boston, U. S. A.

The American Architect and Building News

ADVERTISERS' TRADE SUPPLEMENT.

No. 207. SATURDAY, AUGUST 5, 1899. Volume LXV. No. 1233

FLEXIFOLD MATERIAL.

Flexifold material was invented and perfected to meet a general demand for a method of closing large openings without lifting, straining, or the obstruction of posts or mullions.

This result we accomplish with our substantial sound-proof vertically rigid coiling partitions that are made to harmonize with the architecture and take the place of the old-time lifting and spring-rolling wood curtains, without any of their objectionable features.

They are made to look well, operate smoothly and easily on ball bearings, and are thoroughly practical for the subdivision of large areas, without any interference of posts or mullions, necessary in all other forms of partition.

They are already in use and doing excellent service in hundreds of modern buildings in all sections of the United States, subdividing rooms and closing wider openings than ever before attempted, and for durability and excellence are unsurpassed.

The application of our material to modern architectural requirements is practically without limit.

The horizontal partition is usually made of ½-inch material hung to a shaft on springs rolled up like a curtain. To obtain access from one room to another the whole partition must be raised. The method of operation is very unsatisfactory, as it must be lifted from the floor and finally raised to full height by a pole. The extreme width of a horizontal partition for practical use is 12 feet, and in order to combine large rooms, mullions or posts must be provided, which, if permanent, are an obstruction, and if removable a serious objection.

The horizontal roll necessitates casing or boxing, and special architrave is necessary, often a detriment to the architecture.

The vertical partition eliminates all objections and possesses many and obvious advantages over the horizontal, being especially desirable for closing large openings, allowing numerous rooms to be thrown into one, dispensing with all posts, mullions or overhead boxes, and rendering it easy to isolate or combine apartments at pleasure. It is more door-like in appearance and operation, and when coiled away nothing but a door-jamb or pilaster is visible. Combinations impossible by any other method can be obtained by the use of vertical partitions.

To successfully make and operate substantial sound-proof and practical vertical partitions has required new principles of construction entirely distinct from those heretofore in use. To produce these results the inventive skill of the most ingenious mechanics has been employed. Many special machines have been devised and no expense has been spared in making perfect in every detail the flexible and flexifold principles in use in all our manufactures, enabling us to produce the highest class of products at a minimum of cost. Vertical flexifold doors and partitions are in the line of utility.

We confidently assert that there are no building plans drawn wherein one or more of the various adaptations of the flexifold material cannot be used to greatly benefit both architect and owner as to cost, economy of space and convenience.

The superior method of our improved coiling partition is at once apparent. The appearance is one of strength and durability; the interlocking hinge connection insures perfect alignment; practical and easy operation at all times; proof against communication of sound and conveyance of dust, and while far superior to any substitute method, is guaranteed more economical in cost and in space occupied.

Coiling. — The flexifold partition is made to coil from the centre on a ball-bearing revolving plate attached to a steel shaft. In operation, as the diameter of the roll around the shaft increases, the leverage increases in the same ratio, making it unquestionably practical to coil away flexifold partitions of any widths or sizes, which can be transported or handled, and do so without friction, strain or pressure.

The operation of flexifold coiling partitions on such bearings without springs, weights, or spiral guides is found in every case to be easy, smooth, simple and satisfactory. A positive and easy action is obtained by means of a simple sprocket that engages with a helical reel that regulates the size of roll and prevents abrasion, making an even tension at all points. They are suited to all climatic conditions, and the mechanical perfection of this apparatus is conceded by experts.

Rigidity. — The construction being mechanically accurate and vertically rigid, it will not sag, drag or get out of perfect alignment, and admits of sheaves or trolleys from four to five feet apart. These are the best anti-friction sheaves, and run on a hardwood grooved steel-lined track, either at floor or overhead, thoroughly supporting and reducing friction to a minimum.

No springs, weights or cords.

Saves valuable floor areas, and, therefore, cost of construction.

Convenience and ease of operation.

Renders possible combinations not otherwise obtainable.

Admits isolation of the various departments, being sound-proof as the usual door.

Simple in construction, easily placed in position, positive in action.

Flexifold material is made of selected wood mouldings not less than ¾-inch in thickness, 1½ to 2 inches wide, rigidly hinged together with several series of continuous ¼-inch steel rod connections, having shoulders so devised and inserted into and through the wood mouldings that the door or partition is vertically rigid, any settling of the individual mouldings being practically impossible.

This ingenious interlocking hinge connection is simplicity itself in construction; is made by our special automatic machinery; admits of the entire door or partition being taken apart and put together again in case of injury or accident, and, by its use, the finished door presents the same moulded surface on both sides.

"Flexifold" is made from any suitable wood, finished natural, stained, or painted to order, according to specifications.

FIREPROOF STEEL-CLAD FLEXIFOLD DOORS.

The Flexifold Steel-clad Fire Partitions, either vertical or horizontal, are identical in operation with our regular Flexifold Wood Partitions heretofore described.

The Steel-clad is especially designed as a substitute for the usual tin-covered swing or sliding fire-doors in the many places where the latter are found to be impracticable, ungainly, or in the way. Insurance underwriters will at once recognize the sensible and adaptive features of this fire-wall closure. The practical possibilities of the steel-clad for wide openings afford results which are not obtained by any other fireproof material.

For fire-wall openings, fire-stops and compartments in stores, warehouses, factories, theatres, hotels, corridors, elevator, light and air shafts, engine, boiler and storage vaults, and window openings generally.

Subdivide large areas and thus decrease your insurance rates.

Steel-clad doors are approved by underwriters and fire-inspectors as equal to the Standard Fire Door (a wood door covered with sheet tin or iron) in fire-resisting properties, and are *inexpensive.*

Our steel-clad material is constructed of wood mouldings completely metal-incased and lock-seamed by being drawn through ingeniously contrived and powerful machinery of our own patent. Attention is especially directed

to this lock-seam, without which, in case of fire, the steel shell is worthless. These air-tight shells with wood cores are hinged together with concealed interlocking steel hinges, forming continuous metal chains through the width of partition. Flexifold Fire Doors are handsome, strong, and are so carefully and mechanically constructed that they may be rolled easily backward and forward. The bright metallic shells are lacquered or painted to appear identical with surrounding woodwork.

FLEXIBLE DOOR AND SHUTTER CO.,
WORCESTER, MASS.

PENCILS MADE OF HISTORIC CEDAR WOOD.

FLORIDA is the home of the straight grained, soft, red cedar of which all fine pencils the world over are made.

The building of Fort Marion, St. Augustine, was begun by the Spaniards in 1650 and the wood used in construction of the girders was the same kind of red cedar used for lead pencils. Mr. John A. Walker, the vice-president, treasurer and general manager of the Dixon Company, while on one of his annual trips to the Dixon Cedar Mill at Crystal River, Fla., where all the cedar is sawed for our "American Graphite" pencils, stopped off at St. Augustine for a few hours' recreation. While there, Mr. Walker visited Fort Marion, the oldest fort in the United States, and found the officer in charge taking down one of the old cedar girders. On Mr. Walker making himself known and expressing a wish for a piece of the historical wood he was presented by the officer with about a cubic foot of the coveted and precious wood, and on his return to the factory had it manufactured into lead pencils and appropriately stamped. These lead pencils he has shared with his many friends, by whom the pencils are most justly prized.

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

NOTES.

MESSRS. BOMMER BROS., manufacturers of the well known Bommer Spring Hinges, have removed to, and are now fully installed in their new factory building, 257 to 271 Classon Avenue, Brooklyn, N. Y. The main building has light on all sides, is 60′ x 120′ in size and four stories high, on a plot 200′ x 100′. Engine and boiler rooms, storage for coal, etc., are located outside and separate. The factory is in every respect modern in design and of slow-burning mill-construction, every precaution of tried value such as automatic sprinklers, etc., being taken to minimize fire-risk, and special pains were taken to secure good light and ventilation and sanitary surroundings for the employés.

The power plant consisting of a battery of Bigelow high-pressure boilers, arranged for either forced or natural draught and a Watts-Campbell 100 horse-power Corliss engine is working perfectly. The building contains fireproof vaults for storage of dies and special tools. Messrs. Bommer Brothers desire to thank the trade for the liberal patronage accorded them and which it has ever been their aim to merit.

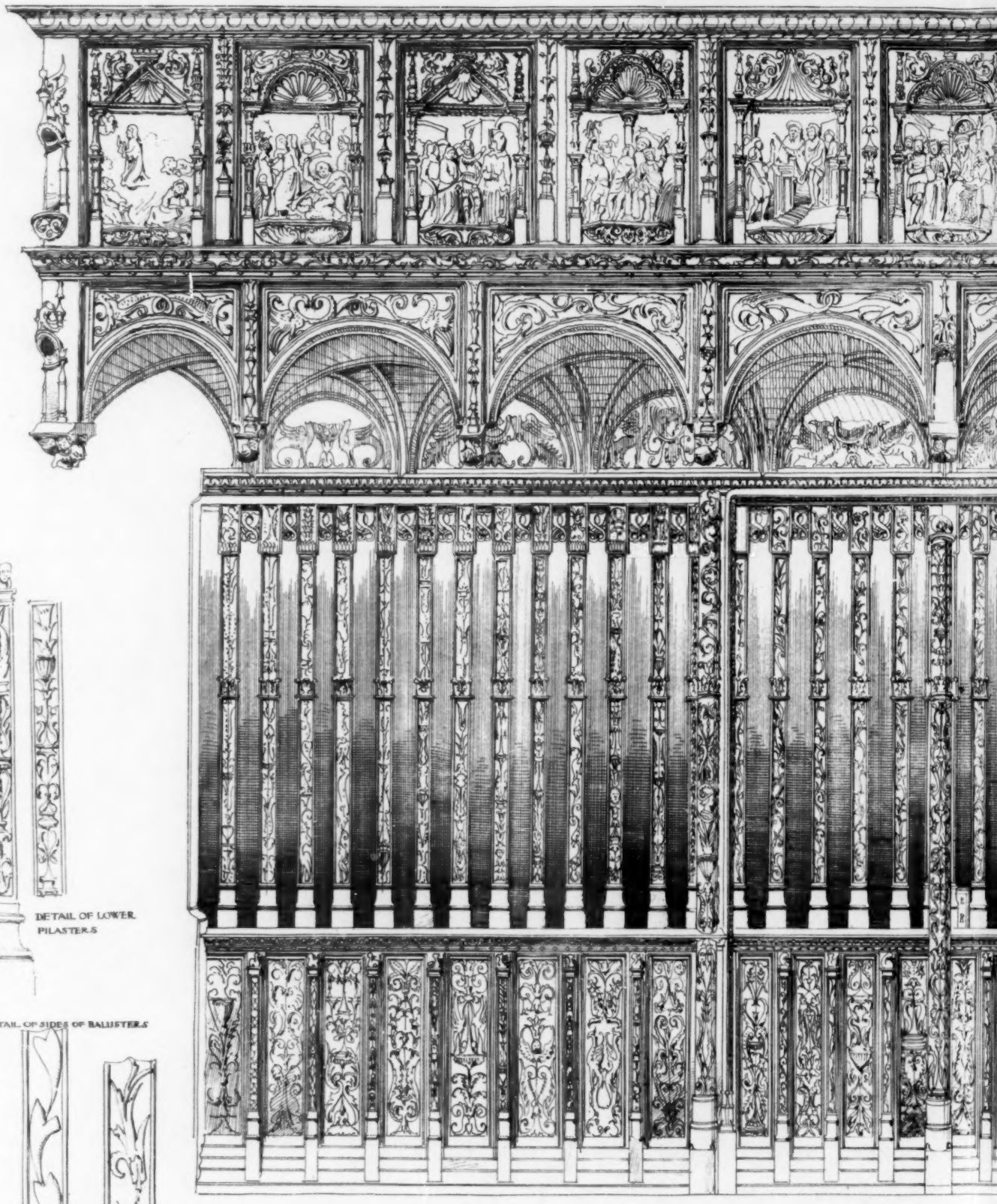
They hope with their now largely increased facilities to be enabled better than ever to serve their customers.

A SET of four bright-colored, celluloid thumb-tacks, bearing the advertisement of Wood's Steel Corner for Plaster Walls, is being sent out to a selected list of architects, by the manufacturers of the corner, Gara, McGinley & Co., of Philadelphia. This is by far the most sensible thing we have seen among the many advertising novelties that are sent to the architects. The steel corner bead itself only needs one careful glance to appreciate its usefulness. This the building public have given with a large demand for it as the result. It makes a neat, trim plaster corner, perfectly protected without the detraction of bulkiness; the plaster keys completely with it. The manufacturers will doubtless respond to a request for a set of the thumb-tacks, with descriptive matter and sample of the corner by mentioning the *American Architect and Building News.*

CURATORS of the large art museums, from their long experience in hanging paintings, so as to show them to the best advantage, have become experts in judging when a picture is perfectly lighted. The retail merchant, who uses his windows to draw trade, has much the same problem before him as the curator of an art gallery. This is particularly true of the dry-goods merchant, who needs to consider carefully the color scheme of his windows. Dress fabrics attract the feminine eye, first of all, by their color, and to preserve this color value under artificial light is an important consideration in all show window lighting. Art museums, by their almost universal adoption of I. P. Frink's Picture Light, have solved the problem of keeping the color values of costly paintings, under artificial light, and theirs is a safe lead for the merchant, or his electrical engineer, to follow. Mr. Frink uses essentially the same system in his special patent store-window reflector that he installed in the Metropolitan Museum of Art in New York, the Corcoran Gallery in Washington, the Carnegie Library in Pittsburgh, and many other public and private galleries. Electrical contractors and engineers can at any time get a free estimate on the cost of this system by sending measurements of the windows they wish to light to I. P. Frink, 551 Pearl Street, New York. Mr. Geo. Frink Spencer, the manager, takes particular interest in the application of this system to store-window lighting, and gives his personal attention to inquiries concerning it.

MINERAL wool is invaluable in the construction of hospitals, asylums, and similar institutions, because of its non-decaying properties, and that it contains nothing to harbor disease germs, in connection with its insulating qualities, arresting the spread of fire and deadening of sound. The free use of this material will so retard the spread of fire as to afford ample time for the escape of all inmates, to say nothing of the increased probability of quenching the flames and saving the structure itself. The mineral wool is low in price, and the extra expense of its use is far from being commensurate to its value, and the additional comfort and protection it affords. For samples, etc., write

U. S. MINERAL WOOL CO.,
2 CORTLANDT STREET, NEW YORK, N. Y.



DETAIL OF LOWER PILASTERS

DETAIL OF SIDES OF BALUSTERS

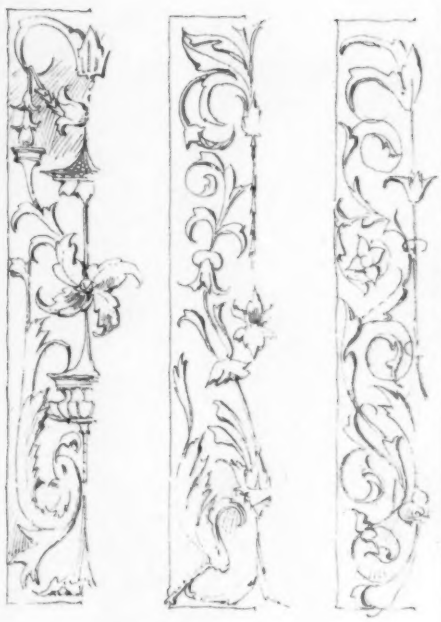
SCALE 1 METRE

SCREEN AND LOFT, VIL

BOTH SIDES ELABORATELY

OFT. VILLEMAUR

ELABORATELY CARVED.



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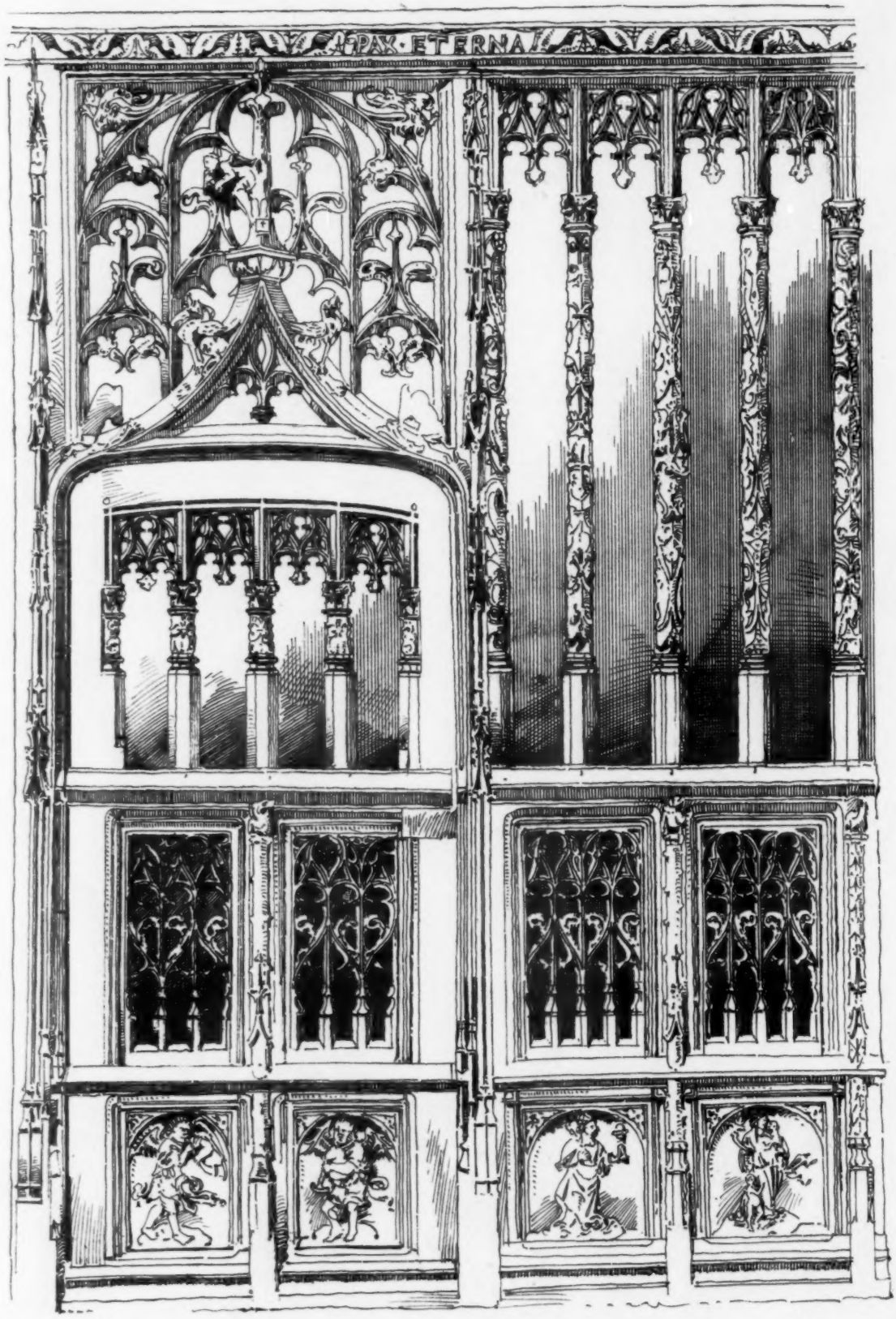

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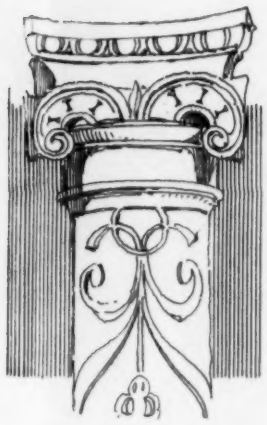
THE AMERICAN ARCHITECT AND BUILDING NEWS CO.



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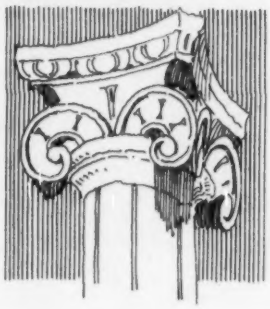

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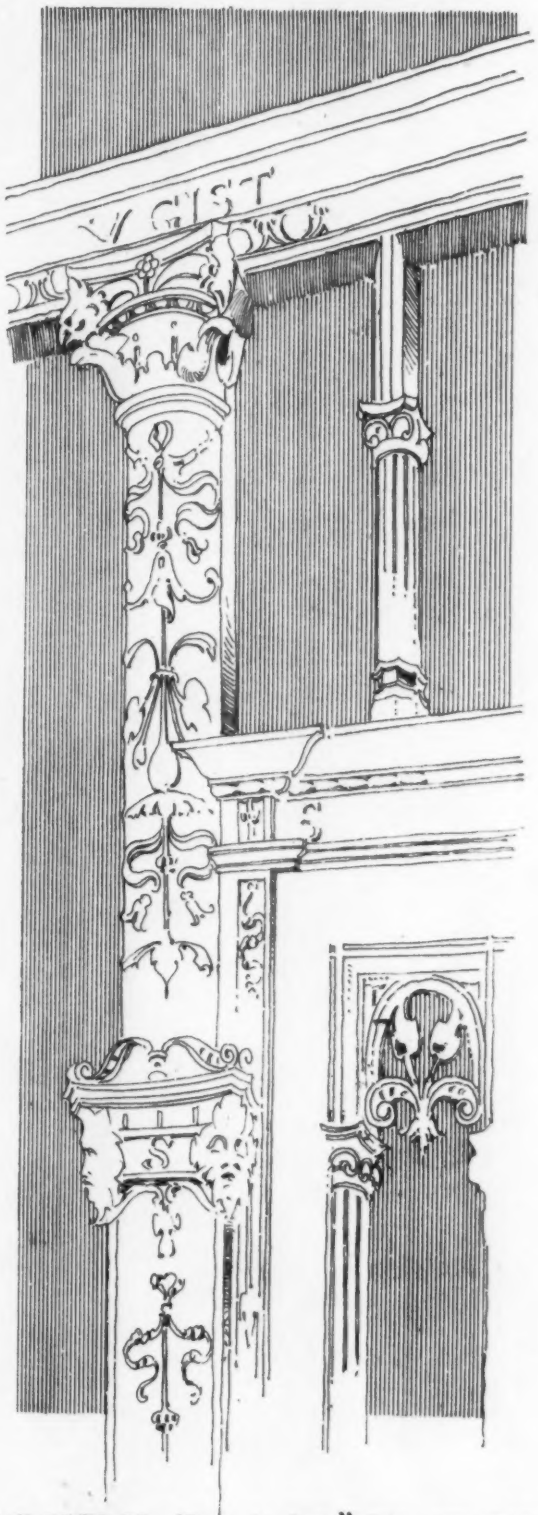
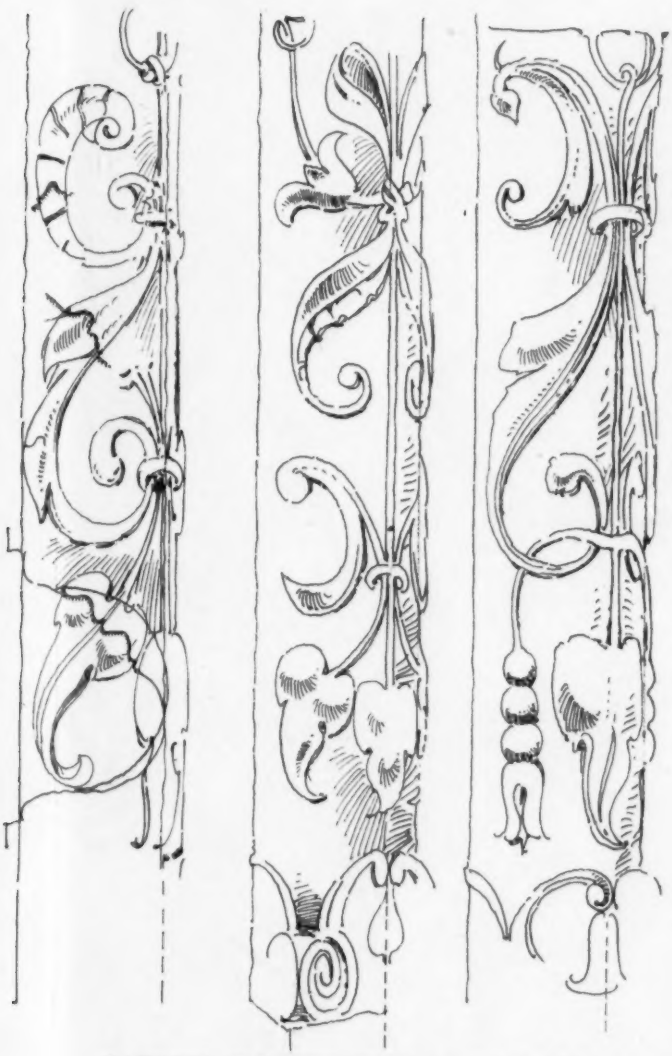
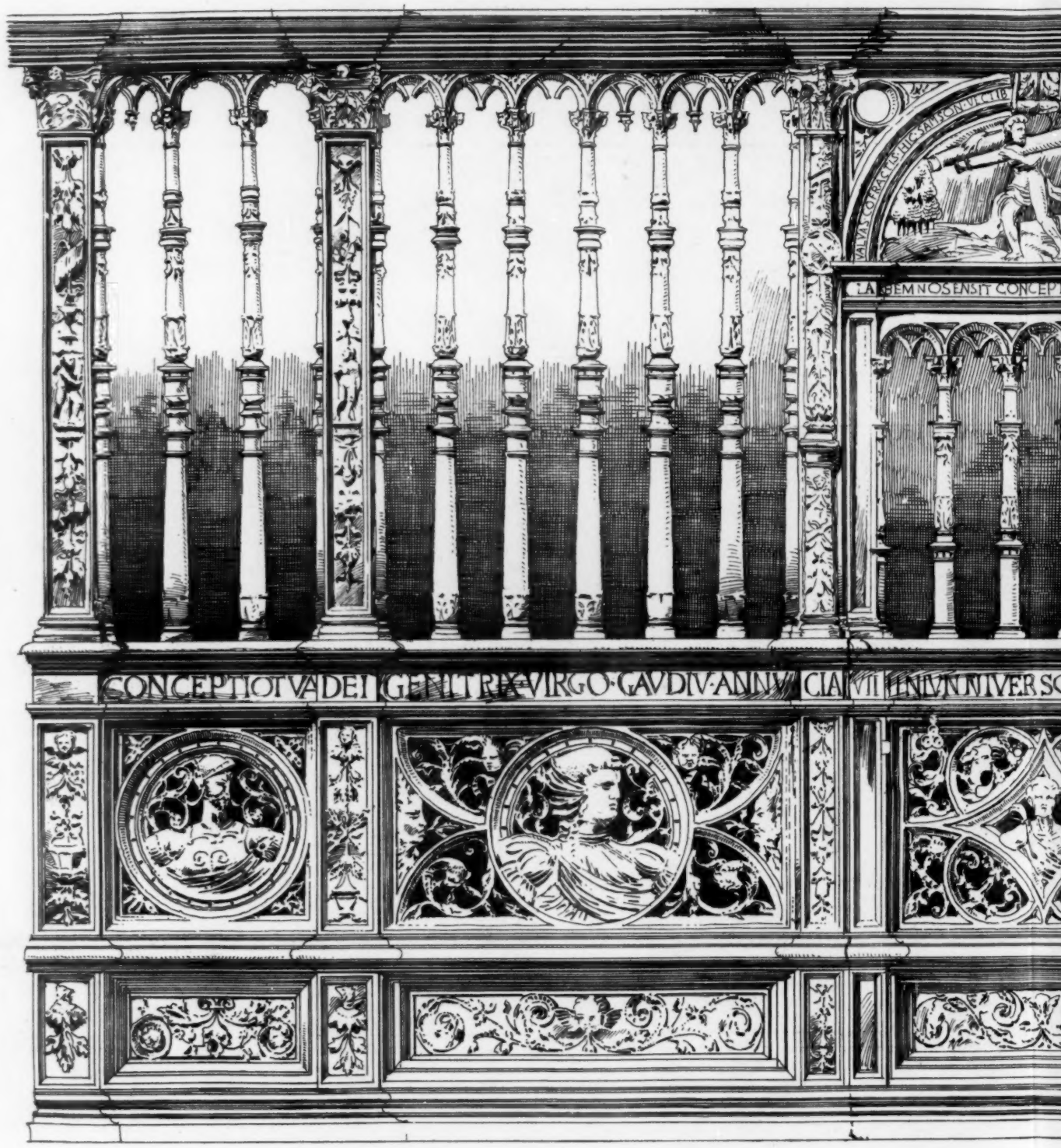




CARVED SHAFTS FROM A REN. SCREEN

SCREENS IN "CATHEDRALE NOTRE DAME" EVREUX

W.T. PARTRIDGE, del.



SCREEN IN CATHEDRA

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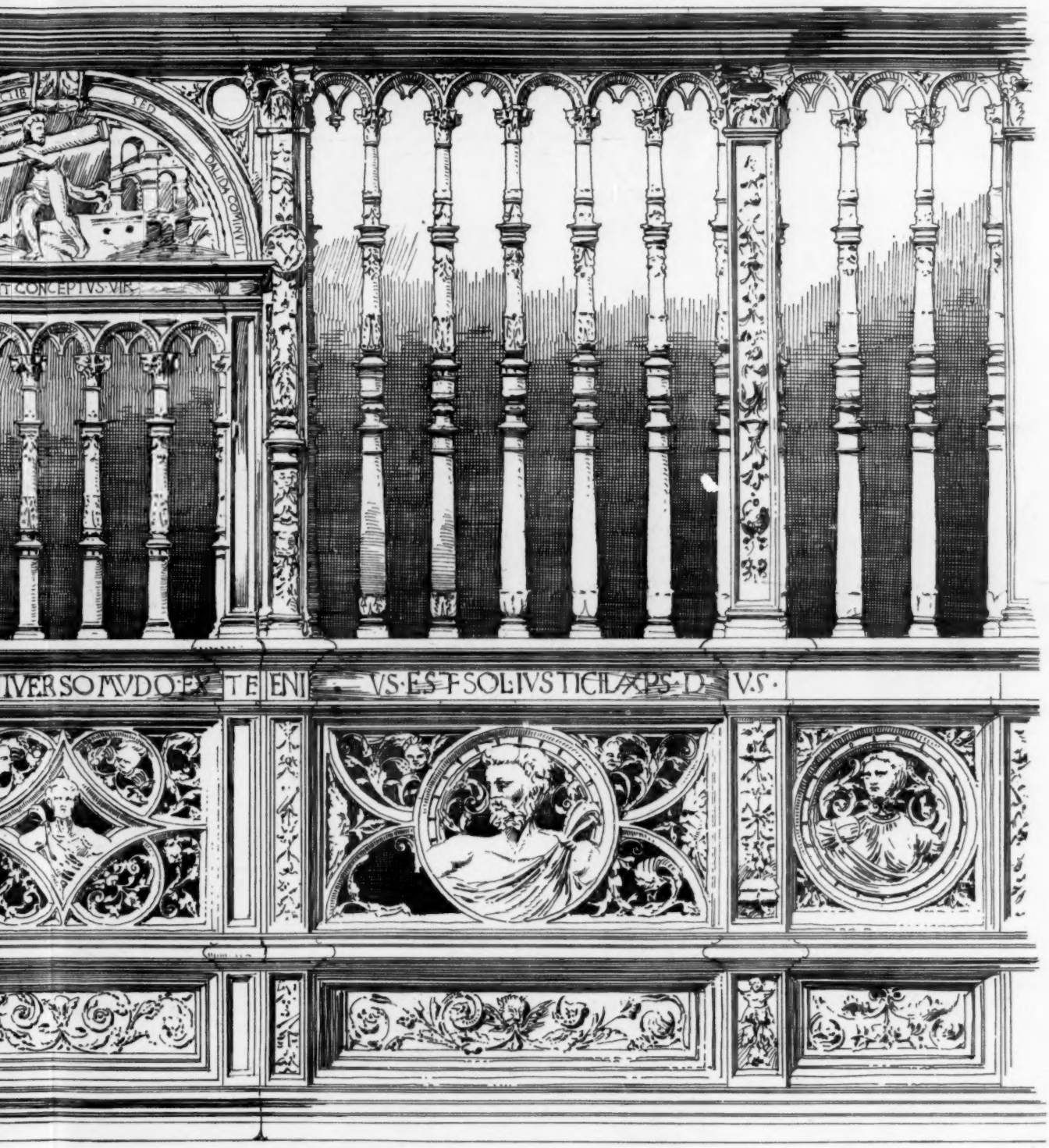


EDRAL OF EVREUX FRANCE

W.T. PARTRIDGE, del.

FROM PHOTOGRAPH

The American Architect and Building News

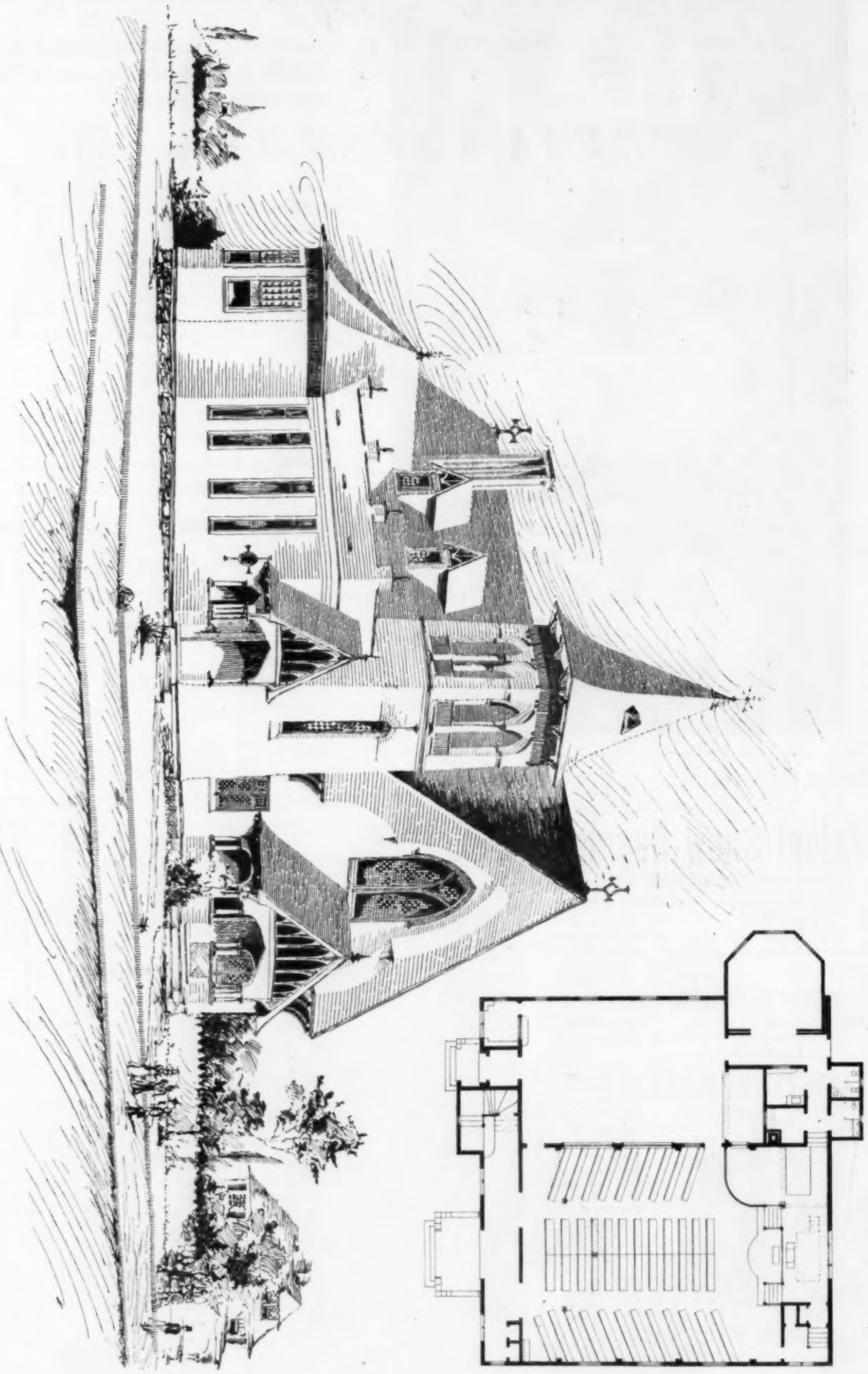
A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART.

VOL. LXV.—No. 1232.] SATURDAY, AUGUST 5, 1899. PRICE, { ROYAL (MOUNTED) 35 CENTS. IMPERIAL " 25 "

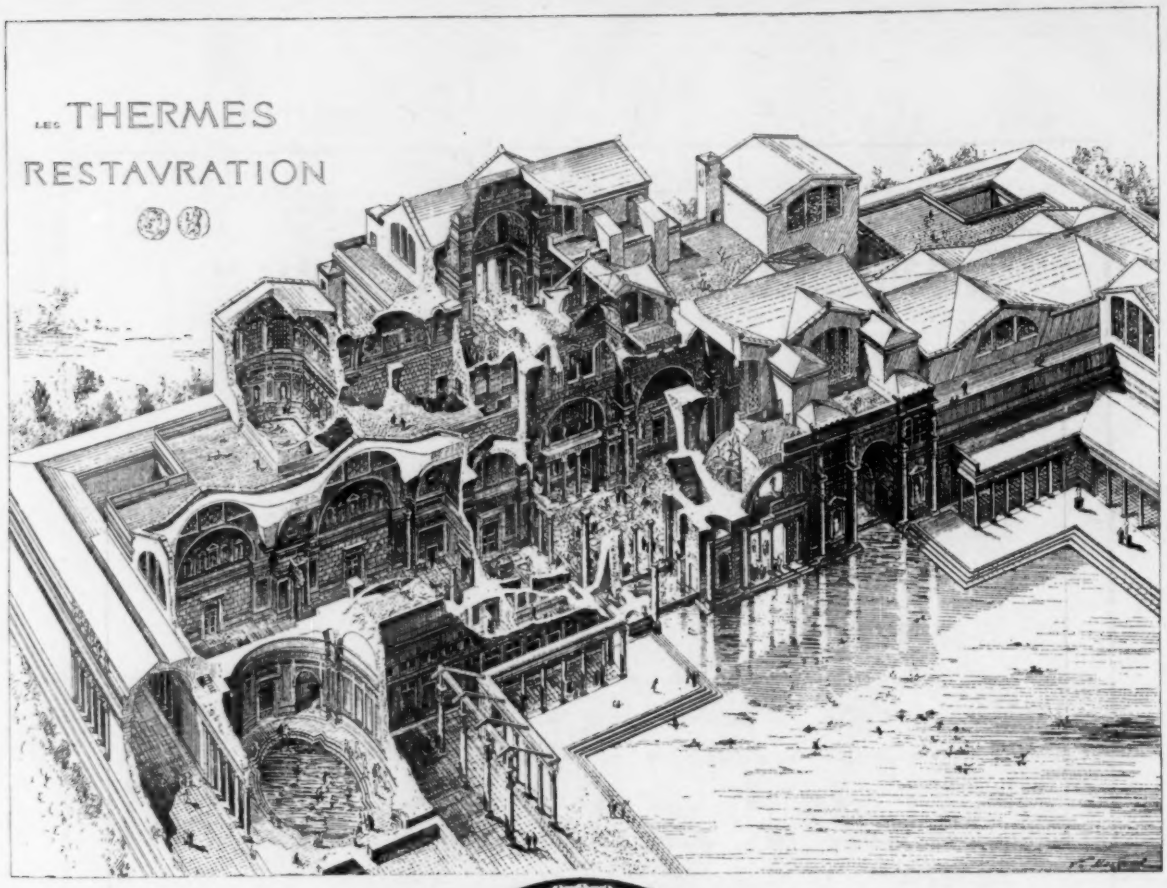
BUILDING MATERIALS.

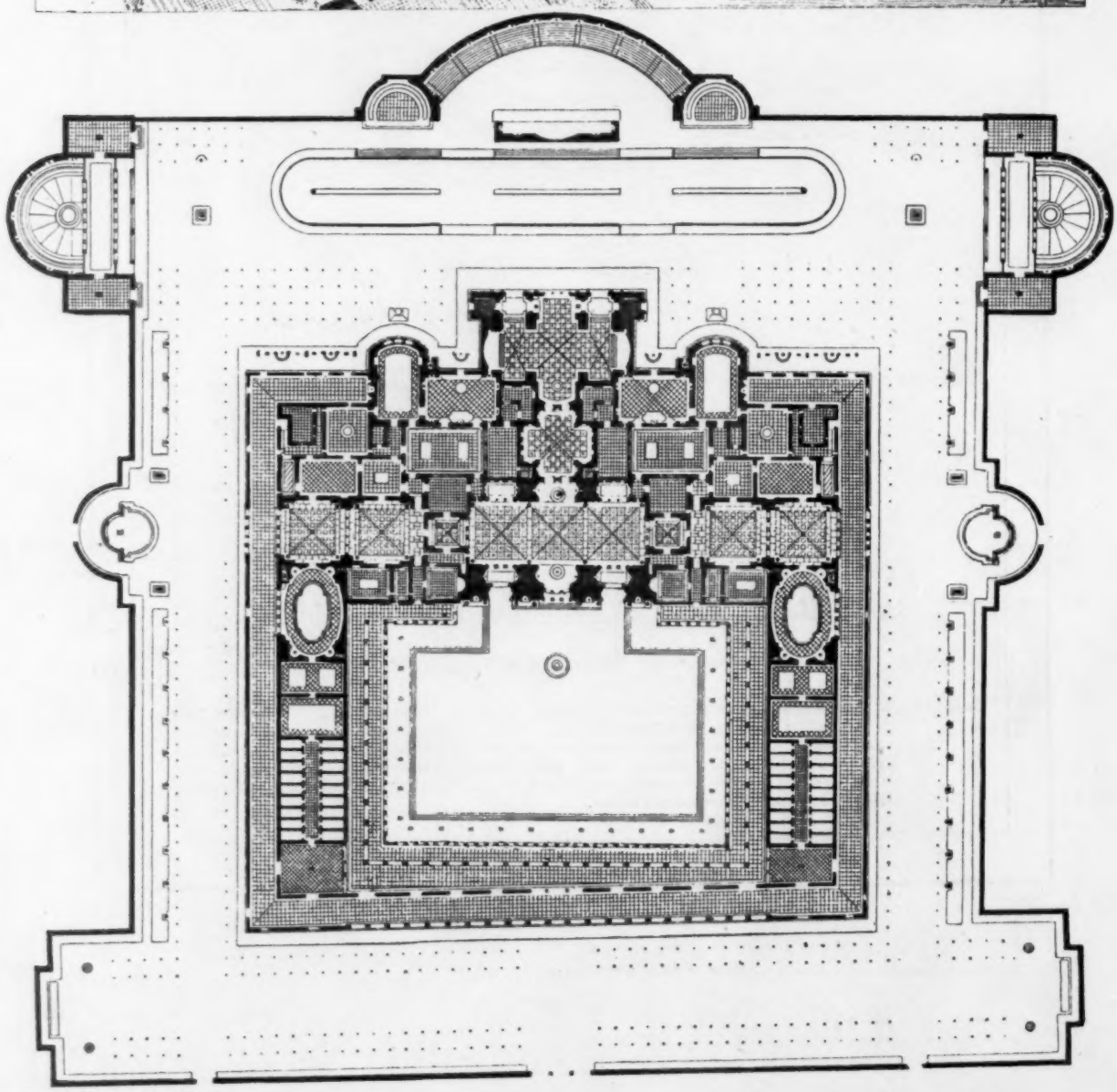
Reported for the American Architect and Building News.

BUILDING MATERIALS	New York.	Boston.	Chicago.	Philadelphia.
STONE. (₱ *cubic foot, rough.*)	(*Wholesale Prices.*)		(*Prices to Builders and Contractors.*)	
Foundation:				
Dimension	@	5 00 ₱ ton.	20 @ foot	@ 5 00
Block	@	4 60 ₱ perch.	10 00 @ cord	Conshocken
Rubble	@	1 25 @ 1 50	9 00 @ "	1 45 @ 2 50
Sandstone:				
Longmeadow	@ 80	80 @ 90	@	
Kibbe	@ 90	90 @ 1 10	@	95 @ 1 05
Brown (Connecticut)	1 00 @	1 00 @ 1 30	1 50 ₱ cub. ft.	1 05 @ 1 25
Amherst Ohio	90 @ 95	90 @ 1 00	45 @ 55	85 @ 95
Berea "	75 @ 1 00	85 @ 90	45 @ 55	55 @ 75
Berlin "	75 @ 1 00	80 @ 90	45 @ 55	85 @ 95
Belleville	80 @ 1 25	25 @ 1 35	@ 1 25	1 00 @ 1 10
New Brunswick (Dorchester)	@ 1 00	75 @ 90	*Not sold.*	1 05 @ 1 15
Potsdam Red	@ 1 30	@ 1 40	@ 1 55	@ 1 40
Caen	@	@ 2 00	@	1 25 @ 1 35
Carlisle, English	@ 1 05	@ 1 05	@	95 @ 1 05
Corse Hill (Scotch)	@ 1 05	@ 1 05	@	95 @ 1 05
Granite: (*Maine*)		@ 60	80 @ 1 50	55 @ 65
Limestone:				
Bedford	45 @ 1 25	95 @ 1 00	20 @ 40	75 @ 85
Joliet	1 00		@	Richmond
Lemont			@	₱ 75 @ 1 50
Serpentine		10 50 per ton.	@	Perch 4 50 @ 5 50
Bluestone: (₱ *sq. ft.*)			cub. ft.	
Sidewalk	30 @ 5 00	40 @ 1 75	1 00 @ 1 25	1 in. th. 10 @ 25
Planed	50 @ 6 00	@ 75	1 00 @ 1 25	37 @ 50
Marble: (₱ *cu. ft.*)				
Lee, Mass	@	1 75 @ 2 50	*Not sold.*	2 00 @ 2 50
Rutland, white and blue	@	@ 3 00	3 50 @ 6 00	2 00 @ 3 00
Sutherland Falls	1 25 @ 1 75	@ 2 00	3 50 @ 6 00	1 70 @ 3 00
Glens Falls, black	@	@	*Not sold.*	4 00 @ 4 50
Italian, blue-veined	@	@	@ 4 40	2 50 @ 2 75
" Sienna	@	@	*Not sold.*	@ 5 00
Tennessee, red	@	@	@ 4 40	4 00 @ 6 00
" Knoxville	@	@	@ 4 40	3 00 @ 4 00
Pennsylvania, blue	@	@	*Not sold.*	2 00 @ 3 00
Vermont, white	@	@	3 50 @ 6 00	2 25 @ 3 00
Slate: Roofing (₱ *square*)				
Green	5 00 @ 6 00	4 75 @ 5 25	3 75 @ 5 00	2 90 @ 3 60
" unfading	5 00 @ 6 00	5 50 @ 6 50	5 25 @ 6 00	4 25 @ 5 00
Purple	5 00 @ 6 00	5 50 @ 6 50	5 25 @ 6 00	4 50 @ 5 50
Red	@ 10 00	10 00 @ 11 00	10 50 @ 12 50	11 50 @ 13 00
Black, Lehigh	4 25 @ 4 75	@	4 50 @ 5 50	4 00 @ 4 35
" Chapmans	@	@	5 30 @ 6 15	4 50 @ 5 00
Genuine Bangor	4 35 @ 5 50	4 75 @ 5 90	5 25 @ 6 50	4 35 @ 5 50
Unfading black	6 00 @ 8 50	6 00 @ 8 50	4 25 @ 8 95	6 50 @ 9 00
" "	5 50 @ 8 00	5 50 @ 8 00	5 50 @ 9 20	6 50 @ 9 00
Tiles, Am. ₱ M	@	@	Salt-glazed tiles	@ 28 00
N. Peach Bottom, war. unfading	@	@	9" 8c. per ft.	5 76 @ 6 25
Fire Clay Roof Tile on cars at fac.	8 00 @	8 00 @	6 00 @ 6 50	8 60 @
LUMBER. — ₱ M.				
Boards: (*Ordinary dimensions.*)				
Pine, 1st quality, clear	65 00 @ 75 00	55 00 @ 75 00	50 00 @ 60 00	47 50 @ 60 00
" 2d quality	55 00 @ 60 00	@ 55 00	42 00 @ 50 00	38 00 @ 48 50
" 3d quality	18 00 @ 22 00	@ 45 00	20 00 @ 28 00	27 50 @ 36 50
Spruce	@ 25 00	14 00 @ 20 00	*Not sold.*	15 00 @ 21 50
Hemlock	@a13½ @ 14	13 50 @ 18 00	10 00 @ 12 00	11 50 @ 13 75
Yellow pine	20 @ 40	22 00 @ 40 00	18 00 @ 25 00	14 00 @ 29 00
Cypress	@	28 00 @ 55 00	30 00 @ 35 00	30 00 @ 38 00
Clapboards:				
Pine	@	35 00 @ 55 00	25 00 @ 30 00	14 00 @ 25 00
Spruce	@	24 00 @ 40 00	*Not sold.*	*Not sold.*
Framing Timber:				
Pine			15 00 @ 25 00	25 00 @ 37 30
Spruce	14 00 @ 16 00	17 00 @ 20 00	*Not sold.*	15 00 @ 21 50
Hemlock	12 00 @ 16 00	14 50 @ 17 00	10 00 @ 15 00	14 00 @ 20 00
Yellow pine	18 00 @ 21 00	25 00 @ 50 00	16 00 @ 25 00	22 50 @ 30 00
Laths:	@			
Pine ..... Round Wood	@	2 00 @ 2 50	1 90 @ 2 00	2 75 @ 3 00
Spruce ..... Slab	2 15 @ 2 20	2 25 @ 2 75	*Not sold.*	2 30 @ 2 35
Shingles:				
Pine, shaved ₱ M	5 00 @ 6 00	@	*Not sold.*	
Pine, sawed "	4 00 @ 5 00	@ 450	2 60 @ 2 75	
Spruce, sawed "	1 50 @ 2 00	1 50 @ 2 00	*Not sold.*	
Redwood ₱ 125.	1 40 @ 1 60	3 25 @ 4 00	4 60 @ 6 00	30" $35 @ 40
Cedar split ₱ M	@	@ 6 00	*Not sold.*	24" 8 @ 21
Cedar sawed "	@	2 75 @ 3 75	2 50 @ 2 90	20" 35 @ 14
Cypress. Split ..... 7 x 24 "	18 00 @ 20 00	5 00 @ 6 00	@	11 00 @ 14



SUCCESSFUL DESIGN FOR FIRST BAPTIST CHURCH, LEFFERT'S PARK, BROOKLYN, N. Y.
FRED C. WATSON, ARCHITECT.





From *la Construction Moderne.*

THE ROMAN BATHS AT TRIER, PRUSSIA:
RESTORATION BY M. BOUTRON, ARCHITECT.

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BUILDING PATENTS.

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

629,336. REGISTER OR VENTILATOR.—Rudolph R. Buehler, Philadelphia, Pa.
629,337. TILE.—Walter Cartwright, New York, N. Y.
629,375. HEAT-REGULATING DEVICE.—Frederick Lamplough, London, Eng.
629,376-377. WATER-SUPPLY FOR BUILDINGS.—Edwin A. Leland, Great Barrington, Mass.
629,396. HINGE.—William Schuch, New York, N. Y.
629,419. WINDOW.—Charles W. Bolton, Philadelphia, Pa.
629,446. WINDOW-FASTENER.—Will S. James, Fort Worth, Tex.
629,448. DOOR, SHUTTER, OR LIKE ARTICLE.—James M. Leaver, Bay Mills, Mich.
629,453. LOCK.—Léon Martel, Point St. Charles, Can.
629,462. WATER-CLOSET.—James Old, Pittsburgh, Pa.
629,463. FLUSHING APPARATUS.—Abram N. Pasman, Jersey City, N. J.
629,464. OUTLET-VALVE FOR WATER-TANKS.—Robert M. Paul, Newport, Ky.
629,468. FIREPROOF STRUCTURE.—Joseph Ray, Emery, Ill.
629,477. WALL.—Charles F. Stowell and Andrew C. Cunningham, Albany, N. Y.
629,494. DOOR CHECK AND CLOSER.—Edward Cliff, Newark, N. J.
629,567. FIREPROOF AND INSULATING MATERIAL.—Alexander Imschenetzky, St. Petersburg, Russia.
629,569. DRAFTSMAN'S CURVE.—Carl A. Klintberg, Nowköpking, Sweden.
629,613. SASH-LOCK.—Adam Rosenkranz, Allegheny, Pa.
629,628. WASHBASIN.—Jas. Totham, New Haven, Conn.
629,636. ARCH-CENTER.—John S. White, New York, N. Y.
629,638. ELECTRIC DOOR-OPENER.—Adolph F. T. Wiechers, New York, N. Y.
629,648. STOP AND WASTE COCK.—Benjamin W. Bontenreiter, Atlanta, Ga.
629,679. SASH HOLDER AND FASTENER.—Allen P. Guynes, Appleby, and Emery A. Flores, Center, Tex.
629,680. WINDOW SHUTTER OR BLIND.—George H. Hamalian, Paterson, N. J.
629,709. CLOSET VENTILATING AND FLUSHING APPARATUS.—William S. Brickell, Olean, N. Y.
629,740. HEATER FOR THAWING FROZEN EARTH, ETC.—Chas. P. Brown, Omaha, Neb.

BUILDING PATENTS.

629,753. DOOR-HOLDER.—Charles H. Ocumpaugh, Rochester, N. Y.
629,755. KNOB ATTACHMENT.—William A. Gibbs, Middletown, Conn.
629,756. APPARATUS FOR PAINTING.—John H. Davis, Chicago, Ill.

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

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

ADVANCE RUMORS.

Ann Arbor, Mich.—J. W. Wood, Detroit, has completed plans for a store and opera-house building for a stock company, of which W. Randolph McGregor is the promoter; estimated cost, $20,000.

Atlanta, Ga.—Esmes & Young, St. Louis, Mo., have been appointed as architects for the Second U. S. penitentiary to be built here; estimated cost, about $1,000,000.

Austin, Minn.—It is stated that Geo. A. Hormel & Co. will erect new buildings at their packing plant costing $40,000.

Baltimore, Md.—Roydhouse, Avey & Co., Builder's Exchange, Philadelphia, Pa., have the contract to erect a four-story brick and steel storage warehouse for Pennsylvania Railroad; cost, $250,000. Plans prepared by Wm. H. Brown, Chief Engr., P. R. R.

Blair, Neb.—It is stated that John Latenser, of Omaha, has prepared plans for a $30,000 high school.

Boston, Mass.—Norcross Bros. have the contract to erect the new Shoe Manufacturers' building for the Albany Trust, on the site of the former Albany Station on Beach St.

Brooklyn, N. Y.—The corner-stone of the new Presbyterian Church, Greene Ave., between Reid and Patchen Aves., was laid recently.

Carnegie, Pa.—The citizens have voted to issue $40,000 bonds for high school improvements.

Chicago, Ill.—Geo. L. Harvey, 115 Monroe St., has completed plans for the Wesley Hospital to be erected on Dearborn and 25th Sts. It will be six stories high and cost about $225,000.

Chillicothe, O.—The School Board has decided to

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

erect a $30,000 building, to contain a library, auditorium and school-rooms.

Cleveland, O.—Mrs. H. V. Harkness has given $30,000 to build a chapel for the College of Women of the Western Reserve University. Rev. Charles F. Thing, president.

Corona, L. I., N. Y.—Ingle & Almirall, 874 Broadway, New York City, have prepared plans for a $25,000 church for the R. C. Society.

Council Bluffs, Ia.—Cox & Schoentgen, of St. Louis, Mo., are preparing plans and bids will soon be asked for a high school building; cost, $65,000.

Davenport, Ia.—The Northern Building Co., of Minneapolis, Minn., have received the contract for the East Davenport School, at $:5,400.

East Orange, N. J.—George W. Maher, 218 La Salle St., Chicago, Ill., is preparing plans for a $60,000 pressed-brick residence, 80′ x 120′, to be erected here for Arthur Leach, of Farson, Leach & Co., brokers, 100 Dearborn St., Chicago, Ill.

Evanston, Ill.—A committee has been appointed to select a site for a new $100,000 library building.

Everett, Mass.—The Board of Aldermen has appropriated $50,000 for a 12-room school on Lexington St.

Fall River, Mass.—The erection of a $100,000 hospital is contemplated. A. I. Connell, M. D., pres.

Faribault, Minn.—Henry Peltier has received the contract for a hospital, at $17,863.

Flint, Mich.—Plans are being considered for an $80,000 addition to the State School for Deaf and Dumb.

Freeport, Ill.—Smith & Thomas have been awarded the contract for the Lincoln Avenue School, at $20,975.

Great Barrington, Mass.—A special meeting of the Great Barrington Fire District has been held in the Town Hall. The committee appointed at the last meeting to recommend a site for a new engine-house recommended the Norton lot on Castle St., which can be bought for $4,500, with the addition of this year's taxes. They also recommended an appropriation of $9,000. The report was accepted. A committee was appointed to buy the Norton lot at a price not to exceed $4,535, as soon as the present house and lot can be disposed of at a price not less than $2,500. A committee of C. J. Taylor, J. L. Pringle, J. P. Norton and the present prudential committee was appointed to proceed to erect a new building upon the Norton lot, provided that the entire cost will not exceed $9,000.

Green Bay, Wis.—An opera-house is to be erected costing $30,000.

Greenwood, S. C.—The Presbyterian Society will probably build a $14,000 church this year.

Hartford, Conn.—The General Assembly has authorized an expenditure of $125,000 for additions to the State prisons. C. C. Cook is said to have been employed to superintend the construction.

Houghton, Mich.—A three-story and basement block, 70′ x 100′, is being erected for Jas. R. Dee and Mary E. Sheldon, from plans by H. L. Ottenheimer, of Chicago, Ill.; cost, $75,000.

The contract to erect the high school has been let to Hinckley & Woods, for $42,000.

Henry L. Ottenheimer, Ft. Dearborn Building, Chicago, Ill., has prepared plans for a $100,000 hotel.

Hurley, Wis.—$20,000 bonds have been voted by the citizens for a high school.

Jersey City, N. J.—The corner-stone of the Zion German Evangelical Lutheran Church, at McAdoo Ave. and the Hudson Boulevard, was laid a few days ago with appropriate ceremonies. The new church will be of granite and brick, and will cost $30,000.

Kansas City, Mo.—Thomas G. Beaham, of Independence, Kan., has plans for the erection of a stone residence at 30th St. and Troost Ave.; cost, $40,000.

Kenosha, Wis.—The Windsor Spring Co. will erect a two-story, 46′ x 300′ main building with a one-story 46′ x 50′ addition, which will be used in the manufacture of steel springs and beds.

The plans of Cornelius Leonhoutz, of Milwaukee, are stated to have been accepted for a $16,000 Y. M. C. A. Building.

Little Rock, Ark.—Frank W. Gibb, 112 Louisiana St., has prepared plans for a $25,000 building for the Sisters of Charity.

Louisville, Ky.—The City Council has passed a resolution authorising the expenditure of $75,000 for an armory for the Kentucky State Guards.

Lynn, Mass.—P. B. Magrane, of Market St., has been granted permission to erect a block of five dwelling-houses and to make important additions to his property in Church St.

Marquette, Mich.—Lipsett & Gregg, of Sault Ste. Marie, have received the contract for the Normal School, at $22,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Milwaukee, Wis.—The Christensen Engineering Co. has had plans prepared for a $60,000 electrical machinery factory.

Plans have been completed for the proposed building to be erected for the Y. W. C. A.; cost, $40,000.

Minneapolis, Minn.—It is stated that the Department of Medicine of Hamline University will erect a new building at an early date, to be but a part of a much larger one to be erected later. It will be three stories in height, 90′ x 125′, and will cost in the neighborhood of $30,000.

Minto, N. D.—J. W. Ross, of Grand Forks, has drawn plans for a Catholic Church to be erected at the Polish settlement; cost, $20,000.

Moosup, R. I.—The committee appointed by the town to secure a situation for a new school-house has secured of G. M. Denison the piece of land west of the present school-building which joins the school-yard. At a special town meeting held in Town Hall it was voted to appropriate $8,000 for the new building.

Morocco, Ind.—E. J. Clark, Fowler, was awarded the contract at $13,219 for building the two-story brick school-building. J. F. Alexander & Son, architects, Lafayette.

Negaunee, Mich.—$9,000 in bonds have been voted to build a school-house.

Newburg, N. Y.—The corner-stone of St. Francis's Church was laid July 30th with impressive ceremonies. The church will be erected by Francis Timoney, the wealthy brick manufacturer, for the use of the brick-yard employés.

Nogales, Ariz.—H. C. Frost, of Tucson, is preparing plans for a $14,000 school.

Norfolk, Va.—Architect J. E. R. Carpenter is preparing plans for two buildings, six stories high, to cost $25,000.

North Adams, Mass.—The City Council has voted to appropriate $55,000 for the purchase of land and the erection of a school-house in Ward 3.

Northampton, Mass.—It is thought that it may be possible to make repairs on the old armory building so that it may be strengthed and made suitable for the use of Co. I. Mayor Mather thinks that under the present state of city finances a new armory would be quite a financial strain, and there are other things more necessary than a new armory.

Omaha, Neb.—Henry Voss has completed plans for a brick school building for the Nebraska Deaf and Dumb Institute, H. E. Dowes, Supt.; cost, $25,000.

Philadelphia, Pa.—The following awards for new school-buildings have been made:—

Sherman School, Frankford Ave. and Somerset St. to J. E. & A. L. Pennock; $73,573.

Building at 12th St., Allegheny and Germantown Aves. to Samuel Gourley, Jr.; $75,325.

Building at 13th and Thompson Sts., to G. W. Pierson; $76,318.

Addition to Bartram School, Cemetery Lane, to Samuel Gourley, Jr.; $11,220.

The corner-stone of the Union Presbyterian Church, 66th St. and Woodland Ave., was laid a few days ago by the pastor, Rev. Alexander Waddell, in the presence of a large gathering. The new building is to be of granite and in the Gothic style of architecture. It will be completed within the next six months, and will cost $35,000.

The laying of the corner-stone of the First Baptist Church's new edifice, at 17th and Sansom Sts., was attended by impressive exercises, in the presence of a large audience. The new building will be one of the finest and largest Baptist churches in the country. It is to be of Holmesberg granite, with brownstone trimmings, and will cover a space 95′ x 105′. It will be surmounted by a dome 125′ in height.

Pittsburgh, Pa.—Plans are peing prepared for the erection of a new brick and stone summer residence, to be erected near Sewickley for R. H. Binns; cost, $50,000.

A permit has been granted for the erection of the new St. Augustine Roman Catholic Church, to cost $140,000.

Milligan & Miller, of Wilkinsburg, have drawn plans for a school for the 37th Ward; cost, $40,000.

The North Side plant of the Riter-Conley Co. which was destroyed by fire with a loss of $150,000 is to be rebuilt at once.

Poplar Bluff, Mo.—The Board of Education have awarded the contract to James Anderson for the erection of a new school, to cost $20 000.

Richmond, Va.—A $40,000 stone church is to be erected on Laurel and Beverly Sts., for the St. Andrew's P. E. Society. Thos. Semmes, rector.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Salt Lake City, Utah.—The Coöperative Wagon & Machine Co. will put up a three-story brick and iron building 220′ long, with frontages of 52½ feet and 51½ feet respectively, on two streets.

San Diego, Cal.—Andrew Carnegie has offered to give $50,000 for a public library at this place, if a site be donated.

Shrewsbury, Mass.—Architects Fuller & Delano have prepared plans for a magnificent summer dwelling here for P. W. Moen, manager of the Amer. Steel & Wire Co. The grounds are among the finest in the State, and the estate, when complete, will represent over $1,000,000. It will be ready for occupancy next summer.

Sioux City, Ia.—Extensive repairs are being made to the Hotel Garretson; cost, $20,000.

Spokane, Wash.—Preusse & Zittel have prepared plans for a $30,000 brick warehouse to be built by Mr. Shields on Monroe St., near the N. P. R. R. tracks.

Steubenville, O.—Report states that Andrew Carnegie has donated $50,000 for a public library and Dr. A. M. Reid, of this place, is to have the matter in charge.

St. Paul, Minn.—Report states that M. Tyson and William Lindeke will erect a three-story business block on Robert St., between 5th and 6th Sts.; cost, $50,000.

H. Kretz & Co. have prepared plans for a new four-story orphanage to be erected by the St. Joseph's Orphan Society; cost, $50,000.

Suffield, Conn.—The Martin J. Sheldon place on Main St. is about to be greatly improved. Mrs. J. Ogden Armour, of Chicago, Ill., daughter of Mr. Sheldon, is having plans made for the building of a palatial summer residence. The grounds will be laid out by a landscape gardener, and the improvements will cost $250,000, or more.

Tampa, Fla.—The First Congregational Church has accepted plans for a new stone edifice that is to cost $30,000.

Thorpe, Wis.—Nye, Lusk & Hudson's heading and stave mill has been burned with a loss of $50,000. It will doubtless be rebuilt at once.

Warsaw, N. D.—J. W. Ross, of Grand Forks, has completed plans for a church for the Catholic Society; cost, $25,000.

Washington, D. C.—The contract for a building for M. G. Emery, to be subsequently rented and occupied by the census office, has been awarded to Jas. L. Parsons, 322 Tenth St., S. E., at $104,000.

Westfield, Mass.—Much building is in prospect here. E. A. & S. A. Allen are to build another factory building; Wm. H. Ensign a two-story addition to his factory, and the Street Railway Co. is to build an addition to its power-house.

APARTMENT-HOUSES.

Chicago, Ill.—*Orchard St., No. 563*, three-st'y bk. flats, 25′ x 67′; $10,000; o., Daniel Riordan; b., Ernest Gamoll; a., Z. T. Davis.

Sixty-sixth St., Nos. 628-34, three-st'y bk. flat, 58′ x 74′; $20,000; o., Wm. McKerlie; b., W. H. Bell; a., W. S. Smith, 134 Van Buren St.

Jackson Ave., Nos. 6446-52, 3 three-st'y bk. flats, 25′ x 71′; $21,000; o., Frank Hessenmueller; b., H. Pekholz.

Rockville, Mass.—*W. Main St.*, bk. flat for six families; $15,000; o., F. T. & Wm. Maxwell; b., Frank Hutchinson; a., Hartwell, Richardson & Driver, Boston.

EDUCATIONAL.

Brookline, Mass.—*Homer St.*, two-st'y convent & school; $8,000; o., Rev. L. J. Morris; b., M. Merrigan; a., T. J. Untersee.

Flint, Mich.—Three-st'y bk. & st. School for Deaf, 88′ x 216′, slate roof, fan system of heating; $80,000; o., State of Michigan; a., F. W. Hollister, Saginaw.

Minneapolis, Minn.—Three-st'y bk., st. & terra-cotta structure for the East High School, 155′ x 178′, with finished 14′ basement; o., Board of Education; a., E. S. Stebbins.

FACTORIES.

Boston, Mass.—*Everett St.*, cor. Braintree St., Ward 25, bk. building, 59′ x 120′, flat roof, steam; $25,000; o., Thompson & Harris Co., 110 High St.

Detroit, Mich.—*Quoin St.*, three-st'y & base. bk. laboratory, 60′ x 518′, mill construction, comp. roof, steam; $50,000; o., Parke, Davis & Co., Atwater St. & Joseph Campau Ave.; a., Donaldson & Meier.

BUILDING INTELLIGENCE.

(*Factories Continued.*)

Pontiac, Mich.—Five & three-st'y building, 80′ x 144′ & 80′ x 100′, iron roof, steam; $20,000; o., Pontiac Spring & Wagon Works.

HOTELS.

Albert Lea, Minn.—3½-st'y st. & bk. hotel, 50′ x 186′; $60,000; o., Albert Lea Hotel Co.; a., F. W. Kinney, Austin.

HOUSES.

Boston, Mass.—*Walk Hill St., No.* 24, Ward 24, 2½-st'y fr. dwell., 26′ x 51′, pitch roof, furnace; $5,500; o., W. A. Rosebrook; b., Calvin Lamont, 59 Warren St., Roxbury.

Park St., nr. Centre St., Ward 23, 2½-st'y fr. dwell., 22′ x 27′ x 43′, pitch roof, furnace; $5,500; o., Carl M. Mitchell; b., Guy W. Mitchell.

Tremont St., nr. Carmel St., Ward 19, three-st'y fr. dwell., 25′ x 40′, flat roof, hot water; $5,500; o., W. H. Gibbens, Randolph; a., T. J. Desmond.

South St., nr. Farquhar St., Ward 23, two st'y fr. dwell., 28′ x 42′, pitch roof, furnace; $5,000; o., A. M. Chute; b., T. R. Wills.

Selkirk St., nr. Sutherland Road, Ward 25, 2½-st'y fr. dwell., 37′ x 47′ x 52′, pitch roof, furnace; $10,000; o., C. A. Walker; a., G. D. Mitchell, 170 Summer St.

Claybourne St., No. 33, Ward 20, two-st'y fr. dwell., 28′ x 31′, pitch roof, furnace; $4,500; o., Mary J. Boden; b., Henry J. Boden, 22 Evelyn St.

Vancouver St., nr. Huntington Ave., Ward 19, three-st'y bk. dwell., 26′ x 60′, flat roof, stoves; $5,000; o. & b., D. W. Thomas, 19 Doane St.

Revere St., No. 50, Ward 11, five-st'y bk. dwell., 23′ x 35′, flat roof, stoves; $8,000; o. & b., Max Hurvitz, 87 Lowell St.

Bay State Road, No. 121, Ward 11, three-st'y bk. & st. dwell., 39′ x 70′, flat roof, steam; $35,000; o., Alice M. Childs; b., S. P. Soule & Son; a., Winslow, Wetherell & Bigelow.

Bay State Road, No. 125, three-st'y bk. & st. dwell., 39′ x 70′, flat roof, steam; $35,000; o., Sophie Moen; b., S. P. Soule & Son; a., Winslow, Wetherell & Bigelow.

Tonawanda St., Nos. 6-16, Ward 20, 6 three-st'y bk. dwells., 25′ x 52′, flat roofs, steam; $40,000; o. & b., John H. Carroll, Gerard St.

Hutchins St., nr. Elm Hill Ave., Ward 21, 2½-st'y fr. dwell., 30′ x 47′, pitch roof furnace; $6,500; o., O. H. Drisko; b., O. H. Drisko & Son.

Hutchins St., nr. Elm Hill Ave., Ward 21, 2½-st'y fr. dwell., 39′ x 50′, pitch roof, furnace; $8,000; o., Fred H. Drisko; b., O. H. Drisko & Son.

Kerwin St., No. 2, Ward 25, two-st'y fr. dwell., 29′ x 50′, pitch roof, furnace; $5,000; o., D. Frank Doherty; b., J. A. Cruickshank.

Hillside St., nr. Codman St., Ward 24, two-st'y fr. dwell., 30′ x 30′ pitch roof, furnace; $4,000; o., Walter J. Burke, 34 Athens St.; b., Thos. Doyle.

Bay State Road, nr. Beacon St., Ward 11, 4 four-st'y bk. & st. dwells., 23′ x 50′, flat roofs, furnaces; $100,000; o. & b., W. D. Vinal; a., A. H. Vinal.

Margaret St., No. 6, Ward 6, four-st'y bk. dwell., 27′ x 34′ x 37′, flat roof, stoves; $9,000; o., Ida Cohen, 78 Prince St.; a., W. E. Clarke.

Chicago, Ill.—*Indiana Ave., No.* 5758, two-st'y bk. dwell., 34′ x 54′; $10,000; o., H. L. Adams; b., Harper Bros., 159 La Salle St.

Washington Ave., Nos. 5751-53, 2 three-st'y bk. dwells., 20′ x 81′: $12,000; o., Nathaniel N. C. Rush; b., A. Meagher, 6554 Drexel Ave.

Washington Boulevard, No. 1254, two-st'y bk. dwell., 27′ x 70′; $15,000; o., C. H. Weaver; b., O. Matsen; a., Postle & Postle.

Dallas, Tex.—Two-st'y bk. dwell., 75′ x 88′, slate roof, hot water; $24,000; o., Col. A. H. Belo; a., Herbert M. Greene.

Detroit, Mich.—*Cadillac Ave.*, nr. Jefferson Ave., 3 st. dwells.; $28,000; o., George E. Currie; a., N. Wardrop.

Findlay, O.—2½-st'y fr. dwell.; $10,000; o., J. C. Fritch; a., George J. Horn.

Two-st'y fr. dwell.; $5,000; o., David Sherrick.

Flint, Mich.—Two-st'y bk. dwell., 42′ x 54′, slate roof, hot water; $6,000; o., John J. Corton; a., F. W. Hollister, Saginaw; b., A. C. Frost.

Marion, O.—Two-st'y fr. dwell., 33′ x 48′, slate roof, furnace; $5,000; o., C. E. Martin; a., Richards, McCarty & Bulford, Columbus.

Newton, Mass.—*Kirkstall St.*, two-st'y fr. dwell.; $15,000; o., C. S. Denison; b., H. F. Ross Co.

Philadelphia, Pa.—*Mt. Vernon St., No.* 1517, three-st'y bk. & st. dwell., 20′ x 74′ 0″; $6,500; o., Miss L. J. Russell; b., S. R. Riley.

Sunset Ave., w Reading Pike, two-st'y fr. dwell., 23′ x 59′; $6,500; o., Russell Thayer; b., John Kinnier's Sons.

St. Louis, Mo.—*Berlin Ave.*, 2½st'y bk. dwell., 32′ x 52′, tile roof, furnace; $20,000; o., Walter W. Candy; a., Weber & Groves.

Webb City, Mo.—Two-st'y bk. & st. dwell., 40′ x 49′, slate roof, hot water; $8,000; o., Geo. H. Bruen; a., Niemann & Boonsted, Joplin.

BUILDING INTELLIGENCE.

LIBRARIES.

New York, N. Y.—*St. Nicholas Ave.*, nr. 155th St., one-st'y bk. & st. library, 41′ x 84′; $30,000; o., Washington Heights Free Library, 311 W. 70th St.; a., Benson & Brockway, 55 Broadway.

MERCANTILE BUILDINGS.

Augusta, Ga.—Five-st'y bk. block; $50,000; o., Leonard Phinizy; a., J. C. Turner.

OFFICE-BUILDINGS.

Boston, Mass.—*Dorchester Ave. and Fenno Pl.*, Ward 24, three-st'y bk. store & office building, 48′ x 50′ x 66′, flat roof, steam; $25,000; o., F. W. Connolly, 1436 Dorchester Ave.; a., W. A. Dykeman, 27 School St.

BUILDING INTELLIGENCE.

(*Office-buildings Continued.*)

Hancock, Mich.—*Quincy and Reservation Sts.*, three-st'y & base. bank & office building, 70′ x 85′, comp. roof, steam; $25,000; o., C. A. Wright; a., Charleton, Gilbert & DeMar.

STABLES.

Boston, Mass.—*Capen St., rear No.* 19, Ward 24, two-st'y fr. stable, 28′ x 36′; $900; o., Hannah Morris; b., Peter Morris, 19 Capen St.

Partridge St., nr. La Grange St., Ward 23, 1½-st'y fr. stable, 15′ x 22′; $400; o., Michael Connolly; b., John A. Havy.

Brookline, Mass.—*Warren St.*, bk. stable; $7,000; o., Frank E. Sweetser; b., Henry H. Hunt, W. Newton.

BUILDING INTELLIGENCE.

(*Stables Continued.*)

Walnut Pl., 1½-st'y fr. stable; $3,000; o., Chas. G. Williams; b., Arthur C. Whitney.

Chicago, Ill.—*Kensington Ave., No.* 2385, two-st'y fr. barn, 25′ x 60′; $5,000; o. & b., W. P. Kindell.

Prairie Ave., No. 2832, two-st'y bk. barn, 25′ x 36′; $2,000; o., J. E. Otis, Jr.; b., Dowling & Rutherford.

STORES.

Detroit, Mich.—*Woodward Ave.*, nr. Adams Ave., bk. double store; $10,000; o., Estate of Geo. Eirsworth; b., Gray & Gray.

New York, N. Y.—*Sixth Ave.*, 21st to 22d Sts., six-st'y bk. & st. department-store, 200′ x 200′; $1,250,000; o., Adams & Co., on premises; a., De Lemos & Cordes, 130 Fulton St.

MISCELLANEOUS.

Chicago, Ill.—*Cortland St., Nos.* 1474-76, six-st'y bk. malt-house, 100′ x 181′, & elevator, 19′ x 88′ x 100′; $250,000; o., P. H. Rice; b., W. A. & A. E. Wells, Monadnock Block; a., Holabird & Roche.

COMPETITIONS.

CHANGE OF SCALE.—Society of Beaux-Arts, Class B, Order Programme No. 9, Competition No. 34. The scale of finished plan has been reduced from 1-8″ to the foot to 1-16″ to the foot. ERNEST FLAGG, Chairman.

WARD BUILDING. [At Patton, Cal.]
Plans and specifications for a new ward building for the Southern California State Hospital will be received until August 7. Approximate cost to be $35,000. M. B. CAMBELL, medical superintendent. 1231

COMPETITIONS.

Y. M. C. A. BUILDING. [At Scranton, Pa.]
Competitive plans will be received until September 15 for a new $150,000 Y. M. C. A. Building. The first prize will be $1,000 and $750 will be divided among the three next best designs. 1232

PROPOSALS.

STONE, SAND, ETC. [At Gann Valley, S. D.]
W. H. Abernathy, County Auditor, will receive bids until August 12 for furnishing and delivering 11 cords stone, 10 yards sand, 15 barrels cement and 4,300 brick; also for building a vault for the court-house. 1232

SCHOOL. [At New Rockford, N. D.]
Bids are wanted August 15 for a school and for heating same. P. J. BRAHAM, Clk. School Dist. No. 4 Eddy Co. 1232

SCHOOL. [At Circleville, O.]
Bids are wanted August 12 for a school in Special District No. 2. Z. N. MACHLIN, Pres. 1232

SCHOOL. [At Modale, Ia.]
Bids are wanted August 15 for a school. F. W. SCHWERTLEY, Secy. School Bd. 1232

COURT-HOUSE. [At Evergreen, Ala.]
Bids are wanted by the County Commissioners August 10 for a court-house. 1232

PROPOSALS.

ADDITION TO HOSPITAL. [At Sacramento, Cal.]
Bids are wanted August 10 for an addition to the county hospital. W. B. HAMILTON, Clk. 1232

SCHOOL. [At Edgeley, N. D.]
H. P. Hanson, Clerk Bluebard District, will receive bids until August 15 for erecting a school-house and shed. 1232

SEWER-PIPE, ETC. [At Washington, D. C.]
Office of the Commissioners, Washington, D. C. Sealed proposals will be received at this office until August 14, 1899, for furnishing terra-cotta sewer pipe and branches, vitrified sewer invert blocks and vitrified sewer invert bricks. JOHN B. WIGHT, JOHN W. ROSS, LANSING H. BEACH, Commissioners, D. C. 1232

STONE CARVING, ETC. [At Madison, Wis.]
Isaac S. Bradley, Secretary State Library Commissioners, will receive bids until August 23, for the stone carving and the installation of the book stacks and accompanying ironwork, electric fixtures and passenger elevator plant for the buildings now being erected. 1233

BUILDING. [At Urbana, Ill.]
Sealed proposals will be received until August 16 for the construction of the building for the College of Agriculture of the University of Illinois. W. L. PILLSBURY, Secretary of Board of Trustees, Urbana, Ill. 1233

BREAKWATER. [At Gloucester, Mass.]
U. S. Engineer Office, Boston, Mass. Sealed proposals for construction of section of Breakwater at Gloucester Harbor, Mass., will be received here until August 29, 1899. CHAS. R. SUTTER, Col. Engrs. 1233

ANNEX TO CAPITOL. [At Charleston, W. Va.]
Bids are wanted August 25 by the Board of Public Works, for an annex to the capitol. 1233

VAULT. [At Rochester, Minn.]
The County Auditor will receive bids until August 19 for building a vault at the court-house. 1233

HALL BUILDING. [At Lakota, N. D.]
Sealed bids will be received until Saturday, September 2, 1899, for the erection and completion, from the stone basement line up, of the A. O. U. W. Hall Building, at Lakota, N. D. THE A. O. U. W. HALL CO. 1233

SCHOOL. [At Paullina, Ia.]
Sealed bids will be received by the Board of Education of the Independent District of Paullina, O'Brien County, Iowa, until August 21, 1899, for the erection and completion of a school-building on the school-house grounds in said city of Paullina, Iowa, STEPHEN HARRIS, Secy. 1233

COURT-HOUSE. [At Auburn, Neb.]
J. M. Wright, County Clerk, will receive bids until August 30 for erecting a court-house, from plans by Geo. Berlinghof, architect. 1233

Treasury Department, Office Supervising Architect, Washington, D. C., July 29, 1899. Sealed proposals will be received at this office until 2 o'clock P. M. on the 29th day of August, 1899, and then opened, for the interior finish, plumbing and approaches of the U. S. Post-office, Buffalo, N. Y., in accordance with the drawings and specification, which will be furnished at the discretion of the Supervising Architect on application at this office or at the office of the Superintendent at Buffalo, N. Y. JAMES KNOX TAYLOR, Supervising Architect. 1233

Treasury Department, U. S. Life-saving Service, Washington, D. C., July 31, 1899. Sealed proposals for the construction of a Life-saving Station at Nahant, Massachusetts, will be received at this office until 2 o'clock P. M., of Wednesday, August 16, 1899,

"The Georgian Period."

"THIS work, three numbers of "which have been issued by the "*American Architect and Building* "*News* Company, Boston, is of ex- "traordinary importance to the archi- "tect whose ambition rises above "the building of simple cottages." —*Boston Transcript.*

PROPOSALS.

and then publicly opened. Plans and specifications, forms of proposal, and full information can be obtained upon application to the Superintendents of Construction, Life-saving Stations, 17 State Street, New York City; to the Assistant-inspector, 1st and 2d Life-saving Districts, Room 148, Post-office Building, Boston, Mass., or to this office. S. I. KIMBALL, General Superintendent. 1233

Treasury Department, Office Supervising Architect, Washington, D. C., July 22, 1899. Sealed proposals will be received at this office until 2 o'clock P. M. on the 31st day of August, 1899, and then opened, for the construction (except heating apparatus, electric wiring and conduits) of the U. S. Post-office building at Newport, Ky., in accordance with the drawings and specification, which will be furnished at the discretion of the Supervising Architect on application at this office or at the office of the Postmaster at Newport, Ky. JAMES KNOX TAYLOR, Supervising Architect. 1233

Treasury Department, Office of the Supervising Architect, Washington, D. C., July 18, 1899. Sealed

PROPOSALS.

proposals will be received at this office until 2 o'clock P. M. on the 15th day of August, 1899, and then opened, for the foundations, superstructure and roof covering of the extension to the U. S. Post-office, Court-house and Custom-house Building at St. Paul, Minn., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at St. Paul, Minn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

The date for opening the bids in the foregoing advertisement is extended to 2 o'clock P. M., August 30, 1899. JAMES KNOX TAYLOR, Supervising Architect. 1233

Treasury Department, Office Supervising Architect, Washington, D. C., July 24, 1899. Notice is hereby given that the date for opening the bids for the construction (except heating apparatus, elevator, electric wiring and conduits) of the U. S. Public Building at Boise, Idaho, is extended from August 7, 1899, to 2 o'clock P. M., August 28, 1899. JAMES KNOX TAYLOR, Supervising Architect. 1232

PROPOSALS.

SCHOOL. [At Oakhill, O.]

Bids are wanted **August 10** for a school. J. J. WILLIAMS, Chmn. 1232

SCHOOL. [At Shadeville, O.]

Bids are wanted **August 10** for a school. E. M. EARHART, Clk. 1232

LODGE BUILDING. [At Woodbine, Ia.]

The undersigned hereby gives notice that sealed proposals for the erection of a two-story brick building, including all labor and material, will be received by him **until the 15th day of August, 1899.** (Signed) G. N. YOUNG, Chairman Bldg. Com. I. O. O. F. 1232

CEMENT. [At Bellevue, Pa.]

U. S. Engineer Office, Custom-house, Cincinnati, O. Sealed proposals for furnishing at dam numbered six, Ohio River, 18,000 barrels, more or less, of natural hydraulic cement will be received at Davis Island Dam, Bellevue, Pa., **until 2 P. M., August 12, 1899.** W. H. BIXBY, major engineers. 1232

SCHOOLS. [At Rockport, O.]

Bids will be received **until August 12** by J. C. ANDREWS, Clerk of Lakewood School Board, for two school-buildings. 1232

COURT-HOUSE. [At Ellaville Ga.]

Bids are wanted **August 31** for a two-story brick and stone court-house for Schley County. W. D. MURRAY, Clk. Co. Commrs. 1232

PAVING BLOCKS. [At Washington, D. C.]

Proposals will be received **until August 14** for furnishing asphalt paving blocks. JOHN B. WIGHT, JOHN W. ROSS, LANSING H. BEACH, Commissioners, D. C. 1232

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.

BUILDING MATERIALS.

Reported for the American Architect and Building News.

BRICK. — ₱ M.	New York. (*Wholesale Prices.*)	Boston. (*Prices to Builders and Contractors.*)	Chicago. (*Prices to Builders and Contractors.*)	Philadelphia. (*Prices to Builders and Contractors.*)
Common: *Cargo afloat.*				
Pale	1 75 @ 2 00	Domestic Com. 8 50 @ 9 50	Building 4 50	In Yard.
Jersey	5 00 @ 5 50	Domestic Face 18 00 @ 25 00	sewer add 1.00	Sq. Hard 8 00 @ 9 00
Long Island	@	Philadelphia 35 00 @ 40 00	hollow, add 1.25	" @ 7 00
Up River	5 00 @ 5 50	10 00 @ 11 00	Enam. Imp. Bk. 125 00 @ 145 00	Salmon @ 5 50
Haverstraw Bay 2d	5 00 @ 5 25	Phila. mould 50 00 @ 80 00	Enam. Domes. 70 00 @ 85 00	Sq. " @ 5 50
" 1st	@ 5 62½	Enamelled B'k. Imported	Select Red Sand-Mold...10 00	Light Stretchers 9 00 @ 11 00
Hollow	5 25 @ 5 50	Enam. (edge) 105 00 @ 120 00	St. Louis Hyd'lic Press..27 00	Medium "
Fronts:	@	" (edge & end.) 120 00 @ 135 00	Collinsville, do 22 00	Red " @ 12 00
Croton, Brown	@ 12 00	Domestic. Enam. (edge) 90 00 @ 100 00	Findlay, do 22 00	Dark " @ 12 00
" dark	@ 12 00	" (edge & end.) 110 00 @ 115 00	Chicago, do assorted shades 16 00 @ 20 00	Pressed @ 17 00
" red	@ 12 00		Chicago, do Brown..24 00	Paving 11 00 @ 13 0
Chicago pressed			Chicago, do Red Roman..24 00	Second " @ 12 00
" Moulded			Chicago, do Br'n Roman..27 00	Third " @ 10 00
Baltimore	37 00 @ 41 00		Bushnell Buff 25 00	Dom. @ 65 @ 85
Philadelphia	19 00 @ 21 00			
Trenton	17 50 @ 18 50			
Milwaukee				
Moulded:				
Red Pressed	@ 29 00			
Buff "	@ 27 00			
Moulded Red & Buff	45 00 @ 70 00			
Enamelled: *Imp.*				
Enamelled (edge)	85 00 @ 100 00			
Enamelled (edge and end)	90 00 @ 110 00			
CEMENT, LIME, etc. (₱ *cask.*)				
Rosendale Cement	90 @ 1 00	5 00 @ 1 00	*Not sold.*	1 30 @ 1 50
Louisville "		@	75 @ 1 00	S.H.Fr'l 20 @ 1 50
Utica, Akron, Buffalo, Milw'ke.	*Not sold.*	@	75 @ 1 00	@
Portland, Eng. (Gibbs)	2 25 @ 2 50		2 50 @ 2 60	2 85 @ 3 15
" (K. B. & S.)	2 50 @ 3 00		2 50 @ 2 60	2 30 @ 2 60
" (Black Cross)	2 25 @ 2 50	@	2 50 @ 2 60	2 85 @ 3 15
" (Burnham)	2 50 @ 2 50	2 20 @ 2 50	2 50 @ 2 60	2 75 @ 2 85
" (White's)	2 65 @ 3 00	@	2 50 @ 2 60	Belg'n 2 10 @ 2 40
" French (Lafarge)	3 60 @ 3 75	@ 5 00	3 75 @ 4 25	Hemmoor 2 50 @ 2 75
" Ger. (Alsen)	2 90 @ 3 25	2 75 @ 3 00	2 90 @ 3 20	2 75 @ 2 85
" " (Fewer)	2 25 @ 2 40	B'ks, Shoobridge & Co.,	@	Josson 2 60 @ 2 75
" " (Vorwohler)	2 50 @ 2 90	English 2 30	@	3 00 @ 3 25
" " (Lagerdofer)	@	2 75 @ 3 00	2 80 @ 2 90	2 75 @ 2 85
" " (Dyckerhoff)	2 75 @ 3 00	@	3 10 @ 3 30	B. Egl. 2 50 @ 2 75
" " (Hanover)	2 50 @ 3 00	@	2 75 @ 2 90	3 00 @ 3 50
" " Stettin, (Anchor)	2 35 @ 2 45	3 50 @ 4 00	2 85 @ 3 00	6 50 @ 7 00
Roman	2 75 @ 3 00	@ 7 00	2 75 @ 3 25	8 00 @ 9 00
Keene's coarse	4 25 @ 4 75	8 00 @ 9 00	6 00 @ 7 00	
" superfine	@ 6 50		9 00 @ 10 00	
Lime:				
Lime of Teil	@ 4 00	@	*Not sold.*	White Lime ₱ bush 25 @ 30
Hydraulic Lime	@ 1 45		45 @ 55	White Mash 1 25 @ 1 50
Chicago Lime in bulk	St. John @		45 @ 55	1 00 @ 1 00
Wisconsin Lime	@	@ 90	*Not sold.*	
Rockland and Rockport, (Com.).	80 @ 85	@ 95	*Not sold.*	
Rockland, finish	90 @ 95	@	1 00 bulk, 75c.	
Kelley Island Lime, finish	@	*Not sold.*	*Not sold.*	*Not sold.*
State, Com. cargo rates	@ 65	*Not sold.*	*Not sold.*	*Not sold.*
State, finishing	@ 75	1 85 @ 2 00	1 65 @ 1 75	1 50 @ 2 25
Plaster-of-Paris (calcined)	1 30 @ 1 40	@ 2 25	1 75 @ 1 90	1 75 @ 2 50
" (casting)	@ 1 60	25 @ 30	12 @ 20	20 @
Hair (cattle) ₱ *bush*	14 @ 16	@ 30	20 @ 25	30 @
" (Goat)	17 @ 19	1 00 @ 1 75	1 00 00 1 25	
Sand, ₱ *load*	1 00 @ 1 25			