

THE AMERICAN ARCHITECT AND BUILDING NEWS

Vol. LXXII

SATURDAY, JUNE 1, 1901

No. 1327



SUMMARY:—

Sidewalk Extortion as a Source of Tammany's Income.—Commercial Statuary and the Tariff.—A Protective Tariff on Art vs. Artistic Freedom.—Mr. Morgan unlikely to bring the Mannheim Collection to this Country.—How the Belgian Glass-workers killed their Trade.—The Strike in the New York Underground Railway.—Death of Ernst Toeche, Publisher.—The Proposed Monument to Charles Garnier.	65
THE COLONIAL THEATRE AND BUILDING.—V.	67
A REVIEW OF CONCRETE-METAL CONSTRUCTION.—II.	69
BOOKS AND PAPERS.	71

ILLUSTRATIONS:—

The Electric Tower: Pan-American Exposition, Buffalo, N. Y.—The Same, with Detail of Lantern.—Detail of Shaft of the Electric Tower: Pan-American Exposition.	
The Wertach-bridge Tower, Augsburg, Bavaria.	
Additional: Base of Shaft of the Electric Tower: Pan-American Exposition.—Detail of the Colonnade of the Electric Tower: Pan-American Exposition.—The Greek Chapel, Wiesbaden, Prussia.—Sculptured Detail in the Colonial Theatre, Boston, Mass.	71
NOTES AND CLIPPINGS.	71

THE robbery of citizens by their chosen rulers is not a very pleasant subject of discourse, but the experiences of the real-estate owners of New York furnish a useful warning to other people. We have all heard how the police-captains of that city obtain their appointment by means of a bribe varying from twenty-five thousand to forty thousand dollars, and recoup themselves for their outlay by receiving bribes, to the amount of twenty-five thousand dollars a year, or more, from criminals within their district, for exemption from prosecution; but these instances of corruption, if more startling, show less impudence, and probably aggregate less in amount, than the robberies practised on property-owners under the forms of law. One of the latest forms of extortion consists in "relaying sidewalks." No matter how recently the grades may have been fixed, and the sidewalks laid, and paid for by the owners of abutting estates, a party of heelers with a level may at any time make their appearance, and "change the grades," by marking some curbstones to be raised, and others to be lowered. This involves relaying the flagstone sidewalks, which is done at the expense of the abutting estate. In some cases, the officials are merciful enough simply to take up and relay the stones, assessing the estate merely about six times what it would cost to have the work better done by a private contractor; but in many instances the flagstones are "condemned," taken up and carried away by the officials, and others laid in their place, and also charged at a "strenuous" price. If new stones were always put in place of old ones, there might be some slight justification for this performance; but, as a matter of fact, it is said that the officials simply "condemn" two sidewalks, take up the flagstones of each, and exchange them, charging both proprietors with the cost of "new flagging." It may be supposed that this operation is a very profitable one, so profitable, in fact, that, as in the case of many other Tammany operations, good people refuse to believe that such monstrous extortion can go on without more conspicuous results in the way of millionaire politicians. The answer to this is that the money collected in New York through bribery and extortion is divided among a vast number of persons, who derive from it their sole support. Swarms of these hangers-on surround every office, and every official. To obtain the ear of a person in authority it is necessary to "placate" a string of these vultures, and a bribe must follow the same course, losing a substantial portion of its bulk on the way. It would be interesting, and not very difficult, to ascertain approximately the number of persons in New York who subsist solely, or mainly, on the proceeds of corruption. There must be many thousands of them, most of them active, glib-tongued politicians; and, so long as their living depends on their control of politics, honest citizens have little chance of being able to get rid of them.

THE Boston Transcript gives, of course unintentionally, a wrong impression in quoting the last issue of the "Treasury Decisions" as authority for the statement that, henceforth, "commercial statuary," distinguished from the other kind by being sold at lower prices, will be required to pay a duty of

fifty per cent, while the artistic statuary is subject only to a duty of twenty per cent. The reason of this distinction is said to be that the "importation of cheap statuary, besides throwing American artists into a damaging competition, hinders the development of taste, and discourages the production of artistic works at home." As a matter of fact, this ruling of the Treasury Department, in a specific case, has just been set aside by the Circuit Court of the United States, so that the evils which we suffer from the importation of cheap art are likely to continue, at least for the present.

TO our mind, it is time for the friends of American art to protest more energetically than they have yet done against the absurd affectations by which the most unenlightened and unreasonable part of our protective system is defended. The Transcript article informs us that, in the opinion of the General Appraisers, "Although certain statues may have been produced in establishments owned or managed by professional sculptors or statuaries, they are not the professional productions of a statuary or sculptor only." It would be interesting to know whether any one imagines that American sculptors cut marble with their own hands, or do anything more than to "manage" establishments in which their models are interpreted in stone by workmen. It is to be said in favor of our sculptors that they do not confine themselves, as certain of their brethren elsewhere are said to do, entirely to getting commissions, leaving the modelling, as well as the execution, of their works to subordinates; but the distinction between a man who keeps a small shop, and turns out a dozen statues a year, and one who produces a hundred in the same time is a shadowy one, to say the least. The General Appraisers discovered another distinction between "commercial sculpture" and the other sort in the fact that the former frequently included "copies or reproductions" of other works, assuming, apparently, that such "copies or reproductions" "hinder the development of taste, and discourage the production of artistic works at home," and should be discriminated against by a heavy duty. This theory is not likely to please American sculptors, who, like sculptors everywhere else, are frequently called upon for replicas of their best works. If we are not mistaken, Mr. McMonnies has now in Paris a replica of his celebrated "Bacchante," which, presumably, he would like to sell. A duty of fifty per cent on the appraisers' valuation of an important bronze like this, supposing Mr. McMonnies to be a Frenchman, would practically shut it out from the American market, the most profitable of all; yet if Mr. McMonnies's replicas are not "commercial art," it is not easy to see why those of the Roman sculptors need be. The fact is that the most pressing need of artists and the public alike in this country, so far as art is concerned, is the removal of the restrictions which now hamper them. It would be interesting to know the opinion of better judges than ourselves on the matter, but it seems to us that, since the imposition of the tariff tax on works of art, American painting and sculpture have not only ceased to advance, artistically, but have languished in a commercial sense. A few years ago, when Barbizon pictures were as popular here as in Paris, and the Impressionist discussion interested thousands of Americans, as well as Frenchmen, painting in this country was progressive and ambitious. Not a few American artists thought that they could do Impressionist work, and tried it, with a success well known to the lovers of pictures; while others, inspired by the artists of the Barbizon school, and their pupils and successors, produced American landscapes of as much promise as anything that was ever painted at Fontainebleau or Ville d'Avray. Then came the movement for the "protection of American art" against "damaging competition," and with it, apparently, a stroke of paralysis. The American public, no longer feeling itself a part of the world of art, lost its interest in artistic matters; while American artists, freed from "damaging competition" with men who could paint better than themselves, lost their ambition, and, with it, the interest which their efforts excited in the community. In sculpture, where the conditions are different, and where the shutting out of foreign work affects less the general cultivation of the public which artists depend upon for support, the municipal art-commissions interfered to stifle what animation was still left. The sculptors, no longer

fearing the competition of the Mercies and Falguières, might have looked forward to a monopoly of public work, as well as to satisfactory employment in the artistic adornment of public places which the growing wealth of the community demanded, if the guardians of the public taste had not suddenly discovered that, in order to prevent injudicious selection, it was necessary that all sculpture for public decoration, after completion, should be subject to acceptance by a board, composed, usually, of a retired financier of presumed æsthetic sensibilities, a politician distinguished for his singular fancy for clean shirts, and an opinionated amateur, and, if not approved by these authorities, should be dishonorably rejected. It is needless to say that, since the establishment of these commissions, the adornment of public places with sculpture has been left mainly in the hands of two classes of sculptors, and two corresponding classes of subscribers to monument funds; one class being composed of people who have sufficient influence with the art-commission to ensure the acceptance of their offerings, and the other of people who have no reputations to lose by an ignominious rejection. As these two classes comprise but a small part of the community, sculpture for public purposes is not making the advance that it might, and, like American painting, it awaits the time when public interest in art shall be revived by the revival of artistic freedom.

ANOTHER illustration of the advantage to American civilization of the policy of protecting the tin-can artists of the United States against the competition of the Raphaels and Meissonniers of the effete countries of Europe is to be found in the announcement that Mr. J. Pierpont Morgan, who has just purchased in Paris the incomparable Mannheimer collection of objects of artistic workmanship, at a price which is not stated, but which must have been something enormous, is to send them to the South Kensington Museum, where they will be exhibited, for the benefit of English designers and craftsmen, until our Government sees fit to change its practice of imposing heavy fines on those Americans who attempt to benefit their country by adding to the artistic treasures which it possesses a few of those which are still to be purchased in Europe, although their number diminishes every day. No one can accuse Mr. Morgan of being unpatriotic or avaricious, but our policy of not only looking gift-horses of this sort in the mouth, but of knocking out a large share of their teeth, when we get a chance, would turn the stomach of the most devoted patriot, and the Morgan collection, like the Gardner collection, and, undoubtedly, many others, representing a smaller outlay, but still precious, are lost to us, at least for the present.

THE effect of labor agitation, of the modern kind, on industry has, perhaps, never been more conspicuously shown than in the case of the Belgian glass-workers. Architects do not need to be told that, not many years ago, nearly all the sheet-glass used in this country, and, perhaps, all over the world, came from Belgium, which, possessing the best materials in the world, and the most skilful workmen, easily held its trade against all competitors. After the policy of high protection adopted by this country shut out foreign glass, many Belgian glass-workers came here and set up factories of window-glass, hoping to take advantage of American high prices; but, according to the industrial statistics of the period, they found business so uncertain, in consequence of the violent fluctuations due to the quarrels and combinations of the manufacturers, that most of them went back to Belgium, where wages, if low, were steady. The affairs of the Belgian manufacturers and their men continued in a condition of quiet prosperity until last year, when the men combined to demand a small increase in wages. The manufacturers granted the increase, and added the additional cost to the price of their glass. The market accepted the small increase, and the labor-leaders, observing this, assumed that it would bear a much greater one, and made a second demand, under threat of a general strike, for fifteen per cent advance in wages, and shorter hours of work. The manufacturers, knowing that submission would mean the loss of their customers through the competition which would spring up on all sides, refused the demand, and the men struck. This was in August last, and the strike still continues. Meanwhile, the glass-works have been closed, and their men idle. The manufacturers were able for a time to fill orders from stock on hand, but, when this was exhausted, their customers were obliged to transfer their orders to French and English and German competitors, and the Belgian glass-trade is practically

extinct. Many of the manufacturers are ruined, and could not resume business if the strike should be terminated, and multitudes of once-prosperous factories are for sale. The men, who can transfer their domicile without loss, have emigrated in great numbers to this country, where the competition among them for employment is said to threaten seriously the future of the window-glass trust. Others have gone to different places on the Continent, and even in England, where, a year ago, it is said that no sheet-glass was made, the industry has been revived, and the few manufacturers who have as yet taken up the business are said to be overwhelmed with orders.

THE art of conducting strikes progresses rapidly. Just now, the most important "struggle between Labor and Capital" is going on in connection with the New York underground railroad. It is not pretended that the men at work on the subway have any grievance. On the contrary, the contractor, Mr. McDonald, pays them the highest wages, for eight hours' work a day, and has an agreement with them to submit any differences to arbitration; yet, a few days ago, the walking-delegates suddenly ordered a strike, and the men stopped work. The explanation of this attack, as given by one of the "labor-leaders," is interesting. It appears that the workmen engaged on the subway, finding their condition so satisfactory, yearned to impart some of their blessings to their fellow-men, and, with this view, struck, or, rather, were ordered to strike by the people who understand these things so much better than ordinary workmen can, as a means of forcing other contractors to grant to their men the same privileges that they themselves enjoyed. It is not stated whether the other contractors' men asked for, or appreciate, this kind attention, and it does not require much penetration to see in the whole affair a scheme of the walking-delegates for advertising themselves, and annoying citizens, by getting up a disturbance in connection with a conspicuous public work, under the ridiculous pretence of humanitarianism. What will be the end of the matter no one can say, but, unless we are willing to see our great industries follow those of England on the downward path, it is time to take measures against the tyranny of the walking-delegates, into whose hands the new industrial combinations have put a weapon which is sure to be used remorselessly, either for extorting blackmail on a scale never before approached, or for throwing, on favorable opportunities, the business and credit of the country into confusion.

THE literature of architecture has experienced a serious loss in the death of Ernst Toeche, a noted publisher of technical works in Berlin. Herr Toeche was, even according to the German standard, the highest in the world, peculiarly qualified for his task, both by his knowledge of the art which he aided to advance, and by his respect and sympathy, not only for the art, but for those who practise it. Without that sympathy, it would be impossible for a publisher to produce books so thoroughly satisfactory to professional readers as those which issued from Herr Toeche's house. Not only was his selection, aided, as it probably was, by the accomplished architects with whom he was intimate, extremely judicious, but, in the proof-reading, the selection of type, the arrangement of illustrations, his publications showed a care and skill which rarely failed to excite the grateful appreciation of readers accustomed, as architects are, to the mangling of technical works at the hands of ordinary publishers. Undoubtedly, the business which he conducted so admirably will be left to successors of capacity equal to his own, but this will not diminish the grateful regard in which architects will keep the memory of the one who first brought the art of ordinary architectural publishing to the highest point that it had ever reached.

A COMMITTEE, consisting of Messrs. Walter Cook, John M. Carrère, Charles F. McKim, J. H. Freedlander, George B. Post, Cass Gilbert, Whitney Warren and Edward L. Tilton, asks for subscriptions from architects in this country toward the monument which it is proposed to erect in Paris to the memory of Charles Garnier. A site has already been assigned for the monument, in front of the circular pavilion of the Opera-house, facing the Rue Scribe. It is hoped that not less than one thousand dollars may be sent as a contribution from the United States. Of this, about five hundred dollars have already been subscribed, and all members of the profession are invited to make further contributions, which may be sent to Mr. Walter Cook, 3 West Twenty-ninth Street, New York.

THE COLONIAL THEATRE AND BUILDING.¹—V.

THE construction and practical details of the portion of a theatre beyond the curtain are to many people shrouded with an air of mystery which is quite unwarranted by facts. Although the system of stage-building and operation in the European theatres seems to be very complicated, in this country stage-carpentry is an extremely simple matter. The only complication which arises is in quantity rather than arrangement. There are a few simple terms which require explanation. In theatrical phraseology the right of the stage is on the right of an actor as he faces the audience. This side is sometimes termed the "prompt" side, though such a thing as a prompter is almost unknown to the American stage. On this prompt side, close by the curtain-line, are usually arranged the devices for controlling the lights throughout the house and throughout the stage. The opposite, or left, side of the stage is also sometimes termed the "o. p." side, meaning by that, presumably, "opposite prompt" side; at least I have never been able to find any other definition for the initials. "Up stage" means towards the rear, "down stage" means towards the footlights. The portion of the stage extending beyond the curtain-line is termed the "apron"; the curtain-line is theoretically the line of the rear of the proscenium-wall. As a matter-of-fact, however, the curtains travel in a depth of some 2 feet. At each side of the stage, raised at a distance of 30 feet above the same, are what is known as the "fly-galleries," one on each side, the gallery on the left side being termed the "working fly." The space between these two galleries measured across the stage is regulated by the width of the widest drop which is likely to be used. In the case of the Colonial Theatre this distance is 54 feet. The fly-galleries are usually connected by a light bridge spanning across the rear of the stage and kept out about a foot from the line of the rear wall. This is termed the "paint bridge" and is used by the scene-painters in working on their canvases, which are attached

by side from front to back the entire depth of the stage, the blocks themselves being 3 inches on centres. At the side of the rigging-loft, immediately over the plumb of the working fly-gallery rail are arranged what are known as the leading-blocks, consisting of sets of four iron pulley-wheels set in a single housing of wood, one above the other, the sets being placed on a slight incline and secured by proper braces at the rear and at the butt. Immediately beneath these

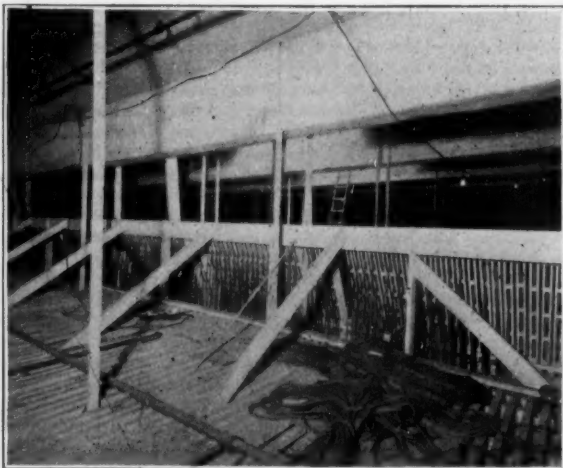


Leading-blocks, Front View.

leading-blocks is a wide cut in the gridiron, and the spacing of the head-blocks, of course, corresponds exactly to the spacing of the simple blocks elsewhere on the gridiron.

Over the rigging-loft are arranged a series of skylights giving a combined area of something over one-tenth of the floor-area of the stage. The sides of these skylights consist of balanced louvers, all of which are connected by cords combining into a single rope leading down to the stage-level each side of curtain-opening, a fusible link being inserted in the main cords, so that in the case of a fire the link will melt, releasing the louvers, which being counterweighted, will fly open, allowing the smoke to escape.

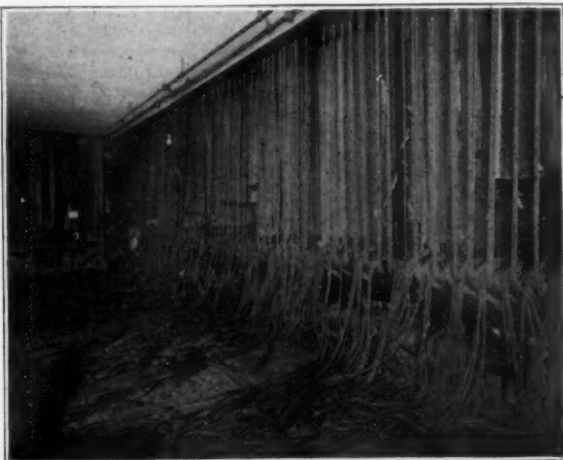
The height of the gridiron above the stage is practically regulated by the size of the proscenium-opening, that is to say, the curtains are supposed to be lifted up bodily without rolling, so as to uncover the whole height of the opening, and the gridiron is placed at such an altitude as to give sufficient space underneath for the curtain to lift up out of sight. Practically, however, it is much more common to give a lesser height than this would indicate, and to leave a large cut across the front of the gridiron, building up the necessary framework above the gridiron to support the rigging of the curtain. The actual height in the Colonial Theatre above the stage floor is 77 feet in the clear. There are four curtains. The one nearest the audience is called the "main curtain," and consists of a single unbroken surface of deep-red silk velours. Immediately behind this, and separated from it by a space of 5 inches, is the fireproof-curtain, made of asbestos-cloth and hung on iron rods at top and bottom. Behind this is what is known as the "act drop," which is of heavy-ribbed Gobelin tapestry, the decorations upon it having been worked out in stains in imitation of old tapestry, by Mr. Pennell. The curtain-opening itself is only 38 feet wide, but the act-drop is carried out each side



Leading-blocks, Rear View.

to a movable frame working up and down in grooves on the back wall of the stage, and operated by a bull-wheel and windlass on one of the fly-galleries. In the case of the Colonial Theatre this paint-bridge was omitted, and instead thereof there is a narrow gallery bracketed out from the rear wall, 2½ feet wide, connecting the two flies. Above the first tier of fly-galleries on each side is a second tier, likewise designated as "fly-galleries," being set back 2 feet from the fly-galleries below. A space of at least 12 feet is usually left between the galleries. Across the front of each fly-gallery is arranged a railing somewhat similar to the rails that are found on board a ship, and known as the "pin-rail." In the Colonial Theatre this is composed of two lines of 5-inch steel pipe set one above the other and drilled at intervals of 6 inches on each rail for cast-iron belaying-pins 18 inches long. To these pins are attached the ropes which operate the scenery. The fly-galleries must be constructed to stand an upward pull equal to the weight of all the scenery. In this theatre, the pin-rail of the working-gallery is proportioned for an upward pull of 50 tons. The other pin-rails are proportioned for loads of 20 tons each. The total weight of the scenery and stage-appliances used in "Ben Hur" and supported directly by the fly-galleries has been estimated at a little short of 50 tons.

Across the whole of the top of the stage-space is built a light floor, having continuous openings or cuts from front to rear left at proper intervals at right angles to the curtain. This floor is called "the gridiron." A clear space of 8 or 10 feet is left over this to the under side of the roof, and constitutes the rigging-loft. The construction of the gridiron is of light channels spaced about 2 feet on centres, to which are dogged 2-inch square strips of hard-pine carried continuously from cut to cut. On each side of each cut is nailed a 1" x 6" strip of wood, and on this strip are laid blocks or pulley-wheels over which the scenery-ropes pass. The blocks consist of iron wheels set in a light wooden housing and are spaced closely side



Scene Halyards and Pin-rail.

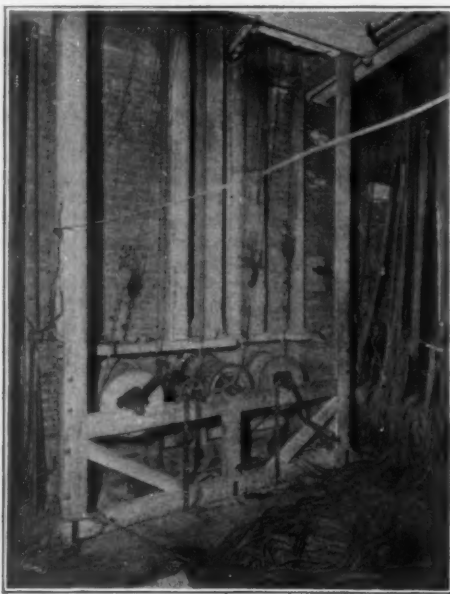
so as to give a total width of 44 feet, or 3 feet on each side wider than the opening. Behind this again is a curtain made of plain black felt-cloth, intended to be used when quick changes are required on the stage and it is not advisable to put out the lights when making these changes.

These curtains are all attached to heavy strips, called battens, at

¹ Continued from No. 1325, page 52.

top and bottom, and at intervals of 2 feet on the sides are attached wooden gromets, threaded on a $\frac{1}{4}$ -inch wire-rope. In the case of the fireproof-curtain, this rope is firmly fixed top and bottom, but in the case of the act-drop and the main curtain the rope is attached at the bottom to an iron shoe which slides in an iron groove, set flush with the top of the stage-floor, this groove being at right angles to the line of the curtain, so that for re-calls the bottom of the curtain can be pulled back, allowing the actors to step out on to the apron. Each of the curtains is hung by four $\frac{1}{4}$ -inch wire-ropes. In addition to this, the fire-curtain has an extra safeguard, consisting of two sets of chains, which are fastened strongly to iron beams attached to the masonry overhead, and of sufficient length to hold the curtain in place when down, even if the wooden blockings or overhead frame should burn away. The ropes from the curtains are led across and down to the working fly-gallery, where they are connected to drums that are worked by man-power. Counterweights are attached to the drums, so that the labor of operating the curtain consists in simply overcoming the friction and inertia. The drum on which the ropes suspending the fire-curtain are wound is fitted with a frictional brake, which is held against the drum by a strong spring, a lever connecting to this spring by wire-cord, which is led down to the prompt side of the theatre, so that the stage-manager, by pulling this cord, can release the brake, when the fireproof-curtain, which is not quite counterbalanced, will descend by its own weight.

When the curtain is raised, the audience sees what corresponds to a false proscenium, set a short distance back of the curtain-line. The side-pieces forming this false proscenium are termed, technically, "tormentors." The flat painted border, or overhead work, connecting the tormentors is called the grand, or arch, drapery, and is carried



Curtain Halyards and Windlasses.

up so far above the top of the proscenium-opening that it completely masks the stage. Another lesser drapery behind it is called the straight drapery. These draperies and tormentors constitute the actual stage setting. The scenes consist of flats which are set up on each side and held by long wooden braces caught into a hook at the top and held by hand-screws fastened into the floor at the bottom. To form the backgrounds, drops are used, while sky-effects are simulated by what are called "borders." These drops and borders are from 40 to 50 feet wide, and consist of cotton cloth or canvas attached to a wooden strip, or batten, at the top, and suspended by four sets of lines, these lines being carried up to the rigging-loft and across to the head-blocks, thence down to the pin-rail of the working-fly, so that each drop is held by four separate ropes.

The space from the curtain-line toward the rear of the stage is divided into "entrances," so called. The first entrance is an imaginary space 3 feet 6 inches deep, and the five entrances beyond that are each 7 feet deep. Hung over the front of each entrance is what is called a border-light, consisting of a row of 162 32-candlepower electric-lamps, set in a reflector-frame and hung from the gridiron so that the whole can be raised or lowered as desired. These lamps light down and towards the rear of the stage, so as to illuminate the borders, drops and flats. Then, at intervals, on each side, opposite the line of each border, are floor-pockets for arc and incandescent lights. Each pocket is provided with two receptacles into which temporary contacts can be plugged with flexible cord-connections leading to bunch-lights consisting of eight 32-candlepower lamps arranged radially in front of a polished reflector, raised on a movable stand, or to strip-lights or ground-rows, consisting of from six to twenty lamps set in a wooden strip which can be placed anywhere on the stage, if desired, to give extra illumination. There are also outlets on the gridiron for chandelier-connections as well as outlets on each

fly-gallery for search-lights, and, in addition, iron balconies are built on each side above the stage-level, against the back of the proscenium-wall, and on these are placed outlets for search-lights to throw either a strong beam of illumination, or give colored effects.

The construction of the stage-floor itself is as simple as the hanging of the drops overhead. Opposite each entrance are usually arranged three traps, except in the two rearmost entrances, where the floor is cut in sections which can be raised to any desired height, not exceeding 10 or 12 feet, these sections being termed "bridges," and being used to produce effects of real bridges or rocks, or anything that needs a raised structure. In building the Colonial Theatre, no traps were put in at all, as the whole space was taken up with the mechanism for the chariot-race in "Ben Hur." This mechanism is of considerable interest. Eight horses appear on the stage at the same time in two groups of four, and in the scene the horses are seen at full gallop, one set of horses gradually drawing ahead of the other. Each horse gallops on a tread-mill and the four tread-mills of each set are built upon a heavy cradle. The two cradles are connected by an endless rope working on a drum underneath the stage, so that one cradle can be slowly pulled back while the other is slowly pulled ahead. At the same time a series of motors cause the chariot-wheels to rotate, a small blower puffs out jets of dust behind the heels of the horses and a narrow border, or strip, is carried across the front of the stage to simulate the appearance of the passing of the foreground, while a huge panorama containing a simulation of the audience of the amphitheatre revolves rapidly at the rear. This is one of the most elaborate pieces of stage-mechanism which has been constructed in this country, and shows how relatively simple the most elaborate effects in theatre-construction really are. For many valuable suggestions in regard to stage-constructions the writer is indebted to Mr. Claude L. Hagen, the chief mechanic of the "Ben Hur" company.

Though there is ample space under the stage to lower vertically a 20 or 24 foot scene, no provision is made for so doing. As far as I know, in very few, if any, of the American theatres is scenery so handled. The space under the Colonial Theatre stage is filled-in with two intermediate floors built to receive the mechanism and machinery of the "Ben Hur" race-scene.

There remains to be described only the electrical equipment of the stage. There are in all about 5,000 lights controlled by the switch-board located on the prompt side of the stage. This board includes 83 switches and 21 dimmers. The board is of what is known as the Cushing type, with interlocking switches. In each border-light there are 40 reds, 40 blues, 41 ambers and 41 white lamps, all of 32-candlepower. Each set of colors on each border can be operated by one of two switches. The same applies to the footlights, which have the same number of lamps, all of 32-candlepower capacity. For each border and for the footlights there are arranged on the switch-board two dimmers, so that any two colors can be operated on any one border at any time, and the dimmers are so arranged that one color can be built up in intensity while the other is being cut down, and all of the dimmers are connected together by an interlocking device, so that, if desired, all of any one color on all of the borders and footlights can be built up, while all of another color on all the borders and footlights can be cut down. Besides this, there are two dimmers for the floor-pockets, a dimmer for the orchestra-lights, two dimmers for the auditorium-lights, and two spare dimmers. Beside the main switch-board there is the plug-board for the telephone-system connecting with the various parts of the house, — the dressing-rooms, the manager's-office, the orchestra, etc., also the signals to the men who operate the curtains, consisting of a series of colored lamps, turned on when the men are to get ready and turned off when the curtain is to move. There are also at this point the controlling-ropes for the fireproof-curtain and for the ventilators over the stage, previously described, and a fire-alarm box connecting directly with the Fire-department Headquarters. The lower sections of the proscenium-opening are made of cast-iron, to preserve them from injury, and a recess is thus afforded each side of the curtain-opening in which a prompter can stand, if desired, and through the cast-iron work are provided peep-holes for giving a view of the audience or of the leader of the orchestra without drawing the curtain aside.

For the prevention of fire, the Theatre is equipped throughout with a sprinkler-system with fusible heads and English alarm valves, these heads being distributed all through the portion of the building behind the curtain, the dressing-rooms, the scene-rooms, etc., and in the ventilating-chambers above and below the auditorium. There is also installed a complete system of automatic fire-alarms, registering at the stage-door, superintendent's-office, and at the nearest fire-engine house. Furthermore, the stage is equipped with a line of stand-pipe on each side, with 100 feet of hose at the stage-level, and on each side of the flies, and for the protection of the proscenium-opening itself, a fan-tail head is placed in the floor at the centre and near the top of the opening on each side, these heads being controlled by a valve on the prompt side close to the curtain-opening. The only portion of the construction, however, which is not strictly fireproof according to the most modern methods is the gridiron and the movable portion of the stage-floor itself. Everything else is as fireproof as terracotta, plaster and iron can make it, and all of the exposed woodwork is saturated with a so-called fireproof-paint which effectually prevents the spread of a blaze.

The building was constructed by Norcross Brothers. The contracts were placed just about the beginning of the famine which characterized the steel market during 1899. This occasioned a

delay of about nine months in the actual construction of the building. On the 15th of June, 1900, the only portion of the building erected above the level of Boylston Street was the rough brick wall about the stage to a height of some 50 feet. On the 15th of December, six months thereafter, the entire building was under roof, the Theatre portion was entirely finished, the lighting and ventilating plant was in place, and the Theatre was actually opened on the 20th of December. The decoration of the house was carried out in a little less than two months.

In this connection it is no more than just to make mention of the various contractors who have helped in the work. The architect was particularly fortunate in having associated with him a corps of helpers who seemed to feel all the enthusiasm and interest in the problem and its practical execution which is so necessary to a successful realization of an architect's ideals. The general contract was given to Norcross Brothers. As a sub-contract to their work the plastering was done by David McIntosh; the carving and modelled work was most thoroughly and satisfactorily studied and worked-out by John Evans & Co., with the exception of the ceiling of the main foyer, which was made and set in place by Sleep, Elliot & King, of Boston; the elaborate bronze-work which is so prominent a feature of the foyer and the stairs, was built in Brooklyn by the Hecla Ironworks; the painting was all in the hands of L. F. Perry & Whitney. The decoration of the Theatre was carried out in an extremely satisfactory manner by L. Haberstroh & Son, with whom was associated Mr. H. B. Pennell. The carpets came from the firm of John H. Pray Sons & Co.; the chairs were made in New York by the R. W. Reid Co.; the elevators were manufactured at Worcester by the Plunger Elevator Co.; the furniture for the Theatre was made and finished by A. B. & E. L. Shaw, while the electric fixtures were made by David R. Craig. The tormentors and stage-settings were painted by Gates & Morange, of New York. The asbestos-curtain was made by the Asbestos Paper Co., of Boston; the other curtains were made by Shepard, Norwell & Co., who also supplied all the draperies of the house, while the painting of the act-drop was by Mr. H. B. Pennell. The elaborate mosaics in the entrance to the building were executed by Traitel Brothers & Co., of New York, and the hardware throughout the entire building was manufactured by P. & F. Corbin. The contract for the plumbing and the heating and ventilating work was let to Buerkel & Co., of Boston, who, in turn, sublet the ventilating work to the B. F. Sturtevant Co., to whom the writer is greatly indebted for valuable suggestions and help. The electric-work was supplied and installed entirely by the Erickson Electric Equipment Company, of Boston. The stage-carpentry was put in by Mr. H. Johnson, of the Hollis Street Theatre. To all of these firms the architect feels a sense of personal indebtedness for a degree of hearty coöperation which made the construction of the Theatre from first to last an easy and pleasurable task.

C. H. BLACKALL.

A REVIEW OF CONCRETE-METAL CONSTRUCTION.¹—II. THE WÜNSCH SYSTEM.

THE concrete-metal arch known as the Wunsch system was invented by Robert Wunsch, of Hungary, in 1884. In this system, arch-ribs of metal, consisting of an arched lower and horizontal upper member, both of which are run together and riveted at the crown, are imbedded in the concrete. The two members of the rib are connected at the piers and abutments by vertical and transverse lower members deeply imbedded in the concrete.

In Figure 4 is shown an excellent example of this construction.

¹ A paper by Chas. M. Kurtz, Member Technical Society of the Pacific Coast, read at the meeting of the Society, held March 1, 1901, and published in the *Journal of the Association of Engineering Societies*. Continued from No. 1326, page 62.

It is the plan of a Wunsch arch of 83 feet span—the longest, up to date, of this system,—constructed in 1897 over the Miljacka River at Sarajevo. The chords of the metal ribs are made up of two angles, and the vertical and transverse members of channels.

THE MELAN SYSTEM.

This style of concrete-steel construction was invented by Joseph Melan, of Austria, 1892, and was patented in the United States the following year. It consists of curved I-beams or lattice-girders imbedded vertically in the concrete of the arch-ring and abutments. These ribs are sometimes connected transversely at their ends in the abutments by cross angles, and are sometimes provided with individual anchor-plates. If the bridge consists of several arches, the ribs in each arch are, in some cases, independent of those in adjacent arches, being connected only by the concrete, but in the large bridge recently built at Topeka, Kan., the ribs were riveted to a common plate at the piers.

The merits of this system were quickly recognized in this country as well as in Europe. The result of such recognition has been the erection of bridges of the Melan type in parks where a handsome and æsthetic design was desired, and the displacing of iron and steel truss-bridges where *permanence* was the quality desired.

THE THACHER SYSTEM.

This system can best be described by quoting from the article entitled "Concrete-steel Bridge Construction," written by Mr. Edwin Thacher, member of the American Society of Civil Engineers, in the *Engineering News*, September 21, 1899.

"Steel bars in pairs, spaced at proper distances apart and spliced

at convenient intervals, are imbedded in the concrete near the outer and inner surfaces of the arch, and extend well into the abutments or piers. The bars of each pair have no connection with each other, except through the concrete, but each bar is provided with projections, preferably rivet-heads of extra height, but which may be lugs, dowels or bolts, spaced at short intervals, thereby providing a mechanical reinforcement of the adhesion between the steel and the concrete, so that a complete crushing or shearing of the concrete must take place before a separation can be effected. The bars act as the flanges of a beam to assist the concrete in resisting the thrusts

and bending-moments to which the arch is subjected. The shearing stresses are small, and the concrete is amply able to take them many times over." Continuing, Mr. Thacher says: "The principal advantages which this system offers over those previously mentioned may be stated as follows: It gives a larger moment of inertia, and consequently greater strength for the same amount of steel. In the Melan system I-beams are usually used, which, if buried in the concrete, are necessarily less in depth throughout than the depth at the crown, and as the greatest bending-moments are always at or near the spring, the use of I-beams gives the less strength and reserve of strength where the greatest is needed. If the beam is made of angles with lattice connections, as at Topeka, it is not practicable even then to follow out the lines of greatest strength, as the beams become too deep and unwieldy. A more reliable connection is secured between the steel and concrete than in any system that depends on adhesion alone." Mr. Thacher was granted a patent on his design January 10, 1899.

Mr. Thacher's paper also enters into some of the details of calculations of the Thacher and Melan systems, which I will not repeat here.

THE HENNEBIQUE SYSTEM.

But little information is to be found respecting this system in English or American publications, as its employment in practice has been confined almost entirely to France, and the writer has not had access to the French publication entitled *Revue Technique*.

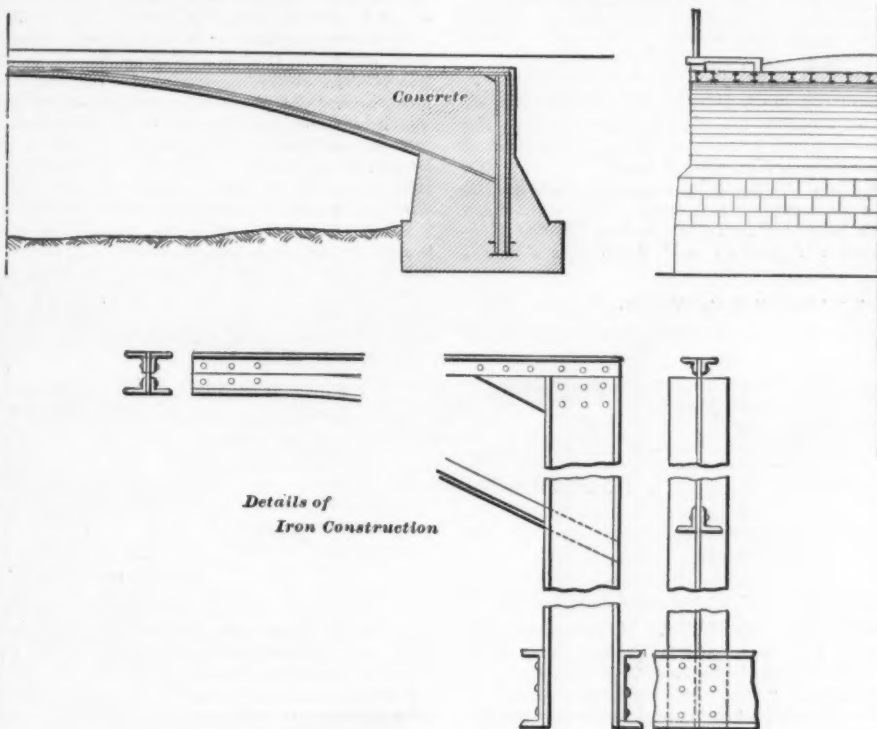
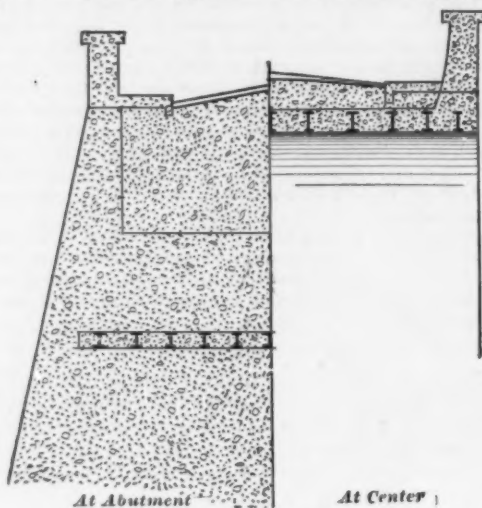


Fig. 4. Wunsch Arch.

In the discussion on Monier construction in the *Journal of the Western Society of Engineers*, June, 1900, the Hennebique system is described by Mr. Ralph Modjeski, member of the Western Society of Civil Engineers, as follows:—

"The Hennebique system, which is used very extensively in France, has its principal application in floors of buildings, partitions,



Transverse Section
Fig. 5. Melan Arch.

etc. The rods used here are much heavier than in the Monier system. Two or more of the rods are placed lengthwise near the bottom of the concrete beam, and are tied to the upper portion of the beam and to the floor-slabs by thin vertical bars."

"Computations for Ribbed Beams of Iron and Concrete on the Hennebique System," a mathematical treatment of the proportions for concrete girders with imbedded iron rods, is found in the *Zeitschrift des Oesterreichischen Ingenieur- und Architekten-Vereines*, September 15, 1899.

THE EXPANDED-METAL SYSTEM.

Expanded metal has also been successfully applied to concrete in a manner somewhat similar to the application of the netting of rods in the Monier system, both in floors and arch-bridges, but principally in floors.

The use of expanded metal in constructing fire-proof floors, partitions, etc., is too familiar to require description. Many tests of slabs of concrete-expanded-metal have been made in the last three years. The best literature on these tests and the records of the tests themselves are found in the paper on "Steel Concrete Construction," by Mr. George Hill, Associate Member of the American Society of Civil Engineers, and in the correspondence and discussion of the same, in the *Transactions of the American Society of Civil Engineers*, June, 1898. The results, tables and formulas in the paper and discussions were not entirely satisfactory, and will not be repeated here.

An arch of 21-foot span and 6-foot 8-inch rise, built at Oconomowoc, Wis., for P. D. Armour, Jr., designed by Mr. C. F. Hall, C. E., has imbedded in the concrete arch-ring flat rods and a sheet of expanded metal of No. 16 gauge, $2\frac{1}{2}$ inch mesh. See *Engineering News*, October 19, 1899.

OTHER SYSTEMS.

A floor-system that has been well tested experimentally by fire and excessive loads is the Roebling system. This system consists essentially of an arch of woven-wire netting springing from the lower flanges of the floor-beams and covered with a bed of concrete, which is levelled up with the upper flanges of the beams. The netting is strengthened by iron rods at intervals of about 9 inches each way, the wires being woven around the rods so as to form one sheet of netting. See *Engineering News*, July 18, 1895. The fire-tests are described in *Engineering News*, December 2, 1897.

There are other systems besides those above described, but as they are not important and are not extensively employed in practice, descriptions of them will be omitted.

THE AUSTRIAN SOCIETY TESTS.

This paper would be incomplete without some mention of the tests of brick, concrete, Monier and Melan arches made by the Austrian Society of Engineers. Tests to destruction were made for spans of 4.43, 8.86, 13.3, 52.8 and 74.5 feet. A synopsis of these tests is found in an article by Mr. Mansfield Merriman, member of the American Society of Civil Engineers, in the *Engineering News*, April 9, 1896. A more complete report appears in *Engineering* (London), February 21, 1896. These tests demonstrated that the theory of elasticity gives the only solid foundation for theoretic investigations, since the deformations were practically proportional to the stress in all cases where the elastic limits were not exceeded.

MISCELLANEOUS APPLICATIONS.

A factory-building.—A large monolithic factory-building for the Pacific Coast Borax Company at Constable Hook, Bayonne, N. J., was designed and constructed by Mr. E. L. Ransome in 1898. The structure is built entirely of concrete reinforced with steel rods. The design embraced the construction of solid concrete floors, supported on reinforced concrete beams and joists and carried by hollow concrete walls and solid concrete columns and beam-piers in the hollow concrete walls. The Ransome system is employed throughout. See *Engineering Record*, July 30 and August 20, 1898.

Retaining-walls.—Concrete retaining-walls reinforced by imbedded steel of different forms have been designed and built. One employing the Hennebique system was constructed at the Paris Exposition of 1900. See *Engineering News*, February 15, 1900.

In making excavations for tall office-buildings, retaining-walls have been constructed of concrete reinforced by horizontal trusses of heavy lattice-girders serving to give the wall strength against flexure and transmit the pressure to the ends of the longitudinal walls upon which they abutted. See *Engineering Record*, June 18, 1898.

A concrete-steel retaining-wall was built in Columbus, O., in 1900, by Mr. F. A. Bone, engineer of the Oregon Bridge Company, Oregon, O. His construction employs the principle on which a tree depends for its stability. "The tensile strains at the back of the wall are transmitted by the metal to the concrete base, which is loaded by the earth and thus held down like the roots of a tree." See *Engineering Record*, November 10, 1900.

Roof of covered reservoirs.—A new 25,000,000-gallon covered reservoir now under construction for the Louisville Water Company has a roof made up of groined concrete-metal arches, the reinforcement consisting of the steel bars of the Thacher system. The arches are supported by the division-walls and concrete pillars. The spans are approximately 19 feet with a rise of 3.8 feet, and the concrete is 6

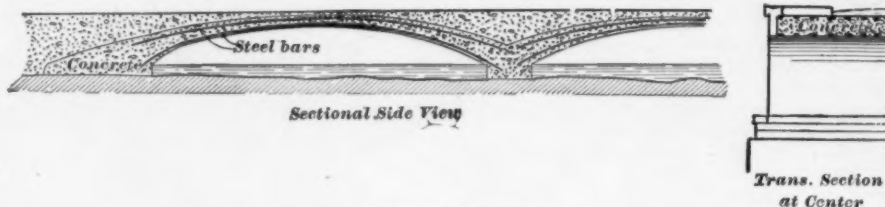


Fig. 6. Thacher Arch.

inches thick at the crown and 36 inches at the springing-line in radial lines, and are constructed of Portland-cement, 1:2:4, concrete. See *Engineering News*, January 10, 1901.

Concrete-steel ties.—Steel and concrete ties have been tried experimentally by the Pennsylvania Railroad in Chicago in one of the main tracks. They were in the track ten months and were then removed because of the failure of the device locking the rail to the tie, although 10 out of the total 30 had cracked at the end of seven months. The tie was patented by Mr. C. C. Harrell, of Chicago, but afterward modified by Mr. J. J. Harrell, of Wilmington, Del. As described in the *Engineering News* of January 10, 1901, it is as follows: "The design is a combination of two channel-bars, 7 feet long, forming the top and bottom of the tie, separated by distance-pieces, and braced under the rail-seats by vertical and inclined struts between the bars. A short piece of channel-iron forms the rail-seat, and through this pass the anchor-bolts, the heads of which are under the lower channel-bar. The whole structure is embedded in concrete, with the exception of the rail-seat. The rail rests on a shim, or packing-plate, and is secured by bolted clamps, filling the rail-base and the edge of the channel. The complete tie is 7 feet 8 inches long, 8 inches thick, 5 inches wide at the top and 8 inches at the bottom, the weight being about 300 pounds."

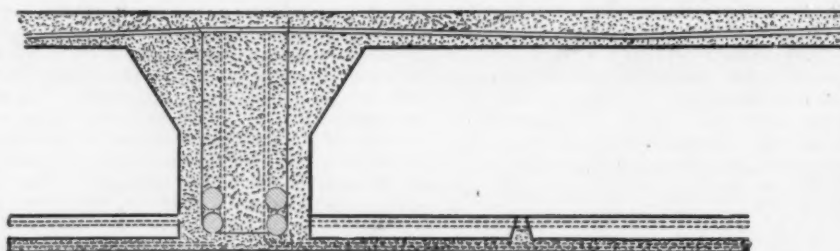


Fig. 7. Hennebique.

The cost of the ties used was about \$8 each, but it is believed that the cost will be less than \$1 each, if made in any quantity.

COMPARATIVE COST OF CONCRETE-STEEL BRIDGES.

In bidding on a bridge for Junction Hollow, Shenley Park, Pittsburgh, Pa., Keepers & Thacher bid on a Melan arch having a clear span of 300 feet with a rise of 66 feet 2 inches, flanked by 70-foot and 61-foot spans, and having a width of 80 feet between parapets. This bridge was 590 feet long and covered 47,200 square feet in clear between stone parapets, erected and paved complete, ready for traffic, and their bid was about \$7 per square foot, only a trifle more than was paid for the steel arch which was accepted and built.

In St. Louis, the Council having appropriated \$5,500 for constructing an arch-bridge in Forest Park, Mr. John Dean, the Engineer of the Park Department, prepared a plan for a concrete arch-bridge of 60 feet span. Fearing that the appropriation was insufficient to provide for the structure as designed, the design was sent to the Melan Arch Construction Company, of New York. This company applied its system to Mr. Dean's design, inserting steel I-beams in the ring and reducing the thickness of the concrete. The contract was then awarded for the work complete, exclusive of the roadway and sidewalk pavements, at a price several hundred dollars less than the appropriation.

A very important feature of the cost of concrete-steel bridges is that their first-cost is their only cost—a great advantage over the steel bridges, which invariably require a constant outlay of money for maintenance and depreciation.

In conclusion, while I realize that this paper has nothing new to offer to the engineering public, by collecting and putting together the above data and information, it has been my aim to make something that will be of utility to any one desiring a general knowledge of concrete-metal construction. Considering the great progress in concrete-metal construction and its present popularity, its future seems very promising. Mr. George S. Morison, member of the American Society of Civil Engineers, is quoted as saying: "I fully believe that we are now only at the beginning of concrete construction, and that, if the results which we hope for can be attained with concrete structures with metal structures inside, the time will come when this will be the one method of building."

BOOKS AND PAPERS

IT must be something like fifteen years since we reviewed Lefèvre's admirable "*Céramique du Bâtiment*," and it has been a standing wonder to us ever since that some one should not have translated it for the benefit of English readers. At last, a translation¹ has appeared; and, although the original work hardly counts among the very recent contributions to the science of construction, it is of perennial value, and its translators, either by using a new edition of the work, or by supplying a certain amount of matter of their own, have brought it down with sufficient fulness to our own time.

The original work gave, in several volumes, a thorough, well-arranged and intelligent account of all the materials, processes and appliances used in the manufacture of bricks, terra-cotta, roofing and paving tiles; and the English translation, which is in one volume, contains not only these, but a great deal of additional information in regard to recent improvements in all these matters; so that any one who wishes, as most architects do, to know just how bricks, roofing-tile and so on are best and most cheaply made, will find the book invaluable. Even ladies who dabble in painting on porcelain will appreciate the chapter on the "Decoration of Pottery," which gives one of the most complete descriptions in print of the materials employed in decorating earthenware, and their proper use. Architects and builders will find, next to the chapter on brick-making, that on tiles the most interesting. It is hardly necessary to say that roofing-tiles are, according to American notions, an expensive luxury of doubtful value, and it will surprise some of them to see how universally they are employed in Europe, how cheap they are, and how ingeniously those of the "fitted" form are contrived. As all architects are expected to be "original" whenever possible, it is necessary for them to be familiar with the facilities at hand for carrying-out "original" designs; and no better guide can be found in the search for new motives and new combinations of the baked-clay materials which are now so universally used than this excellent book.

FEW people realize that there are, in London alone, more than two thousand miles of gas-pipes; that it takes about ten thousand tons of coal a day to supply the gas delivered through these pipes, and that the citizens who consume the gas pay for it about twenty million dollars a year. Taking the whole of England, about ten million tons of coal are used annually for gas-making. So great an industry as this is worth being studied by consumers of gas,

¹"*Architectural Pottery*": Bricks, Tiles, Pipes, Enamelled Terra-cottas, Ordinary and Incrusted Quarries, Stoneware Mosaics, Faïences and Architectural Stoneware: By Leon Lefèvre. Preface by M. J. C. Formigé, Architect to the Government and to the City of Paris; with 5 Plates and 350 Illustrations in the Text; Translated from the French by K. H. Bird, M. A., and W. Moore Linns. London: Scott, Greenwood & Co. New York: D. Van Nostrand Company. Price, \$7.50.

as well as by gas-engineers; and Mr. Paul Hasluck's little book gives a remarkably clear and interesting view of it. Beginning with the process of gas-making, the author follows the manufacture from the retort to the gas-holder, explains the action of metres of various kinds, and brings his reader to the piping of houses. It may be observed that the ancient English method of piping gas through thin tubes of tin, or of tin and lead, has long been obsolete, wrought-iron pipes, with screw-connections and iron fittings, being now in universal use there, as they are here; so that a modern English work on gas-fitting² applies with substantial accuracy to American practice also, although directions for repairing the old-fashioned "compo" pipes are, of course, necessary for the English workman. The hanging of drop-lights and putting-up of brackets are managed in the same way in England as here, the bad gas-fitters in both countries contriving to weaken floors, spoil ceilings, and endanger buildings by manifestations of ignorance or carelessness against which every one, including owners and tenants of houses, as well as architects and builders, will be glad to be warned. The book ends with an instructive description of the various sorts of gas-burners, and of gas-stoves, and gives a detailed account, with illustrations, of a typical system of gas-piping for theatres.



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

THE ELECTRIC TOWER: PAN-AMERICAN EXPOSITION, BUFFALO, N. Y. MR. JOHN GALEN HOWARD, ARCHITECT, NEW YORK, N. Y.

THE SAME, WITH DETAIL OF LANTERN.

DETAIL OF SHAFT OF THE ELECTRIC TOWER: PAN-AMERICAN EXPOSITION.

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

THE WERTACH BRIDGE-TOWER, AUGSBURG, BAVARIA.

[Additional illustrations in the International Edition.]

BASE OF SHAFT OF THE ELECTRIC TOWER: PAN-AMERICAN EXPOSITION.

DETAIL OF THE COLONNADE OF THE ELECTRIC TOWER: PAN-AMERICAN EXPOSITION.

THE GREEK CHAPEL, WIESBADEN, PRUSSIA.

SCULPTURED DETAIL IN THE COLONIAL THEATRE, BOSTON, MASS. MR. C. H. BLACKALL, ARCHITECT, BOSTON, MASS.



PULP-MAKING VS. LUMBERING IN MAINE.—Maine lumbermen are beginning to believe that, as was declared two months ago in the legislative fight for control of the water in the Penobscot River, the day of the saw-mill is nearing its end in that State. Paper-making rather than house-building is absorbing the spruce, and the competition of the pulp-mills has sent the price of logs higher than the lumber manufacturers can pay. In Bangor logs are held at \$14 per thousand feet, while the lumber that can be sawed from those logs will fetch but \$13 per thousand feet. It is true that somewhat more than 1,000 feet of lumber can be sawed from 1,000 feet of logs, owing to a difference in the scale, but this difference, taken with the value of the waste, will not more than make things even, so that were the Penobscot mills to be started in operation to-day, their owners would receive for the product just what they had paid for the material, and lose whatever might be the cost of manufacture. Only through an increase in the price of lumber can the saw-mills be operated profitably.—N. Y. Evening Post.

MACHINE-CUT VS. HAND-CUT STONE.—In the United States much controversy is now taking place as to the respective merits of machine-cut as against hand-cut stone. The advocates of hand-cutting declare that machine-cut stone when used for building purposes will not weather well. The surface is said to be shaken and stunned by the pressure of the heavy planing-machines used. The very life and nature itself, it is

²"*Practical Gas-fitting*," including Gas-manufacture; with Numerous Engravings and Diagrams. Edited by Paul N. Hasluck. New York, London and Paris: Cassell & Company, Limited.

said, is taken out of the stone by the planer. Small fillets are ground so that the fingers are almost able to press the edges off, and beads and other undercut members are studded the whole length of the stone. It is urged also that there is yet another evil connected with the use of machinery for stone-cutting, and that is the degeneration of the practical workman. If the use of machinery is further extended, it is argued that the new generation of artisans in the art of stone-cutting will know very little of the fundamental principles of their trade. All they will know is how to set in a mould for the planer, and how to joint the stone when finished. The advocates of machinery, on the other hand, declare that the use of machinery, if only by lessening the cost of production, has made the employment of stone possible where otherwise brick and cement, or some other substitute, would have been used. A planing-machine will, it is contended, cut finer mouldings in true lines, either straight or circular, and leave the stone in much better state to stand the effects of time than is possible by hand-labor. Instances are cited in which stone of a kind easily split into thin slabs "bed way" has been so strained during hand-labor as to be practically unsaleable; the same stone when machine-cut turning out excellent work. Be this as it may, it is certain that the use of machinery for stone-cutting is largely on the increase in the United States, and is gradually spreading to this country. The cost of labor is the most important factor in the matter. It is the economic pressure thus brought along which will effect a revolution in older methods of doing work. — *Stone-Trades Journal*.

CHEAP STEEL FOR FOREIGNERS.—The present duty on structural-steel is \$11.20 a ton. Its entire removal may be inexpedient. There is reason to believe that it can with safety be reduced considerably. As to this Mr. Schwab says nothing. If he chooses he can give the facts which will enable Congress to determine the extent of reduction. He can give exact figures as to the cost of production of structural-steel at home and abroad. Thus far he has given no such information, though it would be interesting and valuable. Nor has Mr. Schwab explained yet what percentage of the difference between the domestic and foreign price of the products of the United States Steel Company is due to the wish of its managers to pay dividends on an inflated capitalization. His company is a billion-dollar corporation. The value of its tangible properties is put down at about \$300,000,000. Mr. Schwab says the capitalization is none too large. He will find few to agree with him. Mr. Schwab's incomplete statement will not convince the American consumers of iron and steel—there is no man who is not a consumer of these metals in some form—that it is necessary or expedient that they should continually pay the American producers of these commodities so much more than these producers ask of foreigners. They will not be convinced until they have evidence that they are mistaken now. While they do not say that all the duties in the iron and steel schedule should be repealed, they are of the opinion that most, if not all, of them should be reduced, believing that this will compel American steel and iron manufacturers to lower home prices somewhat without decreasing wages. — *Chicago Tribune*.

UNIONIZED LABOR'S TYRANNY OVER CAPITAL.—The extent to which unionized labor in Chicago can tyrannize over capital appears in an opinion by Judge Tuley of the Cook County Criminal Court in the case of Frank L. Davis, a mosaic manufacturer, against the Presidents of the Marble, Enamel, and Glass Mosaic Workers' Unions. The Unions asked him to sign an agreement, some of the conditions of which would have taken practically the control of his business out of his hands, and transferred it to the Unions. Consequently, the contractor refused to sign the agreement. Thereupon the Presidents of the Unions sent to architects, builders, and contractors a printed notice stating that Davis was the only contractor in the city who had refused to sign the agreement, that union men would refuse to work for him, that sympathetic strikes would take place on any building where he had work, and, consequently, the architects, etc., were requested not to let any contracts to him until he yielded. For this act the Presidents were indicted on the theory of conspiring to injure the contractor's business. The Judge ordered a verdict of not guilty, stating that the test as to the wrongfulness of the act was its truth or falsity, and that the statements were true. The Judge stated the law of the case as follows: "If I am competing in business with another man, I have a right to state any truths within my knowledge, either by word of mouth or by writing, in regard to the business of that other party. I cannot tell falsehoods, and cannot conspire with other people to do certain acts which would tend to his injury, but the truth is at the command of every man, and is lawful to be used in competition in business." In commenting on the relations between unions and capital the Judge said: "The agreement which the Unions desired the contractor to sign illustrates strikingly the truth that wherever one of two conflicting interests obtain absolute power, it will abuse that power, and become tyrannical, will take unfair advantage, and make unfair conditions. Experience has demonstrated that where a trades-union, by reason of its by-laws and regulations, gets such control over a trade that it can absolutely dictate as to whether an employer or contractor shall be allowed to carry on his trade, unless he agrees to every condition that they think proper to make, no matter how onerous it may be upon him, no matter how unjust, the trades-union may become, and does become under certain circumstances, just as tyrannical as a contractor or capitalist, when you give them power." — *Exchange*.

STREET-FLUSHING VS. SWEEPING.—Just as Chicago city authorities are considering the flushing of city streets to keep them clean, the Milwaukee officials are about to abandon that method, and contract for dry sweeping by a patent pneumatic process. This is done by large machines drawn by horses, but with sweepers propelled by a small boiler and engine, and so arranged that the dust and dirt is drawn up by an air-blast into a chamber. On a trial of one of the machines on an asphaltum pavement the street was made as clean as a kitchen floor.

A strong recommendation of the machine is that it prevents the blowing about of the dust, which is injurious to health and to fabrics. A like suppression of the dust- nuisance attends the use of the hose, but it is believed that the pneumatic machine will be less expensive, inasmuch as it will save labor. That feature, however, will not recommend it to the politicians. — *N. Y. Evening Post*.

UNEARTHING ANCIENT BABYLON.—Reports have reached Berlin of the successful results of the German exploration-party on the site of Babylon. Dr. Koldewey, the leader of the expedition, declares that the description of the city by Herodotus is right in the main facts, but greatly exaggerated as to its extent. Much excavation has been accomplished, with the happiest result. Several buildings have been unearthed which are easily located in the Bible. One of these is the Kasr, or palace, of Nebuchadnezzar. This is identical with the Schuana of ancient Scriptures. The New Year's Day procession for the Temple of Marduk started from this point, and the King was obliged to accompany it on pain of the forfeiture of his throne. The principal Babylonian temple, Amran, identical with the Egasila of the Scriptures, has also been discovered; also the road between Egasila and the citadel, or palace, of Schuana, called Ai-Bur-Shabou. Ingur Bel and Nimiti Bel, the great Durani of Babylon, are not walls, as had been thought, but bastions. The Babylon of the Bible is distinctly not the city, but the fortified palace, or citadel, of Nebuchadnezzar. The hill Babil is probably the ruins of the celebrated hanging-gardens of Semiramis. The Tower of Babylon probably stood near the Temple of Marduk, on the spot now known as the hill Sikkurat. Many extremely interesting finds have been made proving the extraordinary richness, elaboration, and plenitude of detail of the decoration of the palace. Certain reconstruction and restoration will be reverently carried out under the direction of Dr. Koldewey, who expects to be many years at work. — *London Daily Mail*.

"KYBOSH."—"Kybosh" is a widely-known trade-word. I have heard it used, practically every day, for the last forty odd years—not in one locality only, but in all parts of England. "Where's the 'kybosh'?" "You had better 'kybosh' it a bit," is a query and recommendation that may be constantly overheard where architectural sculptors are at work. "Kybosh" is Portland-cement; "to kybosh" is to throw, with blowpipe and with brush, this dark dust into the deep recesses of carved stonework, so that the latter's shadows may become intensified, and thus augment the general good effect of the ornamentation. The accumulation of dust upon statuary helps its appearance. A sculptor would look askance upon the injudicious intruder into his studio who suggested dusting his plaster casts. What time does in this way to enhance shadow, judiciously applied "kybosh" does for new work in a few minutes. There is no other trade term for "kybosh." It is "kybosh," pure and simple. — *Notes and Queries*.

A GOOD EXAMPLE FOR TREE-LOVERS.—A magnificent oak-tree at Athens, Ga., not only owns itself, but possesses other property. It was owned many years ago by Col. W. H. Jackson, who, in his childhood, played around its massive trunk and in later years grew to love it almost as he would his own child. Fearing that after his death the oak would fall into the hands of persons who would destroy it, he recorded a deed conveying to the tree "entire possession of itself and of all land within 8 feet of it on all sides." — *Exchange*.

OLD FRESCOS IN ROME.—The restorations which are now being carried out in the castle of St. Angelo, Rome, are exceedingly interesting, and have resulted in the discovery of some curious frescos of the fifteenth century. It is even hoped that possibly thick coatings of whitewash still cover the frescos by Pinturicchio, representing the whole of the Borgia family. That such frescos existed in the time of Julius II is proved by a passage in Boehm, who was one of the secretaries to Alexander VI, and who has preserved the names of the persons represented in these pictures, but they have been lost sight of for centuries in the same manner as were the splendid frescos by the same master in the Vatican itself, which Pope Leo XIII has recently recovered and restored to their pristine condition. — *London Chronicle*.

THE COUNTERCHECK QUARRELSOME.—When the famous John Radcliffe, whose library is so well known an institution at Oxford, lived in Bow Street his garden adjoined that of Sir Godfrey Kneller. "Being intimate friends," as Jesse tells us, "they agreed that a doorway should be broken through the wall to admit of their enjoying a free intercourse with each other. Some misunderstanding, however, having arisen between them, Kneller sent a message to Radcliffe that he intended to close up the door." Radcliffe, it is said, asked the messenger to tell Kneller that he might do anything with the door except paint it, while the painter returned the very obvious message: "Tell Dr. Radcliffe, with my compliments, that I will take anything from him but his physic." — *London Morning Post*.

THE COST OF LONDON'S SMOKE-NUISANCE.—A recent document issued by the Coal-Smoke Abatement Society of England states that the annual loss in London resulting from imperfect methods of combustion is not less than £12,000,000 (\$60,000,000). "About 18,000,000 tons of coal," says *L'Echo des Mines*, summing up this report, "are annually consumed in London; it costs about £16,000,000 sterling (\$80,000,000), and probably 3,000,000 tons are used in the manufacture of gas. About two-thirds of the heat produced is lost by passing up the chimneys, and this loss would thus be £8,000,000. The damage caused to paint and decoration, furniture, etc., is estimated at £3,000,000 yearly, while the loss directly due to imperfect combustion reaches about £1,000,000."

THE AMERICAN ARCHITECT

AND BUILDING NEWS

ADVERTISERS' TRADE SUPPLEMENT

No. 229

SATURDAY, JUNE 1, 1901

VOLUME LXXII
No. 1327

THE DIXON PENCILS DESCRIBED.

THE lead-pencil is of comparatively recent origin. Comparatively speaking, only a brief period has elapsed since pencils were rarities; when to have a pencil was a distinction, and when to have more than one pencil at a time was absolute extravagance.

How changed are things at the present time! Now we see boys whittling pencils on the street, for lack of a better stick upon which to use their jack-knives. We have pencils thrown at us from every side; and it would seem that there is nothing so cheap and so common as a pencil. But to-day, as in the past, there are good pencils and poor pencils, dear pencils and cheap pencils, satisfactory pencils and unsatisfactory pencils. The "Dixon American Graphite Pencils" are a line of pencils which have been successfully introduced against prejudices unequalled in any other line of trade, and pencils which have come up from a small beginning to constitute one of the great industries of the land.

Several points are to be considered in selecting a pencil for any given purpose, and to these it is only proper that one should give special attention in this connection, for we are probably placing before the reader some facts about pencils to which his attention has not been previously called. Local stationers keep what is demanded, supply what is asked for, and seldom show new varieties and grades. Therefore, we offer the following discriminative data:—

Irrespective of the shape of the wood, the diameter of the pencil, the length of the pencil, the finish that is put upon the wood, or the way in which the stamping is done, is the grade or hardness of lead which the pencil carries. "Dixon's American Graphite Pencils," which represent the grade that is ordinarily demanded, are supplied in eight degrees of hardness of leads. These grades are indicated by the letters which appear upon the pencils in connection with the stamp, and which to many at first sight are mysterious. For the softest kind made "S," or "soft," is used, corresponding to the old-style No. 1; "SB," meaning "soft black," or 1½, and then following in order are "SM," meaning "soft medium," corresponding with No. 2; "MB," "medium black," or old-style No. 3; "MH," "medium hard," or old-style No. 3½; "H," "hard," or old-style No. 4; "VH," "very hard," or old-style No. 5. "Dixon's American Graphite Artists' Pencils," on which the greatest possible care is exercised in the choice of materials and grading of leads, are made in eleven degrees of hardness, and are in-

tended for the special uses of artists and draughtsmen. The grades include those mentioned above, and have as extremes "VVS," "very, very soft;" "VS," "very soft," and "VVH," "very, very, very hard." The latter in every way takes the place of the well-known "7H" imported pencil.

The Joseph Dixon Crucible Company manufacture and carry in stock a total of some 700 varieties, to only a few of which can special attention be directed at this time. The book-keeper prefers a pencil with a comparatively hard lead, taking a long, sharp point and making a very fine figure. Again, the artist and draughtsman require an assortment of grades, in order to produce the effects they desire. For certain plans and sketches, imitating etchings, hard pencils are demanded; for other classes of work, for example, sketches resembling crayons, exceedingly soft pencils are necessary. The editor and reporter demand a pencil with a soft lead, and prefer that pencil which makes the least possible friction when passing over the paper. The schoolboy requires a medium soft pencil for the general work that falls to him to do, and the business-man uses about the same grade. The stenographer also requires about the "SM" grade, although some take the "M"; and so we might particularize to the end of a considerable list.

Pencils are used as pencils and also as advertisements. When used as pencils, quality of lead and character of finish, with shape and size, are points to be considered. When used as advertisements, all these points receive consideration, but as of secondary importance.

A variation in pencils which the reader doubtless has observed is the shape and size of the lead within the cedar casing. You will have observed that among the pencils in vogue, the leads vary from a comparatively small diameter in the hardest pencils to a considerable size in pencils of the softer grade; and from hexagonal leads in certain foreign pencils, to flat and elliptical leads in special goods. For the most part at the present time the round lead is preferred, and there is good reason for this. With the perfection of modern machinery, a round lead can be made of more satisfactory character than a lead of any other type or shape.

The harder the lead the less need there is of body to it, not only in point of consumption of the lead itself, but also in point of resistance in use. A hard lead is usually whittled to a very fine point, and has strength of substance to stand such use. A considerable quantity of lead to remove, therefore, in

sharpening the point would not only be useless, but would annoy the user. The soft lead, on the other hand, is generally used with a blunt point, and so much more is consumed in the writing than with the hard pencils, that a considerable body is necessary to provide for this use and to save the need of constant whittling at the casing. To a certain extent, the diameter of the lead inside of the cedar casing is indicative of the hardness of the lead, although this does not always follow.

There are various kinds of pencils besides cedar pencils, and leads are supplied for pocket pencils in which the lead is used movably. What has been said about the quality of the lead, as to its hardness, diameter, etc., applies in about the same degree to pencils with movable leads as to pencils with fixed leads, and a full assortment of these movable leads also is supplied by the Joseph Dixon Crucible Company.

To the credit of the Joseph Dixon Crucible Company be it said that they have always sold their goods as American goods, and never have they truckled to the prejudices of their customers by putting on a foreign stamp. To-day their advertising goes forth proclaiming "An American industry, American materials, American capital, American brains, American labor and American machinery." Again on their letter-heads we read, "Established 1827. The oldest house in the trade. The largest concern of the kind in the world."

Another distinctively American thing which the Dixon Company have done in introducing their lead-pencils has been to commence with the boys and girls—in other words, the schools—in such a way as to cause the present generation of business-men to think of a "Dixon" pencil whenever a pencil is mentioned. It took some fifteen or twenty years to accomplish this, but what the young people learned has not been forgotten.

COLORLED PENCILS.

Undoubtedly the reader has wondered why we have had nothing to say about the pencil with a colored lead. If the graphite pencil is not a lead pencil, neither is the pencil with the colored lead. Pencils with colored leads are the aristocrats among pencils; they are not made even in the same factory-room with the graphite leads, for fear their bright tints may be discolored in some way by their more sombre brothers. Colored leads, whether red, blue, green, yellow or any other color, are made of wax and other adhesive materials, with red, blue or other coloring pigments, as the case may be. The leads cannot be

subjected to the baking and toughening process, like the graphite leads, as the materials would not stand the heat. But in other respects they are made and finished the same as the graphite leads.

In past years one of the greatest drawbacks with red and blue and other colored leads was the tendency of the leads to break and crumble. It was next to impossible to put any kind of a point to a colored pencil. If graphite leads were brittle, colored leads were ten times worse. All this trouble and vexation is now done away with, and the Dixon "Best" colored leads are nearly, if not quite, as strong and tough as the graphite leads. The colors are vivid and the marks clear and free of the little tail of coloring matter so readily noticed when using inferior colored pencils.

The Dixon "Best" colored leads are placed in wooden cases same as the graphite leads, and are also made in "solid" leads covered with paper. With the solid leads there is no cutting away of wood to be done — the pencil is always ready.

MR. A. L. SCHULTZ, formerly President and General Manager of the Schultz Bridge & Iron Company, Pittsburgh, Pa., has been appointed to take charge of the Operating Department of the American Bridge Company, covering the Pittsburgh District, comprising the Keystone, Pittsburgh, Schultz and Shiffler plants at Pittsburgh; the Wrought-iron Plant at Canton, Ohio; the New Columbus Plant at Columbus, Ohio, and the Youngstown Bridge Company Plant at Youngstown, Ohio.

RESIGNATION OF MR. JARVIS.

BERLIN has had more than its share of sensations in the last year, and now comes the information that Mr. Jarvis, like Mr. Wilcox, rather than give up his residence in Berlin and New England, has resigned his position with the American Bridge Company.

To begin with, over a year ago, came the announcement that the Berlin Iron Bridge Company had decided to start a branch at Pittsburgh. This looked very much as though it meant the taking away of a part of the plant at East Berlin, and we had hardly recovered from the shock, when the announcement came that the Bridge Company, with several other concerns, had consolidated and formed the American Bridge Company. The people in Berlin thought that might mean a large addition to our thriving plant at East Berlin, but when it became known that the greater number of the officials of the East Berlin plant would be permanently located in New York, people began to think that the Trust would not prove such a great boon to us as it would seem. Then came the announcement of the withdrawal of Messrs. Bradley and Sage in the formation of a new company, with possibly a large plant at Berlin, to fight the Trust. Our hopes in this have been dashed to the ground by their location in Pottsville, Pa. Then came the announcement that the United States Steel Company had absorbed the American Bridge Company, but Mr. Jarvis assured us that this would make no difference with the plant at East Berlin. Now on top of all comes the announcement that the United States Company are to remove the offices of all the constituent companies to Pittsburgh, Pa., and the consequent resignation of Mr. Jarvis, and his return to Berlin.

The editor of the *Berlin News* called upon Mr. Jarvis and ascertained that the above

were substantially the facts in connection with the matter, and that during the present month he will withdraw entirely from all connection with the American Bridge Company, although still retaining his financial interest in United States Steel Corporation. When asked as to his future, Mr. Jarvis simply said he had no plans for the future and as he never had had a day to himself that he could call his own since he graduated from college, he proposed to take a good long rest, and, perhaps, in the fall would be ready to start into business again, but he expected to make his home in Berlin and remain here with us permanently.

What about the United States Steel Corporation? How will it affect East Berlin, we asked?

"I am still a great believer in the United States Steel Corporation, and I leave the American Bridge Company with the best of feeling towards the combine. I simply would not sacrifice my present home and all the pleasant associations connected with it and have now returned to Berlin, as I hope, permanently."

How are the companies doing and how will it affect the stock, we asked?

"The audit which Stephen Little & Company made of the bridge companies forming the American Bridge Company shows that even in the duldest times these companies earned \$3,000,000 a year. At the time of the consolidation the same companies were earning between \$6,000,000 and \$7,000,000 a year."

"Every one knows that Percival Roberts, the President of the American Bridge Company, is one of the best organizers and managers in this country, and it is reasonable to suppose that the combination or consolidation, or Trust, if you will so call it, under his successful direction, is earning much more money than when operated alone, and, therefore, I should not be much surprised if the earnings of the American Bridge Company should be \$9,000,000 a year. It is certain to be over \$6,000,000. The other constituent companies of the United States Corporation are probably doing equally as well. Under these circumstances, what better investment is there today than the United States Steel Corporation's stocks? I shall hold to what I have, and I should advise others to do the same."

What about the plant at East Berlin?

"The plant at East Berlin is one of the best in the American Bridge Company. Under Mr. Stearns's management, the cost of production at East Berlin has been lower than any other plant doing the same class of work. Mr. A. J. Major, who succeeds me, has a very favorable impression of this plant and of the men now operating it, and under these circumstances, it will certainly be for the interest of the United States Steel Company that the plant be operated to its fullest capacity. For several months past, it has turned out 1,500 tons per month, which is a much larger tonnage than this plant ever turned out before. The engineering corps employed at East Berlin understand manufacturing building-work better than at any other plant, and the policy of the American Bridge Company will be to run this plant to its fullest capacity summer and winter. I do not believe the people of Berlin need have any uneasiness about this plant closing down." — *Berlin (Conn.) News*.

THE new Liberty Street Bridge to be built by the Pennsylvania Railroad Company at Pittsburgh, Pa., will be furnished by the American Bridge Company.

N. & G. TAYLOR CO.'S "OLD STYLE" BRAND OF ROOFING-TIN.

MESSRS. N. & G. TAYLOR CO., manufacturers of the "Taylor Old Style" brand of roofing-tin, Philadelphia, are issuing a series of tasteful circulars to architects and those interested in a good tin roof. The last one issued is entitled, "A Few Don'ts," as follows:—

Don't specify other brands with the "Taylor Old Style." If you want the best, specify the best and nothing else.

Don't neglect to have the tin painted as soon as it is laid.

Don't use tarred sheathing-paper under tin. Use red-rosin-sized sheathing-paper, extra heavy quality.

Don't use inferior paints. Use only metallic brown, ground in pure linseed-oil, or red oxide-of-iron. We have it.

Don't permit acid to be used in soldering. Use rosin.

Don't forget to have tin painted under side, two coats, before laying on the roof.

Don't neglect to see that your specifications are complied with, and that the brand specified is used.

Don't specify "Taylor Old Style or equal," as there is no equal.

Don't specify "Taylor's Tin." Have the specification read plainly — The "Taylor Old Style" brand — IC or IX thickness.

Don't forget that the "Taylor Old Style" is manufactured only by N. & G. Taylor Co., Philadelphia. Other brands claiming to be as good are not as good. They are sold by dealers who cannot know the quality. Only a manufacturer knows that.

Messrs. N. & G. Taylor Co. will be glad at any time to send samples, quote prices, or give any general information in regard to their product.

A full stock carried by all the leading jobbers in every city in the United States.

OWING to the determination of the United States Steel Company to concentrate all Operating Departments of the constituent plants at Pittsburgh, Charles M. Jarvis, Vice-President in charge of the Operating Department of the American Bridge Company, has resigned, as Mr. Jarvis does not care to change his residence from New England.

A SPECIFICATION FOR ROOFING-TIN THAT CANNOT BE MISINTERPRETED.

Roof to be covered with "N. & G. Taylor Co. Old Style" brand or — roofing-tin, each sheet stamped with brand, thickness and their name. Sheets to be — thickness (IC or IX) — size (14" x 20" or 28" x 20"), roof to be — seam (flat or standing).

Flashings and counterflashings, window-caps, etc., to be of the same brand and thickness of roofing-tin.

Gutters and valleys of same brand of roofing-tin and — thickness (IX or IXX).

Best Quality Red-rosin-sized Sheathing-paper lapped 2 inches, and laid under the tin.

Tin to be painted with one coat of Best Quality Metallic Brown, ground in Pure Linseed Oil, on under side before laying, and two coats on outer side when finished.

All work to be done in a thoroughly workmanlike manner.

When a lower grade is wanted, simply insert the brand.

N. & G. TAYLOR CO.,
PHILADELPHIA, PA.

Atlas PORTLAND CEMENT

The
Standard
American Brand.

Used Exclusively in the Following New York Buildings:

HAVEMEYER STORES

SINGER BLDG.

ST. PAUL BLDG.

UNIVERSITY CLUB

AMERICAN SURETY BLDG.

N. Y. LIFE INS. BLDG.

BANK OF COMMERCE

STANDARD OIL BLDG.

JOHNSTON and PRESBYTERIAN BLDGS.

AND MANY OTHERS.

Atlas Portland
Cement Company

143 LIBERTY STREET
NEW YORK



DIAMONDS AND CEILINGS

Diamonds must be properly set to bring out their full power and brilliancy.
Ceiling Plates must be properly combined to bring out their true character and beauty.
The Ceiling which looks best is the one in which handsome, harmonious designs are combined in an artistic manner.
Even good designs are spoiled by combining them with those belonging to other artistic styles.
The sure way to avoid conglomerations and unartistic mixtures is to use BERGER'S CLASSIC METAL CEILINGS.

Berger's Classic Metal Ceilings

are made in a series of complete and artistic classified designs. Each classified design is made up of pieces which are in harmony with each other.
Our Catalogue classifies each piece of material under the style to which it belongs.
This makes it easy to make an intelligent and artistic selection.
Write for our handsome Catalogue of Classified Metal Ceilings. We mail it free upon application.

THE BERGER MFG. CO., Canton, Ohio
New York Office, 210 East 33d St.
Philadelphia Office, 1013 Arch St.
New England Branch, 176 Federal St., Boston, Mass.
Western Branch, 1428 N. Broadway, St. Louis, Mo.

SPECIALTIES:—Ceiling, Roofing, Siding, Eave Trough, Conductor Pipe, Hangers, etc.

NOTES.

THE Pencoyd Plant of the American Bridge Company shipped, during March, 7,339 tons. We believe this is the largest shipment ever made by any bridge-shop in the world.

OVER seventy-five years ago, in the city of Philadelphia, a few men prominent in the advancement of scientific knowledge met and formed a society which they named after the great American philosopher Benjamin Franklin. At its birth, this Franklin Institute was composed of only a few men, but men of such standing and reputation that, as the years passed on, it grew to be the Franklin Institute of to-day, recognized as the oldest, most conservative and most influential scientific body in America. Men prominent in industrial and engineering development are connected with it either as active or honorary members. Its officers have always been men who ranked among the leaders in their lines of professional or business work. Its President, Mr. John

P. Birkenbine, is a gentleman of broad technical education and engineering experience. His prominence in the engineering field is attested by the fact that he has served as President of the American Institute of Mining Engineers, is a member of the American Society of Mechanical Engineers, and is a member of other technical societies in Europe and America. Other officers of the Institute are men who are recognized as men of superior ability and education. When the National Export Exposition in Philadelphia was organized, the officers chose the Franklin Institute as the medium through which the awards should be made. In doing this, they knew that merit only would be recognized. While the International Correspondence Schools, Scranton, Pa., had an exhibit at the Exposition, it was impossible for the representatives of the Schools to show in detail what they are accomplishing. In December last, Mr. Birkenbine, President of the Franklin Institute, took occasion to personally visit

the Schools. In his professional work Mr. Birkenbine had met numerous young men who are students of the Schools. He found them among all classes of men employed at large industrial and engineering works, and discovered that his own nephews were supplementing their previous education in this way, and that one in particular had benefited so much by his course as to win an enviable and remunerative position under the United States Government. Thus, with a general knowledge of the work of the Schools on the part of the other officers of the Franklin Institute and a detailed knowledge of the work done on the part of President Birkenbine, the Franklin Institute, on behalf of the National Export Exposition, awarded to the International Correspondence Schools the highest award: a diploma and a silver medal. The specific reason given in the diploma states that the diploma and medal are awarded for a unique, thorough and comprehensive system of technical education by correspondence. While such an

ALSEN'S PORTLAND CEMENT

Highest Quality, Most Reliable, Best Color, Most Enduring Surface, Greatest Bulk to the Barrel.

NOTABLE INSTANCES WHERE ALSEN'S CEMENT HAS BEEN USED BECAUSE OF ITS SUPERIOR QUALITY.

CATHEDRAL OF ST. JOHN THE DIVINE, N.Y.
WASHINGTON LIFE INSURANCE CO.'S BUILDING, N.Y.
MANHATTAN LIFE INSURANCE CO.'S BUILDING, N.Y.
AMERICAN SURETY CO.'S BUILDING, N.Y.

ELECTRIC R.R. SUBWAY, BOSTON.
METROPOLITAN SEWERAGE WORKS, BOSTON.
SEA WALL, LAKE FRONT, CHICAGO.
BRIDGES OVER HARLEM RIVER, N.Y.

THE U. S. NAVAL OBSERVATORY, WASHINGTON, D.C.

Alsen's Portland Cement Works, New York Office, 143 Liberty Street.

AGENTS AT BOSTON: WALDO BROS., 102 Milk Street.

NOW READY

PART VIII of the GEORGIAN PERIOD

The illustrations in this Part, which finishes the Second Volume of this work, include forty-eight full-page plates and some sixty or so text-cuts of various sizes.

In addition to plates and text, this Part includes the General Index of Text and Illustrations contained in the First and Second Volumes.

Price, \$6.00, less the usual discount to subscribers to the *American Architect*.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

211 Tremont Street, Boston, Mass.

award couched in more general terms from the Franklin Institute would be a prize of value, the use of the words "unique, thorough and comprehensive" expresses the highest possible commendation.

EDUCATION has always hitherto been regarded as the peculiar privilege of youth. If any one was compelled to leave school insufficiently trained for the work of life, his case was commonly supposed to be beyond remedy. Hence until the International Correspondence Schools, Scranton, Pa., were established, no attempt had ever been made to reach men and women engaged in earning a living, with an organized course of study intended to fit them for higher efficiency in their chosen pursuit, or to train them for another. The Schools are now doing this important work for thousands in middle life and beyond. Such as these value educational opportunities most highly and know exactly what they want. "Success that comes after many years is the best."

The leading commercial nations all recognize that the chief need of the industrial classes is training in industrial science. Without this, a share in the world's trade is impossible; for articles produced by the "rule of thumb" are both inferior and expensive. Germany's attempt to enlarge her commerce has shown that successful competition is possible only when labor is guided by science. But before the method of teaching by mail was perfected, there seemed to be no way of teaching men and women already at work the science they needed. By means of their Text-books written expressly for teaching by mail, the International Correspondence Schools, Scranton, Pa., are doing this work for thousands.

THE American Bridge Company will furnish to R. H. Hood & Company the structural steel for the New York Central Pier Shed to be built on Pier No. 59, North River. This will require over 1,000 tons of steelwork.

WE wish to announce the appointment of Mr. George E. Rinkenberger as Manager of our New York Office, No. 111 Fifth Avenue, New York City. We take this opportunity of thanking architects for the patronage with which they have heretofore favored us, and bespeak a continuance of the same.

GURNEY HEATER MFG CO.,
BOSTON, MASS.

THE American Bridge Company will furnish the steelwork for the Rogers Hotel, to be erected at the corner of Seventh Avenue and Fifty-fifth Street, New York City.

THE Duke and Duchess of York when starting for their trip round the world specially requested that all the electric-lights on their yacht, the "Ophir," should be fitted with Holophane Glass.

MR. OSCAR LOWINSON, of New York, returned on the steamship "Columbia," May 24, from an extended trip through Europe, and once more may be consulted on engineering work at his office, 39-41 Cortlandt St., New York.

BEHIND THE SCENES IN AN ARCHITECT'S OFFICE.

AN architect sat in his office surrounded by wild-eyed and trembling draughtsmen. He ran his hands through his hair and shouted

hoarse commands which every one hustled about in vain attempt to obey.

"Catalogues, catalogues everywhere," he cried, "but not one that I want! Tell me, who makes —"

Then the frantic man dived again into the mass of manufacturers' catalogues, hoping some chance would lead him to the name of some maker of the article he wanted.

"Here, sir," timidly suggested a frightened clerk; "maybe this trade directory would help you."

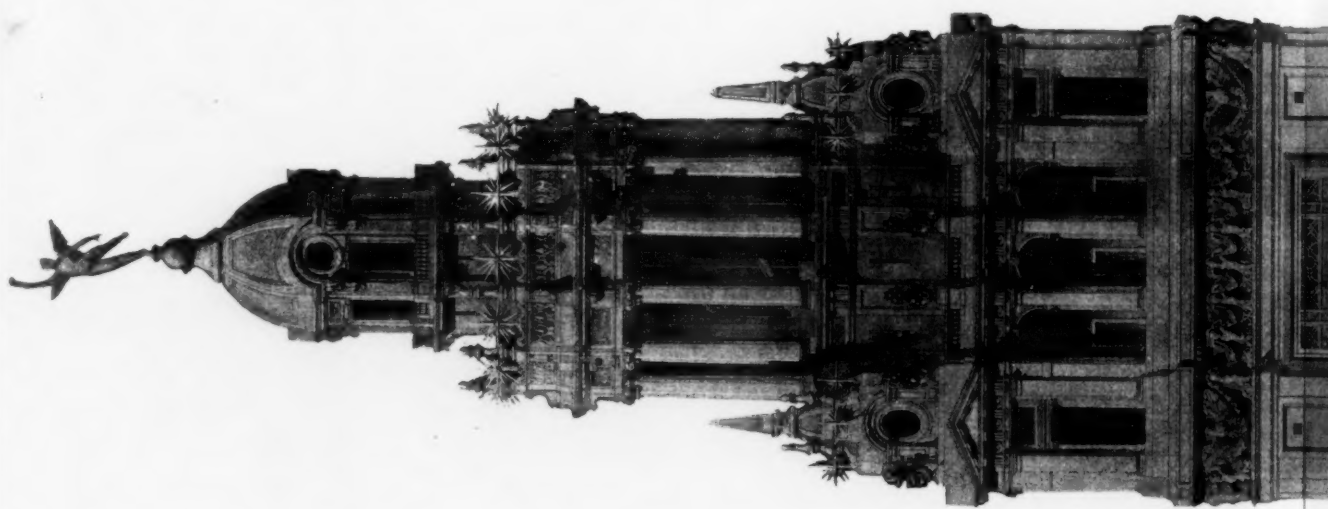
"Directory, directory!" shouted the exasperated architect, for the provocation was great. "Yes, I could find a list a mile long in that directory, but I might as well buy a gold brick. They put every Tom, Dick and Harry in it. How do I know which ones are good and which are worthless? Directories, bah!"

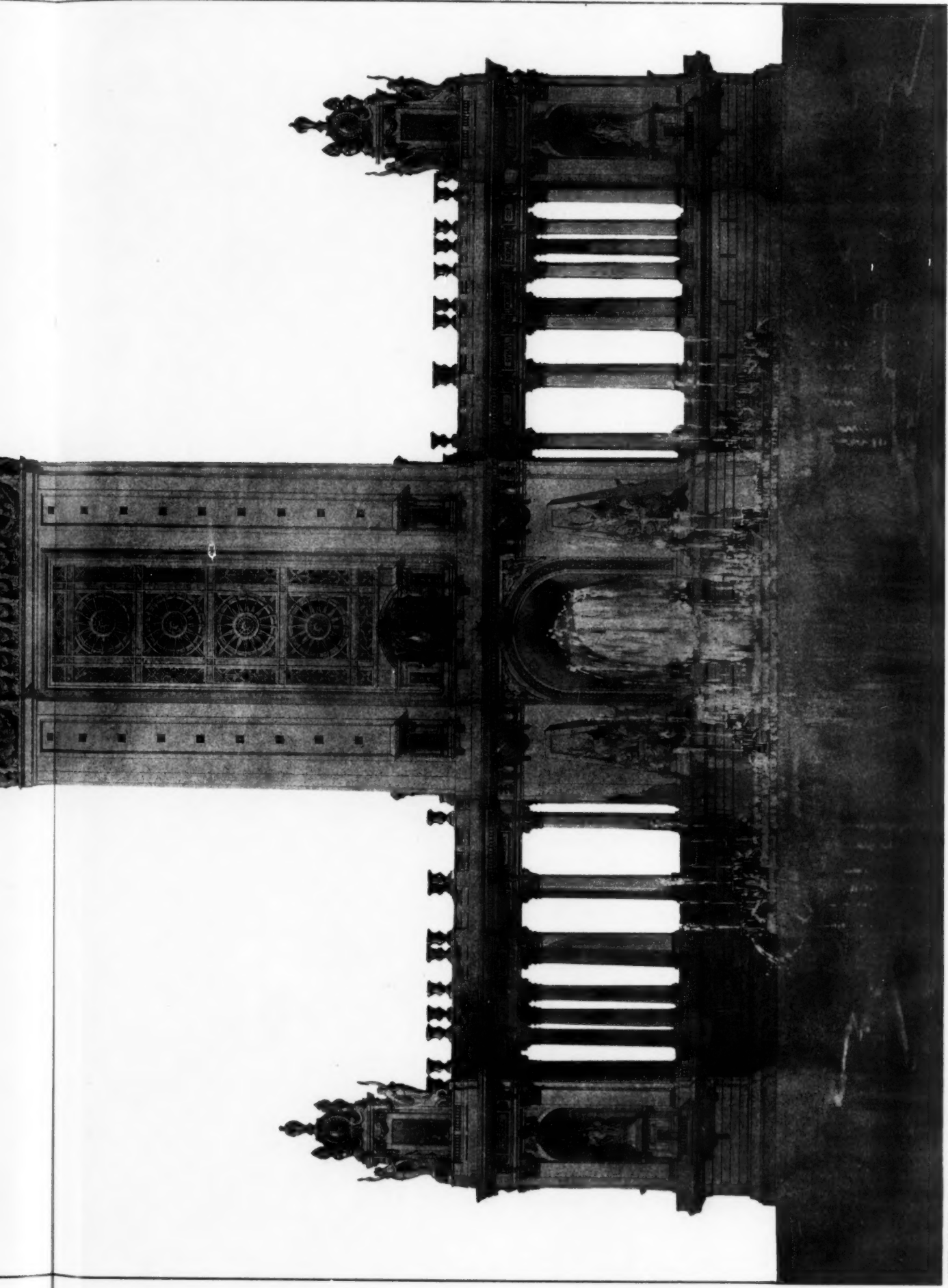
"We'll have to write to the *Interstate*," remarked the calmest young man of the lot. "They'll tell us, as they always do."

"John, you're a general," said his employer, with a sign of returning hope. "And that reminds me that when we get their 'Blue Book of Standards' we'll have no more trouble in picking out reliable concerns with whom to deal. Put these books away."

The architect referred to the "Royal Blue Book of Standards," which is soon to be issued by the Interstate Publishing Co., 509 Chamber of Commerce Building, Cleveland. Every architect in the country is to receive one free of charge. It will cost the reliable concern only a fraction over a mill per architect to place his name prominently before each one of the profession. That's less than it would cost to send one little circular. A letter to the publisher will bring an explanation of details.

ed
ne
e,
ne
g
ne
ed
ld
x-
as
g
a
nd
re
es,
e-
ot.
er,
at
uc
re
th
ue
ed
er
ry
ee
rn
to
ne
ld
to
of



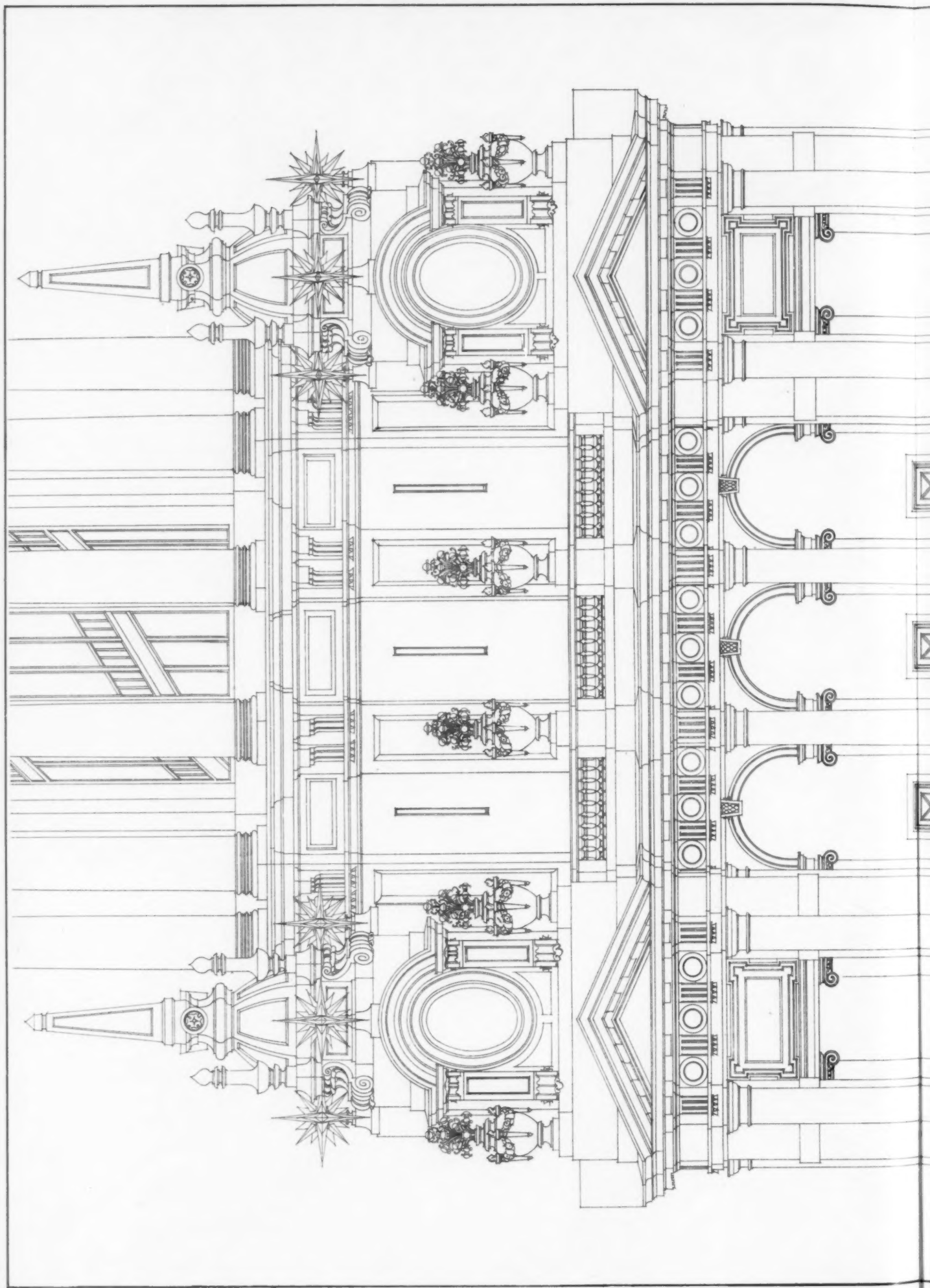


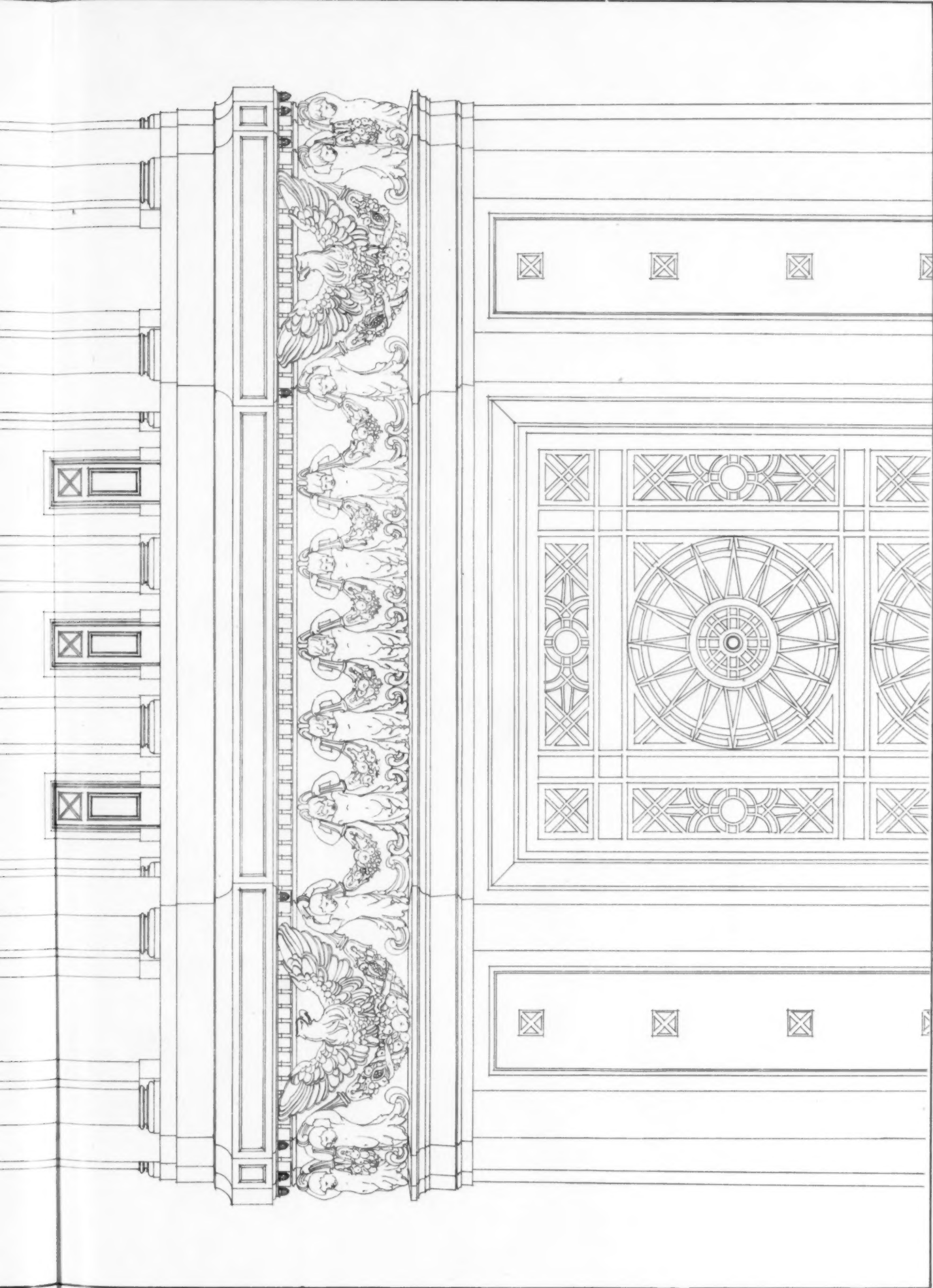
LITHOGRAPHED AND PRINTED BY THE AMERICAN ARCHITECT AND BUILDING NEWS CO.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

THE ELECTRIC TOWER: PAN-AMERICAN EXPOSITION, BUFFALO, N. Y.
JOHN GALEN HOWARD, ARCHITECT.

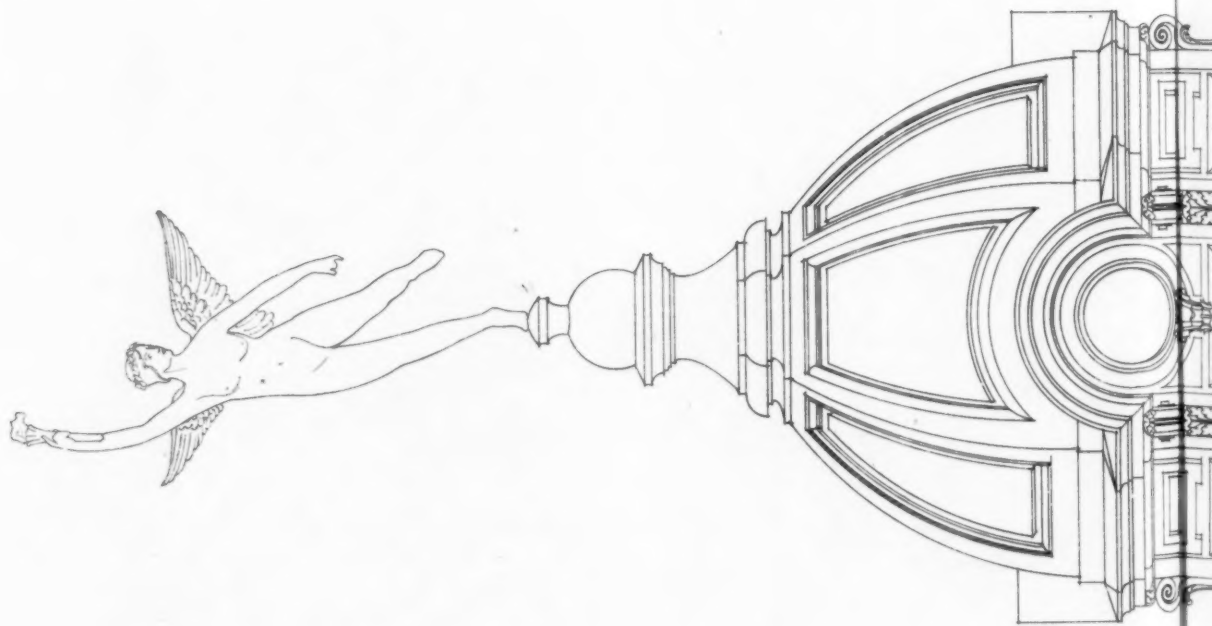
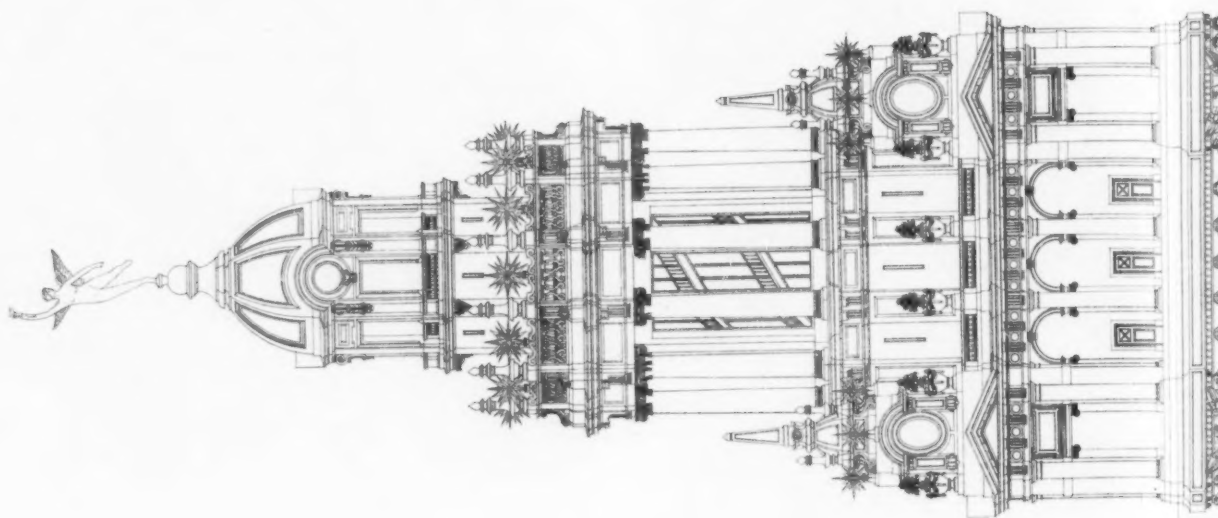
The American Architect
June 1, 1901.
No. 1327.

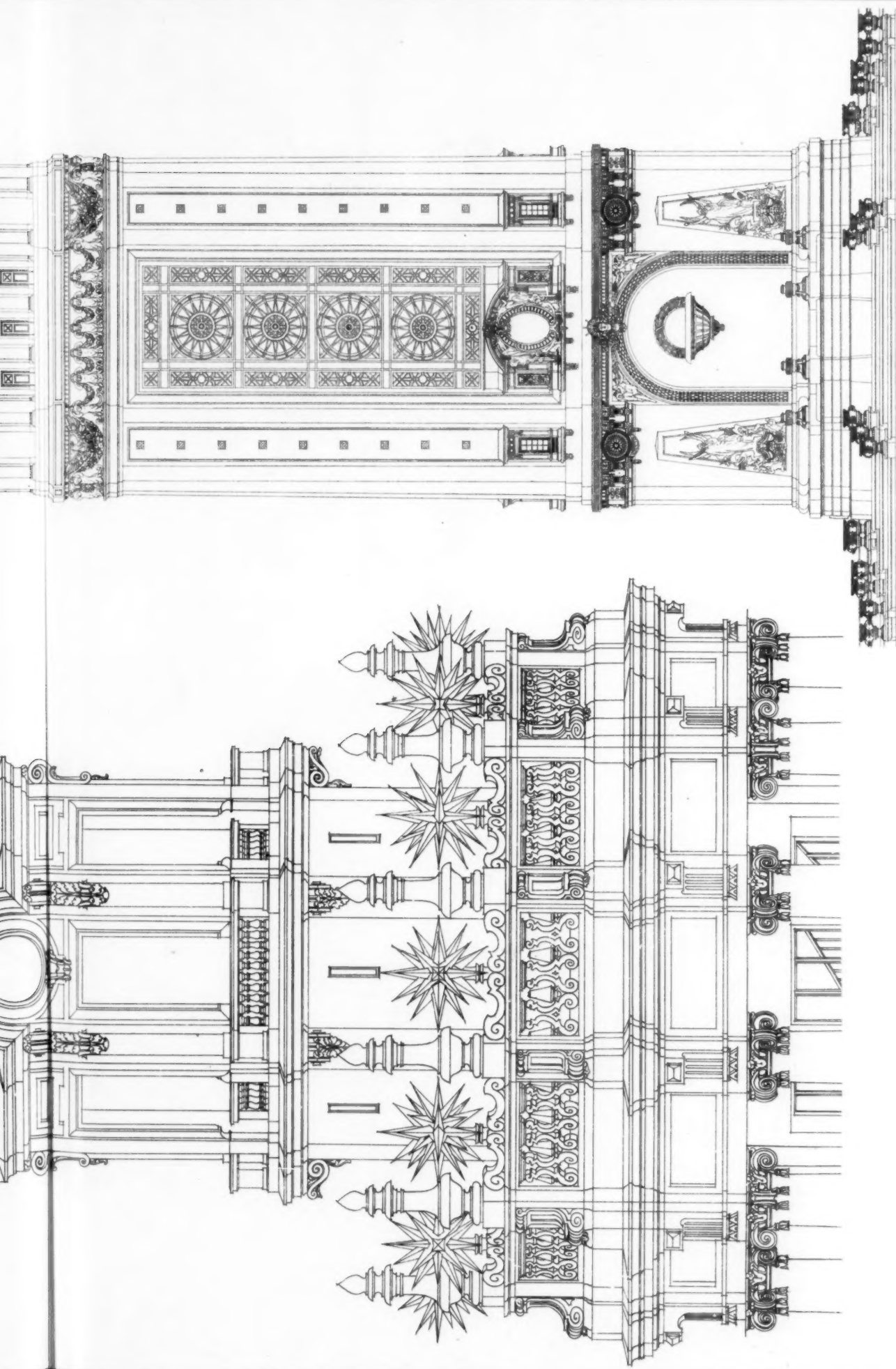




REPRODUCED BY THE AMERICAN ARCHITECT AND BUILDING NEWS CO.

DETAIL OF THE SHAFT, ELECTRIC TOWER: PAN-AMERICAN EXPOSITION, BUFFALO, N. Y.
JOHN GALEN HOWARD, ARCHITECT.





COPYRIGHT 1901 BY THE AMERICAN ARCHITECT AND BUILDING NEWS CO.

ELECTRIC TOWER AND DETAIL: PAN-AMERICAN EXPOSITION, BUFFALO, N. Y.
JOHN GALEN HOWARD, ARCHITECT.

REPRODUCED BY THE AMERICAN ARCHITECT AND BUILDING NEWS CO.

The American Architect
June 1, 1901.
No. 1327.

THE AMERICAN ARCHITECT AND BUILDING NEWS

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

VOL. LXXII. — No. 1827.]

SATURDAY, JUNE 1, 1901.

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

ARCHITECTURAL INSTRUCTION.

BOSTON, MASS.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

DEPARTMENT OF ARCHITECTURE.

Options in Architectural Engineering and Landscape Architecture.

College graduates and draughtsmen admitted as special students.

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

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

CAMBRIDGE, MASS.

HARVARD UNIVERSITY.

LAWRENCE SCIENTIFIC SCHOOL.

PROF. H. LANGFORD WARREN.

ITHACA, N. Y.

CORNELL UNIVERSITY

COLLEGE OF ARCHITECTURE

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

PROF. ALEXANDER BUSH TROWBRIDGE.

NEW YORK, N. Y.

COLUMBIA UNIVERSITY, IN THE CITY OF NEW YORK.

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

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

COLUMBUS, OHIO.

OHIO STATE UNIVERSITY COLLEGE OF ENGINEERING

Offers four-year courses in Architecture, Civil, Electrical, Mechanical and Mining Engineering, and in Ceramics. Tuition free. For information address,

President W. O. THOMPSON, Columbus, Ohio.

WHITTIER MACHINE CO.,

PASSENGER AND FREIGHT
ELEVATORS.

53 STATE STREET - - - BOSTON.

LOOMIS FILTERS.

ESTABLISHED 1880.

Improved System. Simple and Effective.

LOOMIS-MANNING FILTER CO.,

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

PHILADELPHIA, PA.

UNIVERSITY OF PENNSYLVANIA. SCHOOL OF ARCHITECTURE.

PROF. WARREN P. LAIRD.

SYRACUSE, N. Y.

SYRACUSE UNIVERSITY, Syracuse, N. Y. DEPARTMENT OF ARCHITECTURE.

PROF. EDWIN H. GAGGIN.

BOOKS:

"Les Concours publics d'Architecture."
(A Monthly Publication.)

Edited by MM. William and Farge.

Vol. IV. 120 Plates. Price \$9.40.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

BOOKS:

"Cathedral of St. John the Divine."

Designs submitted in the First Competition.

57 Plates, folio. Price \$5.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

BOOKS:

"The Library of Congress."

20 Plates, folio. Price \$5.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

FLYNT

BUILDING AND CONSTRUCTION CO.

GENERAL OFFICE, PALMER, MASS.

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

CHURCHES, HOTELS, MILLS, PUBLIC

BUILDINGS AND RESIDENCES.

Also for the construction of

RAILROADS, DAMS AND BRIDGES.

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

SCAIFE FILTERS.

10 to 10,000 Gallons per Hour.

NO CHEMICALS REQUIRED.

RESULTS GUARANTEED.

WM. B. SCAIFE & SONS,
Pittsburgh, Pa.

The WINSLOW BROS. COMPANY,

CHICAGO,

Ornamental Iron and Bronze.

BOOKS:

"Ile de France, Picardie."

PART I. I.

A portion of the series of "Archives de la Commission des Monuments Historiques."

25 Plates, folio. Price \$6.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

BOOKS:

"Croquis d'Architecture."

(Intime Club.)

XXII Year, complete. Price \$6.70.

A hiatus of ten years occurs between the date of the 21st and 22nd volumes.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

BOOKS:

"Architectural Masterpieces of Belgium and Holland."

96 Plates, quarto. Price \$10.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

ROBERT C. FISHER & CO.

Successors to Fisher & Bird,

MARBLE AND GRANITE WORKS.

97, 99, 101 and 103 EAST HOUSTON STREET,

Established 1880.

NEW YORK

Heavy Heel Prints



scratch and mar floors finished with ordinary varnish. Specially selected hard gums are essential, such as used in making

I. X. L. FLOOR FINISH

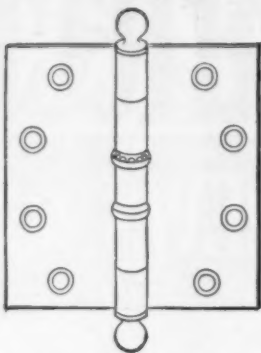
Write for Varnish List

EDWARD SMITH & CO.

Varnish Makers and Color Grinders

45 Broadway, New York

**STANLEY'S BALL-BEARING
STEEL BUTTS**



are heavily electro-plated and highly polished, and compare favorably in appearance and durability with solid metal butts.

It is impossible to wear them down, and they never creak.

Samples and literature free to architects.

THE STANLEY WORKS, Dept. "C."
NEW BRITAIN, CONN.
79 CHAMBERS ST., N. Y.

FOR INFORMATION ABOUT
U. S. MAIL CHUTES
WHICH ARE
A necessity in Office Buildings and Hotels,
write to the sole makers.
THE CUTLER MFG. CO., ROCHESTER, N. Y.
PATENTED. AUTHORIZED.

CLINTON WIRE-CLOTH CO.

Sole Proprietors and Manufacturers of

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

Plain, Japanned or Galvanized.

The Most Perfect and Economic System of FIREPROOF Construction.

SEND FOR CIRCULAR.

BOSTON,
199 Washington St.

NEW YORK,
76 Beekman St.

CHICAGO,
137 Lake St.

FACTORY,
CLINTON, MASS.



FITCH SASH LOCKS
LOCK THE WINDOW.
RATTLE, COLD AND DUST
SIMPLE, DURABLE, SAFE.
SOLD BY HARDWARE DEALERS EVERYWHERE
TRIAL SAMPLE FREE
THE W.&E.T. FITCH CO. NEW HAVEN, CONN.

"La Construction Moderne,"

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

The fifteenth annual volume is now in course of publication.

Subscription, including postage, 35 francs.

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

PRICE OF BACK ANNUAL VOLUMES,
:: 40 Francs. ::

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



FOR USE IN
PUBLIC BUILDINGS
OFFICE BUILDINGS
REDUCTION WORKS
FACORIES
ENGINE AND BOILER ROOMS
VAULTS, STAIRWAYS
and many other Positions

LIGHTER, CHEAPER AND STRONGER THAN CAST
IRON, MARBLE, SLATE OR ANY OF THE MATERIALS
USUALLY USED FOR THIS PURPOSE

USED AND RECOMMENDED BY PROMINENT ARCHITECTS

OGDEN & WALLACE

577-583 GREENWICH STREET, NEW YORK

MANFRES ADV. BUREAU, N. Y.

PATENTED WROUGHT IRON AND STEEL
FLOOR PLATES



OUTSIDE STAIRWAY EQUIPPED
WITH "NEVER SLIP" FLOOR PLATES
SEND FOR ILLUSTRATED PAMPHLET

THE FOUNDATION

is the important part of any structure, whether it be a building or ordinary paint.
The most durable foundation for paint is

ZINC WHITE

Paints built upon this foundation, with pure linseed oil as the binding material,
are economical, beautiful, lasting. There is no other satisfactory paint base.

FREE: Our Practical Pamphlets—

- "The Paint Question,"
- "Paints in Architecture,"
- "House Paints: A Commonsense
Talk About Them."

The New Jersey Zinc Co.
11 Broadway
New York

**The Search
for Work**

The man who can do something better than anyone else doesn't search for work. Employers search for him. We teach the theory of engineering and the trades to men already at work. Thousands of our students have secured a

**Salary-Raising
Education**

in Mechanical, Electrical, Steam, Civil or Mining Engineering, Chemistry; Architecture; Plumbing; English Branches.
When writing state subject in which interested.
International Correspondence Schools,
Box 586, Scranton, Pa.





The Ideal "ARCADIA" Water=Closet Combination

Unquestionably the
Finest Closet that
has ever been pro-
duced. None other
can be compared
with this High-
Grade, Original and
Strictly Sanitary
Closet Combination

THE IDEAL MFG. CO.
DETROIT, U. S. A.

CRANE VALVES

ARE NOTED FOR THEIR UNIFORM EXCEL-
LENCE IN DESIGN AND CONSTRUCTION.
WE MAKE THEM IN BRASS AND IRON
FOR ALL PRESSURES AND PURPOSES.
YOU WILL MAKE NO MISTAKE BY SPECI-
FYING THEM.

WRITE FOR OUR
POCKET CATALOGUE.

IT CONTAINS CLASSIFICATION, LIST,
DIMENSIONS, ETC., WHICH WILL BE
FOUND VERY USEFUL TO ARCHITECTS.
IT IS SENT ON REQUEST.

CRANE CO.
CHICAGO

ESTABLISHED 1855

NEW YORK ST. PAUL KANSAS CITY
PHILADELPHIA OMAHA LOS ANGELES
CINCINNATI SAN FRANCISCO
ST. LOUIS SIOUX CITY PORTLAND, ORE.

Vapor System of Steam Heating.

Adapted to buildings of every kind and size. Superior to hot-water heating.
No pressure on radiators. No air valves. No noise. No machinery. Heat under perfect
control. Easily installed by all steam fitters.
Architects are requested to send blue-prints with data. Drawings and specifications will be
furnished free. Open to all contractors for bids.

VAPOR STEAM HEATING CO. - - - YORK, PA.

BOOKS:

"Norman Monuments of Palermo and
Environs."

81 Plates, folio and text. Price \$12.00.

AMERICAN ARCHITECT AND BUILDING NEWS CO.

Topographical Index of Advertisers.

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

CONNECTICUT.

New Britain.
The Stanley Works.....[Wrought-Steel Busts.
New Haven.
Pitch Co., The W. & E. T.....[Sash Lock.
Stamford.
Yale & Towne Mfg. Co.....[Locks.
Waterbury.
Benedict & Burnham Mfg. Co.....[Seamless
Nickel-Silver Tubing.....[Perspective.

ILLINOIS.

Chicago.
Crane Co.....[Valves.
Johnson Co., E. V.....[Fireproofing.
Northwestern Terra-Cotta Co.....[Terra-Cotta.
Peck Brothers Company.....[Flue-Valve.
Stanton & Blom.....[Cement Paving.
Taylor, J. W.....[Photographs.
Winslow Bros. Co., The.....[Ornamental Iron
and Bronze.

MASSACHUSETTS.

Boston.
Amer. Mason Safety Tread Co.....[Stair Tread.
Bartlett Lumber Co.....[Redwood Lumber.
Butcher Polish Co.....[Floor Polish.
Cabot, S.....[Single-Stains.
Campbell, Walter M.....[Perspective.
Carlisle, Pope & Co.....[California Redwood.
Carter Ink Co.....[Ink.
Dickey & Co., A.....[Spiral Mouldings.
Folsom Snow Guard Co.....[Snow Guards.
Gurney Heater Mfg. Co.....[Hot water, etc.
Haberstroh & Son, L.....[Decorators.
Heliotype Printing Co.....[Art Printing.
Lombard & Co.....[Architectural Ornamenta-
tion.
Massachusetts Institute of Technology.....[School.
New England Felt Roofing Works.....[Roofing.
Samson Cordage Works.....[Sash Cord.
Resounding Print Paper Co.....[Blue Prints.
Union Brass Works.....[Faucets.
Whittier Machine Co.....[Elevators.

Cambridge.

Lawrence Scientific School.....[School.

Clinton.

Clinton Wire Cloth Co.....[Metallic Lathing.

Palmer.

Flynt Building & Construction Co.....[Building
Contractors.

MARYLAND.

Baltimore.
Valle & Young.....[Skylights.

MICHIGAN.

Detroit.
Berry Brothers, Limited.....[Shinglefast.
Dwight Lumber Co.....[Hardwood Flooring.
Ideal Mfg. Co.....[Sanitary Specialties.
Ingia Wire and Iron Works, Wm.....[Wire, Iron,
Brass Work.....[Metallic Lathing.
Grand Rapids.
Grand Rapids Carved Moulding Co.....[Mouldings.

MISSOURI.

St. Louis.
Ludlow Saylor Wire Co.....[Art Metal-Work.

NEW JERSEY.

Jersey City.
Dixon Crucible Co., Jos.....[Graphite.

Paterson.

Passaic Rolling Mill Co.....[Structural Iron.

Perth Amboy.

Perth Amboy Terra-Cotta Co.....[Terra-Cotta.

NEW YORK.

Brooklyn.
Moore, Benjamin.....[Mureaco.

Irrington-on-Hudson.

Lord & Burnham Co.....[Conservatories.

Ithaca.

Cornell University.....[School.

Jamestown.

Art Metal Construction Co.....[Art Metal
Work.....[Steel Structures.

N. Y. City.

Alsen's Cement Works.....[Cements.
American Iron Bridge Co.....[Steel Structures.

NEW YORK.

N. Y. City.
American Sheet Steel Co.....[Galvanized Iron.
Atlas Cement Co.....[Cement.
Bicklehaupt, G.....[Skylights.
Columbia University.....[School.
Deane, E. Eldon.....[Colorist.
Fisher & Co., Robert C.....[Marble.
Frank, I. F.....[Reflectors.
Gorton & Lidgerwood Co.....[Boilers.
Hayes, George.....[Metallic Lathing.
Hitchings & Co.....[Greenhouses.
Holophane Glass Co.....[Holophane Glass.
Hurd & Co.....[Wall-Ties.
Jackson & Co., Wm. H.....[Grates.
Jenkins Bros.....[Valves.
Jones, T. W.....[Fanes.
Kent-Costikyan.....[Rugs (Carpet).
Laughlin-Hough Co.....[Drawing Tables.
Mott Iron Works, The.....[Iron Work.
Neuchatel Asphalt Co.....[Asphalt.
New Jersey Zinc Co.....[Zinc White.
New York Belting and Packing Co., Ltd.....[Belting.
New York Cement Co., The.....[Cement.
New York Marble Works.....[Marble.
N. Y. Metal Ceiling Co.....[Metal Ceilings.
Ogden & Wallace.....[Floor Plates.
Okonite Co. (Ltd.).....[Insulated Wire.
Pitt, W. R.....[Folding-Gates.
Rider-Ericson Engine Co [Hot-Air Engines.
Sargent & Co.....[Builders' Hardware.
Smith Co., H. B.....[Steam Heat.
Smith & Co., Edward.....[Varnishes.
Thiele, E.....[Portland Cement.
U. S. Mineral Wool Co.....[Mineral Wool.
Warren Chemical & Mfg. Co.....[Asphalt Roofing.
Williams, John.....[Wrought Metal.
Yale & Towne.....[Hardware (Art).

Rochester.

Cutler Mfg. Co.....[Mail Chutes.

Syracuse.

Syracuse University.....[School.

Troy.

Globe Ventilator Co.....[Ventilators.
Troy Laundry Machinery Co.....[Washing Ma-
chines.

OHIO.

Canton.
Berger Mfg. Co., The.....[Metal Ceilings.
Canton Steel Roofing Co., The.....[Metal Ceilings.

Cincinnati.

American Steel Roofing Co., The.....[Conductors.
Ohio Marble and Wood Co., The.....[Marbles Col-
ored.....[School.

Cleveland.

Glidden Varnish Co., The.....[Varnish.
Tyler Co., The W. S.....[Ornamental Iron and
Bronze.....[School.

Columbus.

Kinnear Mfg. Co.....[Steel Rolling-Doors.
Nelson Co., The C. T.....[Capitals (Carved).
Ohio State University.....[School.

PENNSYLVANIA.

Ambler.
Kensley & Mattison Co.....[Magnesia Covering.

Philadelphia.

Electric Storage Battery Co.....[Chloride-
Accumulator.....[Chloride-
French & Co., Samuel H.....[Mortar Colors.
Harrison Brothers & Co.....[Protective Paints.
International Sprinkler Co.....[Automatic
Sprinklers.
Loomis Filters Improved System.....[Filters.
Merchant & Co.....[Tin Roofing.
Morse, Williams & Co.....[Elevators.
Taylor Co., N. & O.....[Tin.
Thorn, J. S. Co.....[Sheet Metal.
University of Pennsylvania.....[School.

Pittsburgh.

Saife, Wm. B. & Sons.....[Filters.
Wisconsin Graphite Paint.....[Graphite Paints.

Scranton.

International Correspondence Schools, The.....[Architecture.

York.

Vapor Steam Heating Co.....[Heating Apparatus,
Steam.....[School.

VERMONT.

Burlington.
Burlington Venetian Blind Co.....[Venetian
and Sliding Blinds.....[School.

"The Chloride Accumulator" Detailed Descriptions of In Electric Lighting Installations Saves coal and labor; reduces engine hours; increases reliability of service

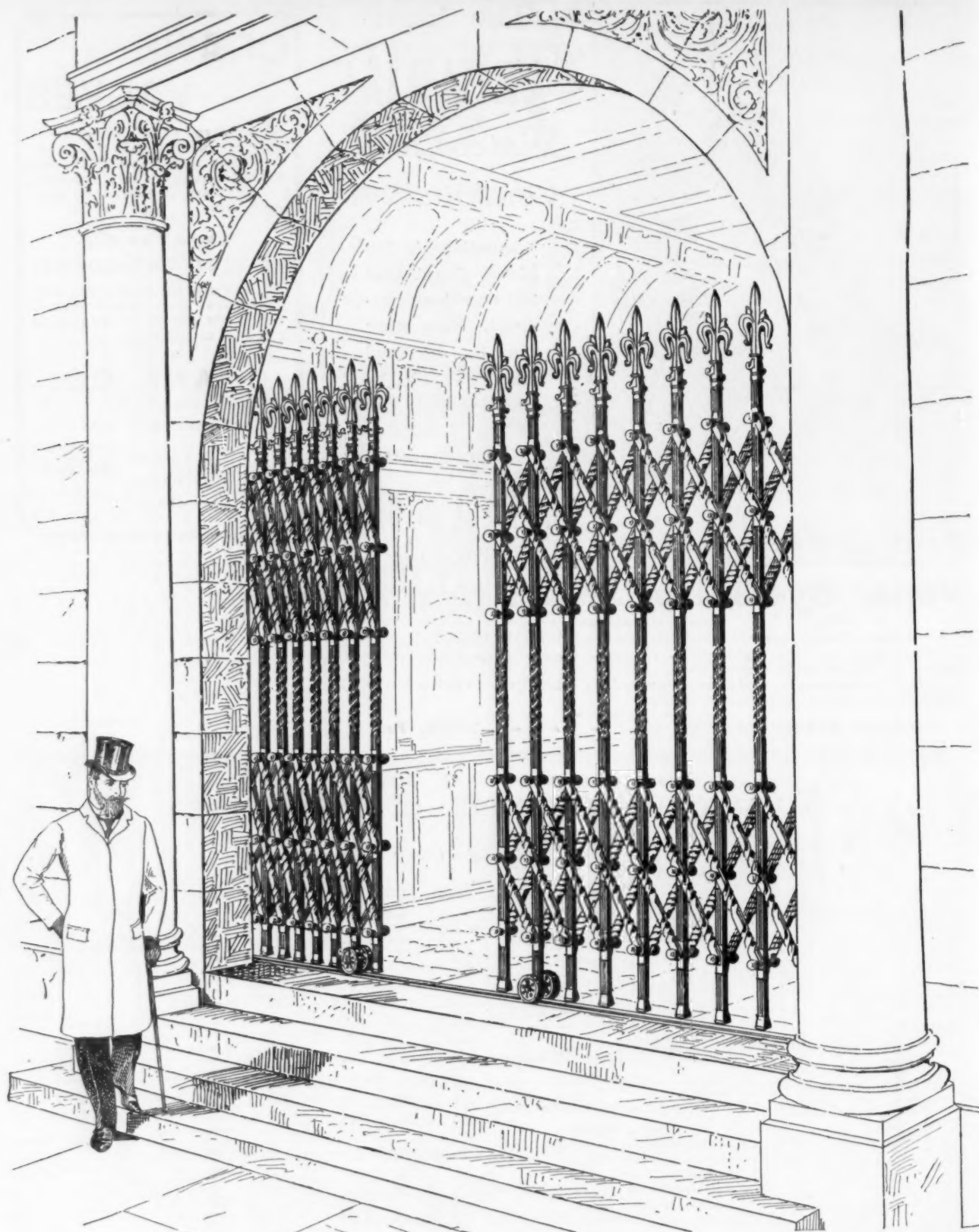
SALES OFFICES

NEW YORK: 100 Broadway
BOSTON: 60 State Street
CHICAGO: Marquette Building
BALTIMORE: Equitable Bldg.
ST. LOUIS: Wainwright Bldg.
SAN FRANCISCO: Nevada Bldg.

THE ELECTRIC STORAGE BATTERY CO.

CLEVELAND: New England Bldg.
DETROIT: Michigan Elec. Co.

Allegheny Avenue and 19th Street, Philadelphia



COMPOSITE FOLDING GATE. PATENT, APRIL 4, 1893.

THE WM. R. PITT COMPOSITE IRON WORKS,
111 FIFTH AVENUE, NEW YORK.

MANUFACTURERS OF THE "PITT," "BOSTWICK," "COMPOSITE" AND NOVELTY PATENT FOLDING GATES AND GUARDS IN BRASS, BRONZE, STEEL AND IRON FOR STORE FRONTS, VESTIBULES, ELEVATOR ENCLOSURES AND CARS, BANK VAULTS, WINDOWS, BRIDGES, ETC. ALSO RAILINGS, DRIVEWAY AND ENTRANCE GATES, WINDOW GRILLES, MARQUEES, STAIRS, SPECIAL HARDWARE, LANTERNS AND ALL ARTISTIC WROUGHT WORK. ESTIMATES FURNISHED.



Architects are warned against imitations of

Cabot's Sheathing and Deafening Quilt

which is suffering the penalty of success. The imitations are made with cow-hair and other putrescible materials which harbor moths and vermin, in place of the absolutely sanitary and unflammable eel-grass which our patents protect to our sole use.

We like the flattery of imitation, but do not want our patrons to suffer by it.

The genuine article bears our trade-mark

"QUILT."

Samples and full information sent on request.

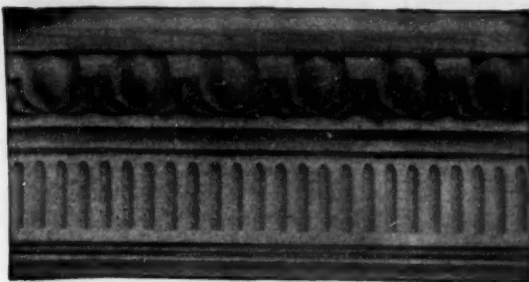
SAMUEL CABOT, Sole Manufacturer, BOSTON, MASS.

28 Dearborn Avenue, Chicago, Illinois.

AGENTS: V. H. Schneider, 8 Wooster St., New York; Samuel H. French & Co., Philadelphia, Pa.; Waterhouse & Price, San Francisco, Cal.; P. H. Mathews, Los Angeles, Cal.; Whitelaw Brothers, St. Louis, Mo.; George H. Lawes & Co., St. Paul and Minneapolis, Minn.; John H. Corning, Washington, D.C.; Brady & Co., Detroit, Mich.; The National Building Supply Co., Baltimore, Md.; Timms, Edwards & Co., Portland, Ore.; Cleveland Builders' Supply Co., Cleveland, O.; Seymour & Co., Montreal; S. W. R. Dally, Seattle, Wash., and at all other central points.



THE WERTACH-BRIDGE TOWER, AUGSBURG, BAVARIA.



CARVED WOOD MOULDINGS...

For Interior Finish

AS CORNICES,
CHAIR AND
PICTURE RAILS,
CEILINGS, ETC.

..... New Catalogue just out.

GRAND RAPIDS CARVED MOULDING CO.

9 and 11 Myrtle Street,

GRAND RAPIDS, MICH.

A Pencil

should be sharpened to a fine point and wear off in use, instead of breaking off.

DIXON'S AMERICAN GRAPHITE PENCILS

are made with smooth, tough leads, perfectly graded. Ask for them at your stationer's or mention American Architect and Building News and send 16 cents for samples.

JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J.

*When architects specify several brands of tin,
a roofer naturally buys the cheapest and the
property owner suffers.*

N. & G. TAYLOR CO.

SOLE MANUFACTURERS
.. OF ..

THE "TAYLOR OLD STYLE" BRAND

FOR SALE BY ALL DEALERS

Tinplate Works
PHILADELPHIA

Rolling Mills and Blackplate Plant
CUMBERLAND, MD.

LUDLOW SAYLOR WIRE CO. N. E. Cor. Fourth & Elm Sts.,
ST. LOUIS, MO.



Elevator Enclosures and Cabs,
Metal Work in Brass,
Wire and Wrought-Iron,
Office and Bank Railings,
Wire and Iron Fences, etc.

JNO. WILLIAMS, BRONZE FOUNDRY AND WORKS

ARTISANS IN ORNAMENTAL METAL WORK TO SPECIAL DESIGN
BRONZE, BRASS AND WROUGHT IRON WROUGHT IRON WORKS
OFFICE Colossal Bronze Statuary and Monumental Castings
556 W. 27th STREET Works, 544 to 556 WEST 27th STREET
Annex, 549 to 555 WEST 26th STREET NEW YORK

HITCHINGS & CO., Established 50 years

HORTICULTURAL ARCHITECTS AND BUILDERS
and largest Manufacturers of
GREENHOUSE HEATING AND VENTILATING APPARATUS.



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

Send four cents for Illustrated Catalogue.

233 MERCER STREET, N. Y. CITY.

USED FREELY
BETWEEN MEALS



CARTER'S
LIQUID INDIA INK
WILL AID
YOUR SYSTEM.

A fair trial will convince you that this is the
BEST INK and
MOST PRACTICAL PACKAGE on the market.
Postal for Circular and Color Card.
THE CARTER'S INK CO., - BOSTON, MASS.

Stairbuilders' Supplies



of all
kinds
and
Spiral
Mouldings
of
every
description



A. DICKEY & CO.

37 Bristol St., BOSTON



NEW ENGLAND
FELT ROOFING
WORKS,

18 Post Office Sq., BOSTON.

Originators of Felt Roofing in New England.

Inventors and only Manufacturers of the Celebrated

"BEEHIVE BRAND."



Cathedral of
St. John the Divine.

NEW YORK, N. Y.

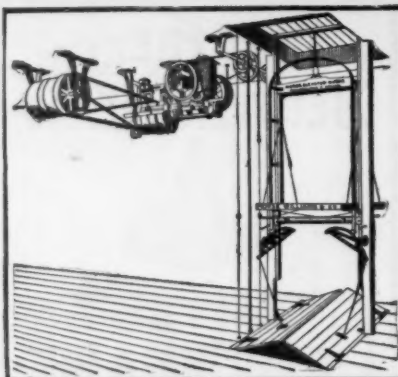
Illustrations of the competitive designs for
the great Protestant Episcopal Cathedral, now
building on Bloomingdale Heights, New York

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

PRICE, \$2.50 PER SET.

American Architect and Building News Co.,

BOSTON, MASS.



THE MORSE ELEVATOR

Catalogue A
Free on Application

MORSE, WILLIAMS & CO.
PHILADELPHIA AND BOSTON

JENKINS IMPROVED AUTOMATIC AIR VALVES



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

JENKINS BROTHERS, New York, Boston, Chicago, Philadelphia

ASPHALT ROOFING AND PAVING MATERIALS.

WARREN'S "ANCHOR BRAND" NATURAL ASPHALT ROOFING. WARREN'S NATURAL ASPHALT READY ROOFING.
Send for circulars, samples and specification forms to
WARREN CHEMICAL & MFG. CO. • • • 81 & 83 Fulton Street, NEW YORK, U.S.A.

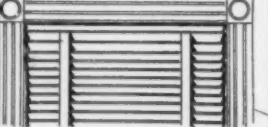


OUR VENETIAN AND SLIDING BLINDS

Keep out the Sun: Control the Light:
Permit perfect Ventilation: No pockets or unsightly projections

BURLINGTON VENETIAN BLIND CO.

BURLINGTON, VT.
ALSO MANUFACTURERS OF
WINDOW AND DOOR SCREENS
MADE ON HONOR
WRITE FOR CATALOGUE "B"



MARBLES COLORED

Domestic Marbles colored in exact imitation of imported marbles, without their cracks, flaws, imperfections and patched-up appearance, and at great saving in cost.

We match broken pieces, reproduce varieties from extinct quarries, tint acid, ink-stained or smoked marbles to new effects.

Also, Color Wood Veneering, Etc. Manufacturers of Wooden Wall Paper, equal in finish to that of a piano.

Agents wanted to sell our handsome Pedestals, Jardinieres, and Marble Top Kitchen and Dining Room Tables.

THE OHIO MARBLE AND WOOD CO.

130-132 West Front Street

CINCINNATI, OHIO

ASPHALT FLOORS, ROOFS, SIDEWALKS AND CARRIAGE-WAYS

Of Public Buildings, Hospitals, Warehouses, Stables, Cellars, etc.
Laid with VAL de TRAVERS ROCK ASPHALT,
DURABLE, FIREPROOF AND IMPERVIOUS.

For estimates and list of works executed, apply to
THE NEUCHATEL ASPHALT CO., Limited,
265 BROADWAY - - - NEW YORK.

Conservatories, Greenhouses, Vineries, Etc.

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

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

METAL CEILINGS

Suitable for
Residences, Offices, Stores, Schools,
Hospitals & Churches
Can be applied over old plaster
without removal of same
Give Measurements for estimate

N.Y. METAL CEILING CO.

21 ST. AND 13 AVE.
NEW YORK, N.Y.

Boston Office: 48 Congress St., Room 23.



"Cheapest and Best, All in one piece"

Send for samples and quotations.
Special lengths and forms on short notice.

HURD & CO.

576 W. Broadway, New York
(Engineers and Manufacturers.)

Holophane Glass Co.

No. 15 East 32nd Street, N. Y.

COMPOUND

Prism Globes and Shades.

"Maximum Light—Complete Diffusion—Minimum Glare" for all kinds of light.

Send for catalogue and price lists.



JAP-A-LAC

PRESERVES THE NATURAL BEAUTY OF THE WOOD

Natural or Clear Jap-a-lac is light in color and perfectly transparent, thus accentuating and preserving all the natural beauties of the wood.

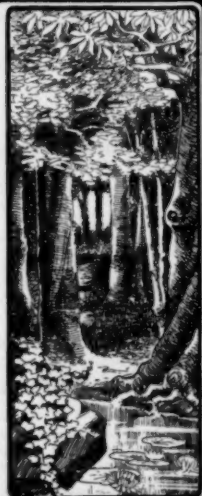
No other wood finish can compare with Jap-a-lac. It will never crack or crumble and is beyond all doubt the most durable varnish on the market.

EQUALLY GOOD FOR FLOORS OR INTERIOR WOODWORK

Make a trial of Jap-a-lac. Specify it on your next contract. We assure you that if you once try it you will use it permanently.

THE CLIDDEN VARNISH CO., Cleveland, Ohio

FREE SAMPLES OF FINISHED WOODS SENT ON REQUEST.



Important Litigation Relating to Magnesia Covering Patents

THE KEASBEY & MATTISON CO., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford & Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr, to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent of magnesia, and especially coverings containing 85 per cent magnesia.

The Bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

☞ All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit. ☞

Beware of Fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

KEASBEY & MATTISON COMPANY AMBLER, PENNA.

New York Boston Chicago Washington Atlanta New Orleans

Cleveland Cincinnati Milwaukee

AUTHORIZED SELLING AGENTS

Boston . S. C. Nightingale & Childs
New York . Robert A. Keasbey
Philadelphia . Magnesia Covering Co.
Baltimore . Wallace & Gale
Richmond . Smith-Courtney Co.

Norfolk . Henry Walke Co.
Charleston . W. M. Bird & Co.
St. Louis . F. Bocler
Omaha . Spencer Otis
Kansas City . Spencer Otis

Chicago . Walch & Wyeth
Detroit . S. P. Conkling
San Francisco . DeSolla-Deussing Co.
Seattle . DeSolla-Deussing Co.

PERSPECTIVES RENDERED

IN PEN-AND-INK AND WATER-COLOR,
WALTER M. CAMPBELL,
8 Beacon St., Boston, Mass.

E. ELDON DEANE,

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

MASON SAFETY TREAD BEWARE OF INFRINGEMENTS

AMERICAN MASON SAFETY TREAD CO., BOSTON

J. W. TAYLOR'S PHOTOGRAPH SERIES

151 MONROE ST., CHICAGO OF AMERICAN ARCHITECTURE
Removed to Owings Building.
Send two 5 cent stamps for Catalogue.

R. P. SOUTHARD

General Supt. Building Construction
Takes entire charge of Building Operations
LARGE WORKS A SPECIALTY
Address — 1053 Exchange Building, Boston, Mass.

E. V. JOHNSON CO.

Manufacturers and Contractors

Fire-Proofing for Buildings

Latest Improved Systems

85 HARTFORD BUILDING, CHICAGO



Send for Pamphlet of

Automatic Self-Locking SCUTTLE OPENER

Secure from BURGLARS
Quick escape in case of FIRE

Metallic Skylights

Fire-Proof Windows
For Factories, Warehouses, etc.

G. Bickelhaupt Skylight Works
243 & 245 West 47th St.

Tel., 675-98th. NEW YORK

"HOFFMAN" CEMENT

HAS AN UNPARALLELED RECORD

PORTLAND "DRAGON" CEMENT

Stands Every High Requirement of
ARCHITECTS & ENGINEERS

For 12 Years

16,000,000 BARRELS

USED ON IMPORTANT WORKS IN THE UNITED STATES

THE LAWRENCE CEMENT COMPANY

E. R. ACKERMAN, Pres.

Assoc. Am. Soc. C. E.

Sales Office

No. 1 BROADWAY, NEW YORK

The American Architect and Building News

IS PUBLISHED EVERY SATURDAY BY
The American Architect and Building News Co.,
211 TREMONT ST., BOSTON, MASS.

Advance Subscription Rates:

Regular Edition, \$6.00 per year; six months, \$ 3.50
[Foreign Postage, \$2.00 Extra.]

International Edition, per year in advance, 15.00
quarterly, 18.00

Payment should be made to American Architect and Building News Co. direct, either by draft or post-office order.

Address all business correspondence to the publishers direct.

Advertising Agents:

New York City:—
H. M. Carleton, Temple Court, 5 Beekman St.

Agents at Large:—
F. P. Spokesfield, 211 Tremont St., Boston, Mass.
Burrell & Fowler, 310 New England Bldg.,
Cleveland, O.

Advertising Rates: For "wants" and "proposals," 15 cents per line (8 words to the line), each insertion. 50 cents the least charge. Other rates on application.

New Advertisements.

CORNELL UNIVERSITY (Ithaca, N. Y.), School.
Page 1.

See last or next issue for the following advertisements:—

American Steel Roofing Co.
Bartlett Lumber Co.
Butcher Polish Co.
Carlisle, Pope & Co., E. A.
Gorton & Lidgerwood.
H. B. Smith Co.
Kinnear Mfg. Co.
L. Haberstroth & Son.
Morehart & Co.
New York Belting & Packing Co.
N. & G. Taylor Co.
Okonite Co.
Sargent & Company.
Spaulding Print Paper Co.
Samson Cordage Works.
T. W. Jones.

ARCHITECTS' REMOVALS, Etc.

MR. A. CONNELLY, architect, has removed his office from 613 Broad St. to the (new) Century Bldg., 142 Market St., Newark, N. J. 1328

WANTED.

SALESMAN OR MANAGER.—A man of large experience in the best class of furniture, drapery and wall-paper business, now doing business on his own account, will take position either as salesman or manager of the upholstery and drapery department, including work-rooms, in a large first-class establishment. Is well-known among the best trade in Boston for his knowledge of the business in all its details. Will go to New York or any large city in the United States. Address "Upholstery," care American Architect, Boston, Mass. 1327

WANTED.

DRAUGHTSMAN.—Wanted, a competent draughtsman for the summer. State references, salary expected, and submit sample drawings. Address Cass Gilbert, 524 Endicott Building, St. Paul, Minnesota. 1327

TO ARCHITECTS.

COMPETITION designs and perspectives by expert colorist and designer; 25 years' superior experience. Designs from sketches or suggestions. Competition work on speculative terms and at architect's offices if required. Address "Artist," Oakwood Ave., Arlington, N. J. 1338

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.]

672,004. BUILDING-BLOCK.—John T. McRoy, New York, N. Y.
672,053. LIQUID DOOR-CHECK.—Nathan W. Crandall, Meriden, Conn.
672,044. BUILDING-BLOCK.—Arthur Staples, Lowell, Mass.
672,060. SASH-FASTENER.—William L. Goodnow and John W. Anderson, Moline, Ill.
672,071. FIREPROOF INSULATING-DUCT.—Horace N. Spear and Edward D. Spear, New York, N. Y.
672,147. GLAZING-BAR.—Louis D. Folze, Houston, Tex.
672,175-176. CEMENT OR CONCRETE CONSTRUCTION.—Frederick Meiber, Pittsburgh, Pa.
672,181. LOCK.—William Schlueter, Yonkers, N. Y.
672,194. PILE-DRIVER.—James W. Rollins, Jr., Boston, Mass.
672,237. DOOR-CHECK.—Frederick H. Ogden, Newark, N. J.
672,240. MANUFACTURE OF BRICKS, TILES, SLABS, ETC.—John Saunders, Hove, Eng.



The Improved Shingle Stain and Preservative. Imparts an artistic finish to shingles and prolongs their life by penetrating the pores of the wood and retarding decay.

Shingletint is made in all desirable shades, is easily applied, the colors are permanent, and money is saved by its use.

Full information and finished samples of wood mailed free for the asking.

BERRY BROTHERS, Limited,

Varnish Manufacturers,

DETROIT, MICH.

NEW YORK, 252 Pearl St. CHICAGO, 15 and 17 Lake St.
BOSTON, 520 Atlantic Ave. CINCINNATI, 304 Main St.
BALTIMORE, 22 E. Lombard St. ST. LOUIS, 112 S. Fourth St.
PHILADELPHIA, 26 and 28 N. Fourth St.
SAN FRANCISCO, 12 Front St.

BUILDING PATENTS.

672,279. HORIZONTAL SECTIONAL BOILER.—Moses B. Moore, Reading, Pa.
672,280. VERTICAL SECTIONAL BOILER.—Moses B. Moore, Reading, Pa.
672,338. TEMPERATURE-REGULATING APPARATUS.—John V. Stout, Easton, Pa.
672,362. METAL CEILING.—Frederick H. S. Hawley, Pretoria, South African Republic.
672,379. MANUFACTURE OF FLOORS.—Matthias Koenen, Berlin, Ger.
672,383. METHOD OF CONSTRUCTING LIGHT FIRE-PROOF BUILDING MATERIAL.—Christian W. Luther, Reval, Russia.
672,397. SASH-LOCK.—John H. Gracey, Westfield, N. Y.
672,400. HOT-WATER FURNACE.—Joseph T. Robbins, Des Moines, Ia.
672,405. MITER-BOX.—Charles N. Felix, Cleveland, O.
672,431. APPARATUS FOR FLUSHING WATER-CLOSETS.—Adolphus La Bonté, Worcester, Mass.
672,455. SQUARE.—Moses Nicholls, Glenwood, Ia.
672,468. CLOSET-CISTERN AND VALVE THEREFOR.—George W. Wilkes, Fort Worth, Tex.
672,469. ANTIFREEZING VALVE AND CLOSET-CISTERN.—George W. Wilkes, Fort Worth, Tex.

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.

Albany, N. Y.—Oscar L. Hasey, who has made many gifts to institutions in this city, is to erect a guild-house for All Saints' Cathedral, to cost \$20,000.
Ann Arbor, Mich.—The Regents of the University of Michigan have adopted plans for a new \$100,000 medical building.
Atlanta, Ga.—Plans have been drawn by W. F. Denny, Prudential Building, for a Jewish synagogue to be built at Pryor and Richardson Sts.; cost, \$50,000.
Baltimore, Md.—The contract to erect the Calvert Bank Building for about \$25,000 has been awarded E. M. Noel, 322 W. Biddle St.
Brandon, Man.—The cornerstone was recently laid for the new Presbyterian Church. It will be of white brick on native granite foundation, with Bedford facings. W. H. Shillinglaw, architect.
Brooklyn, N. Y.—Plans have been drawn for a new building to replace the main structure of the Long Island College Hospital at Henry and Pacific Sts.; cost, \$175,000.

DIAMOND FINISHES

Inside and Outside

Represent the very acme of varnish making. They are the PUREST, CLEANEST and most TRANSPARENT VARNISHES. Send for Pamphlet.

Harrison Bros. & Co., Inc.

White Lead, Colors, Paints, Varnishes and Chemicals
35th Street and Grays Ferry Road,

PHILADELPHIA

27 Lake St.
CHICAGO

117 Fulton St.
NEW YORK

72 Broad St.
BOSTON

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Buffalo, N. Y.—The Building Committee of the Y. M. C. A. will hold a competition limited to ten Buffalo architects for plans for a new building, the cost not to exceed \$200,000. The drawings must be submitted by July 1.

Butte, Mont.—H. M. Patterson, Owsley Bldg., has prepared plans for a three-story business building to be erected on Park and Main Sts. for W. A. Clark; cost, \$65,000.

Plans have been prepared by German & Ligwell for an eight-story building to be built at Broadway and Main St. for the Hirsh Estate; cost, \$65,000.

Chelsea, Mass.—Plans will be prepared in the near future for proposed new Y. M. C. A. building, costing about \$40,000.

Chicago, Ill.—Tracy C. Drake, son of the late John B. Drake, announced recently at the dedication of the school named after his father that Mrs. Drake stands ready to build a memorial hall adjoining the school-building if the board of education will furnish the lot.

A three-story nursery building for Hull House is to be erected by Mrs. Frank R. Lilly on Ewing St. It will cost when completed \$50,000.

Plans have been prepared by James Gamble Rogers for 12 houses which Sam Brown, Jr., & Son will erect on a new street to cut through near Wilson Ave. The houses will be modern in every respect, constructed of boulder stone, brick, plaster and wood. Each will contain 11 rooms.

Cincinnati, O.—Plans have been completed for a new R. C. Cathedral, to be erected at Newstead Ave. and Lindell Bldg., to cost \$400,000.

Claremont, N. H.—H. S. Chase has bought the Belmont House and will thoroughly remodel it. Work includes steam heating and electric-light fixtures.

Clinton, Ia.—The First M. E. Society will erect a new church to cost \$30,000.

Denver, Col.—It is stated that F. E. Edbrooke, 510 Opera-house Bldg., has prepared plans for a brick, stone, iron and glass museum building to be erected by the city in Carter Park; cost, \$250,000.

De Pere, Wis.—Plans have been prepared by Wm. E. Reynolds, of Green Bay, for a new \$25,000 building for St. Norbert's College.
The Premonstratensian Fathers will erect a new college building to cost \$25,000.

Evanston, Ill.—An additional gift of \$5,000 for the Free Public Library site fund has been made by William Deering. Mayor James A. Patten, of this place, recently gave an equal amount. The Library Board is endeavoring to raise \$45,000 to purchase a site for a \$100,000 library building offered to the city by Charles F. Grey.

Fishkill Landing, N. Y.—Mr. Winthrop Sargent has given \$20,000 for the erection of a free hospital here.

Grand Rapids, Mich.—The Fred Macey Co., Ltd., intend erecting a factory building to cost from \$75,000 to \$100,000, and wish to be placed in communication with contractors, material and machinery dealers.

Greenfield, Ind.—Plans have been prepared by Philip Jeckel, of Anderson, for a \$30,000 church to be erected by the Methodist congregation.

Greensburg, Pa.—A company has been organized with a capital stock of \$100,000 for the erection of a factory for the manufacture of brass and iron goods.

Hawkinsville, Ga.—The Baptist congregation will erect an \$80,000 church. J. C. Huggins has the contract.

Hearne, Tex.—It is stated that plans have been prepared for a \$20,000 depot to replace the one recently burned.

Homestead, Pa.—The Realty Real Estate Co. will build stores and offices at 8th Ave. and Amity St.; cost, \$50,000. Architect, John A. Long, Park Bldg., Pittsburgh.

Jacksonville, Fla.—A new school-building will be erected here at the cost of about \$100,000.

Kansas City, Mo.—A two-story addition will be built to the Baltimore Hotel at a cost of \$40,000.

La Crosse, Wis.—Eugene Liebert, of Milwaukee, has prepared plans for a \$25,000 addition to the Convent of St. Rose.

Los Angeles, Cal.—Chas. A. Leighton will erect a \$400,000 hotel on 6th and Alvarado Sts. after plans by John Parkinson, 606 Loughlin Building.

Marquette, Mich.—Plans have been drawn by Byron H. Pearce, of Hancock, for a \$60,000 opera-house to be erected on Ravine and Quincy Sts. by Wm. Kerridge, of Hancock.

Middletown, Conn.—About \$300,000 will be expended in erecting a mill and cottages at this place for the Plainfield Woolen Co.

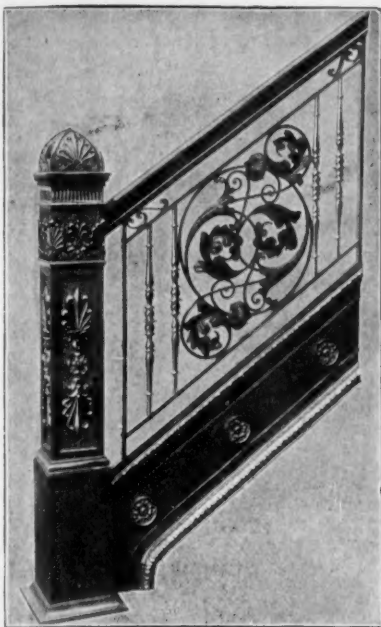
Muskegon, Mich.—I. H. Davenport & Son, of Grand Rapids, have prepared plans for a \$30,000 poor-house for Muskegon County.

New Castle, Ind.—The Christian Society contemplate the erection of a \$20,000 church.

New York, N. Y.—Report states that a twelve-story apartment-hotel is to be built near the Hoffman House. The site is now occupied by the two dwelling-houses Nos. 18 and 20 W. 25th St. The undertaking represents an expenditure of nearly \$1,000,000.

The W. S. Tyler Company

CLEVELAND, OHIO



ORNAMENTAL IRON AND BRONZE

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Plans have been submitted to the Department of Buildings by William B. Tutill for a four-story brick and limestone-trimmed building, to be erected at a cost of \$135,000 for the American Female Guardian Society and Home for the Friendless. The Home will be erected on the east side of Woodforest Ave., near Jerome Ave., and extending to Anderson Ave.

Simonson & Sturgis, 42 Union Sq., have prepared plans for a \$250,000 studio building, to be erected at 67th St. and Central Park West.

North Adams, Mass.—The Young Men's Christian Association is soon to have a gymnasium. Plans have been prepared by Lapointe & Bond, and the building will be two stories, 40' x 70', of brick construction, costing about \$15,000.

Omaha, Neb.—Fisher & Lawrie, Paxton Building, have prepared plans for a department-store to be built at 16th and Harney Sts. for W. R. Bennett; cost, \$130,000.

Owego, N. Y.—A \$50,000 hotel is to be erected here. W. A. Wright is interested.

Parkersburg, W. Va.—Plans have been completed for a \$100,000 theatre to be erected on Market and 7th Sts.

Philadelphia, Pa.—Report states that the University of Pennsylvania is about to erect a medical laboratory; cost, \$500,000. The trustees also have in contemplation the erection of a new medical hall, anatomical building and auxiliary buildings, which will adjoin the new laboratory.

Otto C. Wolf, 1025 Arch St., has drawn plans for a six-story office-building to be erected at 18 S. Broad St., to cost \$75,000.

Phoenixville, Pa.—It is stated that the Duganese Club proposes constructing a \$500,000 club-house. Plans have been drawn by Alden & Harlow, 316 Fourth Ave., for a one-story granite bank building, 51' x 170', for the Farmers' Deposit Bank on 4th Ave.; cost, \$250,000.

H. G. Morgan, 203 Bissell Block, and W. N. Murray, 129 S. Beatty St., will erect 12 three-story brick apartment-buildings on Braddock Ave. at a cost of \$200,000.

The Grand Lodge of Odd Fellows of Pennsylvania propose erecting a home near here for disabled and aged members, to cost about \$50,000.

Pittsfield, Mass.—A. A. Mills is to erect a brick block on North St., costing \$25,000.

Providence, R. I.—The trustees of the John Carter Brown Library, acting under the provisions of the will of the late John Nicholas Brown, will present the library to Brown University. In addition to the books, whose rare value it is difficult to estimate, there will come to the university \$150,000 for a library building and \$500,000 of permanent endowment. The library will thus be amply supported, and can be constantly enlarged. The university will receive the library as a sacred trust, never to be merged in the general university library, but to be preserved as a family memorial and used by properly qualified students. Brown will then possess the first collection of Americana in existence, and historical students will be drawn from all parts of the country to avail themselves of this rare opportunity.

Rawlins, Wyo.—The plans of W. E. Ware, 62 Hooper Building, Salt Lake City, Utah, have been accepted for remodeling the Wyoming State Prison; cost, \$30,000.

Salt Lake City, Utah.—The plans of S. C. Dallas, 302 Whitingham Block, have been accepted for a museum building for the Utah University; cost, \$50,000.

Why!!!

are the largest users of Graphite Paint content with

"WISCONSIN"

BRAND

We have the Reasons and Facts, so convincing.

May we tell YOU?

We mine, manufacture and sell direct to the consumer.

Wisconsin Graphite Co.

421 Market St., Pittsburg, Pa.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

San Francisco, Cal.—Reports state that the Mechanics' Institute will build a modern office-building and library, at a cost of a \$1,000,000, the income from which will maintain the institute.

Sauk Center, Minn.—The contract to erect the hotel building for R. L. Palmer, of Wheaton, has been awarded F. A. Hancock, of Morris. How Bros. & Co., of this city, have the heating and plumbing; cost complete, \$20,000.

Seattle, Wash.—Plans have been prepared by Saunders & Lawton, 733 N. Y. Block, for an eight-story office-building to be erected on 2d Ave. and Seneca St. for the Moore Investment Co.; cost, \$300,000.

Saunders & Lawton have been selected to prepare plans for a new wing for the court-house, to cost \$25,000.

Shrewsbury, Mass.—W. H. Harvey has drawn plans for the new two-story almshouse to be erected here.

Southboro, Mass.—Plans are in preparation for a brick addition at St. Mark's Episcopal School, to cost about \$40,000. The building will be devoted to laboratory and library purposes.

Sterling, Mass.—A one and one-half story frame club-house will be erected on the shore of Lake Washacum for the Hundul Club of Clinton, from plans furnished by Parker & Bateman, architects.

Tilton, N. H.—A \$20,000 library building will soon be erected for the Seminary and a gymnasium will be planned at an early date.

Waltham, Mass.—The American Waltham Watch Co. will begin at once to enlarge its plant. It is proposed to increase the height of the centre front of the main building one story, and a new addition will be built on the South tower. The further plans embrace the erection of a number of wings.

Worcester, Mass.—Fuller & Delano, Main St., have drawn plans for a \$500,000 hotel to be erected on Foster St. by a syndicate.

Fuller & Delano, 425 Main St., have prepared plans for a \$30,000 addition to the brick factory on Salem St., owned by W. H. Burns Co.

APARTMENT-HOUSES.

Chicago, Ill.—Berkeley Ave., three-sty' bk. & st. apart., 50' x 60'; \$20,000; a. W. J. Van Keuren.

East Boston, Mass.—Saratoga St., Nos. 855-65, three-sty' fr. apart., 21' x 45', comp. roof, stoves; \$24,000; o. D. A. Ginsburg; a. A. N. Rogers.

Minneapolis, Minn.—Second Ave., Nos. 1512-14, four-sty' & base. bk. & st. apart., 46' x 86', gravel roof; \$25,000; o. W. P. Mealey; c. John Chick & Co.

New York, N. Y.—One Hundred and Thirteenth St., Nos. 233-235, 2 five-sty' bk. flats, 25' x 25' 6" x 61' 11"; \$50,000; o. Theresa Aritabile, 313 E. 109th St.; a. Geo. F. Pelham, 503 Fifth Ave.

FACTORIES.

New York, N. Y.—Forty-eighth St. nr. 1st Ave., five-sty' bk. factory, 75' 11" x 100' 11"; \$15,000; o. Orange County Contract Co., 207 Produce Exchange; a. J. B. Snook & Sons, 261 Broadway.

HOSPITALS.

Boston, Mass.—Blossom St., No. 17, Ward 8, one-sty' bk. ward-room, 40' x 100', steam; \$25,000; o. City; a. H. H. Atwood, Alban St., Dorchester.

HOTELS.

New York, N. Y.—Eight Ave., cor. 58th St. & Grand Circle, four-sty' bk. & st. hotel, 40' 8" x 100' 6", tile roof; \$200,000; o. Mrs. Nellie Flake, care Bowers & Sands, 31 Nassau St.; a. John H. Duncan, 21 W. 24th St.

HOUSES.

Boston, Mass.—Mt. Vernon St., nr. Chelsea St., Ward 5, 3 three-sty' bk. dwells., 23' x 35', flat roofs, stoves; \$17,000; o. b. Simon Hurvitz, 31 Spring St.; a. G. H. Smith, 15 School St.

Wenham St., nr. Walk Hill St., Ward 23, three-

THE J. L. MOTT IRON WORKS,

38 Beekman Street, NEW YORK, N. Y.

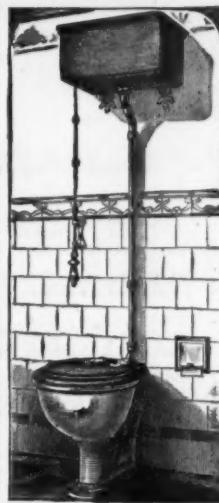
The Primo Improved Vitro-Adamant.

PLATE 495 R.

No. 33 Design L Cistern with Nickel-plated Brass Brackets, Nickel-plated Brass Flush Pipe, Nickel-plated Chain, Hardwood Pull and Brass Floor Flange.

Copyrighted, 1897.

Copy of circular furnished on application.



The Soderlund Twin Faucet

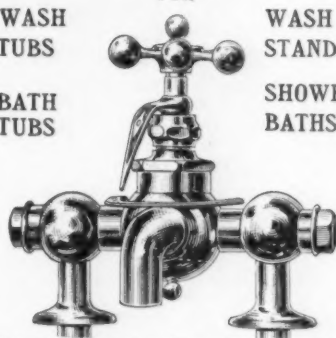
FOR

WASH TUBS

WASH STANDS

BATH TUBS

SHOWER BATHS



And in all places where hot and cold water is used

PATENT APPLIED FOR

UNION BRASS WORKS

11 Hawkins Street, Boston, Mass.

BUILDING INTELLIGENCE.

(Houses Continued.)

st'y fr. dwell., 25' x 49', pitch roof, furnace; \$6,000; o. Miss Rooney; a. J. G. Hutchinson, 3700 Washington St., Jamaica Plain.

Montview St., nr. Corey St., Ward 23, two-sty' fr. dwell., 34' x 37', pitch roof, furnace; \$5,000; o. Sophia S. Balch; b. Chas. Duran, W. Roxbury.

Thompson Pl., nr. Calumet St., Ward 19, three-sty' fr. dwell., 28' x 41', pitch roof, furnace; \$5,500; o. Wm. Thompson; a. T. J. Desmond, 2 St. Alphonsus St.

Roseland St., Nos. 9-16, Ward 11, 6 two-sty' bk. dwells., 30' x 45'; \$75,000; o. Marshall Westworth; a. W. L. Morrison.

Brown Ave., nr. Blakemore St., Ward 23, three-sty' fr. dwell., 28' x 28', pitch roof, furnace; \$3,000; o. a. & b., John T. McFarland, 61 Fairbanks St., Brighton.

Woodlawn St., nr. Hyde Park Ave., Ward 23, 4 three-sty' fr. dwells., 23' x 47', flat roofs, furnaces; \$20,000; o. A. S. Root; a. J. S. Hutchinson, 3700 Washington St., Jamaica Plain.

Whipple Ave., nr. Washington St., Ward 23, one-sty' fr. dwell., 18' x 23', pitch roof, furnace; \$25,000; o. G. B. Cobleigh; a. & b., J. H. Burton, 4210 Washington St.

Harvard Ave., nr. Harvard St., Ward 20, three-sty' fr. dwell., 27' x 50', pitch roof, furnace; \$6,500; o. Margaret McAuley; a. D. McAuley, 7 Claybourne St., Dorchester.

Corey St., nr. Centre St., Ward 23, two-sty' bk. dwell., 45' x 48', pitch roof, furnace; \$6,000; o. C. N. Pool; a. H. M. Seaver.

Hutchins St., Ward 21, two-sty' fr. dwell., 40' x 44', hot water; \$14,000; o. Walter Littlefield; a. John Kaplmeyer; b. J. F. Mills, 22 Nightingale St., Dorchester.

Abbotsford St., Roxbury, 2½-sty' fr. dwell., 30' x 40', hot water; \$6,000; o. The Misses Finneran; a. R. A. Watson, 1140 Columbus Ave.

McLellan St., No. 11, Ward 20, two-sty' fr. dwell., 38' x 42', pitch roof, hot water; \$5,500; o. & b. W. Donaldson, 690 Blue Hill Ave., Dorchester Dist.; a. S. Rantin & Son, 1117 Columbus Ave.

Helen St., No. 12, Ward 20, two-sty' fr. dwell., 27' x 44', pitch roof, furnace; \$5,500; o. Thos. F. Doherty, 61 Bernard St., Dorchester Dist.; a. F. A. Tracy, 923 Dorchester Ave., S. Boston.

Claybourne St., nr. Dakota St., Ward 20, two-sty' fr. dwell., 28' x 46', pitch roof, hot water; \$5,500; o. & b., Geo. W. Palmer, 36 Devon St., Dorchester Dist.; a. D. McKay.

Tonawanda St., No. 46, Ward 26, two-sty' fr. dwell., 27' x 47', pitch roof, furnace; \$5,500; o. R. J. Caverly; a. & b., Howard Bros., 412 Dorchester Ave., S. Boston.

Cobden St., No. 21, Ward 21, three-sty' fr. dwell., 27' x 65', flat roof, hot water; \$6,000; o. M. McIntyre; a. & b., J. A. McIsaacs, 5 Washington St., Cambridgeport.

Meridian St., No. 362, Ward 1, three-sty' fr.

We can supply promptly any
ordinary order for Steel Bridges,
Buildings, Roofs, Trusses,
Columns, Girders, Beams,
Channels, Angles, Plates, etc.

**American
A Bridge
B Company**

GENERAL OFFICES
100 BROADWAY
NEW YORK

21-160.

ART METAL WORK
BANK AND OFFICE RAILINGS
ELEVATOR CABS AND ENCLOSURES
ORNAMENTAL WIRE-IRON-BRASS AND BRONZE WORK
WM. INGLIS WIRE & IRON WORKS-DETROIT, MICH.

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

Steel Beams 4 inches
to
20 inches
deep.

ALL STRUCTURAL SHAPES.
NEW YORK OFFICE . . . 45 BROADWAY.
Boston Office, No. 31 State Street.

J. S. THORN CO.,
Architectural Sheet-Metal Works.

Metal Building Trimmings, Ventilating Skylights
Metallic Roofing Tiles, Building Specialties, Builders'
Light Iron Work of every description.

Nos. 1325 to 1329 Callowhill Street,
PHILADELPHIA, PA.

BUILDING INTELLIGENCE.

(Houses Continued.)

dwelling, 24' x 64', flat roof, hot water: \$8,000; o., Rocket Lodge; a. & b., A. N. Rogers, 89 White St., E. Boston.

Brooklyn, N. Y.—Forty-third St., nr. 4th Ave., 5 three-st'y bk. dwells, 20' x 45'; \$22,500; o., S. Abraham, 307 Forty-seventh St.; a., H. L. Spicer, 326 Fifty-sixth St.

Neck Road, nr. Village Road, two-st'y & attic fr. dwell., 33' x 33', shingle roof; \$5,500; o., Gravesend Reformed Dutch Church, Neck Road & Coney Island Ave.; a., B. Driesler, 1432 Flatbush Ave.

New York, N. Y.—Broadway, cor. 78th St., two-st'y bk. dwell. & store, 18' 6" x 44' 10"; \$12,000; o., F. W. Saltzeder, 480 Sixth Ave.; a., M. C. Merritt, 1267 Broadway.

Sixty-sixth St., No. 57, five-st'y bk. dwell., 20' x 77', tin & copper roof; \$20,000; o., J. Archibald Murray, 36 W. 9th St.; a., Augustus N. Allen, 35 E. 58th St.

Seventy-fourth St., Nos. 33-35, four & five-st'y bk. & st. dwell., 33' 4" x 76' 0", tile roof; \$33,000; o., Sarah J. Robbins, 127 E. 35th St.; a., Grosvenor Atterbury, 18 W. 34th St.

Seventy-ninth St., nr. Madison Ave., five-st'y bk. & st. dwell., 27' x 87', copper roof; \$75,000; o., Chas. W. Ogden, 30 W. 20th St. & 95 Liberty St.; a., Little & Browne, 70 Kilby St., Boston, Mass.; b., Harvey Murdock, 116 Nassau St.

Seventy-ninth St., nr. Madison Ave., five-st'y bk. & st. dwell., 28' x 87', copper roof; \$75,000; o., Mary F. Ogden, 31 W. 20th St.; a., Little & Browne, 70 Kilby St., Boston, Mass.; b., Harvey Murdock, 116 Nassau St.

One Hundred and Sixty-fourth St., nr. Prospect Ave., 7 three-st'y bk. & st. dwells, 19' x 20' x 50'; \$52,500; o., James E. Brown, 569 Eagle Ave.; a., W. C. Dickerson, 3d Ave. & 149th St.

Pond Pt., nr. 197th St., 2 two-st'y bk. dwells, 18' 6" x 52'; \$14,000; o., Thomas Watson, 2785 Third Ave.; a., Louis Falk, 2785 Third Ave.

Clay Ave., nr. 165th St., two-st'y bk. dwell., 22' 6" x 47'; \$8,000; o., Ernest Wenigmann, 179th St. & Morris Ave.; a., W. C. Dickerson, 3d Ave. & 149th St.

OFFICE-BUILDINGS.

Boston, Mass.—Meridian St., cor. London St., Ward 1, four-st'y bk. office-building, 72' x 80', flat roof, steam; \$35,000; o., Sam'l Goldenburg; a., Greenleaf & Cook, Tremont Building.

New York, N. Y.—Columbus Ave., cor. 79th St., two-st'y bk. & iron stores & offices, 102' 2" x 117' 9"; \$50,000; o., John G. and James M. Brady, 1552 Broadway; a., A. O. Hoddick, 57 W. 24th St.

PROPOSALS.

Treasury Department, Office Supervising Architect, Washington, D. C., May 28, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 2d day of July, 1901, and then opened for the construction (except heating apparatus, electric wiring and conduits) of the U. S. Post-office at Joliet, Ill., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Joliet, Illinois, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1328

HEATING.

[At Ft. Hunt, Va.]

Office of Constructing Quartermaster, 419 North Washington St., Alexandria, Va. Sealed proposals for installing a hot-water heating system in hospital at Fort Hunt, Va., will be received at this office until June 10, 1901. Information regarding plans and specifications may be obtained at the office of the depot quartermaster, Baltimore, Philadelphia, and also at this office. ABE S. BICKMAN, captain and quartermaster, U. S. Army. 1327

BRIDGE AND STREET WORK.

[At Shirley, Mass.]

Sealed proposals addressed to Jacob P. Hazen, chairman, will be received by a committee for the town of Shirley, Mass., at the engine-house, corner of Main and Pleasant Sts., Shirley, Mass., until the tenth day of June, 1901. The work consists largely in rebuilding an old bridge over a brook crossing Main St., in the form of a masonry arch, together with such other work as may be required in widening, grading and rebuilding the portions of said streets shown by plans and specifications at the office of the County Engineer, Court-house, East Cambridge, Mass., where blank forms for proposals may be obtained after May 23, 1901. JACOB P. HAZEN, C. FRED EDGARTON, F. D. WEEKS, committee for the Town of Shirley. 1327

LIBRARY.

[At Fort Dodge, Ia.]

Sealed proposals will be received by the Building Committee of the Fort Dodge Public Library up to the 12th day of June, 1901, for the erection and completion of a library building in the city of Fort Dodge, Ia., according to plans and specifications now on file in the office of the undersigned, and in the office of H. C. Koch & Co., Milwaukee, Wis. S. J. Bennett, G. S. Ringland, Webb Vincent, O. M. Olson, committee. LEON VINCENT, secretary. 1327

PROPOSALS.

DORMITORY.

[At Moscow, Idaho.]

Bids are wanted June 10 for a girls' dormitory and science hall for the Idaho State University at Moscow. H. T. CONDON, registrar. 1327

LIBRARY FOUNDATIONS.

[At New York, N. Y.]

Bids are wanted June 13 for contract No. 3 for the New York Public Library foundations at 5th Ave., 40th and 42d Sts., Boro. Manhattan. GEO. C. CLAUSEN, commr. of parks. 1328

Treasury Department, Office Supervising Architect, Washington, D. C., May 27, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 26th day of June, 1901, and then opened, for the installation of a conduit and wiring system for the U. S. Post-office building at Menominee, Michigan, in accordance with the drawings and specification, copies of which may be obtained at this office or at the office of the Superintendent of Construction at Menominee, Michigan, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1328

Treasury Department, Office of the Supervising Architect, Washington, D. C., May 27th, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 1st day of July, 1901, and then opened, for furnishing the heating apparatus complete in place for the U. S. Post-office at Menominee, Mich., in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Menominee, Mich., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1328

Treasury Department, Office Supervising Architect, Washington, D. C., May 23, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 20th day of June, 1901, and then opened, for the

DYCKERHOFF PORTLAND CEMENT.

E. THIELE,

Sole Agent,

99 John Street, New York.

THE...

BEST IS NOT
TOO GOOD FOR YOUR CLIENT

Specify the

WATROUS

"AQUAMETER"

It is a Self-Measuring Flush Valve for Water Closets and Urinals.

Constructed on entirely new principles, and contains more practical and valuable features necessary to the successful working of the Valve than any other now in use.

HANDSOME

QUIET

DURABLE

ADAPTED TO ALL CONDITIONS

Do not compare this Valve with others. Investigate for yourself. Fully Guaranteed by the Manufacturers.

Peck Brothers Company

No. 233 WASHINGTON STREET

CHICAGO, ILL., U. S. A.



PROPOSALS.

Installation of an electric conduit and wiring system for the U. S. Post-office, Monmouth, Illinois, in accordance with the drawings and specification, copies of which may be obtained at this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1328

Treasury Department, Office Supervising Architect, Washington, D. C., May 24, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 25th day of June, 1901, and then opened, for the construction (except heating apparatus, electric wiring and conduits) of the U. S. Post-office and Court-house at Abilene, Texas, in accordance with the drawings and specification, copies of which may be had at this office, or at the office of the Postmaster at Abilene, Texas, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1328

Treasury Department, Office Supervising Architect, Washington, D. C., May 24, 1901. Sealed proposals will be received at this office until 2 o'clock P. M., on the 24th day of June, 1901, and then opened, for furnishing the heating apparatus complete in place for the U. S. Post-office and Court-house at Beaumont, Texas, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Beaumont, Texas, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1328

ELECTRIC PLANT.

[At Ft. Greble, R. I.] U. S. Engineer Office, Newport, R. I. Sealed proposals for furnishing electric-light plant for Fort Greble, R. I., will be received here until June 19, 1901. Information furnished on application. GEO. W. GOETHALS, major, engs. 1328

STEEL ROOF, ETC.

[At Boston, Mass.] Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, D. C., until June 22, 1901, for constructing a steel roof and two gallery floors, with an electric traveling bridge crane of 40 tons capacity at the navy yard, Boston, Mass. Plans and specifications may be seen at the navy yard, Boston, or obtained upon

PROPOSALS.

application to the commandant of that yard upon deposit of \$15 to secure their return. MORDECAI T. ENDICOTT, chief of bureau. 1329

COURT-HOUSE.

[At Reidsville, Ga.] Sealed proposals for the erection of a court-house are wanted until June 11, by B. F. ALEXANDER, ordinary. 1327

JAIL.

[At Lewiston, Mont.] Bids are wanted June 8 for a two-story jail, to cost \$10,000. C. M. KELLY, co. clk. 1327

SCHOOL.

[At Waterloo, Ia.] Bids are wanted June 11 for a high school; probable cost, \$25,000. IRA RODAMAR, sec'y school dist. 1327

WORK ON DORMITORY.

[At Fulton, Mo.] Bids are wanted June 11 for erecting the 2d and 3d stories of the dormitory building at State Hospital for Insane No. 1. W. L. RAY, supt. State lunatic asylum. 1327

STABLE.

[At Cincinnati, O.] Bids are wanted June 7 for a brick stable for the Water-works Department, including plumbing, gas-fitting and hot-water heating. GEO. F. HOLMES, clk. bd. pub. service. 1327

BUILDING.

[At Sullivan's Island, S. C.] Office of Quartermaster, Sullivan's Island, S. C. Sealed proposals will be received here until June 7, 1901, for construction at Sullivan's Island, S. C., of one double barrack building, one hospital, eleven sets of officers' quarters, one quartermaster stable, one guard-house, one coal-shed, one oil-house, one quartermaster and commissary storehouse, one ordnance storehouse, one shop building, one hospital steward's quarters, six noncommissioned staff officers' quarters, according to plans and specifications to be seen at this office. DAVID PRICE, Q. M. 1327

PROPOSALS.

CONSTRUCTION.

[At Fort Caswell, N. C.] Fort Caswell, N. C. Sealed proposals will be received here until June 8, 1901, for constructing, plumbing and electric wiring, 2 captains' quarters, 1 double N. C. S. quarters, 1 Q. M. and subsistence storehouse, 1 lavatory, 1 ordnance storehouse, 1 quartermaster's stable and 1 coal-shed at this post. P. P. BISHOP, Q. M. 1327

BUILDING.

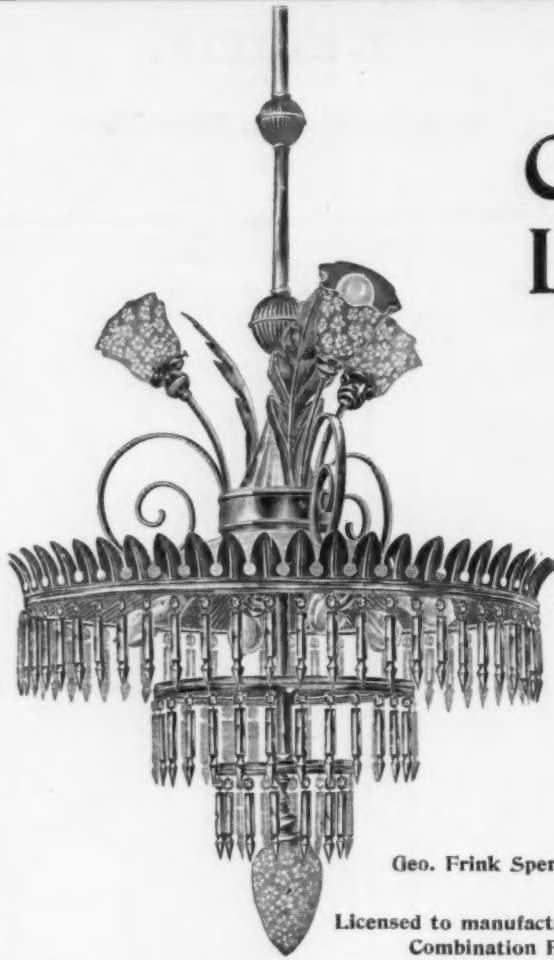
[At League Island, Pa.] Sealed proposals will be received at the Bureau of Yards and Docks, Navy Department, Washington, until June 15, 1901, for constructing a brick and steel building at the navy yard, League Island, Pa. For plans, specifications and forms of proposal address "Commandant, Navy Yard, League Island, Pa." MORDECAI T. ENDICOTT, chief of bureau. 1328

CONSTRUCTION, HEATING, ETC.

[At Fredonia, N. Y.] Bids are wanted June 17 for the construction, structural steel, heating and ventilating, plumbing, electric wiring and fixtures, gas-piping, etc., for a State Normal School-building. 1328

STATE NORMAL SCHOOL.

[At Fredonia, N. Y.] Sealed proposals for construction, structural steel, heating and ventilating, plumbing, electric wiring and fixtures, gas-piping and pipe-covering (from pipe covering manufacturers only) for a State Normal School-building at Fredonia, N. Y., may be sent by mail or delivered in person until the 17th day of June, 1901, to Charles R. Skinner, State Superintendent of Public Instruction, Capitol, Albany, N. Y., at which time and place the State Superintendent of Public Instruction will receive and open all proposals. Drawings and specifications may be consulted and blank forms of proposal obtained at the office of Dr. F. B. Palmer, Principal, Fredonia, N. Y., or at the office of G. L. Heins, State Architect, in the Capitol, Albany, N. Y. CHARLES R. C. SKINNER, State Superintendent of Public Instruction. 1328



Contracts for Church Lighting

Should include an estimate on the system adopted by more than 20,000 churches as the best. This system is the development of over forty years' experience in church lighting, and the fact that it has supplanted other systems, originally installed but found unsatisfactory, is a good reason for putting in the right thing the first time. We make "The Great Church Light" for its place, conditions of size, and proportion of the interior, determining the size, character, and relative angles of the reflecting surfaces, and the minimum number of lamps for the required light. We are constantly receiving the most commendatory letters from contracting engineers who have installed this light. Send measurements, or plans, and we will send an estimate free.

I. P. Frink

Geo. Frink Spencer, Mgr.

551 Pearl Street

Licensed to manufacture Electric and
Combination Fixtures.

NEW YORK

No. 17.

No. 17.

"TOPICAL ARCHITECTURE"

PUBLISHED MAY 15,

is devoted to

"LIONS"

**The Winslow
Bros. Company**

CHICAGO, ILL.

**Ornamental Iron
and Bronze**

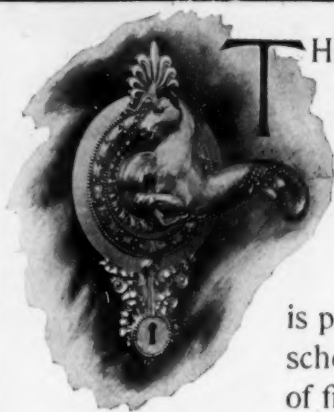
Awarded GRAND PRIZE and two GOLD
MEDALS at the Paris Exposition, 1900

MINERAL WOOL

FIRE, SOUND and VERMIN PROOF INSULATOR.

Samples and Circulars Free.

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



THE Hardware of Ornament (comprising decorative metal work for doors, windows and cabinets) is produced in practically all schools, and a great variety of finishes, by the

Yale & Towne Mfg. Co.

General Offices: 9-11-13 Murray St., New York.

The collection of designs and patterns of this class is by far the largest in the world and is of the highest technical excellence.

"Artist and Artisan" is the title of an attractive Brochure dealing with the origin of the Hardware of Ornament and its present development and uses. It will be sent on request.

An Exhibit Room for the convenience of Architects and their Clients is provided at the above address.

THE ARTIST

An Illustrated Monthly Record of Arts, Crafts, and Industries

35 Cents. Yearly, \$3.50

A beautifully illustrated Magazine, which covers in its survey the field of Art in European countries and is devoted to the Arts and Crafts' movement in America.

THE DIAL

"THE ARTIST is one of the best of the art journals."

THE CRITIC

"THE ARTIST is a handsome cosmopolitan magazine, very profusely illustrated."

THE ARGUS

"One of the handsomest magazines published is THE ARTIST."

LITERARY WORLD

"... Handsome and engaging candidate for the favor of those whose tastes or occupations center in the world of applied art. We recommend it warmly to all art students and to all artisans who desire to rise in their professions."

BOOK AND NEWSDEALER

"We see in THE ARTIST a publication of constantly increasing merit. The classically artistic exterior is the equal of anything we have seen."

PUBLISHED BY

TRUSLOVE, HANSON & COMBA, Ltd.
67 Fifth Avenue, New York

NEW ENGLAND

MATERIAL-MEN & CONTRACTORS.

BLUE PRINTING.

CHAS. E. MOSS,
Rapid Printing Papers,
14 Broad St., Boston.
Telephone: Boston, 2751-2.

CONTRACTOR & BUILDERS.

WILLIAM L. RUTAN,
1016 Tremont Bldg., Boston.

ROOFING DUCK.

C. H. BATCHELDER & CO.,
135 State St.,
Cor. India St., Boston, Mass.

SASH CORD.

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

SEAM-FACE GRANITE.

GILBRETH SEAM-FACE GRANITE CO.,
Park Row Building, New York
85 Water St., Boston.

WATERPROOF CELLARS.

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

Professional Ethics.

The following . . .

. . . CODE OF ETHICS . . .

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKS & MAIN OFFICE: Cor. Clybourn & Wrightwood Avenues.
 CITY OFFICES: Room 1118 Hookery Bldg. cor. La Salle & Adams St.

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

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

BOSTON AGENTS:
 WALDO BROS., 102 MILK STREET.

SEYSSSEL ROCK ASPHALT
 and Bitumen Damp Course,
NEW YORK MASTIC WORKS,
 11 Broadway, New York.

Big Four

The
 'Buffalo
 Route'

to



1901
Pan-American
Exposition

Big Four Route in connection with Lake Shore & Michigan Southern and New York Central R.R. offers the finest equipped train service at frequent intervals to Buffalo from South & West.

M. E. Ingalls, President.
 Warren J. Lynch, Genl. Pass. Agt.
 W. P. Deppe, A. G. P. A.
 Cincinnati.



ABSOLUTE PROTECTION FROM FIRE

is afforded by our Steel Ceilings and Side Walls. Used in all kinds of Buildings, Stores, Salesrooms, Offices, Churches, Schools and Residences.

We make Eaves Trough, Conductor Pipe, Cornice, Fire Proof Doors and Shutters, Skylights, Hangers, Tin Plate, Etc.

Write for catalogue of designs and prices.

THE CANTON STEEL ROOFING CO.
 CANTON, OHIO.

If you want something that you can depend upon, specify Dwight Lumber Co.'s
HARDWOOD FLOORING.

It is made from lumber which is well air-dried and then thoroughly kiln-dried.

Dwight Lumber Co., Detroit, Mich.

[See Alphabetical Index on Cover 2 for Pagination.]

CLASSIFIED ADVERTISEMENTS.

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

ARCHITECT'L ORNAMENTATION.

Lombard & Co., A. P., Boston.....

ART METAL WORK.

Ludlow Saylor Wire Co., St. Louis, Mo.....(mon)

ASPHALT.

Neuchatel Asphalte Co., New York..

New York Mastic Works, New York.

ASPHALT ROOFING.

Warren Chemical & Mfg. Co., N. Y.

AUTOMATIC SPRINKLER.

Internat'l Sprinkler Co., Phila., Pa...

BLINDS (Venetian).

Burlington Venetian Blind Co., Burlington, Vt.....

BLUE PRINTS

Moss, Chas. E., Boston.....

Spanlading Print Paper Co., Boston.....(eow)

BOILERS (Side-Feed).

Gorton & Lidgerwood Co., New York.

BRASS WORK (Ornamental).

Ingalls Wire and Iron Works, Wm., Detroit, Mich.....

BRICKS (Red Oxide).

Wisconsin Graphite Co., Pittsb'g, Pa.

CALIFORNIA REDWOOD.

Carlisle, Pope & Co., E. A., New York.

CAPITALS.

Lombard & Co., A. P., Boston

CAPITALS (Carved).

C. T. Nelson Co., The, Columbus, Ohio

CARVING.

Lombard & Co., A. P., Boston.....

CEMENT.

Alsen's Cement Works, N. Y....(eow)

Atlas Cement Co., New York.....

Lawrence Cement Co., The, New York

Thiele, E. New York.....

CEMENT PAVING.

Stamson & Blome, Chicago, Ill.....

CHLORIDE ACCUMULATOR.

Electric Storage Battery Co., Philadelphia, Pa.....

COMPOSITION ORNAMENT.

Lombard & Co., A. P., Boston

CONDUCTORS.

American Steel Roofing Co., The, Cincinnati, Ohio.....

CONSERVATORIES.

Lord & Burnham Co., Irvington-on-Hudson, N. Y.....

CONTRACTING.

Flynt Building & Construction Co., Palmer, Mass.....

Rutan, William L., Boston.....

CONTRACTING.

Southard, R. P.....

CONTRACTOR AND BUILDER.

Rutan, William L., Boston.....

CORDAGE.

Samson Cordage Works, Boston..(eow)

CREOSOTE STAINS.

S. Cabot, Boston.....

CUTLER PAT. MAILING SYSTEM.

Cutler Mfg. Co., Rochester, N. Y.....

DEAFENING QUILT.

Samuel Cabot, Boston, Mass.....

DECORATORS.

L. Haberstroh & Son, Boston.....

DOORS.

Kinnear Mfg. Co., The, Columbus, O.

DOORS (Interior Finish).

Carlisle, Pope & Co., E. A., New York.

DRAUGHTSMAN.

E. Eldon Deane, New York.....

ELEVATORS, ETC.

Morse, Williams & Co., Philadelphia.

Whittier Machine Co., Boston.....

ENGINES (Hot-Air).

Rider-Ericsson Engine Co., New York.

FAUCETS.

Union Brass Works, Boston, Mass...

FILING DEVICES.

Art Metal Construction Co., Jamestown, N. Y.....

FILTER.

Loomis-Manning Filter Co., Phila., Pa.

Seafie & Sons, Wm. B., Pittsb'g, Pa.

FIREPROOF DOORS.

Kinnear Mfg. Co., The, Columbus, O.

FIREPROOFING.

Johnson Co., E. V., Chicago, Ill.....

FIREPROOF LATHING.

Hayes, Geo., New York.....

FIREPROOF SHUTTERS.

Kinnear Mfg. Co., The, Columbus, O.

FLOOR-PLATES.

Ogden & Wallace, New York.....

FLOOR POLISH.

Butcher Polish Co., Boston.....

FLUSH-VALVE.

Peck Brothers Co., Chicago, Ill.....

GALVANIZED IRON.

American Sheet Steel Co., New York.

GATES.

Wm. R. Pitt, New York(mon)

GRATES, ETC.

Wm. H. Jackson & Co., New York...

GREASE (Graphite).

Wisconsin Graphite Co., Pittsb'g, Pa.