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WHERE is not a year in which some of the enthusiasts who understand every one else's business so much better than those do who practise the business do not bring forward in State legislatures bills for the absolute prevention of elevator accidents, by compelling the adoption, by owners of elevators, of safety-devices of infallible efficiency. As no indication is given of the nature of these devices, or of the source from which they can be procured, and as owners and elevator-manufacturers are unable to obtain any information on the subject, the statute, if passed, as it often is, leaves the matter just as it was before, the elevator-owners continuing to use the best safety-appliances that they can get, and the enthusiasts continuing to insist that nothing but infallibility will answer. Just now, a bill is before the Massachusetts Legislature, requiring, among other things, that some device shall be attached to every elevator "which shall prevent any person being caught between the floor of the cab or car and the floor of the building, while attempting to enter or leave the elevator, before it becomes level with the floor"; that all elevator-wells shall be so constructed that the inside surface of the well "shall be flush with the cab or car," evidently to prevent any one from getting his feet caught in the space between the well and the car; and requiring also that all freight-elevators "shall be equipped with a danger-signal to warn people of the approach of the elevator."

IT is needless to say that, while countless varieties of self-closing elevator-doors have been for many years in use, the problem of preventing any one who chooses to get half-way in or out of the elevator door, and stay there while the elevator is started, from being brought in contact with either the floor or the car, is not yet solved, and is not likely to be. The present laws, which require an operator in every elevator, provide the most efficient remedy for the trouble, since no elevator-boy in his senses would start the car when any one was half in or out of the door; but to try to effect the object by mechanical means involves simply the use of a self-closing door with so strong a spring that it would be likely to catch a man who was half-way in, and hold him there. In the same way, to follow the second requirement, and make all elevator-wells a tight fit for the cars, would be an extremely dangerous proceeding. All elevator-cars run with absolute precision on the guides, while the well-holes vary more or less through irregularities in framing. If the front of the well-hole were brought exactly to the edge of the car, as the bill provides, the result of any settlement or movement of any floor would very probably cause the car to bind between the front of the well-hole and the guides. This, as every architect knows, is the most dangerous thing that can happen to an elevator. If the car is going up, the continuance of the pull on the hoisting-ropes instantly snaps them, leaving the car to fall; while, if it is going down, the ropes continue to unwind, leaving a slack which, if the car should free itself later, and fall, would generally ensure their breaking. The present inspection usually allows two inches clearance between the car and the well, which is as satisfactory a standard as circumstances allow. As to the "danger signals" for freight-elevators, architects do not need to be told that such things, once much in vogue, have long been superseded by automatic gates, a great variety of which are in use. If a danger-signal should ever be needed, nothing is easier than to suspend a board, carrying a painted warning, to the hoisting-cables, or the yoke, above the platform, with a similar one below it, and nothing better has yet been invented. The more complicated "danger signals" are apt to come into collision with the bystanders in their movements, to the detriment of both, and the safest course is to keep people away from the hatch altogether, by the usual gates.

IT is only the middle-aged and elderly members of the profession who remember the famous Assos Expedition, carried out mainly by young American architects, which resulted in the uncovering of one of the most interesting Greek cities known, and a tolerably complete restoration of a Doric temple unlike any other known. Although certain details of the results of the expedition have been published, there have been long delays in the preparation of the complete and official account, and it is only just announced that the materials for this are at last ready, and that publication will be begun as soon as a sufficient number of subscriptions are received to warrant it. The edition is limited to five hundred copies, but publication will begin as soon as two hundred subscriptions are received. The price — twenty-five dollars for the complete set of one hundred plates, with text — is very low for a work of such importance, and the subscription-list should soon be filled. In any other civilized country, publication of a book of the kind would, undoubtedly, be assisted by the Government; but the public authority in this country does not interest itself in learning or the fine-arts, and American citizens have to be their own patrons of these departments of intellectual exertion. The plates, fourteen by twenty-one inches in size, have been prepared by Mr. Francis H. Bacon and Mr. Robert Koldewey, both members of the original expedition. The work will be issued in five parts, each containing twenty plates, and subscribers may pay five dollars for each part, on delivery, or pay for the whole in advance, as they prefer. Subscriptions may be sent to Mr. William Fenwick Harris, 8 Mercer Circle, Cambridge, Mass., or, if sent to us, will be properly forwarded.

A PECULIAR insurance case was decided in New York a few days ago. A dealer in picture-frames, who held a policy of insurance, wished to have a drop-light installed in his store, and an employé of the gas-company undertook the work. After it was done, the pipe, or the fixture, was found to leak, and the workman, to find the leak, lighted a match and applied it to the pipe. This proceeding was successful, so far as its original purpose was concerned, but the escaping gas, taking fire, set fire to the store, causing a loss of a thousand dollars. One insurance-company paid its proportion of the loss, and sued the gas-company for reimbursement, and was successful, the Supreme Court holding that the workman could not be presumed to have been ignorant of the probable consequence of his actions, and that, under the policy, the insurance-company acquired the same rights against the gas-company that the policy-holder would have had.

ANOTHER insurance case, involving a different principle, has been decided by the Court of Appeals of Colorado. Some time ago, a large building in Denver was wired for electric-lights by the owners, and a contract made for current from the Denver Consolidated Electric Company. Soon afterwards, the building was burned, in consequence, as was supposed, of defects in the wiring, and the insurance-companies paid a loss of sixty thousand dollars. The companies interested sued the electric-company for reimbursement, on the ground that, although it did not do the wiring, it should have known that it

Entered at the Post-Office at Boston as second-class matter

was defective, and have refused to supply current until the defects were removed, but were defeated, the Court holding that the electric-company, having merely contracted to supply current, was not obliged to ascertain whether the wiring with which it was requested to connect was properly and safely installed, even supposing that the fire was actually caused by defective wiring, which was not proved.

THE New York *Tribune* has been investigating the subject of the disposal of city sewage abroad, and has discovered, apparently to its surprise, that the practice of utilizing city refuse for poisoning the neighbors, or for filling up harbors, is looked upon there as obsolete and barbarous; and, being shocked to find that America is not in this respect so superior to other nations as it would like, it calls upon "wideawake, progressive American cities" to devise at once "some practicable system in advance of the rest of the world." So far, its studies seem to have covered only Great Britain, and not to have been exhaustive even then, for it speaks of Edinburgh, which divides with Milan the honor of leading the way in the disposal of city sewage by irrigation, as "pouring its liquid sewage into the sea"; and it seems never to have heard of the vast filtration-works by which that "unhappily misgoverned metropolis," London, purifies its sewage before discharging it into the Thames; but its main conclusion, that the assertion usually made in defence of the river-poisoning system in this country, that "no other method of disposal has been found practicable," is "untrue and absurd," will, we hope, be pondered as it deserves by its readers. If the daily press in this country had followed more closely the advance of engineering science during the past twenty years, we should not now see the city of Boston, for example, beseeching the General Government for twelve million dollars to clear its harbor, into which it is constantly pouring the sewage from a metropolitan district of about a million inhabitants, or the people of St. Louis protesting with all their might against having the filth of Chicago poured into the Mississippi under their noses. There are, probably, no two cities in the world better situated for sewage-disposal by irrigation than Chicago and Boston. In the case of the former, gravitation alone carries the flow from the city to the Gulf of Mexico, and to control it, so as to spread and filter it on the vast tracts of level prairie-land through which it flows, allowing only the purified filtrate to reach the rivers, would seem one of the simplest of problems. In Boston, pumping is required even to discharge the sewage into tide-water, and a little more pumping only would be necessary to convey it to the great tracts of sandy soil, now worthless, or nearly so, which lie just outside the limits of the metropolitan district, to the southeast. Those whose ears are not deaf to everything that seems to cast a doubt on the superiority of all things American have probably heard of the famous milk-farms around Milan. The milk from these farms is so rich and pure, and so skilfully sterilized and prepared for transportation, that the Mediterranean steamers use it for the whole voyage from Italy to New York and back again, in preference to taking American milk on board in New York. Many, if not all, of these Milanese milk-farms are irrigated with the city sewage, which has brought wealth to their owners, as the sewage of Paris has to the farmers of Gennevilliers and Asnières. Within a distance of Boston, to the southeast, much less than that of most of the milk-farms from which the city obtains its supply, are immense tracts, now covered with "scrub oak" and brambles, a thousand acres of which could, in many cases, be bought for the price of a single acre of good market-gardening ground to the west of the city. Little would be necessary to reclaim these worthless tracts beyond the application of city sewage, in the manner followed at Glasgow, where, as the *Tribune* tells us, sewage-irrigation has "transformed a bog into a paradise," and it is singular that, in these days of low interest-rates and superabundant capital, no one should have thought of an operation far more likely to be permanently remunerative than enterprises having for their basis nothing but a temporary monopoly.

THE Chicago Art Institute, now in its twenty-third year, announces that its Summer School, opened for the first time last year, will be held this season during the twelve weeks from July 1 to September 21. A Normal Course is also provided for, extending from July 8 to August 3, but with the option of continuing it for a longer period. Instruction is given by the regular staff of the Institute. A children's class will also be held from July 1 to August 31. The tuition-fee for children is twelve dollars for the full term of nine weeks; that for the regular Academic Course of twelve weeks is twenty-five dollars, and that for the Normal Course of four weeks is fifteen dollars. Further information may be obtained from Mr. N. H. Carpenter, Secretary, Art Institute, Chicago.

EVERY tourist knows the "Nassau House," at Nuremberg, the upper portion of which is decorated with painted coats-of-arms of various sovereigns and princes, including those of the Pope, the Emperor and others. Recently, an investigation has been made into the history of this old house, by Dr. Mummenhoff, of Nuremberg, which has shown that the "Nassau House" was never, as has been supposed, the property of the Dukes of Nassau, the mistake having arisen from the fact that one of the coats-of-arms on the front shows a lion, which was supposed to be that of the House of Nassau. Dr. Mummenhoff shows, however, that the building was not built by the family of Nassau, and that the coat-of-arms with the lion is that of the royal house of Bohemia. Instead, moreover, of being the habitation of kings or dukes, the house, at the time the decorations were painted, was owned and occupied by a simple citizen, Ulrich Ortlieb. Ortlieb was a rich man, and is known to have been on terms of intimacy with the Emperor, and, presumably, to have had some acquaintance, in the way of business or otherwise, with the remaining magnates whose arms are displayed on the house, and who, in the Middle Ages, would certainly not have allowed the use of their insignia without permission. In the case of the King of Bohemia, something is known of the relations between him and the thrifty Nuremberger, through a document, dated 1431, and still preserved at Vienna, by which the King mortgages his crown to Ortlieb, as security for a loan of fifteen hundred gulden. This, according to the *Deutsche Bauzeitung*, is the only instance in German history of the pawning of his crown by a reigning sovereign; and it is quite likely that Ortlieb, either as a part of the transaction, or in consideration of some amiability in settlement, obtained from the King the right to display the royal lion on his house.

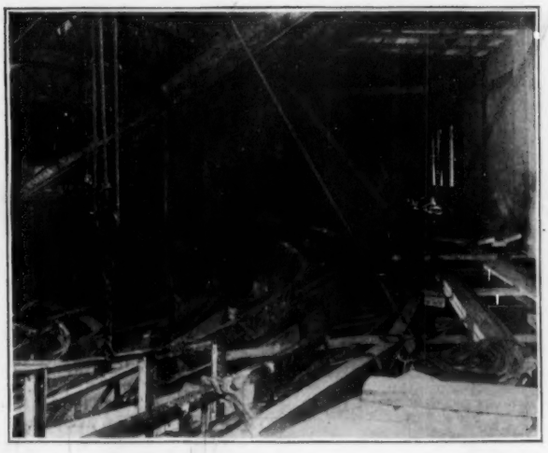
M. PLANAT, the editor of *La Construction Moderne*, makes some observations on the inartistic character of modern costume which are interesting. Noticing that sculptors very rarely venture to represent a man in a dress-coat, the statue of President Carnot, at Bordeaux, furnishing, apparently, the only exception to this rule in France, he accounts for their reluctance to adopt the naturalistic treatment so vigorously recommended to them by their critics, on the ground that to represent a man in a suit of the fashion prevailing at any given time would be to make him ridiculous a few years later, when the fashion had changed; while to clothe him in garments of no particular style would make him ridiculous from the outset. In illustration of this, he refers to the example of two comic actors of the Theatre of the Palais Royal, who always excited universal laughter by their mere entrance on the stage. Their hats, particularly, had such an extravagantly grotesque air that it seemed as if they must have been concocted expressly by some hatter of unbalanced mind. In point of fact, however, these objects were not made to order at all, but were simply the fashionable hats of a previous period, kept by the actors for a few years, until the styles had changed.

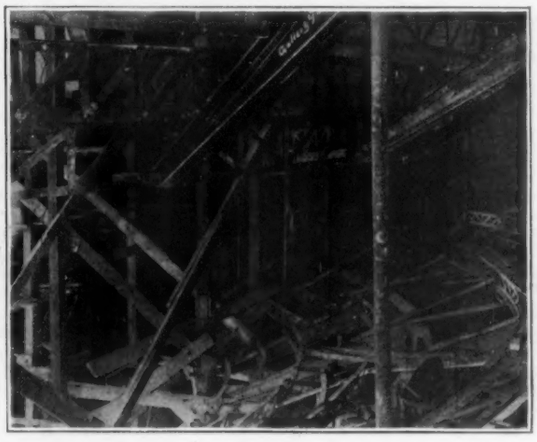
IT is obvious that a sculptor who represented his masculine subjects in costumes only seen on the comic stage would win the approbation neither of the critics nor the public; yet, as every modern fashion takes its place in turn on the comic stage, the artist is virtually forced to clothe his heroes in some mythological or historical garb, too remote from reality to be criticised. A uniform, like that shown in the Farragut statue, in New York, one of the most successful realistic figures in existence, affords an escape from the difficulty; but every one cannot be represented in uniform with due regard to historical truth, and, where civilians are concerned, the problem still remains unsolved. One would suppose that the solution lay in the direction of an improvement in the artistic character of costume generally; but this seems farther off than ever; and, apparently, our distinguished men must continue to be immortalized in Roman togas, instead of coats, and our women in tunics and mantles, instead of Royal Worcester corsets and Russian blouses, until it occurs to some one that the statuesque styles of dress are also beautiful in real life.

THE COLONIAL THEATRE AND BUILDING.[1]—II.

THE interesting portion of the building is naturally that devoted to the Theatre and its accessories. The general arrangement is sufficiently shown by the plans and does not require any especial description. The total seating of the house is 1,662, divided into orchestra, 618, balcony, 552, gallery, 370, boxes, *loges* and extra seats in orchestra-pit, 122. The theatre and its accessories occupy altogether a space of about 19,000 square feet on the ground-floor.

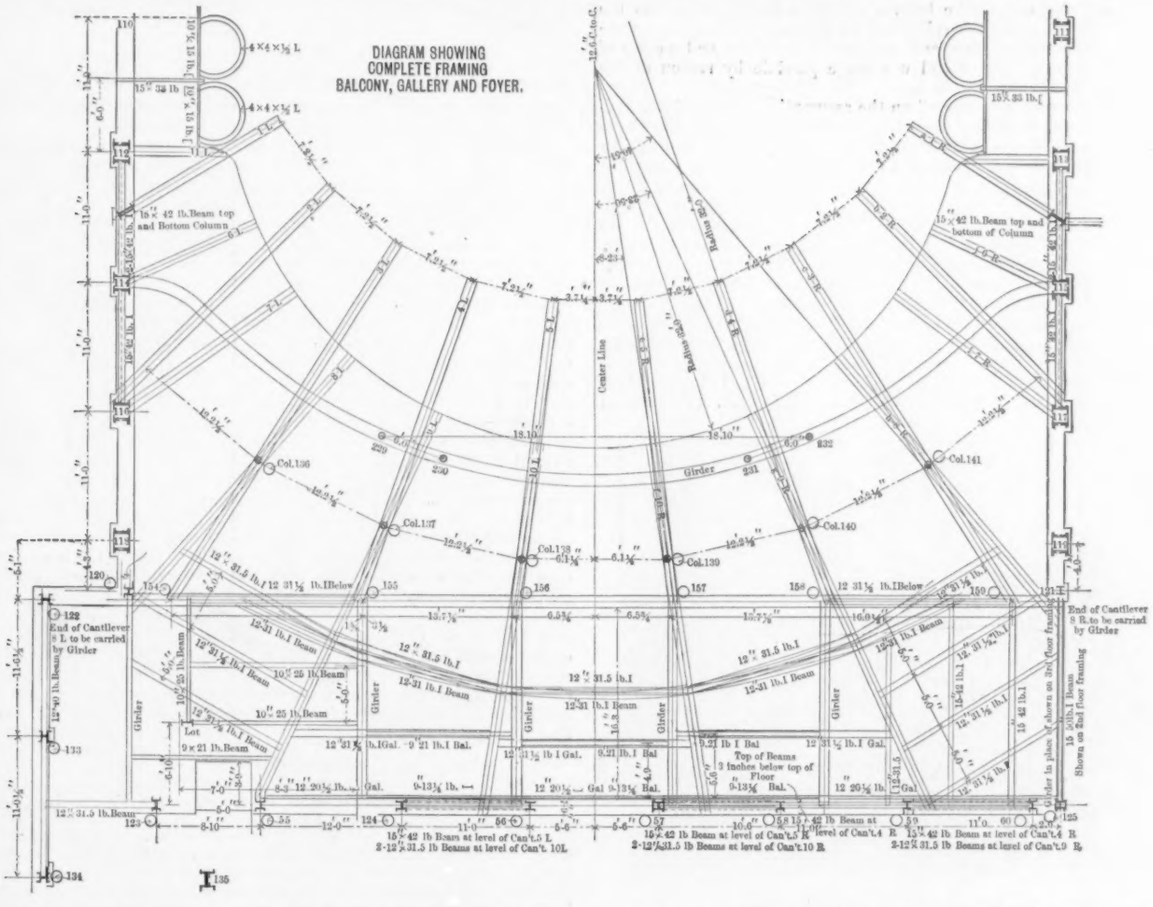
A few of the principal dimensions are of a certain interest. The main entrance-vestibule is 18 feet wide and 63 feet long. The ticket-office is 53 feet from the street doors. The main foyer, or promenade, is 16 feet wide. The stage is 45 feet deep from the rear wall in the centre to the curtain-line, and 3 feet from the curtain to the front of the apron. The width of the stage is 80 feet. The curtain-opening measures approximately 38 feet square. The height from the stage to the gridiron is 77 feet, and the depth from the stage-floor to the bottom of the cellar is 25 feet. The auditorium is 69 feet deep from the curtain-line to the back of the standing-up space, and 79 feet wide in the clear. There are on the ground-floor nineteen rows of seats, the distance between the risers being 2 feet 7½ inches, leaving a standing-up space at the rear 8 feet wide at the centre and 14 feet at the sides. The aisles are run from 2 feet 9 inches wide, as a minimum, to 3 feet 6 inches, as a maximum. The opera-chairs are laid out for 22-inch seats throughout the centre of the house and 20, 21 and 22 inches elsewhere; nothing less than 20 inches being used anywhere in the house.





The Balcony Framing during Construction.

The provision for the accommodation of the actors is very ample. The house has opened with the play of "Ben Hur," which requires a stage-force of something over 360 persons, and these had to be all taken care of. In the basement are two large rooms, which are marked on plans "supers' rooms." One of these is in practice used as a wardrobe, while the longer one and a part of the bill-room, immediately beyond, are used as the supers' dressing-rooms. Above the stage-level, in the first tier, is the ballet-room, and above that, in three tiers, are arranged thirty-six individual dressing-rooms, each



[1] Continued from No. 1320, page 12.

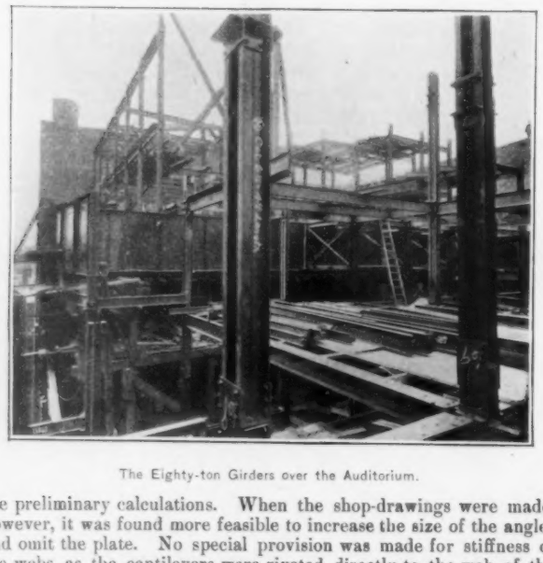
measuring an average of something over 8 feet square. These are each provided with hot and cold water, at least two dozen hooks and a make-up table, with gas and electricity. The stage-hands have a separate room for themselves, and there are also separate rooms for the matron, the footman, the electrician, and the chore-women. The special construction of the stage itself will be described later.

The construction of the balcony and gallery of the theatre is somewhat complicated, as it was desired to avoid the presence of any columns in the parquet. The drawing given herewith shows the system of construction adopted. The plan is a composite one, showing at once the construction for the balcony and for the gallery, while the accompanying section makes the relative position of the framework clearer. On each side of each of the two central aisles of the parquet is a column, the line of columns being just inside of the rail of the standing-up space. These four columns support a deep plate-girder, which is built on a curve in plan with a slight pitch sidewise in each direction, the girder continuing around on the curve to join the constructive columns of the outside walls of the auditorium. Attached to this curved girder are lines of cantilevers projecting a little over 15 feet beyond the girder and over the parquet seats and extending towards the rear on the slope of the balcony to form the balcony-foyer floor and thence carried across level and tied to the constructive columns of the building at the rear of the foyer. Upon these balcony-cantilevers are placed 4-inch solid forged-steel columns, which in turn support similar cantilevers forming the construction of the gallery. Connecting the cantilevers in both balcony and gallery are light trussings constructed of angle-irons and forming the lines of the steppings for the finished floor, serving at the same time also for lateral bracing for the cantilevers. To these trusses is attached the expanded-metal work serving as a basis for the concrete fireproofing which entirely envelops the steelwork. Wooden furrings are also attached to the angles at intervals which provide nailings for the wooden-finished risers and the wooden-finished floors.

In setting the cantilevers the level portions were first put in place and riveted to the structural columns at the rear. The sloping portions on each side of the curved girder were then set in place and the overhanging portions were guyed so that the line of the front of the balcony or gallery could be varied as might be necessary to secure a uniform pitch each way. The connection between the overhanging portion of the cantilevers and the curved girder was made by a large steel pin at the bottom and by a field-splice across the top. The drilling for the splice was all done after the girders were temporarily set in position, and any necessary raising or lowering of the extreme overhanging end was made possible by reason of the pin-connection at the bottom.

The cantilevers were figured on the assumption of a total live-and-dead load of 200 pounds per square foot, which brought a total distributed load of about 15 tons on the projecting portion of the balcony cantilevers. There is an excess of metal in the webs at the end of the cantilever nearest the curved girder as the depth which was deemed advisable for the curved girders was more than would be required theoretically for the cantilevers, but at the extreme of the overhang the webs had to be reinforced as shown by the drawing, in order to properly take care of the shear. The curved framework of angle-iron which forms the actual railing of the front of the balcony was riveted directly to the angles of the cantilevers.

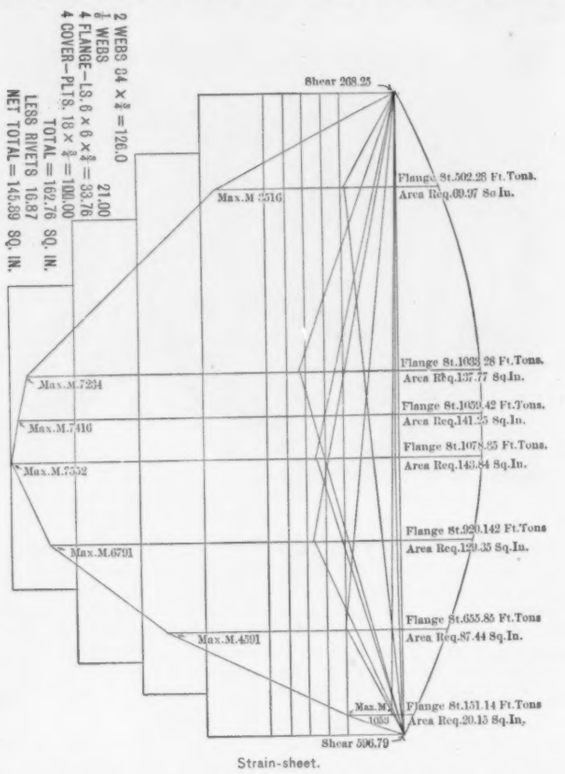
In figuring the curved girder it was first calculated as if it were to be built straight and the amount of metal on the flanges was determined in the ordinary manner. Then, to take care of the tendency to buckle, the upper flange was reinforced by a 1″ x 12″ cover-plate, which was arbitrarily added as a matter of judgment. This was in



The Eighty-ton Girders over the Auditorium.

the preliminary calculations. When the shop-drawings were made, however, it was found more feasible to increase the size of the angles and omit the plate. No special provision was made for stiffness of the webs, as the cantilevers were riveted directly to the web of the girder on each side and acted for all purposes as stiffeners.

All of the cantilevers did not bear upon the curved girder, and some of them had to be bracketed out from the structural columns in the side-walls. A few of these are shown by the drawing, and though they seem very curious in shape, in calculation their proportioning was extremely simple, and in nearly every case it was found



Strain-sheet.

that the amount of depth which was available for these cantilevers between the finished floor and the ceiling was more than would really be required for purposes of theoretical strength.

The auditorium is spanned by a series of seven huge box-girders 84 feet long on centres of support, which sustain the whole superstructure of six stories and roof, including a very considerable amount of exterior brick walls forming the enclosures of the wings in the office portion of the building. The location of the girders is shown by the section. The heaviest weighs a little over 82 tons. The strain-sheet shown herewith indicates the loading, and the sizes of the different members which were determined upon. The plates and the webs were 7 feet deep, which gave a very bulky girder, so heavy that it was, of course, impossible to construct it at a shop and deliver at the building complete. Accordingly, the following procedure was adopted: Each girder consists really of two plate-girders set side by side, a scheme which was necessary in order to permit of a sufficient number of rivets between the flange-angles and the cover-plates. Each web was made at the shop in two pieces, each complete with its stiffener angles and connections, and was delivered at the building, there hoisted up to a heavy temporary stage and laid on top of the bottom flange-plates with the top cover-plates placed in position above it. The two halves of each web were then spliced and the cover-plates riveted to the angles top and bottom, a pneumatic riveter being used for this purpose. The cover-plates were 16 inches wide on each half of the girder. The two halves were then united into a single girder by suitable lateral horizontal splice-plates, and the completed girder was jacked over into place and set down on top of the columns. About one week was required to rivet-up complete one of these girders. The connection between the top of the column and the girders was reinforced by heavy gusset-plates and the lines of the girders themselves were connected by lateral cross-bracing of channel-iron, as shown by the section. The total deflection of the heaviest of these girders, when set in place and loaded, was about 1½ inches.

C. H. Blackall.

[To be continued.]

Obliterating Theories with Bread-crumb. — Frescos by Correggio in the Church of St. John the Evangelist, at Parma, have been subjected lately to a careful cleaning with dry bread. A thick crust of dust and smoke from the wax candles had formed especially in the vaulted ceiling of the church, so that when the cleaner, Bigoni, removed it, the frescos looked like entirely different compositions. A local antiquarian who has founded an elaborate theory on the dark shadow which has lain across the "Transfiguration" in the dome, was so startled to find the basis of his argument removed by bread-crumbs that he telegraphed to the Minister of the Fine-Arts in Rome that the frescos were being ruined. Fortunately, the frescos are in excellent condition. The writer on art will have to adjust himself as best he can to the facts of the case. — *N. Y. Times.*

BRICK AND CONCRETE-METAL CONSTRUCTION.[1] — II.

DESCRIPTION OF RANSOME SYSTEM OF CONCRETE-STEEL FLOORS.[2]

IN order to properly understand the strength of the concrete-steel arch, or more correctly beam, it is necessary to first consider the principle of the combination of the steel-bar with the concrete. Square bars of steel are gripped by the ends, and are twisted cold until the angle made by the edge with the axis of the bar is about 20 degrees. The bar thus becomes a long screw. The mortar of the concrete imbeds itself in the concave whorls of the bar, and, when set, in order to remove the bar an area of concrete must be sheared off equal to the superficial area of the cylinder inclosing the bar. In addition, some portion of every face presents a resistance to drawing through the concrete in a direction inclined to the axis of the bar. One component of this is a compressive-resistance. Thus, the bar is thoroughly and rigidly held throughout its entire length, so that it cannot stretch or draw, and can at no point bring upon the concrete a concentrated stress greater than it can bear.

Thus, for practical purposes, the bond of union is perfect, and the composite beam can be figured accurately by using the steel as a tensile member and the concrete as a compressive member. The common formula, which is sufficiently accurate for all practical work, is obtained by equating the external force $M = \frac{L\,S}{8}$ (giving the bending-moment in the beam for a uniformly distributed load) against the internal force of the working-stress of the bar into the arm between it and the centre-of-gravity of the upper third of the concrete, which is the compressive portion of the beam considered. Equating these gives the formula $f = \frac{L\,S}{6\frac{2}{3}\,D}$. Wherein f is the fibre-stress in the bar in pounds per square inch, L is the total load on the beam in pounds, S is the span in inches and D is the depth of beam from its top to the centre of the bar. As cold twisting of mild steel increases the tensile-strength and raises the elastic limit from 10 to 15 per cent, there is no appreciable error in increasing the denominator 5 per cent, changing $6\frac{2}{3}$ to 7, which makes a simple formula for actual use $f = \frac{L\,S}{7\,D}$. Numerous experiments show that there is greater strength in the actual construction than is indicated in the formula, which nominally gives a factor of from 4 to 5.

For short spans, say up to about 10 feet, we use a flat slab of concrete with the rods imbedded in the lower surface. It will be seen that the tensile members of the slab run in straight lines, and this is an important advantage of our construction over those which employ a metal mesh, for where heavy loads or long spans necessitate an increase in the depth of the slab we can core out between the lines of stress, and thus, while retaining the depth and strength, can decrease the weight of the slab. This construction gives an absolutely fireproof and rustproof floor, which is capable of carrying large loads over long spans. It will be observed that the bar is thoroughly encased in the concrete, but, nevertheless, it is never more than 2 to 3 inches from the lower surface. Experiments by Mr. E. L. Ransome, by those interested in the Monier and Melan systems, and by Professor Bauschinger, of the Munich Technical High School, all prove that concrete affords a thoroughly trustworthy means of protecting steel against rust.

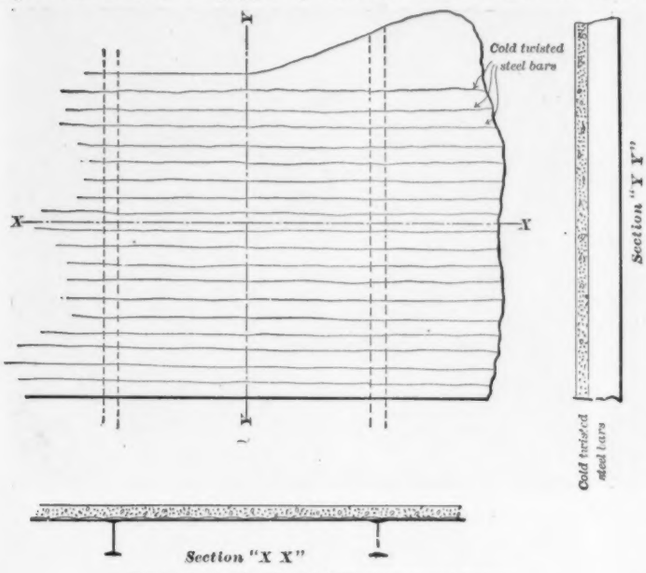


Fig. 1. Design for Flat Slab Floor, Ransome System.

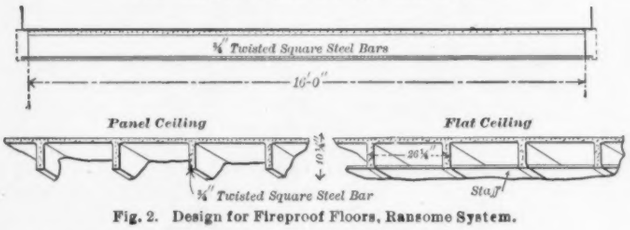


Fig. 2. Design for Fireproof Floors, Ransome System.

Figure 1 shows the construction of a flat-slab floor. Figure 2 shows a section of floor where the concrete has been cored out between the bars which form the tensile members of this construction. Going one step farther, we build floors with concrete girders. The concrete beams head into these girders. Figure 3 is an isometric view of the roof of a septic tank designed on these lines.

Probably the best example of Ransome construction is the building of the Pacific Coast Borax Company, at Bayonne, N. J. In plan the building is about 75′ x 200′, and is four stories in height. The floors take their bearing on concrete columns 18 inches square and upon the walls. The floor-bays are 12′ x 24′. The floors were designed for carrying loads of 500 pounds per square foot, besides supporting jarring machinery; but they are often entirely covered with borax to a load of 1,000 pounds per square foot.

As regards the strength of this construction: In the Police-court building at Chelsea, Mass., we built a flat slab 4½ inches thick which had a clear span of 14 feet 8 inches between supports, reinforced by ¾ inch bars 6 inches apart between centres. It was designed for a live-load of 100 pounds per square foot. Some question was raised as to its strength, and in order to reassure the doubters we put 40 barrels of cement three tiers high on the centre of the span, giving a load equal to 200 pounds per square foot uniformly distributed. There was no apparent effect on the slab.

In 1897 the Building Department of the City of Boston made a test of a beam-floor which spanned 15 feet. The beams were figured to carry 125 pounds per square foot, which equalled two tons each. The Building Department loaded one beam with six tons on the middle 13 feet. The deflection was $\frac{3}{16}$ inch. This load remained on for three weeks, and the deflection disappeared when the load was removed.

At this building we constructed over an area a driveway with a span of 12 feet between supports. The thickness between the upper surface and the bottom of the concrete-beams is about 12 inches. This driveway is subject to the usual jarring and pounding wear of a roadway. Heavy loads of flour are taken over it daily, and 4-horse

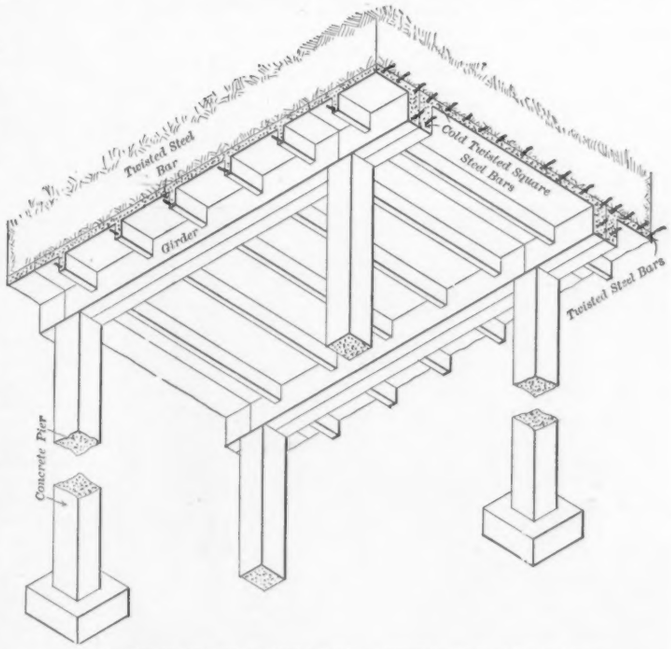


Fig. 3. Design for Roof of Septic Tank. Isometric View of Typical Bay.

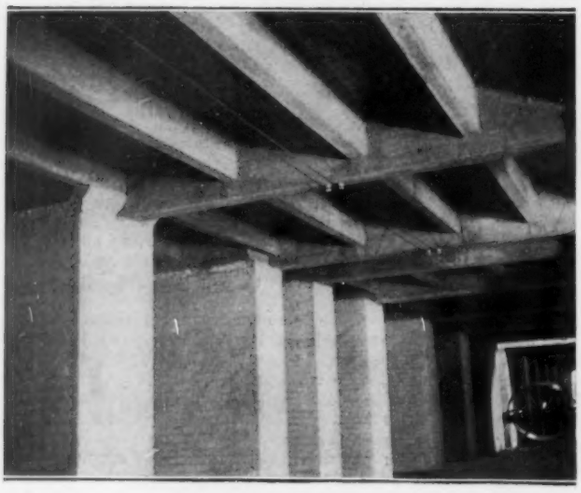
Safe Superimposed Load, including 2 feet Earth Fill = 250 pounds per square foot. Weight on each Pier with Full Load = 15 tons. Load on soil 3 tons per square foot. Girders, each half, 6″ x 15″ + 1¼″ bar. Beams 3″ x 10″ + ¾″ twisted steel bar. Slab 3″ thick with ½″ twisted bars 10″ centre to centre. Piers 12″ x 12″ x 10′ long. Footings 2′ 3″ x 2′ 3″ x 12″ thick. Bays, 12′ x 8′ 6″ on centres.

[1] Continued from No. 1321, page 23.

[2] A paper by M. C. Tuttle, of the Aberthaw Construction Company, presented at the meeting of the Society, held October 17, 1900, and published in the *Journal of the Association of Engineering Societies.*

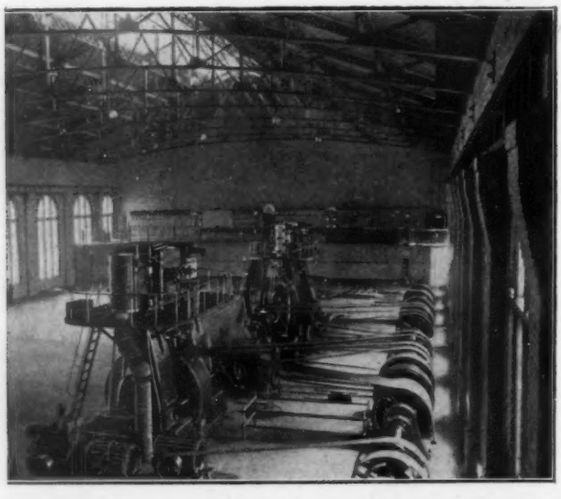
loads of machinery have been hauled over it repeatedly. It is in as good shape to-day as the week it was built.

A specimen of our floor was tested by Professor Edward F. Miller, of the Massachusetts Institute of Technology. The concrete slab was 4 inches thick, 5 feet wide and 14 feet long, and was supported by 6-inch I-beams spaced 4 feet 7 inches on centres. There



Ransome Floor Construction, Edison Illuminating Co.'s Power Plant, Paterson, N. J.

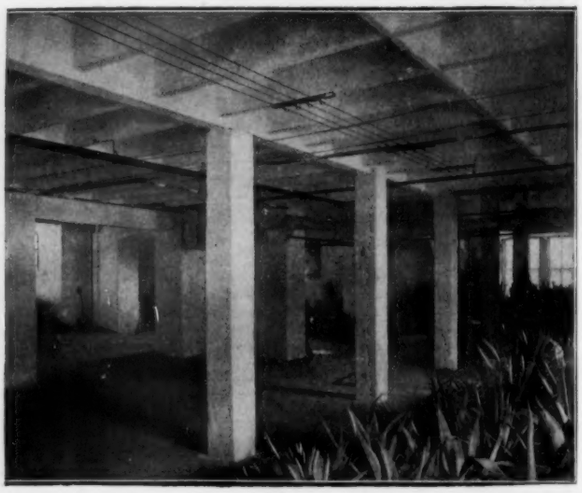
was no side-support. The specimen was twenty-one days old when tested. Imbedded at the bottom of the slab, and 6 inches apart on centres, were pieces of $\frac{3}{8}$-inch square twisted-steel. The slab was designed for a load of 500 pounds per square foot. One end span of the slab was first tested by piling bricks on it until it was loaded with a uniformly distributed weight of 489 pounds per square foot. Under this load the centre deflection between the I-beams was $\frac{3}{32}$ inch. The load was then increased to 724 pounds per square foot, and the deflection under the load was $\frac{5}{32}$ inch. With the maximum load still remaining on the first span, the second span was tested by dropping a stick of spruce timber, weighing 164½ pounds, from a height of 7 feet 10 inches so that it struck on end in the centre of the span. Five blows in all were struck in this way. Three of them were at an angle. The last two blows were fair, and both struck in the same space at about 20 inches from the I-beam. No cracks were noticed after this. The third span was tested by setting a jack under an upright and turning it until a load of 7,700 pounds was brought on an area $\frac{1}{4}'' \times 9''$. At this load a slight crack appeared, and the specimen gradually failed. The middle span was then loaded across the centre through an I-beam having a bearing-surface 3½ inches wide and 5 feet long. The maximum load put on at the centre was 20,700 pounds, which equals 1,900 pounds per square foot uniformly



Ransome Floor, Edison Illuminating Co.'s Power Plant, Paterson, N. J.

distributed, and the deflection at the time the first crack appeared at the bottom was $\frac{1}{16}$ inch.

In our opinion, the most notable example of the strength of concrete-steel floors is that of the Edison Electric-station at Paterson, N. J. Here the concrete-floor has girders 9½-foot span and beams 12½-foot span, 18 inches in depth, united at the top by a panel 4 inches thick. The girders are supported by brick piers 20 inches square. A counter-shaft about 100 feet in length is bolted down to the panel of this floor, with twenty-two belts, two connected with 750-horsepower engines, the others driving dynamos, all pulling on one side. All the dynamos rest on the floor at any convenient point. Quite a number of compound-engines of the vertical type are supported by two A-frames bolted down to the floor, which in turn is

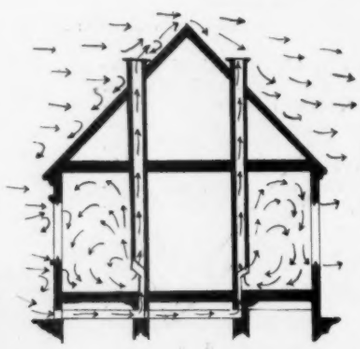


supported by long brick piers. The main shaft is about 18 feet in length, having a heavy fly-wheel, and the armatures of two large dynamos wound on it, and supported by two pillow-blocks which are bolted down to the 4-inch panel in the middle of the 12½-foot span. These engines run very smoothly, and there is scarcely a perceptible tremor when standing in contact with the pillow-block while the engines are running.

There are many other applications of this system, such as the construction of walls, chimneys, arch-bridges, retaining-walls, etc. We have confined our description only to the so-called flat-arch floor.

[To be continued.]

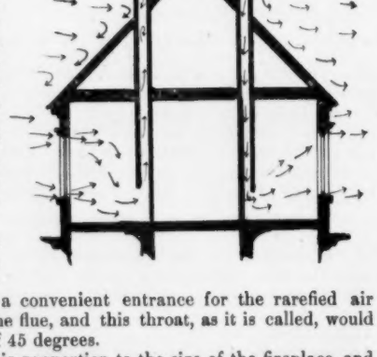
SMOKY FIREPLACES.



MOTION is invariably due to force. Whether it be a train of cars or the smoke in the chimney, the principle is the same: nothing moves without power.

It is usual to think that a chimney has in itself ability to create a draught, but this is not true. Force is always needed. Usually it is heat; in some cases a fan or other machine gives the motion, or external air-movements induce the currents. The chimney is merely a tube — the place in which the results of the energy are manifested, and without some external power there can be no draught.

When there is a current up or down an unused flue, it will be found that the air of the house is warmer or cooler than that outdoors, or the sun's rays may be warming the chimney especially.



The amount of current in the flue depends on the difference of density between the air within the flue and that outdoors. Just as the balance falls when one side is heavier than the other, so the lighter column of air rises from the pressure of denser and colder air. It is pushed up by the heavier volume.

The architect's work is to make easy the operation of the currents. There must be a convenient entrance for the rarefied air from the fireplace to the flue, and this throat, as it is called, would best slope at an angle of 45 degrees.

The flue must be built in proportion to the size of the fireplace, and must have as much volume as possible, in proportion to its wall-area.

The surface of the walls exerts an enormous amount of resistance, and especially when there are turns, bends, or changes in size. Flue-linings are desirable, not alone for their protection against fire, but because of their smooth surface and their uniform size. In fact, a rough brick flue 8″ x 8″ when lined becomes 6″ x 6″, and although the cross-section is not much more than half, the draught is almost equally as good.

A small, smooth flue is better than a flue that is larger, but irregular. In cutting a channel for water in new irrigation-plants, the water-course is left rough, from economic motives. As the demand for an additional supply is realized, the rough rock-work is *filled-in*, and a more rapid flow results. Air and smoke are similarly affected.

When flue-linings are not used, see that the inner walls of the flue are smooth. Cut off the corners when corbelling or turns are necessary.

The shape of the flue must be such as to give a large area, with little friction. Thus, a circular flue is better than a square one, and a square better than an oblong rectangle. A triangle is bad, for with but half the area of a square, it has 85 per cent of the wall-surface. And, too, the corner spaces soon fill with soot, so as to reduce the original area rapidly. The flues of old-fashioned city houses, wide and shallow, are especially bad. Thus, 4″ x 16″ is no larger than 8″ x 8″, yet it has 25 per cent more wall-surface, and 50 per cent more exposure to the outside cold.

It is always best to have the chimneys in interior walls, as then more heat is radiated to rooms adjoining the flues, and less is taken from the smoke. With an outside exposure, the cooling of the smoke seriously reduces the draught of the flue.

With an interior flue, of course the more exposed the brickwork, the more heat will be received in the house from the chimney, which is not a good feature for a kitchen-flue in summer.

The size of the flue in cross-section should be one-twelfth, or possibly as small as one-fifteenth, the area of the fireplace-opening. Soft coal requires a proportion of one to ten.

Do not alter the size of the flue, unless it be to increase the area near the upper part, and have no cap or stone over the top.

The chimney must be as high as the highest point of the house, and if there are any high objects near, there will still be trouble when winds are blowing across the chimney toward those objects. In mountainous sections, a fireplace will inevitably smoke in certain winds, though, of course, an increase in the height of the chimney will help.

In places like Chinon, a very interesting development of chimney-stacks and chimney-tops results from the attempts to overcome the winds sweeping down from the mountain bluff.

Except that they increase the height of the opening, chimney-tops or cowls do little good. It is not so much the direction of the wind that is disastrous to the draught, but an *increase in density* of the atmosphere at the place of obstruction. This heavy atmosphere seeking an outlet, to relieve the pressure, goes down the flue and causes a "downward draught."

There is one other feature required for the free burning of a grate-fire, and that is a source of air, to supply or replace the draught. It is evident that the air passing up the chimney must be replaced. One cannot suck air out of a bottle. If the furnace is running it supplies a volume of air and materially helps the draught.

In the usual case, the air comes through cracks around doors and windows, and if there be no cracks, the draught is checked. The well-built house is more apt to have smoky fireplaces than is the cheap contract house. To supply the draught, either use some of the grates that are constructed on this principle, or yourself arrange a similar system.

Here, too, the wind has an effect on the fire. The side of the house on which the wind blows is under more than normal pressure, and there is a natural exit up the flues of the rooms on the side. On the other hand, the lee side is subject to suction, and the fireplaces here have this to overcome, or smoke pulls down the flue and into the room.

Of course, with the furnace or other air-supply for the fireplaces, the wind-pressures are not felt, and in any case, a good fire and a good flue will send the smoke where it should go — up the flue.

WILL WALTER JACKSON.

GEORGE W. PERCY.[1]

BY the sudden and lamentable death of our highly-esteemed President on Friday, December 14, the Technical Society, and, indeed, the entire community, sustained an irreparable loss.

George Washington Percy was born at Bath, in the State of Maine, in 1847, his early youth being spent among agricultural surroundings. He received his education as a boy at the Kent's Hill Academy in his native State. It was during the progress of the Civil War that he found employment in the mercantile-marine of this country. At this time he made several voyages to Europe, and also visited other countries.

Endowed with a natural aptitude for mechanical and mathematical pursuits, he decided about this time to study architecture with a view to adopting it as his life profession. How wisely he made his choice is exemplified by the many structures which will stand for ages as monuments of his professional skill and intelligence. His technical education was begun in the office of Mr. Fassett, of Portland, Me., and for some years his time was spent in faithful and painstaking study to qualify himself for practising the profession of his choice. Subsequently, Mr. Percy entered the office of Bradlee & Winslow, Architects, of Boston, Mass., and while there designed and superintended several important works.

Coming to California in 1869, he designed the Stockton Insane Asylum, but returning to the East immediately after the great Chicago fire, we again find him located in Boston with Bradlee, Winslow & Wetherell.

Returning once more to California in 1876, still full of youth and energy, he immediately began to build up a successful and steadily increasing practice. Numerous important buildings in San Francisco and throughout the Pacific Coast testify to his professional ability and constructive knowledge. It is, perhaps, unnecessary to do more than mention the following as being among the more important of Mr. Percy's works: —

Stanford University Library and Assembly Hall; Girls' Dormitory, Stanford University; Academy of Sciences Building, Market, near Fifth Street; Alameda City-hall; Crocker Building; Nevada State University, Reno, Nevada; Episcopal Church, Stockton; Alvinza Hayward Residence, San Mateo; Leland Stanford, Jr., Museum, Palo Alto; Lick Observatory, Mt. Hamilton; Methodist Episcopal Church Business-building, Alameda; California School of Mechanical Arts, 16th and Utah Streets; San Joaquin County Almshouse; De Fremery Block, Oakland; Golden Gate Park Children's House and Play-ground, etc.; Strathmore Apartment-house, A. Hayward, Larkin Street; First Unitarian Church, Geary and Franklin Streets; Golden Gate Park Panorama; Sir Francis Drake's Monument, Golden Gate Park; City Front Stables, Clay, near East Street; John Benson Office-building, Leidesdorff and Pine Streets; Hobart Building, Post Street; the Hobart Vault, Cypress Lawn Cemetery; Hoitt's School, Menlo Park; the Bourn Tomb, Laurel Hill Cemetery; Wells Fargo Building, Mission and Second Streets; Alexander Young residence, Oakland; Alexander Young Business-block, Honolulu; Hayward Building, California and Montgomery Streets.

In addition to filling the Presidential Chair of the Technical Society, in which association he took the warmest interest, Mr. Percy was an active Associate-member of the American Institute of Architects, a trustee of the San Francisco Chapter, American Institute of Architects, and also a member of the Pacific Lodge of Free and Accepted Masons. He was also a member of a literary and professional club at Berkeley and was the author of many instructive technical papers which he read before the societies in which he took so deep an interest. His skill and experience have, also, been frequently sought in consultations involving questions concerning architecture and construction. Indeed, it may justly be said of him that he was at the zenith of a successful career, and that he not only occupied a high and honorable position among the members of his profession, but also enjoyed the absolute and perfect confidence of his many clients.

A widow and four children — two sons and two daughters — are left to mourn the loss of a devoted husband and a loving father.

Mr. Percy possessed an exceedingly strong personality. His wide capability, his sterling integrity and earnestness, and, above all, his absolute thoroughness, were apparent in everything he undertook. These moral qualities, and the knowledge that he was in every sense a manly man, as well as a genial gentleman, will ever be associated with the memory of our late fellow-member and friend.

[1] Read by Mr. G. A. Wright, at a meeting of the Technical Society of the Pacific Coast.

SOCIETIES

ST. LOUIS ARCHITECTURAL CLUB.

LIST of officers elected April 3, 1901, to act for one year: —

President, G. F. Brueggeman, 1505 Chemical Building; *First Vice-President*, Jas. P. Jamieson, 300 Security Building; *Second Vice-President*, Chas. O. Pfeil, 604 Columbia Building; *Secretary*, Ernest Helfensteller, Jr., American Central Building; *Treasurer*, Chas. H. Deitering, 708 Pine Street; *Advisory Committee*, Edw. G. Garden, 1505 Chemical Building, and Frank A. P. Burford, 604 Benoist Building; *Auditors*, S. L. Sherer, 912 Wainwright Building and Chas. H. Deitering, 708 Pine Street.

ERNEST HELFENSTELLER, JR., *Secretary.*

ILLUSTRATIONS

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

THE MONTGOMERY WARD BUILDING, CHICAGO, ILL. MR. RICHARD E. SCHMIDT, ARCHITECT, CHICAGO, ILL.

THE detail of this building is not lifted bodily from photographs we can all buy, but all of it has been given study in the endeavor to have at least some originality in it, not only for the sake of originality, but to have the character of the ornament somewhat in

keeping with the locality and its uses; for instance, the building is used by Montgomery Ward & Co., whose sole business consists in supplying the agriculturist, fisherman and miner with supplies and goods: the largest part of their business being with the agriculturist, much of the ornament, particularly about the entrance, is drawn from wheat, barley, oats, millet, corn, rye and hops. Fish were used in the ornamentation of the exterior, as the building is within a few hundred feet of Lake Michigan. The figure on the top of the tower was modelled by J. Massey Rhind, of New York, and was executed by W. H. Mullins, of Salem, maker of the Madison Square Garden "Diana." The fronton was modelled and executed by Mr. Philip Martiny, also of New York. The building being very high and narrow, it has been impossible to obtain a satisfactory photograph of the whole, near enough to show any of the detail.

FRAMING OF BALCONY AND GALLERY: COLONIAL THEATRE, BOSTON, MASS. MR. C. H. BLACKALL, ARCHITECT, BOSTON, MASS.

For description see article elsewhere in this issue.

CANTILEVER DETAIL: COLONIAL THEATRE, BOSTON, MASS.

THE LADIES' ROOM: COLONIAL THEATRE, BOSTON, MASS.

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

METALWORK, — XXV: NO. 16 EAST 36TH ST., NEW YORK, N. Y.

[Additional illustrations in the International Edition.]

CHIMNEYPIECE IN THE MODEL-ROOM: CLUB-HOUSE OF THE NEW YORK YACHT CLUB, WEST 44TH ST., NEW YORK, N. Y. MESSRS. WARREN & WETMORE, ARCHITECTS, NEW YORK, N. Y.

DETAIL OF MUSICIANS' GALLERY IN THE SAME ROOM.

THE NEW YORK "BOX-STOOP," — XXII: NO. 261 MADISON AVE., NEW YORK, N. Y.

THE NEW YORK "BOX-STOOP," — XXIII: NO. 262 MADISON AVE., NEW YORK, N. Y.

THE BEFREIUNGSHALLE, KELHEIM, BAVARIA.

BOURSE DE COMMERCE, BRUSSELS, BELGIUM [1868-74]. M. LÉON SUYS, ARCHITECT.

NOTES AND CLIPPINGS

COLOGNE CATHEDRAL. — Augustine Birrell waxes enthusiastic in the April *Century* over the beauties of the cathedral at Cologne. The first thing that strikes you about Cologne Cathedral is its glorious profusion, its boundless wealth. There is so much of everything. Bricks and mortar were never so multiplied, magnified, and glorified. I should like to see the original specifications. It is more than a building; it is a city by itself. The materials that go to compose the flying buttresses alone would build cottages for ten thousand men. The grinning gargoyles, the enchanting turrets, the forests of stone-foliage, the poetry of water-spouts, the quaint humors of the woodcarving, the depth of the cornices, the twists and turns of the roofing, the great population of statues, the rich mosaics — who can pretend to charge his memory with more than a miserable fraction of all this detail, or to say he knows Cologne Cathedral? A man who is bored with Cologne Cathedral had better at once betake himself to another world: this one can provide him with nothing more interesting. The west front of a cathedral is always a severe test, for in itself it is nothing but a bare wall blocking-up the end of the nave and aisles. To make it significant and interesting it must have a great hole made in it as entrance or chief door. The doors of a church are all of importance, but the chief door is vital. Next to the door and over it comes the great window necessary to light the nave and also to be, as it were, the eye of the church. This, too, must be large and beautiful both in shape and tracery. Despite the fact that the west front is the most secular part of a church, being farthest away from the high altar, it is almost impossible for the church to be mightily impressive and dominating unless the face it shows to the outside world, to whom its mystery is addressed, is impressive and dominating also. The west front of Cologne Cathedral is satisfactory. The great door is 93 feet high and 31 feet wide. These figures are comforting and inviting. The window is 48 feet high and 20 feet wide. The side entrances are generously planned, and the actual doors are bronze. Architects are apt to be timid when they should be bold, and bold only on the occasions when modesty would be charming. When you have passed through the western doors into the nave, you can scarcely restrain your cheers. No miserable partition, no ill-placed organ, mars your view of the splendid proportions of the edifice you have just entered. Your eye runs with joy up the avenue of pillars, past the shadows of the transepts, enters the choir, and reverently beholds the steps of the altar, and is rewarded by the rich hues of the eastern window, and all in a moment of time.

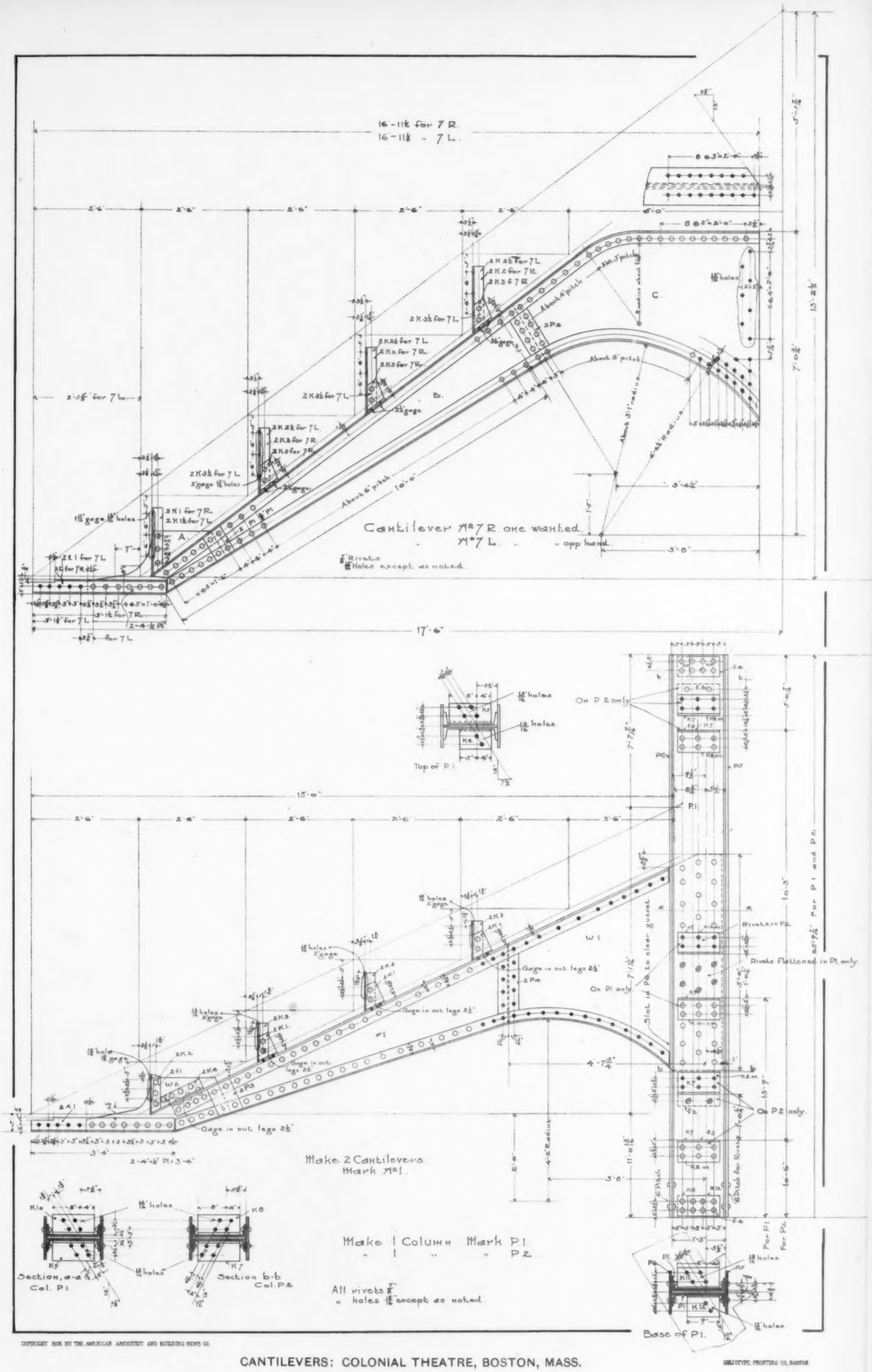
DEFECTIVE STATE BUILDINGS IN PARIS. — To judge from the lamentations provoked by the discussion of the Budget, the State is the owner of much very "ineligible" house property. There has been no end to the number of complaints of the grievous insufficiency, the unsuitable arrangement and the wretched state of repair of many of the buildings affected to national purposes. Ministers relegated to temporary premises, prisons (such as the Saint Lazare prison for women) which are a crying scandal, hospitals in the last stage of decay, tumbledown barracks, preposterously makeshift picture-galleries — the list of condemned buildings is long. The authorities admit the justice of most of the accusations brought by their critics, but plead the financial impossibility of proceeding simultaneously with all even of the most urgent reforms. They are promised us one by one, a rate of progression that will spread their complete achievement over a generation or two. The Luxembourg Gallery is among the most deserving, but unhappily among the postponed cases. It has got to bide its turn until the long-promised rebuilding of the Conservatoire of Music is an accomplished fact, and also, for reasons most obscure, until the barracks ironically named La Nouvelle Caserne have been improved off the face of the Faubourg Poissonnière. Yet the gallery can ill wait. Ten years ago it contained some four hundred pictures; to-day ten times as many canvases are crowded into it by dint of utilizing every inch of space from the "line" to the ceiling. Now that the pictures lent to the Exposition have been returned, the very lumber-rooms are full to repletion. And in theory, of course, the pictures annually bought by the State are not purchased with a view to their being stowed in an attic. The statues, too, are so numerous that many of them cannot be housed at all, and are left to brave the weather in the gardens. The crowning misery of the situation is that the Luxembourg, which was built for an orangery and "temporarily" converted into a picture-gallery, is so hot in the summer that the pictures crack, and even melt. In the winter the ravages caused by the damp are just as great. Many of the pictures have been irremediably injured by these wretched "hygienic" conditions. Another building that is a disgrace to the State is the National Printing Works. The edifice has some interesting historical associations. Throughout the eighteenth century it was the home of a branch of the Rohan family, and was inhabited in succession by the four famous Cardinals of that name. The last of these Grand Almoners of France was the hero of the great pearl-necklace scandal, and it was in the now dilapidated mansion that he was arrested. The wear and tear and the dirt of a large printing establishment have left little trace of the artistic beauties which were once the glory of the old house, but it still contains a few interesting relics, in particular two important pictures by Bouchat, a clock of extreme beauty by a pupil of Boulle, and the table on which the Cardinals wrote their occasional sermons and their frequent *billets-doux*. The building is also worth a visit by those interested in the history of printing, as it contains a notable collection of out-of-date appliances and other typographical relics. The mansion and the ground on which it stands were bought by the State a century ago for some £28,000: the land alone is now estimated to be worth £200,000 — figures which illustrate the growth of the value of land in Paris. — *Pall Mall Gazette.*

A MODERN STEEL-MILL. — The most efficient steel-mill in the world is that at Ensley, Ala. There are larger ones in the North, but none of which uses such remarkably modern methods in all the processes of production. Every step is automatic; from the time a miner picks up a piece of ore in the mines and places it in his barrow, it is not touched by human hands until it is ready to be packed and shipped as finished product. Meantime it has undergone all the various operations of the furnace and mill. The building in which the steel-furnaces are located is 80′ x 736′. It contains ten basic, open-hearth furnaces, gas heated, each of fifty tons' capacity and having a stack 150 feet high. The material is charged into the furnaces by two charging-machines. The charging-boxes, each holding two tons, are run up to the doors of the furnaces on cars carrying four boxes each, and the machine takes one of these boxes, thrusts it into the furnace, inverts it, and then places it back on the car. The machine and cars are operated by electricity, and controlled by the mere touching of a button. The casting side of the mill is at a lower level. When the mass of molten metal has reached the desired condition, the whole furnace is tilted, and the fiery fluid poured off into wheeled ladles, which roll up on tracks under the lips of the furnace to receive the spitting and sputtering cascade of fire. The metal is then moulded into ingots, and subsequently rolled into billets. The blooming-mill, where the latter operation is accomplished, is 44 inches in diameter, and the largest but one in the country. The shears then receive the metal; they can cut a piece 10 inches thick and 30 inches wide. The coke used in the iron furnaces is made in the most approved manner. Coal straight from the mines is passed through a $600,000 plant, which saves all the volatile portion. The tar and ammonia are washed from the smoke. The latter is crystallized into sulphate-of-ammonia, and the tar is made into pitch and creosote. The gas from these furnaces is then conducted to the blast-furnaces, where, in the process of iron-making, it is forced through the molten metal. Even then it is not allowed to escape; it is made to do service in heating the boilers for generating power. Each ton of coal thus treated yields 10,000 cubic feet of gas, twenty pounds of ammonia and one hundred pounds of tar. The ammonia is used for refrigeration and fertilization; the tar is taken by a roofing concern which has a plant nearby. Another industry allied to the steel and iron plant is the one which utilizes the slag refuse from the furnaces in the manufacture of cement. — *World's Work.*

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

THE LADIES' ROOM: COLONIAL THEATRE, BOSTON, MASS.

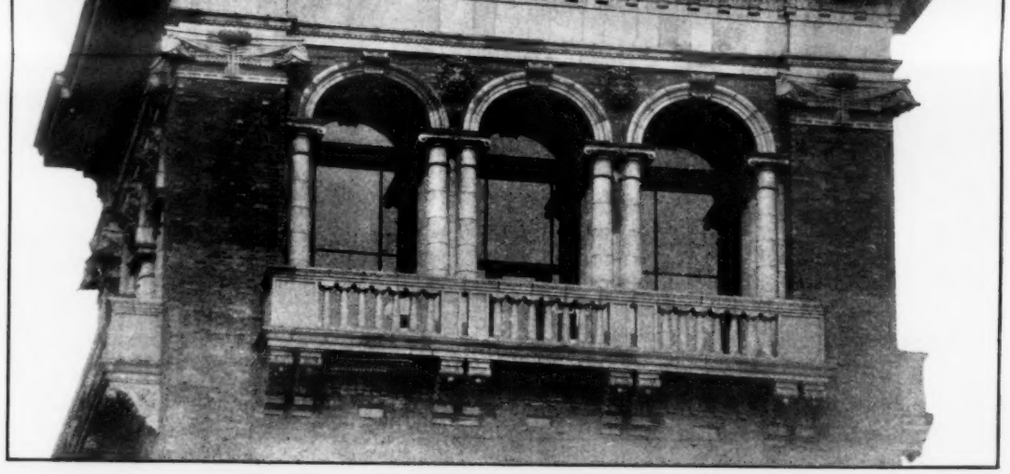
C. H. BLACKALL, ARCHITECT.



CANTILEVERS: COLONIAL THEATRE, BOSTON, MASS.

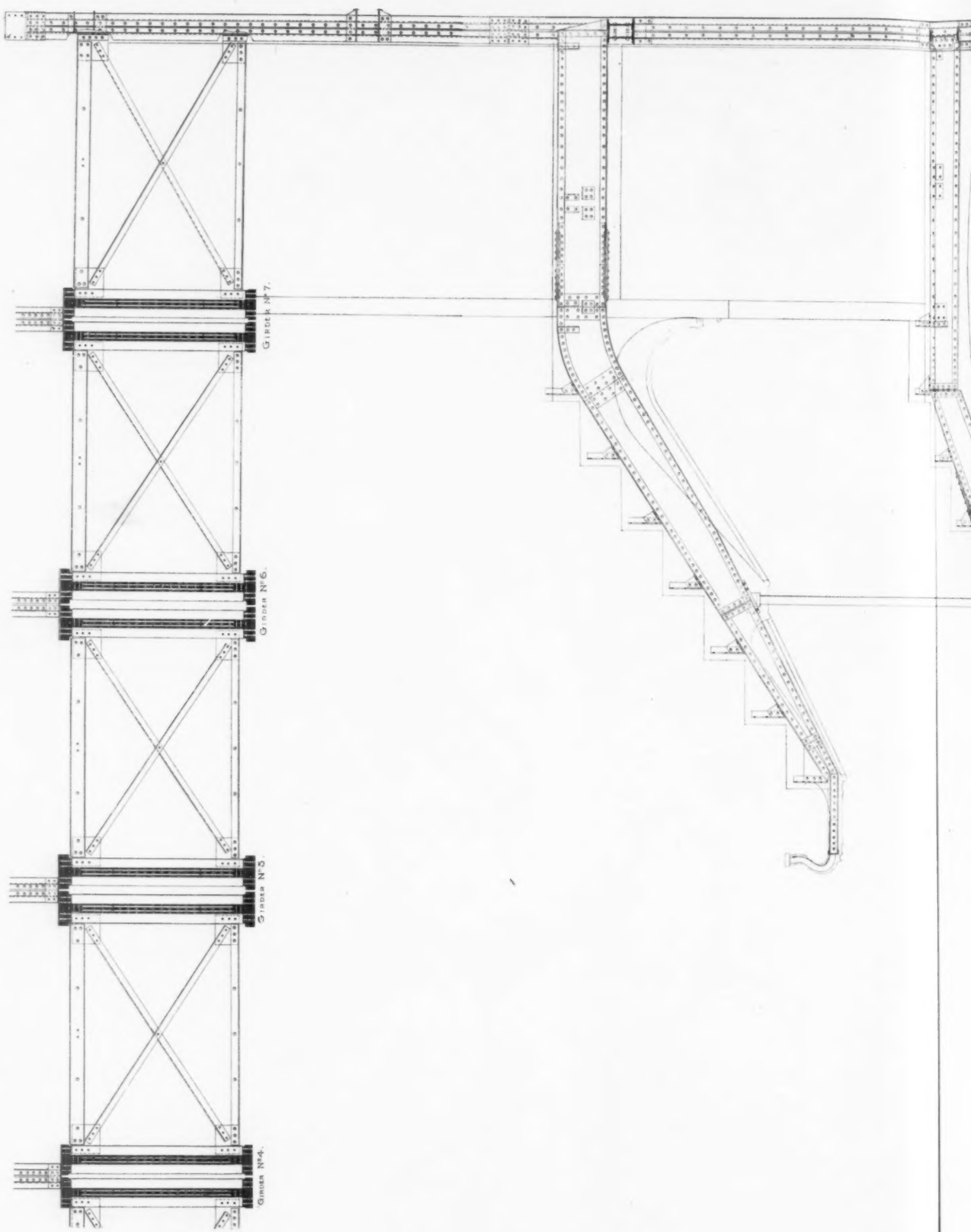
C. H. BLACKALL, ARCHITECT.

The American Architect
April 27, 1901.
No. 1322



THE MONTGOMERY WARD BUILDING, CHICAGO, ILL.

RICHARD E. SCHMIDT, ARCHITECT.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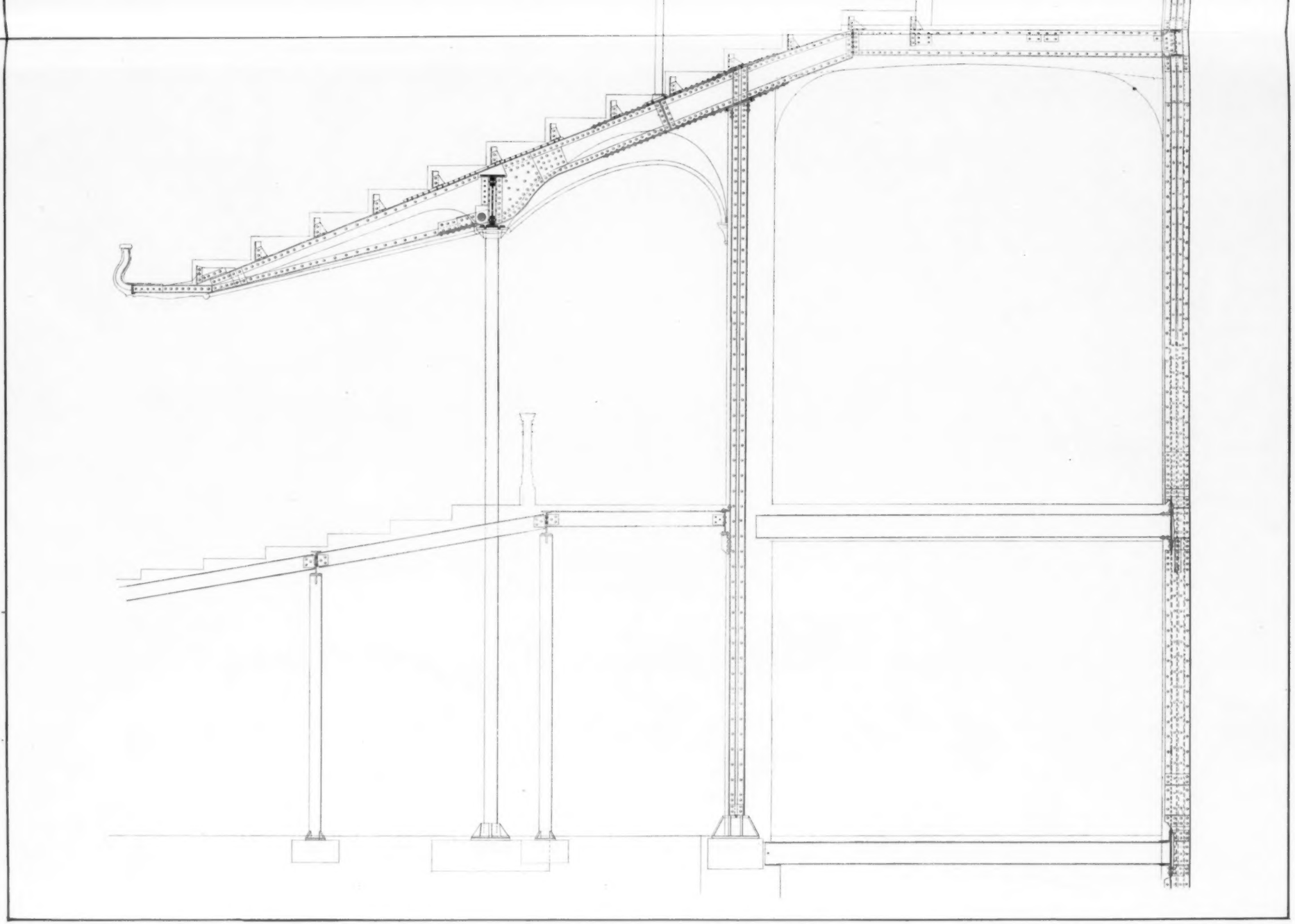

HELIOTYPE PRINTING CO, BOSTON

BALCONY FRAMING: COLONIAL THEATRE, BOSTON, MASS.

C. H. BLACKALL, ARCHITECT.

The American Architect and Building News

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

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Topographical Index of Advertisers.

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

"The Georgian Period"

This publication, which now consists of eight Parts, contains more than a hundred pages of text, illustrated by over three hundred text-cuts, and two hundred and ninety-seven full-page plates, of which one-third are gelatine or half-tone prints. It is in truth a work of superior excellence and great usefulness.

The matter already illustrated may in small part be classified thus:

PUBLIC BUILDINGS

City Hall, New York, N. Y.	Date 1803-12
Old State House, Boston, Mass.	" 1748
Pennsylvania Hospital, Philadelphia, Pa.	" 1755
Carpenters' Hall, Philadelphia, Pa.	" 1770
Independence Hall, Philadelphia, Pa.	" 1729
Faneuil Hall, Boston, Mass.	" 1741

and others.

CHURCHES

King's Chapel, Boston, Mass.	Date 1749
Seventh-day Baptist Church, Newport, R. I.	" 1729
Christ Church, Alexandria, Va.	" 1767
Christ Church, Philadelphia, Pa.	" 1727
St. Paul's Chapel, New York, N. Y.	" 1764
Old South Church, Boston, Mass.	" 1729
First Church, Hingham, Mass.	" 1681
St. John's Chapel, New York, N. Y.	" 1803
First Congregational Church, Canandaigua, N. Y.	" 1812
St. Peter's P. E. Church, Philadelphia, Pa.	" 1758
Gloria Dei Church, Philadelphia, Pa.	" 1700

and others.

IMPORTANT HOUSES

Fairbanks House, Dedham, Mass.	Date 1636
Royall Mansion, Dedham, Mass.	" 1737
Philipse Manor House, Yonkers, N. Y.	" 1745
Tudor Place, Georgetown, D. C.	" 179-
Mappa House, Trenton, N. Y.	" 1809
Woodlawn, Va.	" 1799
Mount Vernon, Va.	" 1743

and others.

Incidentally there are shown special measured drawings or large views of the following features and details:

Porches and Doorways	67 Subjects
Staircases	21 "
Mantelpieces	81 "
Pulpits	6 "
Fanlights	60 "

In addition to the subjects enumerated above there is a large quantity of measured and detailed drawings of Cornices, Ironwork, Gateposts, Windows, Interior Finish, Ceiling Decoration, Capitals, etc., together with elevational and sectional views of entire buildings.

METALWORK XXV.—No. 16 EAST 36TH ST. NEW YORK, N. Y.

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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.

ARCHITECTS' REMOVALS, Etc.

MR. WILLIAM HART TAYLOR, architect, has removed his offices from 6 Beacon St. to 50 Bromfield St., Boston. 1322

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.*]

670,222. Concrete-Mixer. — Howard Campbell, Brooklyn, N. Y.

670,237. Means for Humidifying the Air of Rooms. — Paul Kestner, Lille, France.

670,281. Door-Operating Apparatus. — Olaf Johnson, New York, N. Y.

670,299. Manufacture of Artificial Stone. — Wilhelm Schwarz, Zurich, Switzerland.

670,309. Girder Construction. — Cyrus M. Carnahan, Allegheny, Pa.

670,443. Ventilating Apparatus. — William E. Vernon, San Angelo, Tex.

670,456. Fireproof Grain-Elevator. — James L. Record, Minneapolis, Minn.

670,465. Setting for Tile. — William v. Baumbach, Milwaukee, Wis.

670,466. Elevator. — Henry Bolander, Romulus, N. Y.

670,478. Fireproof Construction. — Franklin W. Garrettson, Baltimore, Md.

670,488. Window. — Clinton H. Willits, Davenport, Ia.

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.

Alexandria, La. — It is stated that the plans of J. Rieley Gordon, of Dallas, Tex., have been accepted for the proposed $75,000 court-house.

Amherst, Mass. — Amherst College has received an offer of $25,000 for a much-needed new building, provided that a similar amount can be secured from other sources.

Andover, Mass. — At the annual meeting of the alumni of Phillips Academy, Dr. Bancroft, in his address, announced a gift, the amount of which and the name of the giver are to be kept secret for the present. Dr. Bancroft said: "While less than $250,000, it is large enough to establish a department of archæology, provide it with specimens valued at between $40,000 and $50,000, to erect a building, and to provide for some original investigation.

Ann Arbor, Mich. — A building will be erected this summer for the University of Michigan, costing $100,000.

Auburn, N. Y. — E. D. Metcalf has had plans prepared by C. C. Darrow for a $25,000 building to be erected at 146-148 Genesee St.

Augusta, Me. — It is stated that one of the wings at the Maine Insane Hospital will be remodelled and fireproofed this season.

Birmingham, Ala. — The congregation of the First Christian Church will erect a new edifice here to cost $20,000.

Bloomington, Ind. — A woman's building, to cost $30,000, will be erected upon the campus of Indiana University. It will be paid for by private subscription, and $5,000 has already been raised.

Boston, Mass. — Charles Francis Adams, 2d, and Howard Stockton, trustees of the Riverbank Improvement Co., have sold to Samuel M. Shapleigh 5 lots of land on the north side of Commonwealth Ave., between Sherborn and Granby Sts. Mr. Shapleigh will erect five light stone and brick swell-front houses, 24′ x 70′, four stories high and with all the latest improvements.

Henry N. Chadwick has bought land on Commonwealth Ave., between Sherborn and Granby Sts., and will erect four dwelling-houses of light freestone and brick.

A two-story fireproof bank and office building will be erected for the Roxbury Institution for Savings at 2341-45 Washington St., Roxbury; estimated cost, $300,000. Architects, Peabody & Stearns.

It is stated that Spofford & Eastman have prepared plans for a seven-story apartment hotel to be erected on Newbury and Kenmore Sts., near Charlesgate West. It will be called "The Wadworth."

Boulder, Col. — St. John's Episcopal congregation is considering plans for the erection of a $20,000 church.

Cambridge, Mass. — A project is on foot to build a hotel opposite Beck Hall, on the site now occupied by the "College Inn." Mr. George Moore has drawn the plans, which call for a seven-story building. It will cost in the neighborhood of $400,000.

Canton, O. — President McKinley has given $5,000 toward a fund of $30,000 necessary to secure the erection of a new and modern hotel here. It will be built on the site of the recently burned Saxton Block, at a cost of $100,000.

Charleston, Me. — The Higgins Classical Institute is to have two new buildings, a dormitory, 43′ x 115′, costing $10,000, and an academy, 60′ x 110′, costing about $20,000.

Chattanooga, Tenn. — The contract for the erection of a $10,000 residence on the corner of Payne and Lindsay Sts. has been awarded to Geo. Collins.

Chicago, Ill. — It is stated that the Hyde Park Baptist Church will receive a gift of $15,000 from John D. Rockefeller, which will make possible the erection of a new building, to cost $65,000.

A building for the Chicago Commons will be erected at Grand Ave. and Morgan St. $8,000 was left the Commons by John Marshall Williams, and his six children have now donated $12,000. The $20,000 will be devoted to the construction of a memorial building to be known as "Williams Residence Hall." It will be five stories high, containing reception-room, office and ample accommodations for twelve or fifteen resident workers.

Leon Stern, an architect of Rochester, N. Y., has in preparation plans for a residence to be built on Drexel Boulevard, at a cost of $50,000.

W. G. Williamson, 161 La Salle St., has drawn plans for a new church, which the First Presbyterian congregation will build at Oak Park, on Lake St., near Forest Ave. It will cover 67′ x 120′, and will cost $45,000.

Goetz & Brada Manufacturing Co., 18-28 Michigan St., have purchased a lot at the corner of Chicago Ave. and Sangamon St. and will build a $30,000 factory.

The Chicago Business Women's Club is taking steps toward the erection of a down-town clubhouse.

Cleveland, O. — The Cordrey Asbestos Chimney Lining Co., recently organized with a capital stock of $125,000, will erect a factory here.

Columbus, O. — The trustees of the Ohio State University have approved plans prepared by Stillman Dutton, 814 New England Bldg, Cleveland, for a law building, to cost $75,000.

Dannemora, N. Y. — $53,000 has been appropriated for further construction at the Dannemora Hospital for Insane Convicts.

Dayton, O. — The proposed new Market Arcade will be erected between 3d and 4th Sts., and will cost $225,000.

Dedham, Mass. — The bill to provide for a new building for the registry of deeds and probate court for Norfolk County was enacted this week. The cost of the building is not to exceed $200,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Denison, Tex.—It is stated that the St. Louis & San Francisco R. R. Co. will erect a $30,000 depot at this place.

Detroit, Mich.—Architect Raseman is preparing plans for the Calvert Lithograph Co.'s new building to be located on Grand River Ave. and Elizabeth St.

The Y. M. C. A. contemplate the erection of a $60,000 building for their own use. The site is not yet settled upon.

Dr. D. M. Coonley will build an apartment-house corner 4th and Forest Aves. to cost $12,000.

F. C. Andrews will erect an apartment-building to cost $100,000, corner Woodward and Forest Aves., from designs by Mason & Kahn.

East Orange, N. J.—Mrs. Andrew Reasoner, widow of the former superintendent of the Lackawanna Railroad, has given $25,000 to the Munn Avenue Presbyterian Church, for the erection of a new Sunday-school building and lecture-room as a memorial to her husband.

Elizabeth, N. J.—Messrs. L. Hersh & Bro. will erect a building on Broad St., costing $45,000, after plans by Nathan Meyers, of Newark.

Findlay, O.—The plans of Kramer & Harpster have been accepted for a $40,000 city-hall.

Fitchburg, Mass.—C. P. Dickinson is about to build a brick and steel business block at Main and Oliver Sts.; cost, $20,000.

Fond du Lac, Wis.—A. D. Werner has completed plans for a $50,000 sanatorium to be erected and operated in connection with the hospital of the Sisters of St. Agnes.

Grayling, Mich.—Report states that Haug & Scheurman, Saginaw, W. S., have prepared plans for a brick and stone court-house and jail for Crawford County; cost, $20,000.

Greenfield, Mass.—Architects Cutting, Carleton & Cutting have awarded the contract for addition to the factory for Wiley & Russell Mfg. Co. to Allen Bros., of Amherst, for $8,500.

Hallowell, Me.—Mr. Thistle, of Worcester, Mass., has drawn plans for the new Industrial School; cost, about $14,000.

Hartford, Conn.—It is probable that in the early future this city will have a hospital for the treatment of consumption, capable of caring for 200 patients. The bill asks for an appropriation of $150,000 for buildings and equipment.

Houston, Tex.—George E. Dickey has completed plans for the erection of a $12,000 home for Joseph F. Meyer. It will be erected on the corner of Pierce and Fannin Sts.

Jackson, Miss.—Hinds County is to have a $75,000 court-house.

Janesville, Wis.—At the first meeting of the new council $20,000 was appropriated to purchase the Dr. E. F. Woods property on the East Side, opposite the Court-house Park, for the public library donated by Andrew Carnegie and F. S. Eldred. An appropriation of $50,000 was also made for the erection of a new city-hall and the purchase of a site on the West Side.

Kalamazoo, Mich.—Patton, Fisher & Miller, 115 Monroe St., Chicago, Ill., are making plans for a $50,000 three-story science hall for the Kalamazoo College.

Kenosha, Wis.—E. Z. Simmons will present the city with an emergency hospital to cost $30,000.

Lafayette, Ind.—R. P. Daggett & Co., Marion Block, Indianapolis, are making plans for a $60,000 stone or brick building for the Purdue University.

Lexington, Ky.—The Y. M. C. A. will expend $75,000 for a building and site.

Los Angeles, Cal.—Morgan & Walls, 232 N. Main St., have prepared plans for a three-story brick business building to be erected for the Lang Estate on Spring and 2d Sts.; cost, $50,000.

Lynn, Mass.—Rev. L. C. Parrish, pastor of the Zion Baptist Church, is hard at work trying to raise funds to build a new church for his people. The new church will be located in East Lynn, on or about Chestnut St., in the vicinity of the colored people.

Macon, Mo.—It is stated that a $60,000 school-house will be erected here.

Mason City, Ia.—The laying of the corner-stones of the initial buildings of Memorial University will take place at an early date. A uniform style of architecture has been adopted, and the buildings will all be of a massive character and constructed according to the latest and most improved methods. The contract for the first building has been awarded and work commenced, with others to follow as rapidly as architects can prepare the plans and specifications.

Memphis, Tenn.—A three-story brick addition, costing $75,000, will be made to St. Joseph's Hospital.

G. M. Shaw has prepared plans for a five-story wholesale business building for Napoleon Hill, to be located on 2d St. It will cost about $50,000.

Mobile, Ala.—The Manassas Club contemplate erecting a $30,000 building.

Nashville, Tenn.—C. H. Kirk, Stephen Girard Bldg., Philadelphia, Pa., has prepared plans for a $20,000 country house to be erected here for J. W. Baker.

New Orleans, La.—The Board of Administrators of the Charity Hospital will erect a $50,000 home for the trained nurses.

New York, N. Y.—The collection-boxes at Grace Church held $107,000 Easter Sunday in response to Dr. Huntington's request for funds to erect new buildings in the rear of the present structure.

Land on 6th Ave., between 25th and 26th Sts., belonging to the Astor estate, has been leased by the Associated Merchants' Co. It is stated that a twelve-story building, to cost $3,000,000, will be erected thereon, to be used as the Eastern headquarters for the business of the combination.

Report states that the Erie Railroad has purchased the entire block bounded by 11th and 13th Aves., 28th and 29th Sts. It is intended to build thereon an immense freight depot.

The St. Nicholas Russian Society will erect a brick and stone church and rectory on 97th St., near Madison Ave., after plans by J. Burgesen. The total cost will be about $85,000.

Norristown, Pa.—It is stated that the parish of St. Patrick's R. C. Church is considering the erection of a new edifice to cost $150,000, at Chestnut and De Kalb Sts.

Omaha, Neb.—A $100,000 department store will be erected by N. R. Bennett & Co., at Harney and 16th Sts.

The Episcopal Society is about to build a $100,000 addition to Clarkson Hospital.

Philadelphia, Pa.—A brick, stone and iron building is to be erected adjoining the present building of the Women's Hospital, corner of 22d St. and N. College Ave. Plans have been drawn by Herman Miller, and the building will cost about $25,000.

Pittsburgh, Pa.—F. J. Osterling, *Times* Building, has completed plans for a six-story brick warehouse and factory to be erected on 2d Ave. and Blockhouse Way for McClure & Co., tinplate manufacturers; cost, $65,000.

Providence, R. I.—The demolition of old Lyon Hall has been completed. Upon the site will be erected an administration building for Brown University.

Rankin, Pa.—The McClintic-Marshall Construction Co. will erect a $20,000 steel and brick office-building after plans by Wm. Young Brady, 32 Stevenson Building, Pittsburgh.

Reading, Pa.—It is stated that the plans of Seymour Davis, 907 Walnut St., Philadelphia, and Paul A. Davis, of Philadelphia, have been accepted for a $130,000 building for the Colonial Trust Co.

Rock Island, Ill.—The plans of F. Borgolte, Mitchel and Lind Building, have been accepted for a high school to cost $70,000.

Salt Lake City, Utah.—S. C. Dallas, Whittingham Block, will draw the plans for two new buildings for the University of Utah.

San Francisco, Cal.—It is reported that some New York capitalists propose erecting a $500,000 theatre in this city.

Santa Barbara, Cal.—Plans have been completed by Cunningham & Politeo, of San Francisco, for the proposed $60,000 high school.

Sewanee, Tenn.—Quite a great deal of work is in progress on new university buildings at the University of the South. Quintard Hall, the new dormitory for the grammar school, will be finished June 1. A large addition is being made to Thompson Hall and ground will soon be broken for the new Hodgson Memorial Chapel, to be used by the theological department.

Shrewsbury, Mass.—Chapin & Topanelian have plans for a private stable and summer residence to be erected here for H. H. Merriam; cost, $4,800.

Springfield, L. I.—A church and chapel will be erected here for the Little Sisters of the Poor, a Catholic organization of Brooklyn; cost, $100,000.

St. Louis, Mo.—The Christian Scientists will build a new church here to cost $100,000.

St. Paul, Minn.—The Legislature authorizes the expenditure of an additional $1,000,000 for completing the State Capitol.

Terre Haute, Ind.—Plans have been prepared for a $30,000 addition to St. Anthony's Hospital.

Trenton, N. J.—Brouse & Arend, First National Bank Building, have prepared plans for an apartment-house which the Trenton Improvement Co. will erect on E. State and Carroll Sts.; cost, $150,000.

Washington, D. C.—The United States Capitol is to be enlarged and many desirable improvements made during the Congressional recess. About $400,000 will be expended. The architect of the Capitol has been authorized to prepare and submit plans for the reconstruction and fireproofing of the central portion of the building and the renovation and redecoration of the rotunda. Plans are also to be prepared for a new fireproof building adjacent to the Capitol grounds, to be used for additional committee rooms, storage and a power plant.

Plans have been prepared by Bruce Price, New York City, for a ten-story office-building to be erected by Messrs. Tyssowski at the corner of 15th and G Sts., N. W.; cost, $100,000.

Webster, Mass.—Architects Chapin & Topanelian have prepared plans for changes and alterations to the business block for Cyrus Spaulding; cost, $6,000. No contracts let.

West Boylston, Mass.—Architects Chapin & Topanelian are preparing plans for a two-story church edifice to be erected here for the Cong'l Society; cost, $9,000. No contracts let.

Winchester, Mass.—The Episcopal Society is raising funds for a new edifice to be erected at the corner of Central and Church Sts. In the special collection taken at the church on Easter Sunday the sum of $5,742 was received. Of this amount $5,000 was in the form of a single check from a wealthy resident, understood to be Thomas W. Lawson. The building fund now stands at $12,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Worcester, Mass.—Architects Chapin & Topanelian are preparing plans for a one-story frame church edifice to be erected here for the Worcester City Missionary Society, Rev. Elbridge Mix, supt.; cost, $6,000. No contracts let.

Architects Frost, Briggs & Chamberlin are preparing plans for an extensive fireproof warehouse for the Barnard Sumner Putnam Dry Goods Co., of this city. No contracts let.

Yountville, Cal.—An appropriation of $25,000 has been made for the erection of a hospital for the Veterans' Home.

HOUSES.

Boston, Mass.—*Clarkson St.*, Ward 20, three-st'y fr. dwell., 26′ x 52′, furnace; $6,500; o., Mary A. G. Eustace; a., T. E. Sheehan.

Webster St., nr. Cambridge St., Ward 25, two-st'y fr. dwell., 31′ x 48′; $5,500; o., J. & R. Van Buskirk; a., U. S. McLaren.

Dresden St., No. 8, Ward 22, three-st'y fr. dwell., 34′ x 38′, stoves; $5,500; o., Jas. Sutherland; a. & b., J. P. Campbell.

Page Ave., cor. Glenway St., Ward 20, two-st'y fr. dwell., 26′ x 40′, furnace; $6,000; o., Chas. E. Moss; a., O. M. Higgins.

Commonwealth Ave., Nos. 1194-6, Ward 11, 2 three st'y bk. dwells., 23′ x 57′ & 25′ x 85′, steam; $20,000; o., a. & b., Wm. Dwyer.

Greenbrier St., Ward 20, two-st'y fr. dwell., 28′ x 37′, furnace; $5,500; o., Mary F. V. Hall; a., G. H. Smith.

Blue Hill Ave., Nos. 281-85, 3 three-st'y bk. dwells., 20′ x 54′, 21′ x 51′ & 22′ x 55′, flat roofs, stoves; $18,000; o., P. Kearns Est.; a., J. F. Kavanagh, 286 Blue Hill Ave.

Blue Hill Ave., Private Way, 7 three-st'y bk. dwells., 20′ x 30′, flat roofs, stoves; $35,000; o., P. Kearns Est.; a., J. F. Kavanagh, 286 Blue Hill Ave.

Mellen St., nr. Ocean Road, Dorchester, two-st'y fr. dwell., 28′ x 54′, pitch roof, furnaces; $8,000; o., W. M. Rice; a., D. A. McAuley, 7 Claybourne St.

PROPOSALS.

GATE HOUSES. [At Washington, D. C.]

Office of the Commissioners, D. C., Washington. Sealed proposals will be received at this office **until May 4, 1901**, for constructing two gate houses at the Brightwood Reservoir, D. C. Specifications, blank forms of proposal and all necessary information may be obtained at this office. HENRY B. F. MACFARLAND, JOHN W. ROSS, LANSING H. BEACH, commissioners, D. C. 1322

IMPROVEMENTS. [At Los Angeles, Cal.]

Bids are wanted **May 3** for improvements and repairs to the State Normal School, including plumbing and heating. EDW. T. PIERCE, sec. bd. trus. 1322

ALTERATIONS TO COURT-HOUSE. [At Norristown, Pa.]

The county commissioners will receive sealed proposals **until May 6, 1901**, for alterations to the stone court-house to cost $200,000. Schermerhorn & Reinhold, architects, 340 Walnut St., Philadelphia. 1322

Treasury Department, Office Supervising Architect, Washington, D. C., April 23, 1901. Sealed proposals will be received at this office until 2 o'clock P. M., on the 14th day of May, 1901, and then opened, for covering steam-pipes, tanks and other hot surfaces, cold-water pipes, ducts, etc., in the various buildings at the U. S. Immigrant Station, Ellis Island, New York Harbor, in accordance with the specification, copies of which may be had at this office or at the office of Messrs. Boring & Tilton, architects, 32 Broadway, New York City, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1323

HEATING AND VENTILATION. [At Newton, Mass.]

City of Newton, City-hall, West Newton, Mass. Sealed proposals for installing the heating and ventilation in the proposed building for contagious diseases, at the Newton Hospital, in accordance with the plans and specifications prepared by the S. H. Woodbridge Co., 93 Federal St., Boston, where plans and further information may be obtained, will be received at the office of the Public Buildings Commissioner **until May 15th, 1901.** GEO. H. ELDER, public buildings commissioner. 1323

PROPOSALS.

SEWERAGE WORKS. [At Quincy, Mass.]

Sealed proposals will be received at the office of the Metropolitan Water and Sewerage Board, 1 Ashburton Pl., Boston, Mass., **until May 13, 1901,** for building Section 49 and culverts and embankments for Sections 48 and 49 of the high-level sewer in Quincy, Mass., in accordance with the form of contract and specifications to be furnished by the Board. Plans can be seen and specifications and form of contract can be obtained at the above office, or at the office of the Engineering Department, Pemberton Building, Boston, Mass. WM. N. DAVENPORT, sec. 1323

SEWER SYSTEM. [At Pipestone, Minn.]

Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals will be received at this office **until May 7, 1901,** for furnishing and delivering the necessary materials and labor required to construct and complete a sewer system at the Pipestone School, Minn. For further information apply to D. S. Harris, superintendent, Pipestone, Minn. W. A. JONES, commissioner. 1322

COURT-HOUSE. [At Newroads, La.]

Bids are wanted **May 15** for a brick court-house, also for remodelling the present court-house. O. ST. DIZIER, chmn. police jury com. 1323

COURT-HOUSE. [At Clyde, Ga.]

Local press reports state that sealed proposals will be received **until May 6, 1901,** for the erection of a court-house. W. B. BRAGG, ordinary. 1322

CEMENT. [At Cincinnati, O.]

U. S. Engineer Office, Custom-house, Cincinnati, O. Sealed proposals for furnishing at dam No. 2, Ohio River, about 5,000 barrels cement, Portland or natural, will be received here **until May 8, 1901.** WM. H. BIXBY. 1322

CHURCH. [At Selma, Ala.]

It is stated that bids are wanted by the Building Committee of the First Baptist Church **until May 1** for a church to cost $25,000. WILSON & EDWARDS, archts., Columbia, S. C. 1322

SEWER SYSTEM. [At Ft. Point, Cal.]

San Francisco, Cal. Sealed proposals will be received here **until May 6, 1901,** for construction of a sewer system at Fort Point, Cal. Information furnished on application to J. M. MARSHALL, assistant quartermaster general, chief quartermaster. 1322

GRANOLITHIC SIDEWALKS. [At East Cambridge, Mass.]

Sealed proposals will be received at the court-house at East Cambridge, Mass., **on or before May 4th, 1901,** for the granolithic sidewalks around the new Registry of Deeds building. Proposals must be addressed to Levi S. Gould, ch. of county commissioners. LEVI S. GOULD, SAMUEL O. UPHAM, FRANCIS BIGELOW, county commissioners of Middlesex County. 1322

ALTERATIONS TO COURT-HOUSE. [At Norristown, Pa.]

It is stated that bids are wanted by the county commissioners **May 6** for alterations to the stone court-house, to cost about $200,000. SCHERMERHORN & REINHOLD, archts., 430 Walnut St., Philadelphia. 1322

COURT-HOUSE. [At Clyde, Ga.]

Sealed proposals will be received **until May 6, 1901,** for the erection of a court-house. W. B. BRAGG, ordinary. 1322

BRIDGE. [At Chicago, Ill.]

Sealed proposals will be received **until May 8, 1901,** for the substructure and superstructure of a bridge to cross the Chicago River at Randolph St. A. R. PORTER, clerk board of trustees, sanitary district of Chicago. 1322

BUILDING, SEWERS AND MACHINERY. [At Southern Ute Agency, Col.]

Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals will be received at this office **until May 6, 1901,** for furnishing and delivering at the school site, Southern Ute Agency, Colorado, the necessary material and labor required in the construction and completion of a brick dormitory, a brick warehouse, one water and sewer system, one gas machine-house and acetylene gas machine fixtures. For further information apply to W. A. JONES, commissioner. 1322

Treasury Department, Office of the Supervising Architect, Washington, D. C., April 15, 1901. Sealed proposals will be received at this office until 2 o'clock P. M., on the 20th day of May, 1901, and then opened, for the installation of an electric conduit and wiring system for the U. S. Post-office, Annapolis, Md., 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. 1322

Treasury Department, Office Supervising Architect, Washington, D. C., April 15, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 15th day of May, 1901, and then opened, for the installation of a conduit and wiring system for the U. S. Post-office building at Streator, Illinois, 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 Streator, Illinois, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1322

Treasury Department, Office Supervising Architect, Washington, D. C., April 15, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 3d day of June, 1901, and then opened, for the construction (except heating apparatus, electric wiring and conduits of the U. S. Public Building at Helena, Montana, in accordance with the drawings and specification, copies of which may be had at this office, or at the office of the Custodian of the site, Helena, Montana, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 1322

SEWER WORK. [At Boston, Mass.]

Sealed proposals will be received at the office of the Metropolitan water and sewerage board, 1 Ashburton Pl., Boston, Mass., **on April 30, 1901,** or soon afterward, for seven separate contracts for sections 2, 3, 4, 5, 6, 12 and 13 of the Weston aqueduct, having an aggregate length of 7.9 miles. Plans may now be seen at the offices of the Board in Boston and Saxonville. Pamphlets containing further information for bidders, forms of proposal and contract, specifications and plans, will be mailed to contractors who apply to the Chief Engineer, or may be obtained at his office, 1 Ashburton Place, and may also be obtained at the Saxonville office. HENRY H. SPRAGUE, *et al.*, Metropolitan water and sewerage board. 1322

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.

[*See Alphabetical Index on Cover 2 for Pagination.*]

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