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MR. CARNEGIE'S thoughtful generosity in presenting libraries to small cities attracts, indirectly, a good deal of attention in architect's offices, to judge from the many letters which we receive in regard to the competitions by which designs for these library buildings are usually selected. As a rule, the terms of competition offered by the local committees or boards having the matter in charge seem to be fairly intended, but the authors of most of them defeat their purpose, which is, presumably, to obtain the best design that can be carried out for the money available, by requiring far too much labor on the part of competitors, and by assuming qualifications for judging designs intelligently which they do not possess. It is obvious, from the printed terms, that, in most cases, the board or committee is in mortal fear of being led by the architect into expenses beyond the sum provided by Mr. Carnegie, and, to provide against this, it is common to see incorporated in the terms of competition the most absurd stipulations, which are not only perfectly useless as a protection against excessive cost, but have the effect of keeping out of the competition the experienced and capable men who would be best able to design a successful and economical building of the kind. We have, for example, recently seen a programme in which each competitor was required to submit quarter-scale working-drawings and specifications, with an estimate in detail, based on the prices per hour of labor of various kinds, as given in a schedule appended.

ARCHITECTS find it hard to believe that any one can seriously imagine it possible to get by such means an estimate of the cost of a building which would be of any value whatever. Supposing a bricklayer's wages in a given town to be thirty-three cents an hour, how is an architect at a distance to know whether the local bricklayers are union-ridden slaves, limited to four hundred and fifty bricks a day, or independent Americans, who take pride in laying from fifteen hundred to two thousand? Even a builder, accustomed to measuring the average amount of work accomplished by his own men in an hour, would hardly venture to base an estimate on what would be done by men in a distant town; while for architects, accustomed to estimating by cubic contents, or by area covered, general-wages schedules are worse than misleading. Even if architects knew exactly what mechanics in every place would do in a day, an estimate based on such knowledge would be worthless. If the relation of cost of work to the schedule of wages were fixed, or nearly so, the proposals of local builders for any given building would vary only by the percentage of profit that they reserved for themselves; whereas, as every architect knows, they often differ by a hundred per cent, each

bidder estimating by what he thinks his own men will be able to accomplish, while the architect's estimate, based on knowledge of what similar buildings have actually cost per square foot, or cubic foot, is usually about the same as that of the lowest responsible bidder.

NOTHING but experience will enable an architect to estimate the cost of a building closely and intelligently, and if the trustees of Carnegie libraries wish to get the best designs for their buildings, and to know before they begin work how much they will cost, the only way for them to do so is to secure at the outset a professional adviser to draw up or revise the terms of competition; to judge the designs; to throw out those which, in his judgment, will exceed in cost the limit; and, if the first estimates on the selected design should slightly exceed the limit, as is usually rather desirable, to advise in regard to the modifications to be made to bring the cost within the prescribed sum. In that way the most that is possible will be obtained for the money; in that way only can it be made certain that the best design has been selected, and, later, that everything necessary has been included in the drawings and specifications; and only on these terms can the best architects be induced to compete. After a thoroughly competent professional adviser has been secured, the programme should be so drawn as to require as little costly draughtsman's work as possible from competitors. All good architects like to design, but they think twice before employing costly draughtsmen to work up elaborate drawings for a small competition; and terms which require only pencil sketches, such as an architect could make at home evenings, would bring out contributions from men who would throw the ordinary Carnegie programme at once into the waste-basket. To the professional adviser, these sketches would indicate as much as finished working-drawings in regard to the skill of the designer, the merit of the plans, and the comparative cost of carrying them out; and, while an ordinary committee would, perhaps, as we have actually known to occur, select a plan with neither light nor air in some important room, or presenting other peculiarities of the sort, the expert would, almost at a glance, discover and eliminate the fatally defective plans, leaving the remainder for a further examination, in which the element of cost would be considered; and the result of this examination would be, with an expert of reasonable qualifications, to determine which, if any, of the designs could be carried out within, or near, the limit of cost, and which was the best among these. The award could then be made, conditioned upon the revision of the design, if found necessary, to bring the cost of execution within the limit; and, instead of shutting out all but novices from the competition, by compelling all taking part in it to go through with an immense amount of labor, of no use to anybody, only one competitor would have that work to do, and he, being the most skilful of all, according to the judgment of a qualified expert, might reasonably be expected to do it to the best advantage.

THE bills drawn up by the New York Tenement-house Commission have all been passed by the Legislature and signed by the Governor, and are now the law of New York. We have already discussed the bills, and need say no more about them except to suggest that the next thing is to have them enforced. If, as has been the case with former building-regulations, they can be openly ignored by persons who enjoy the favor of the inspectors, they will do those for whose benefit they are intended more harm than good, by discouraging honest property-owners from investing money in tenement-houses, which they do not wish to build in violation of the law, and cannot rent otherwise, and by stimulating the dishonest ones to the worst evasions of the law and the most miserable construction that they can bribe the inspectors to shut their eyes to, as a means of making the profit in the operation commensurate with the risk.

THE suggestion, made some time ago, that the great revival of manufacturing industry in this country was likely to lead to increased fire-losses, has been amply justified by the continued high rate of fire-loss in factories. The factory mutual companies, by their admirable system of supervision of risks, have not suffered seriously, but the establishments in

which the underwriters take all the chances burn, just now, at an appalling rate. Naturally, press of orders in factories leads to hurry, carelessness, night-work and the other conditions favorable to conflagrations, while, as factories are larger and better built now than they were twenty years ago, and contain more costly machinery, and larger stocks of materials and finished goods, the loss is greater when one of them burns up. In the end, the people pay all the fire-losses, so that the millions taken out of their pockets every month in this way form a very appreciable offset to the prosperity which, as we are told, everybody is enjoying.

IT is worth remarking that the prosperity of promoters and financiers does not always involve that of working-people.

One of the rumors current among stock-brokers is that a banker's syndicate in New York, aided by another in Europe, has "cornered the copper-supply of the world," and that henceforth no copper will be obtainable at less than seventeen cents a pound. It is only a few years since the market-price of copper was nine cents a pound, and the obvious effect of nearly doubling the price, supposing that the syndicate had the power and the disposition to maintain such a price, would be, in the long run, to curtail consumption. Aluminium, which is less than one-third the weight of copper, and is sold, by weight, at about double the price, is considerably cheaper, for the purposes to which it is adapted, and we may be sure that, as our knowledge of the properties of aluminium increases, it will be adapted to an increasing number of purposes. Under ordinary circumstances, curtailment of consumption of any product leads to competition among the producers, who lower their prices, to keep their customers; but a banker's syndicate, which had "cornered" the entire supply, probably with the help of borrowed money, would be very likely to prefer the policy of diminishing production, for the sake of maintaining the price of whatever amount the market would take; and the diminution of production, under monopoly, would involve the closing of mines and discharge of workmen, where free competition would keep them employed. That the system of combination and monopoly tends to such results is already shown by the closing, for example, of the Fall-River print-cloth mills, at the direction of the managers of the mill-owners' association, while the United States Rubber Company, which, although formed by the combination of several corporations, does not pretend to monopolize the business in which it is engaged, has reduced the prices of its goods to a scale which will deprive its stockholders of their dividends for a considerable time, but, at these prices, has taken orders which, it is said, will keep all its operatives employed until November. In view of the vicissitudes which have attended the iron industry in this country during the past fifteen years, and which are not likely to be diminished in violence by the establishment of two immense plants, encouraged by Government subsidy, in the Provinces, it may not be long before the great United States Steel Corporation will find itself obliged to choose between reducing prices below the dividend-earning point, or curtailing either production or expenses. To curtail expenses involves reduction of wages, while the curtailment of production means throwing men out of employment, and it remains to be seen whether either of these can be successfully accomplished on a great scale.

THE beginning of operations on the rapid-transit line in New York has had a curious effect on real-estate values in the upper part of the island. In view of the reasonable certainty that the rapid-transit road, by putting the beautiful district around and above Morningside Park within easy reach of the business quarter, would, in the end, enhance prices of property in that district, it seems as if speculators would hasten to secure whatever might be for sale in it. In point of fact, however, the contrary has been the case. Even corner-lots, in the region which will profit most by the subway, have been sold lately at a fraction of the price which they commanded before the subway was thought of, and it is only very recently that a slight reaction has begun. The explanation given by the real-estate agents of this phenomenon is that the people who live in houses in a region where extensive public improvements are going on, or who contemplate living there, find the dust, noise and obstruction, combined, in New York, with fear of malaria from the disturbed soil, so objectionable that they seek for a habitation somewhere else, and rents and prices fall in consequence. The same thing occurs, under similar condi-

tions, in many other places, and those who have studied real-estate movements can recall, probably, many instances where the laying-out of a new avenue, or the provision of improved means of transportation, has not only depressed values below the point at which they stood before the improvements were thought of, but has ruined the speculators who imagined that there would be an immediate rise. Of course, in the end the advance comes. People like to live where the air is pure, the outlook pleasant, and the neighborhood good, particularly if to these advantages they can add that of quick and cheap transportation to the scene of their daily work. So long as the prospect of these advantages is obscured by clouds of dust and heaps of rubbish they stay away, and it is not until not only the obstructions, but the recollection of them, have vanished that they begin to compete with each other for the more desirable lots.

THE Boston Mutual Boiler Insurance Company has taken in hand the accumulation of information in regard to the suppression of smoke in cities. It is notorious that, up to the present time, the popular dislike for a smoky, sooty city atmosphere has been utilized by interested parties for securing the passage of unreasonable laws, designed to compel citizens to purchase, at high prices, smoke-consuming devices of little value, or even to restrict them to the use of the costly anthracite in furnaces adapted only to soft coal. All experienced persons know that the only efficient smoke-preventive is attached to the handle of the coal-shovel, and that, while no smoke-preventing device will prevent a badly-managed fire from smoking, a skilful fireman can feed a boiler with almost anything that will burn, without causing an objectionable smoking of the chimney. As the officers of the Company do not pretend to a complete knowledge of the subject, they have addressed to the members a series of questions, as to the sort of coal used by them, the smoke-preventing devices, if any, which they employ, the efficiency of such devices in preventing smoke, and in saving coal, and, if anthracite is used, whether the fine ashes from it are found troublesome. As copies of this circular are to be sent, not only to members of the Company, but to other large steam-users, the replies are likely to be of great interest and value.

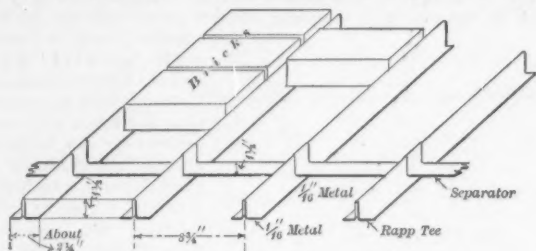
A SINGULAR accident took place a few days ago in Westminster Abbey, where a pillar in what is described as "the chapel northeast of the chancel," presumably St. John the Baptist's Chapel, fell, injuring a tomb near it. Examination showed that another pillar, in a similar situation, was ready to fall, and some operations will be required for strengthening it. We shall probably learn later, through the English professional journals, the cause of the accident, which English architects are, as a rule, well qualified to investigate.

THE Chicago Drainage Canal seems to be having a sad influence on the mental condition of the dwellers on the Mississippi, whatever may be its effect on their physical health. Finding that the flow of water through the canal to the Mississippi was likely to subtract perceptibly from the amount left to flow through the chain of lakes, the Lake Carriers' Association, supported by the Chicago Commercial Club, applied to the Secretary of War to restrict the quantity admitted to the canal, and, by a recent order, he has done so, reducing it to about one-half that specified in the State law of Illinois as required for the proper drainage of the Chicago District. Meanwhile, the people of St. Louis, who look with aversion on Chicago microbes, finding that the flow through the Illinois River, under Secretary Root's order, will be about twice as rich in microbes as it was before, have raised an outcry almost as vigorous as that which was heard last winter, and propose to appeal again to the courts. We have never had much sympathy with the plan of disposing of one's drainage by throwing it into one's neighbors' premises without their consent, and the interference with vested rights of navigation in the Great Lakes only complicates a problem of interference with other vested rights, no less important. Meanwhile, we have the evidence of geology that the movements of the earth's surface are tending to divert the lake waters through the Mississippi valley, instead of that of the St. Lawrence. The full operation of the Drainage Canal would probably increase that tendency, and the struggle between Chicago, St. Louis, the Lake Carriers' Association and Nature will be interesting to witness.

BRICK AND CONCRETE-METAL CONSTRUCTION.—I.

A TEST OF THE STRENGTH OF RAPP FLOOR-ARCHES.¹

FROM time to time the Engineering Department of the City of Boston has been asked by the Building Commissioner to make tests upon different types of fireproof-floors. These tests, however, had nothing to do with fireproof qualities, they having been made solely to satisfy the Commissioner that the floors in question



Details of Arch
Details of Rapp Floor in Building on India Street.

were capable of sustaining the load required by the city building-laws. Hence we might call them tests of the "working-strength." One of these, a test of some floor-arches of the Rapp type of construction, is described herewith. Considering the fact that the test was made upon one of the floors of a building (which at the time was in process of construction), and that the arches had been built before the test was proposed, it is thought that the conditions found were those likely to be met in practice.

Details of this Rapp floor are shown in the accompanying figures. Two adjoining arches near the centre of the building were selected for the test, the span of each arch being, approximately, 7 feet 10 1/2 inches, and the width 16 feet 5 inches, the distances being measured between the centres of the supporting-beams. The total area of the two is about 258 square feet.

The test consisted in loading the arches with a live-load of about 500 pounds per square foot, the behavior of the arches during the test being studied by noting their deflection and spread.

CONSTRUCTION OF THE FLOOR.

Between columns 11 and 12 and columns 16 and 17 are two 18-inch I-beam headers. At right angles to the latter are three 15-inch I-beams, the middle one being framed into the 18-inch beams and the other two connecting directly to the columns.

Curved Rapp tees are supported by the bottom flanges of the 15-inch beams. These tees consist of pieces of sheet-steel 4 1/2 inches wide and 1/8 inch thick, bent so as to form a "T" section with about 2 1/4-inch flange and 1 1/2-inch stem. Separators, made by bending a strip of steel 1 1/2 inches wide by 1/8 inch thick, regulate the spacing of the tees to about 8 3/4 inches on centres.

The Rapp tees being placed with their stems upward, the flanges are available for supporting rows of bricks which form an arch of nearly 9 inches rise above the bottom of the beams. The bricks were laid dry, and after they were in place cement-grouting was supposed to have been poured over the arch and into the joints between the bricks. Many of the joints, however, apparently contained but little mortar.

A filling of cinder-concrete, said to be made of 1 part Atlas-cement and 8 parts cinders, was then deposited upon the arches to the level of the tops of the 15-inch beams. Thus, there was about 4 inches of concrete above the brick arch at the crown, the depth increasing to a maximum of 12 inches of concrete at the springing. Neither the upper layer of concrete, inclosing the nailing-strips, nor the wooden floor had been put in place at the time the test was made.

The 15-inch I-beams were said to be connected by tie-rods, which had been bent upward 2 inches or more out of line in order that they might not be exposed in the ceiling at the crown of the arch.

The test was begun Wednesday, November 9, and ended Saturday, November 12. When the arches received their full load the

concrete-filling had been in place fifteen days. The loading was made by using bricks carefully piled in such a manner as to avoid breaking joints, thus allowing their weight to be uniformly distributed. A representative of the Building Department supervised the loading, and by weighing and measuring several lots of bricks secured the data from which the total weight of bricks was estimated from their volume. The maximum load applied was, very closely, 500 pounds per square foot.

The deflection of the floor was obtained by taking levels upon the under side of the beams and arches of the two bays tested, and also upon two of the adjoining arches. The spread of the arches was determined by measurements with a steel tape and an engineer's scale.

The first series of levels and measurements was made between 10 and 2 o'clock of Wednesday, November 9, before any live-load was applied to the floor. From 2 o'clock of Wednesday until noon of Thursday workmen were engaged in putting on the bricks. Friday morning, after the arches had been carrying their full live-load for nearly twenty-four hours, the second series of readings was taken. Friday afternoon the load was entirely removed. After a period of rest of about sixteen hours, the bays were again measured on Saturday morning, to determine to what extent the floor had recovered from the effects of the load.

Table I shows the deflections of the two arches tested. The deflections there given are *net*; that is, the total drops of the arches have been corrected to allow for the settlement of the supporting-beams, so that the net results given are the same as though there had been no vertical movement of the arch-supports.

TABLE I.—SHOWING DEFLECTION OF ARCHES.

Point (on under side of arch).	Deflection under Live-load of 500 lbs. per Sq. Ft.	Upward Movement upon removal of Load.	Deflection still remaining after removal of Load.
k	0.21 inch.	0.11 inch.	0.10 inch.
l	0.26 "	0.14 "	0.12 "
m	0.24 "	0.16 "	0.08 "
n	0.18 "	0.13 "	0.05 "
o	0.30 "	0.19 "	0.11 "
p	0.22 "	0.16 "	0.06 "
Average for Arch klm.	0.24 "	0.14 "	0.10 "
Average for Arch nop.	0.23 "	0.16 "	0.07 "
Average for both arches.	0.23 "	0.15 "	0.09 "

Measurements at the middle of the 15-inch beams showed the spread of the arches in the direction *CD* to be as given in Table II.

TABLE II.—SHOWING SPREAD OF ARCHES.

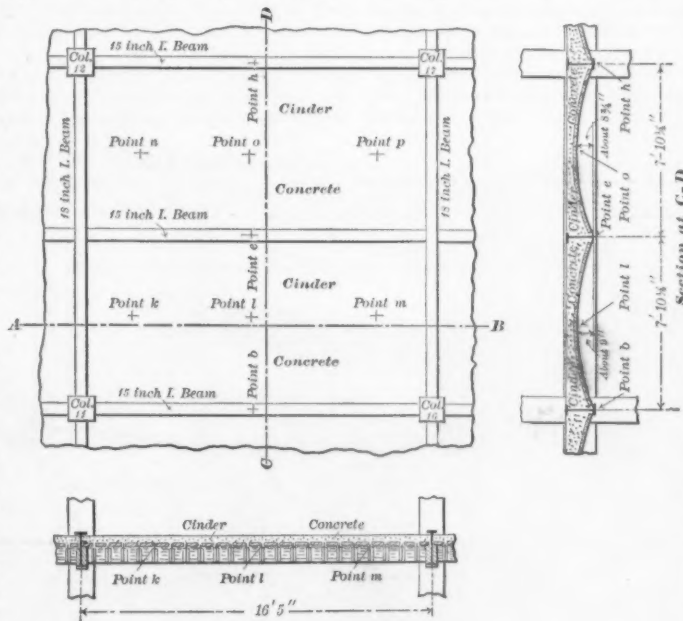
Arch.	Elongation under Live-load of 500 lbs. per Sq. Ft.	Contraction upon removal of Load.	Elongation still remaining after removal of Load.
From b to e.	0.16 inch.	0.09 inch.	0.07 inch.
From e to h.	0.09 "	0.07 "	0.02 "

Throughout the test, levels were taken upon the two adjacent arches, at *C* and *D*, which were liable to deformation from the thrust of the loaded arches. No considerable movement was found in either adjacent arch, and, apparently, their shape was practically unchanged.

CONCLUSIONS.

Under the load of 500 pounds per square foot the average deflection of the two arches tested was 1/4 inch. Sixteen hours after the removal of the load, the arches had regained about 60 per cent of their deflection, making the average deflection still remaining less than 1/8 inch. Some permanent set might have been expected, due to the closing of certain joints between bricks which were only partly filled with cement-grout. Still, it is possible that the arches had not entirely recovered from their fatigue, and that a further slight upward movement could have been detected had readings been taken at a longer interval after the removal of the load. The smallness of the spread of the arches was prob-

ably due to the fact that the floor had been built in the adjoining bays, and its stiffness was sufficient to prevent much sidewise motion of the arches in question. It is not likely that the bent tie-rods would be very efficient in holding the thrust, which must have been resisted principally by the sidewise bending of the supporting-beams and outer-walls. The practice of bending tie-rods in arches is certainly not to be recommended, and it is understood that, in accordance with the suggestion of the Building Department,



Section at A-B
Partial Plan of Second Floor, Showing Tested Bays.

¹ A paper by Frederic H. Fay, Member Boston Society of Civil Engineers, presented at the meeting of the Society, held October 17, 1900, and published in the *Journal of the Association of Engineering Societies*.

the rods of the other floors of this building have been made straight.

EXPANDED-METAL AS USED IN FIREPROOF BUILDING-CONSTRUCTION AND OTHER WORK.¹

THE object of this paper is to give briefly some information regarding the uses of expanded-metal, and the results of a few tests made on expanded-metal and concrete structures.

At intervals there have been submitted for the consideration of engineers and architects different combinations of plastic materials and steel, and of concrete and steel, with the steel in the form of isolated ribs acting entirely in tension; combinations where single rods are imbedded in the tension side of the concrete, and acts also under transverse stress. Each of these methods claims to possess certain advantages. The expanded-metal system belongs to the latter class, in which the expanded-metal acts entirely in tension and is distributed through the tension side of the slab or beam. The metal should be placed as far as possible from the neutral axis, where its moment-of-resistance is greatest, and at the same time be thoroughly imbedded in the concrete. In order to develop the full strength of steel it is also necessary that it should be held in place by some means possessing greater strength than the cohesion between the steel and the concrete.

Expanded-metal is made from sheet-steel cut with the grain, and expanded into diamond-shaped meshes, greatly increasing the original size of the sheet without any waste of material. Expanded-metal lathing is made from the lighter gauges of steel, Nos. 27 and 24, and is expanded only about three times the size of the sheet of steel. This lathing, besides being substituted for wooden laths, is used in the construction of fireproof partitions and outside walls. It is, also, almost exclusively used for the framing of cornice and ornamental plaster-work. The metal generally used in floors is No. 10 or No. 4 gauge, the short diameter of the diamond-mesh being 3 and 6 inches respectively, making the finished product from eight to twelve times wider than the sheet of steel. This gives for each foot in width a sectional area of .168 square inch for the 3-inch mesh, No. 10 gauge, and .282 square inch for the 6-inch mesh, No. 4 gauge metal.

For fireproof floors cinder-concrete is largely used, on account of its lightness and its great resistance to fire. Tests show that it is superior to either stone-concrete, tile or brickwork laid in Portland-cement mortar. It weighs 100 pounds per cubic foot, and has an average

crushing-strength of 1,200 pounds per square inch, mixed in the proportion of 1 part cement, 2 parts sand and 5 parts cinders. Where we require greater strength Portland-cement stone-concrete is used with heavy expanded-metal. For this construction tight wood centring is put up between floor-beams so that the concrete can be properly tamped, and the expanded-metal is placed directly on the centres. The shape of the metal is such that it touches the centring at only one point in each mesh, which allows space for the concrete to be worked in and around the meshes, thoroughly imbedding the metal. In joining one sheet of metal with another it is

necessary only to lap the sheets from 6 to 12 inches, and the concrete will bond them together so securely that the metal will break before they can be pulled apart. The shape of expanded-metal is such that it cannot slip or be pulled through the concrete. Concrete and metal have to work together; no sudden shock or continued vibrations can break their bonds. A great advantage in expanded-metal is that it gives tensile strength not only lengthwise, but also transversely. It forms a blanket system, distributing the load in all directions, the whole acting as a monolithic structure.

When steel is properly imbedded in Portland-cement concrete or plaster, we may feel sure that it will not rust. The expansion and contraction of steel caused by changes in temperature is practically the same as that of concrete. Combined in one structure, steel and concrete act so well that the expanded-metal system has a wide field, and it is interesting to note the different designs where expanded-metal can be used with a saving of material.

The walls of wooden and steel frame buildings are built of 2 inches of Portland-cement and expanded-metal lath. Large tanks and cisterns have been built with expanded-metal and concrete. Sidewalks, floors and highway bridges, foundations in quicksand, conduits and sewers, coverings for reservoirs, flat arches and many other designs can be successfully built with this construction, and money saved by so doing.

The question arises, How much does expanded-metal increase the strength of a concrete structure? Where crushing-strength only is required expanded-metal does not add materially to the strength of the concrete, but in any structure that is subject partly to tensile strain expanded-metal may be used with great advantage to develop the full compressive-strength of the concrete. Load a concrete beam, for example. It gives way when the ultimate tensile-strength is reached, which is possibly one-eighth of the compressive-strength of the same material. If by

the introduction of a light rod or sheet of expanded-metal we can make the beam stand until the ultimate crushing-strength is reached, we have increased the strength of the beam at least eight times.

I will give the results of a few tests of the expanded-metal system, that will prove all we can say for the strength of the combination. In most of these tests on flat-floor slabs, tabulated below, the spans

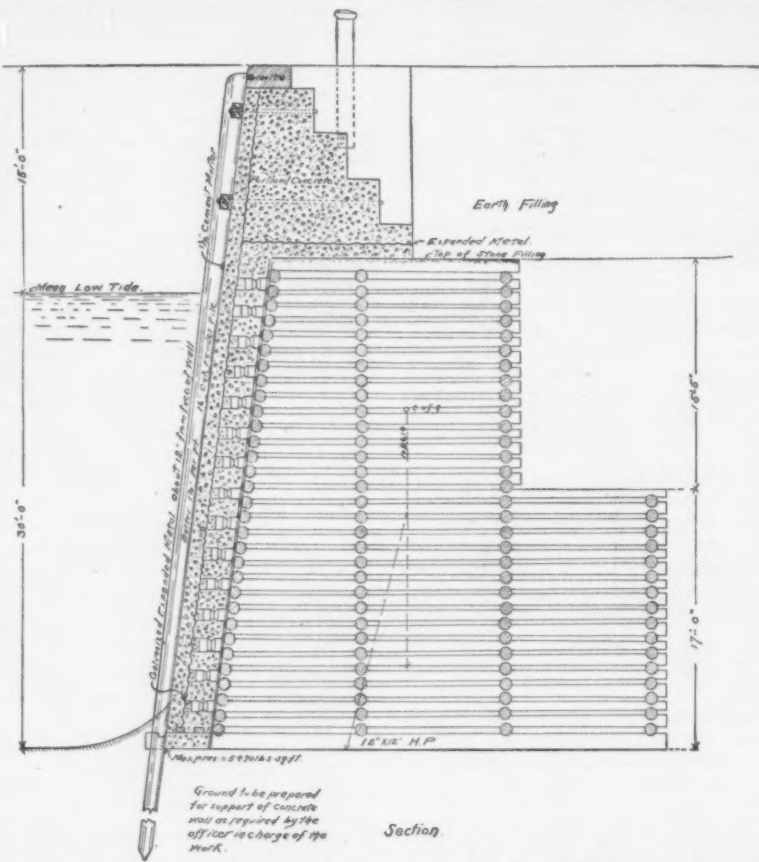


Fig. 1. Retaining Wall at the New Dock for the Joint Use of the F. R. R. Co. and the United States Navy Yard, Boston, Mass., Showing the Use of Concrete and Expanded Metal.

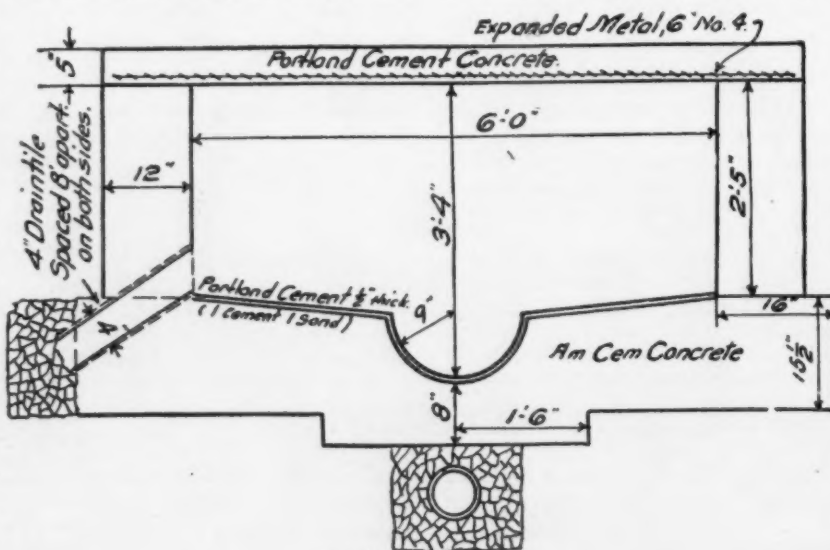


Fig. 2. Covered Waterway.

¹ A paper by William M. Bailey, Member Boston Society of Civil Engineers, presented at the meeting of the Society, held October 17, 1900, and published in the *Journal of the Association of Engineering Societies*.

are short, but it is only a question of greater thickness of concrete and heavier metal for equal strength on longer spans; and formulas are now in use by which we design the composite structure with the same confidence that we have in designing wooden or steel structures.

TESTS OF CONCRETE AND EXPANDED-METAL FLOORS. FLAT SLABS, SUPPORTED ON I-BEAMS.

No. of Test.	Span.	Thickness.	Mixture of Concrete.		Days Old.	Equiv. Dist. per Sq. Ft.	Deflection.	Size of Metal.	Remarks.
			C. Sand. Cinders.						
1	4' 1½"	3"	1	2	5	30	2,333	3" Mesh. No. 10 Gauge.	Cement used in all these tests was American Portland.
2	4' 1½"	3"	1	2	5	31	2,354	"	Test made on same slab as above.
3	5' 2"	3½"	1	3	6	30	775	1-16"	
4	4' 0"	3½"	1	2½	5	30	1,750	None.	
5	6' 0"	3½"	1	2	5	30	1,100	¼"	"
			Rock.						
6	6' 0"	4"	1	2	6	28	850	1-16"	"
7	5' 4"	4"	1	3	6	30	914	5-16"	"
8	5' 4"	6"	1	3	6	30	914	None.	"
9	11' 0"	6"	1	2	5	30	360	9-64"	2 Sheets. 3" No. 10.
10	4' 0"	2½"				30	26	Broke.	No Metal.
11	4' 0"	2½"				30	256	Broke.	3" Mesh. No. 10 Gauge.

DESCRIPTION OF TESTS.

Test No. 1.—The slab tested was a panel selected from floors built in an eight-story building. The mixture of the concrete was 1 part Alpha-cement, 2 parts sand and 5 parts cinders, and when tested was thirty days old. In section it was like Figure 8. The I-beams supporting the slab were 4 feet 1½ inches on centres; thickness of concrete 3 inches, with one sheet 3-inch mesh, No. 10 gauge, expanded-metal imbedded in the lower part. The testing began by loading a platform 4' x 12' with pig-iron. No deflection was perceptible until 13 tons had been put on, when there was a deflection of $\frac{1}{32}$ inch. It then increased under the loading as follows:—

Tons.	Deflection.
17 $\frac{1}{2}$	$\frac{3}{32}$ inch.
20	$\frac{1}{8}$ "
25	$\frac{3}{16}$ "
30	$\frac{1}{2}$ "
35	$\frac{5}{16}$ "
44 $\frac{1}{2}$	$\frac{3}{8}$ "
48	$\frac{9}{16}$ "
58 $\frac{1}{8}$	$\frac{1}{2}$ "

After twenty-four hours the load was removed and the floor returned to its original position, which shows considerable elasticity of the combination.

Test No. 2. — This test was made the following day on the same slab as Test No. 1 by loading a plank 12 inches wide, 9 feet 6 inches long, placed lengthwise in the middle of the bay. A total load of 23 tons was applied, with a deflection of $\frac{5}{8}$ inch. The slab gradually settled down and broke, resting

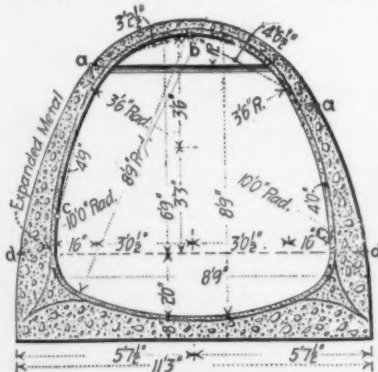


Fig. 3.

Section of Proposed Conduit for New Jersey Water Co.

on a false floor which had been placed 3 inches below. A final test on this slab was made by dropping a weight of 185 pounds (18 inches square on the end) 11 feet upon the broken slab, after the false floor had been removed, without apparently doing further damage. This

floor was designed to carry a breaking-load of 1,600 pounds per square foot, and the tests showed over 40 per cent increase of strength.

All of the tests tabulated, excepting Nos. 10 and 11, were made upon sections of floors selected by the architect or engineer from

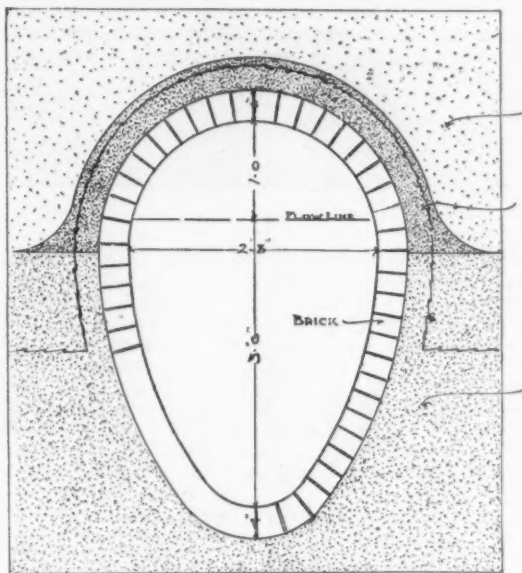
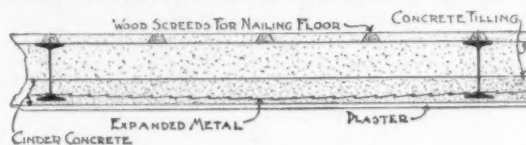


Fig. 4. Expanded Metal as Used to Reinforce Arch of Sewer.

buildings under construction, and, therefore, give a fair and practical idea of the strength of expanded-metal and concrete flat-slab coverings for floors, roofs, etc.

Without giving more details than are shown by the tables for tests similar to No. 1, we will compare Nos. 10 and 11. In both these slabs the concrete came from the same "batch" or mixture,



№ 8 SYSTEM

Fig. 6.

and both were allowed to set under like conditions; so, without doubt, the average crushing-strength of each per square inch was the same. In No. 10 the slab was composed of concrete alone, and broke under a uniformly distributed load of 26 pounds per foot. In No. 11 the concrete slab of same thickness as No. 10 contained one sheet of 3-inch mesh, No. 10 gauge, expanded-metal imbedded in the lower or tension side of the beam, and broke under a uniformly distributed

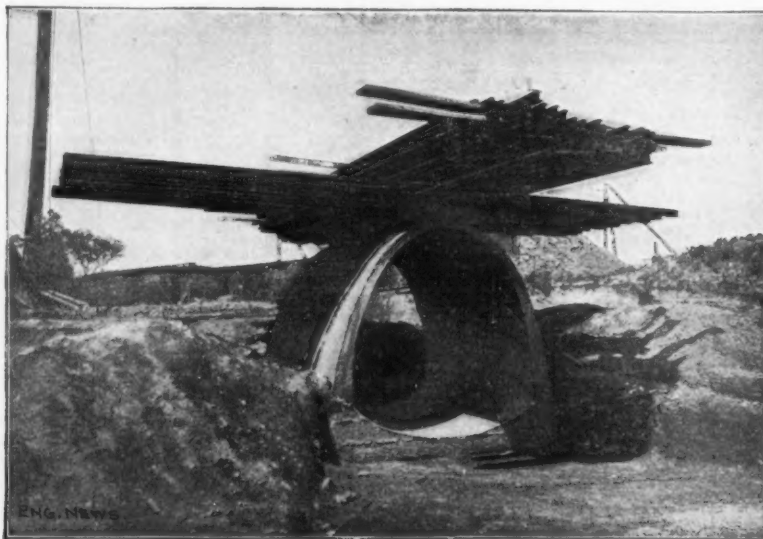


Fig 5. Load Section of Culvert.

load of 256 pounds per square foot. This shows that the metal increased the strength of the concrete beam about ten times.

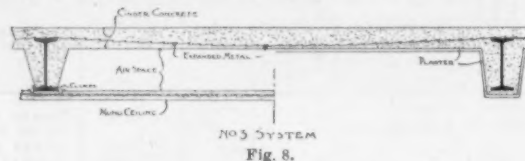
In Figure 3 we have a cross-section of a concrete and expanded-metal conduit built by the New York Expanded-metal Company as

an experimental section for the Jersey City Water-supply Company from design of Mr. R. Godfrey, Civil Engineer. The concrete below the springing of the arch was composed of 1 part Nazareth-cement, 2 parts fine stone-screenings and sharp sand and 4 parts of crushed-stone; the portion above the spring-line was composed of 1



part cement, $2\frac{1}{2}$ parts screenings and sand and 5 parts crushed-stone. When the concrete was seven days old the centring was removed, and at the age of twenty-one days the concrete structure was tested. Figure 5 is from a photograph of the loaded 12-foot section. Twenty-five tons of steel rails were placed upon three wooden saddles fitted on the crown of the girder 6 feet apart. Slight cracks were developed at points marked *a, b, c* in Figure 3. About one ton of steel-rails was afterwards twice dropped 11 feet upon the loaded section, and the cracks were slightly widened, which, with a total deflection of $\frac{7}{16}$ inch, was the only change in the structure. The results from the above test were so favorable that the writer has since built a similar

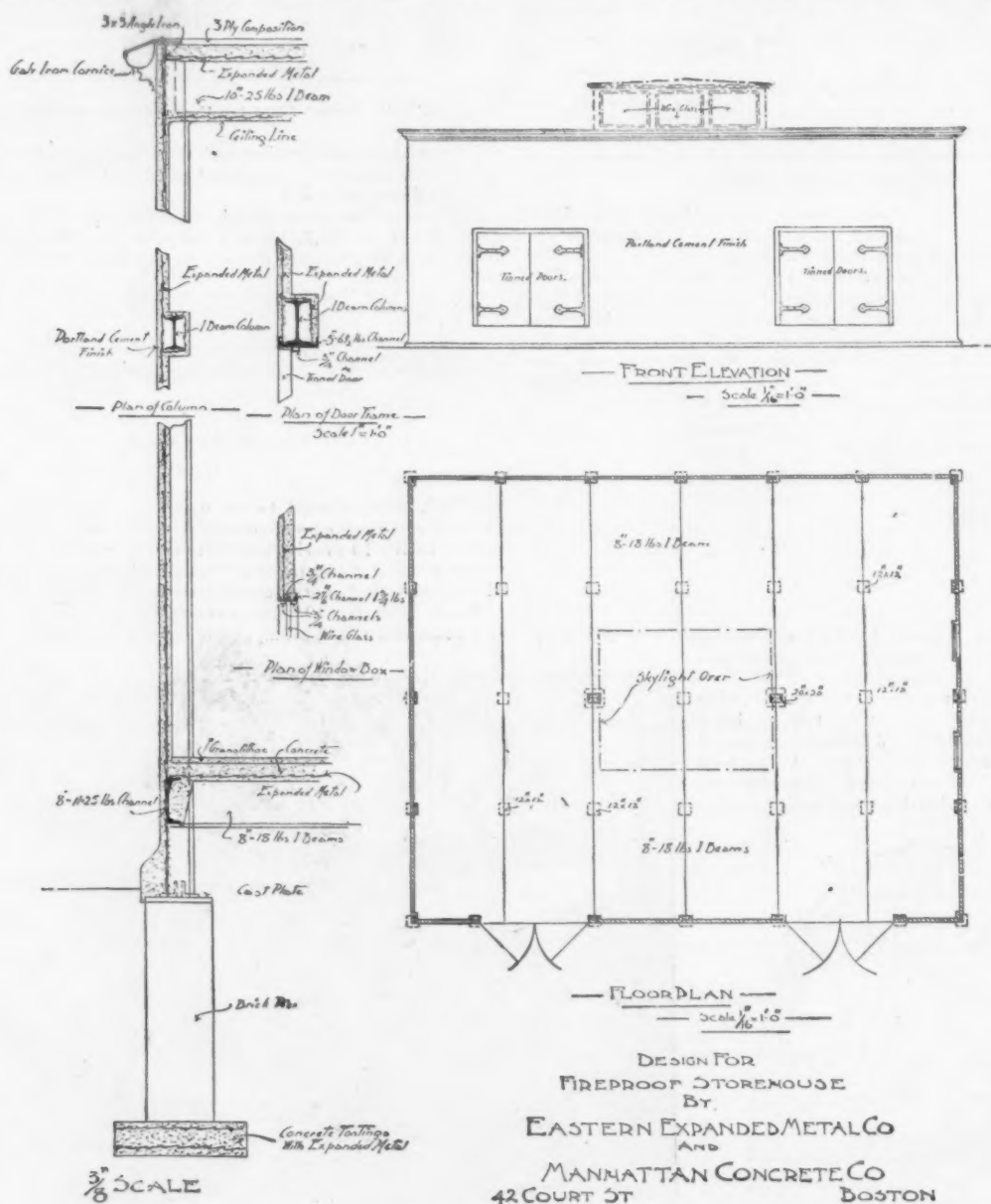
metal. The flume-deck, carrying a weight of 20 feet of water and the floor of the generator-house above are concrete and expanded-metal flat-slabs supported on I-beams, similar to our No. 3 system, shown in Figure 8. The tail-race is to be built part of the distance in a trench 22 feet deep, with the following dimensions: span 15 feet, rise 18 inches, concrete 6 inches thick at the crown and increasing to 8 inches thick at springing. One sheet of expanded-



metal, 3-inch mesh, No. 10 gauge, is imbedded in the concrete to give the tensile-strength where required.

Mill-engineers are becoming interested in the possibilities of concrete and expanded-metal construction, as it may be applied to their work. One of the large pulp-mills in Maine has recently accepted our designs for concrete and expanded-metal bleaching-chests. They are circular, about 14 feet in diameter and 20 feet high; the walls at the bottom 6 inches thick, with enough expanded-metal imbedded in the concrete-shell to give it the necessary strength when filled to the top with water.

Entire buildings are now made of cement and concrete on wooden



conduit for the Massachusetts Chemical Company, at Walpole, Mass. A wheel-pit 33 feet deep and 15 feet in diameter, with an 8-foot diameter inlet and an arched tail-race 15 feet in diameter, are now under construction for the same company. The walls of the wheel-pit are 18 inches thick at the bottom, and reinforced with expanded-

or steel frames, and are practically fireproof. Many owners carry no insurance, and when insurance is carried the difference in rates warrants the extra expense of concrete construction over wood.

In Figure 9 are sections of outside walls, partitions, etc., as built with expanded-metal and Portland-cement.

A reservoir has lately been covered over with a flat-slab or blanket of concrete and expanded-metal, and was supported only by piers about 12 feet on centres each way. This made a simple and easily-constructed covering only 7 inches thick, which did not require such expensive centring as is necessary with the groined arches.

There is a growing demand for concrete structures, and I have tried to show by these few tests and remarks that expanded-metal of

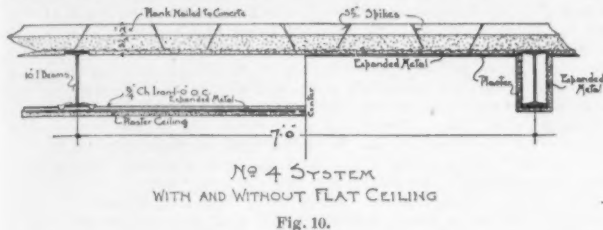


Fig. 10.

the right shape and strength, properly used with concrete or plaster, will give a maximum strength with a minimum amount of material, and is applicable to many cases where concrete alone could not be used.

[To be continued.]

BOOKS & PAPERS

LONGMANS & CO., 39 Paternoster Row, London, E. C., are publishing William Morris's lectures¹ in a series of small volumes, printed with the type designed by Morris for the Kelmscott Press, and simply bound, at two shillings and sixpence each, the price in America being one dollar. Although we must confess that William Morris's essays do not inspire us with admiration for either his learning, his good feeling or his common-sense, there is generally in them, as in those of his prototype, Ruskin, something interesting, and often something with which the reader will heartily agree; so that the time spent in reading them is not lost intellectually, and the artistic interest of the beautiful type with which this edition is printed is sufficient to redeem a text of much less value.

The volume before us contains two papers, one on Architecture and History, and the other on Westminster Abbey, both read before the Society for the Protection of Ancient Buildings, and both of special interest to architects.

Like Ruskin, Morris cultivated an air of regarding everybody else as a fool, which imposed upon the general public, but was not well calculated to impress professional men; and the architects who read this essay, in which several pages of eloquence, including allusions to Mr. Ruskin, St. Louis, Pallas and Zeus, King Edward I., Theodoric the Goth and Alfred the Great, are devoted to extolling "the beauty of the weathered and time-worn surface" of an ancient building, and ridiculing the "restorers" who meddle with such surfaces, will wonder whether Mr. Morris really expected his hearers to believe, for example, that the "untouched surface" of St. Paul's, which, with its patches of white and crumbling stone, contrasted with the blackness of the surrounding wall, reminds one more of a mangy dog than anything else, "bears witness to the development of man's ideas, to the continuity of history, and, so doing, affords never-ceasing instruction, nay education, to the passing generations, not only telling us what were the aspirations of men passed away, but also what we may hope for in the time to come." Stripped of the sentimentalism and history, Mr. Morris, no doubt, means to say that the original surface of an ancient building, where it is in good condition, is more interesting than a scraped and restored surface; and here most architects would agree with him, not because they see any indication of "what we may hope for in the time to come" in the surface of an old wall, but because the workmanship, for instance, of the fourteenth-century stone-cutters and masons was superior to anything obtainable at the present day, and is as characteristic of the period as the ruder stone-cutting, but beautiful carving, is of the preceding century.

Mr. Morris, like his great original, Mr. Ruskin, diverges from his argument occasionally to administer a thrust at people against whom he has a real or affected grudge. He informs us, for example, that "the art of lying has always been sedulously cultivated by the world, and especially by that part of it which lives on the labor of others." Considering that the part of the world which lives on the labor of others is mainly composed of children, who live on the labor of their parents; of widows and orphans, who are supported by the income of the invested savings of their dead husbands and fathers, and of the inmates of charitable institutions, who are maintained by the income from funds earned by the labor of good men now deceased, it is, to say the least, rather hasty to speak of these classes as being "particularly sedulous" in the cultivation of the art of lying; and the reference, the meaning of which we regret not being able to grasp fully, to "the narrowness, the vulgarity of mind, which deals with our ancient monuments as if Art had no past, and is to have no future," seems to be aimed at another class of persons who are probably quite innocent of bad intentions.

¹ "The Lectures of William Morris." Longmans & Co., London.

Mr. Morris's theories in regard to the mediæval guilds are well known, and repetition, especially in connection with exaggerated attacks on "vulgarity of mind," and the skill in lying of "those who live on the labor of others," does not add to their attractiveness; but they have so long been incorporated into the current socialistic cant that it is interesting to be reminded again of their origin. Multitudes of these phrases about the "tendency" of the "commercial or competitive" modern society toward "the destruction of the pleasure of life"; the "barbarism" of the present day in comparison with the "order" of the past, and the "slaves of machines" fill the pages of these essays, but in the midst of them are thoughts of real value, to the profession as well as to the world at large.

It is always a pleasure to read a practical work on any art, written by a person who thoroughly understands, from personal experience, the art of which he writes; and it is a long time since we have seen a book so satisfactory in its treatment of the important branch of the art of building of which it treats as this little volume,² by a practical mechanic, who has studied his profession thoroughly, and gives us, from his own knowledge and experience, a great deal of information which will be valuable to every one concerned in building. It would, of course, be easy to make a few criticisms, and where Mr. Maginnis goes off into chemistry, as, for example, when he tells us that the slaking of lime consists in the expulsion, by the water used in slaking, of the carbonic-acid remaining in the lime, he is not quite happy, but these excursions into science are rare, and the main part of the book, which consists of the results of personal observation of a great variety of brick-construction, by a skilled and intelligent man, cannot be too highly praised.

One thing which will please architects is Mr. Maginnis's unqualified condemnation of the practice of making "pigeon-hole" corners where two walls meet at an angle either greater or less than a right angle. Such corners are beloved of builders, who consider it a waste of money to have bricks moulded or cut to the angle required; but Mr. Maginnis agrees entirely with the general opinion of architects, that such work "is not good bricklaying," for the reason that the pigeon-holes afford opportunities "for accumulation of water, snow, ice, and, frequently, nests of birds, and the result is that the brick-work rapidly deteriorates." Another common practice of builders, which architects generally disapprove, is that of laying-up walls which meet at any angle separately, trusting to be able to bond them together by "toothings," or "pockets," reinforced by iron anchors; and it is a satisfaction to find that Mr. Maginnis shares the opinion of the architects in regard to it. "Though not defective, it is, nevertheless, not good brickwork," he says, and his judgment is of great value.

We have not space to quote further from the interesting and useful observations upon bonding for walls of various thicknesses; upon the proper laying of free-brick, moulded brick and arch-blocks; upon shoring, corbelling and foundations, anchors and centres, and a multitude of other details of construction; but the reader can find them all in the book itself, and architects, with their assistants and superintendents, as well as students and laymen who wish to understand something of the most important branch of building-work, cannot do better than provide themselves with it, not only for present reading, but for reference in future cases of need.

ILLUSTRATIONS

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

EXTERIOR DETAIL: CLUB-HOUSE OF THE NEW YORK YACHT CLUB, 44TH ST., NEW YORK, N. Y. MESSRS. WARREN & WETMORE, ARCHITECTS, NEW YORK, N. Y.

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² "Bricklaying." By Owen B. Maginnis. Published by the Author, 310 West 128th St., New York.

[Additional illustrations in the International Edition.]

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CATHEDRAL OF S. FLORIDO, CITTA DI CASTELLO, ITALY [1480-1540]. ELIA DI BARTOLOMEO LOMBARDO, ARCHITECT.



IRON AND STEEL RIDDLES.—In view of our apparently extensive knowledge of the nature of iron and steel, it may seem strange to still speak about riddles wrought in these metals. Nevertheless, in everyday practice, we are constantly confronted by riddles of one kind or another, when dealing with iron or steel, particularly the latter. Why is it that we can raise the strength of soft stay-bolt iron of, say, 47,000 pounds per square inch, to 60,000 pounds per square inch either by heat treatment, or by repeated application of stress? Why is steel coming from the rolls or hammer weaker and less ductile than the same steel is after left lying a day or two, or, better still, a week? There is no doubt that many tons of suitable material have been either thrown out by the mill-people themselves or were rejected by the Inspectors because it failed to meet specifications, causing needless vexation and friction, simply because neither the one nor the other of the parties knew that steel is in a disturbed physical state after rolling or hammering, no matter how good the material, and should be left to rest, the longer the better. Now, what takes place in the steel during the period of rest? Another riddle is that we can raise the elastic limit and ultimate strength by a successive application of stresses very much above the original strength. What law, if it is law, governs this phenomenon? Personally, the author is convinced that many errors of design or inherent weakness of the steel have been modified in their probable consequences, and breakdowns averted, by this peculiar property of steel to gain in strength if allowed to rest after having been subject to stresses within certain limits. It was the knowledge of this fact which enabled the author to fight for steel and defend steel for structural purposes at a time when that metal was not yet a favorite with the engineer by any means. We are all familiar with the discovery of cast-iron getting stronger by tumbling in a tumbling-barrel, but, for all we know, it is still an unsolved riddle what the conditions really are producing such effects. — *Cassier's Magazine*.

ROUEN'S OVERHEAD FERRY.—Just now, when so much is being said of bridges and tunnels between Manhattan and Brooklyn, it is interesting to note how the city of Rouen, in France, has solved, for itself at least, the problem of trans-river communication. The city lies on the Seine, but a short distance from the sea, and many of the conditions there are similar to those prevailing in the North and East Rivers here. In the first place, the Seine is very busy with shipping, and the chief aim of the engineers was to build a bridge that would least interfere with navigation. A draw was considered impracticable because of the delay that would follow its frequent opening and shutting, and a bridge, 150 feet above water, so as to clear all shipping, was held to be too costly on account of the approaches. So the engineers planned an overhead ferry, or, as they call it, a *pont transbordeur*, which is described in a report just made by the American Vice-Consul at Rouen. The structure is of especial interest as being the first of its kind, though the principle has been used before in some very small bridges. The essential part of the system may be described as a horizontal railway supported by a bridge spanning the channel and built up at such a height as will allow the tallest-masted vessels frequenting the channel to pass beneath. The platform of the bridge carries the lines of rails over which a carriage on small wheels rolls, the number of wheels varying with the weight to be carried. The rollers are connected with a movable frame under the line of rails, which may freely move in a longitudinal direction quite close to the platform and from one end to the other of same. In order to make this vehicle of practical use, iron rods or cables are attached to the frame above mentioned, the object of these being to carry a platform or carrier from shore to shore, hanging at the same level as that of the quays on each bank, but in any case above high water and the reach of waves. There is thus a little railway for crossing the river, with this difference, that the body of the vehicle, instead of being above the rails and wheels as usual, is some 140 or 160 feet below these. It possesses, nevertheless, the speed and regularity of motion which can be obtained on any straight and horizontal railway line, with the advantage that, thanks to its long suspension, this new kind of wagon enjoys a smoother motion than the best railway-coaches. Any kind of motive-power may be used to move the car, cable driven by steam, compressed-air, gas, or, better still, electricity. But in the last case the dynamo, instead of being erected on shore, as the steam-engine, is preferably placed on the movable frame, which it carries along with itself by means of a pinion working into the teeth of a rack fixed to the bridge. — *N. Y. Evening Post*.

THE ISLE OF DOGS, LONDON.—Perhaps the most out-of-the-way, and it certainly is one of the smallest, of London's many "lungs" is the tiny park situated at the southern extremity of the Isle of Dogs. For more than three years has it been open to the public, yet how many, or how few, rather, are aware of its existence! Nor is this surprising, for the "island" itself has always been more or less of a *terra incognita* to metropolitans. Even the origin of the uninviting title is involved in obscurity, some authorities declaring it to be a corruption of "Isle of Ducks," while others assert that it was first so called owing to the fact of the royal kennels being situated there in Charles II's time. For centuries prior to that it was a dismal swamp, uninhabited and uninhabitable, save and except for roving bands of river pirates, who found within its noisome recesses a safe and secure abiding-place. Pepy alludes to it as "that unlucky Isle of Doggs." And "unlucky" it has remained ever since. Over and over again the turbid waters of the Thames have devastated it. In 1670 a flood carried away "all the inhabitations" on the island, and in 1795 there was but "one house in the whole marsh." In 1800 it was described as "one of the best imitations of the Great Dismal Swamp to be found in England." Broad ditches filled with black, stinking mud and malodorous water intersected it in every direction; and a large proportion of its inhabitants, at all events, were criminals who had fled from justice. Five of these were taken in one day and hanged in chains on the foreshore of the Thames; and from Greenwich Hospital opposite, sober citizens in broadcloth and gallants in silk and velvet, aye, and dainty dames in frills and furbelows, foregathered to gaze, through telescopes lent by the aged pensioners at a penny a head, at the ghastly, grisly, swaying things. To-day the island exists as a sort of back-water in the stream of London life. Away to the northward, through the great main artery of the East India Dock-road, throbs eternally the turmoil of the town. But its reaction upon the everlasting placidity of the island-peninsula to the south of it is of the slightest. The Isle of Dogs is, in fact, a forgotten, not to say neglected, corner of London. No buses run to or through it. Its streets are unseamed by tramways. There is not a single cab-stand in the place. Only, at intervals of fifteen minutes, a perky, puffing little engine drags a miniature train of baby-carriages from the Greenwich ferry to Millwall Junction. Other communication with the outside world there is none. Nevertheless, as has been said, it has its park, with trim parterres, asphalt walks and a real octagonal band-stand of the latest and most approved pattern, from whence a real live County-Council band discourses sweet music every Sunday evening throughout the summer. Curiously enough, the possession by the inhabitants of this boon can be directly traced to the enterprise and foresight of Sir Christopher Wren. When the great architect selected the curving, baylike sweep of ground immediately opposite the island as a fitting sight for Greenwich Hospital, he made a stipulation that the ground on the other side of the river should not be built upon. "Otherwise," he urged, "the appearance of my work, viewed from the Middlesex bank of the Thames, will be entirely spoiled." "Very well," replied his royal patron, King William III, of happy memory, "it shall be as you desire." And forthwith a plot of three acres of ground, more or less, was acquired, and vested in the trustees of the hospital in question, the stipulation being that it should be preserved as an open space for all time. — *London Mail*.

THE TRIBULATIONS OF THE NUDE IN ART.—The French sculptor Mulot has been suing a contractor who removed two nude statues which were modelled for and placed on each side of the grand stairway in front of the Salle des Fêtes at the Exposition of 1900. The sculptor claimed \$2,000 damages. On his own part the contractor submitted that he only obeyed orders. The reason for their removal then appeared. The order was given by a Minister whose wife thought the statues indecent. The Court has now decided that the sculptor has no redress and must pay the costs of the suit. In other words, the Minister of Commerce and M. Picard were autocrats and the contractor had but to obey, while the sculptor had only to submit. Another case of the nude in statuary causing trouble occurred in Rome, but there it led to popular tumults, the tearing down of a board fence which the Clericals had erected, and much hissing and hooting of the "Neri" in the Municipal Council by the mob. The offenders were some water-nymphs on a fountain in the Piazza Termini. After violent speeches on both sides the Syndic of Rome was empowered to consult artists not connected with the municipality. How far this will go to settle the matter depends on the artists he consults. There are reactionary and prudish artists as well as those of another sort. — *N. Y. Times*.

CANOVA'S WASHINGTON.—Referring to the fact that, though injured, Valentine's marble statue of Jefferson was saved from the burning of the Hotel Jefferson, while Canova's marble statue of Washington was demolished when the North Carolina Capitol was burned, in Raleigh, the *Richmond Dispatch* gives this interesting bit of history: "It is recognized that the destruction of Canova's Washington involved the greatest loss in plastic art this country has ever sustained. It left the Houdon Washington, in the Capitol in this city, the only authentic marble of Washington, so to speak, in existence. The Houdon was modelled from life, and, if we mistake not, the 'portraiture,' or head, of the Canova was modelled from the Ceracchi bust, which in turn had been taken from life. Chief Justice Marshall is quoted as saying that from one point-of-view in our Capitol rotunda, the Houdon was a speaking likeness of Washington, and Lafayette is said to have pronounced the Canova a triumph in portraiture, and to have stood in reverential admiration before it when he visited Raleigh." — *Raleigh (N. C.) News and Observer*.

A STATUE OF GEN. W. F. BARTLETT.—The Massachusetts Legislature has appropriated \$20,000 for the erection of a statue to the memory of Gen. William Francis Bartlett, a hero of the Civil War, who died in 1876. — *Exchange*.

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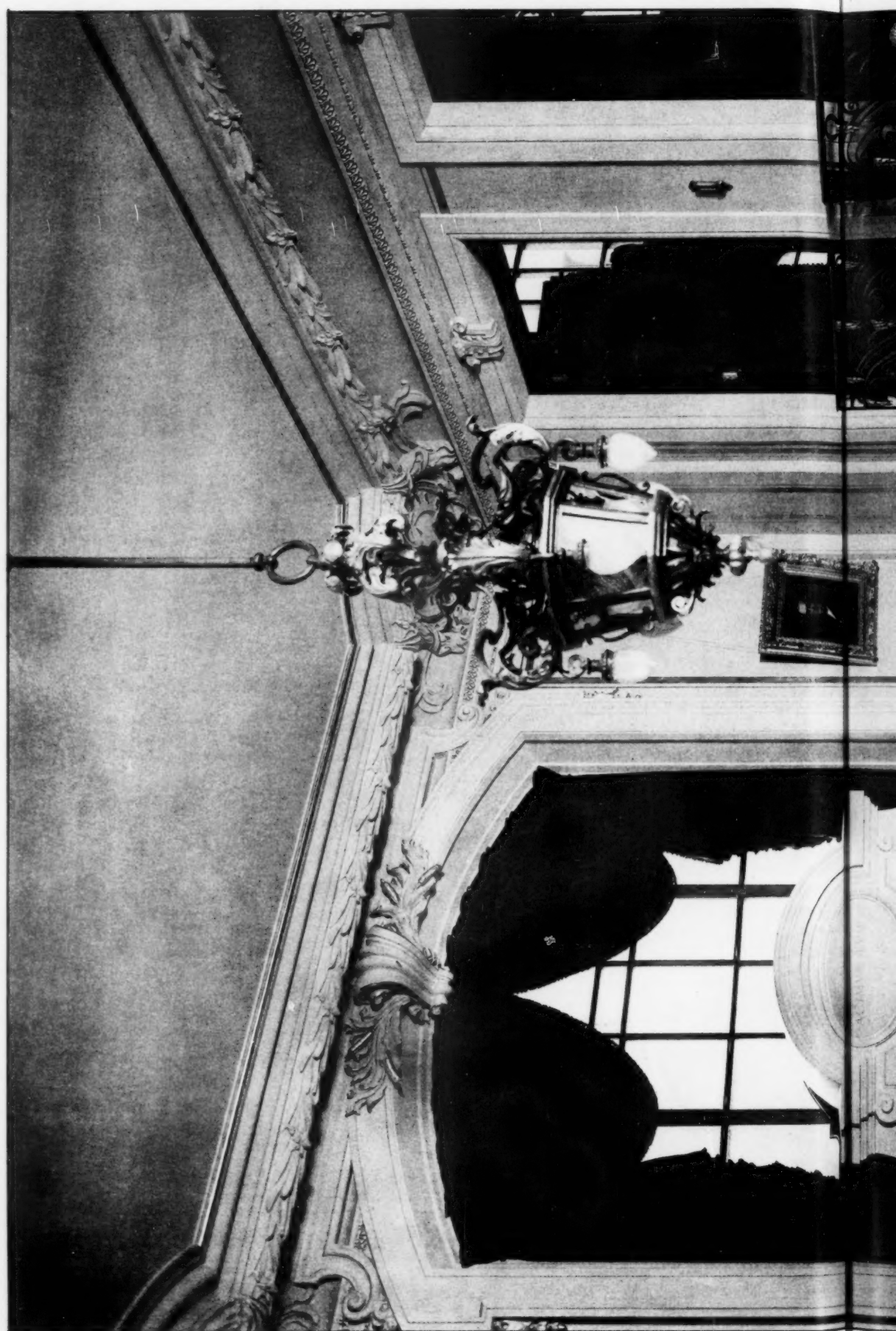
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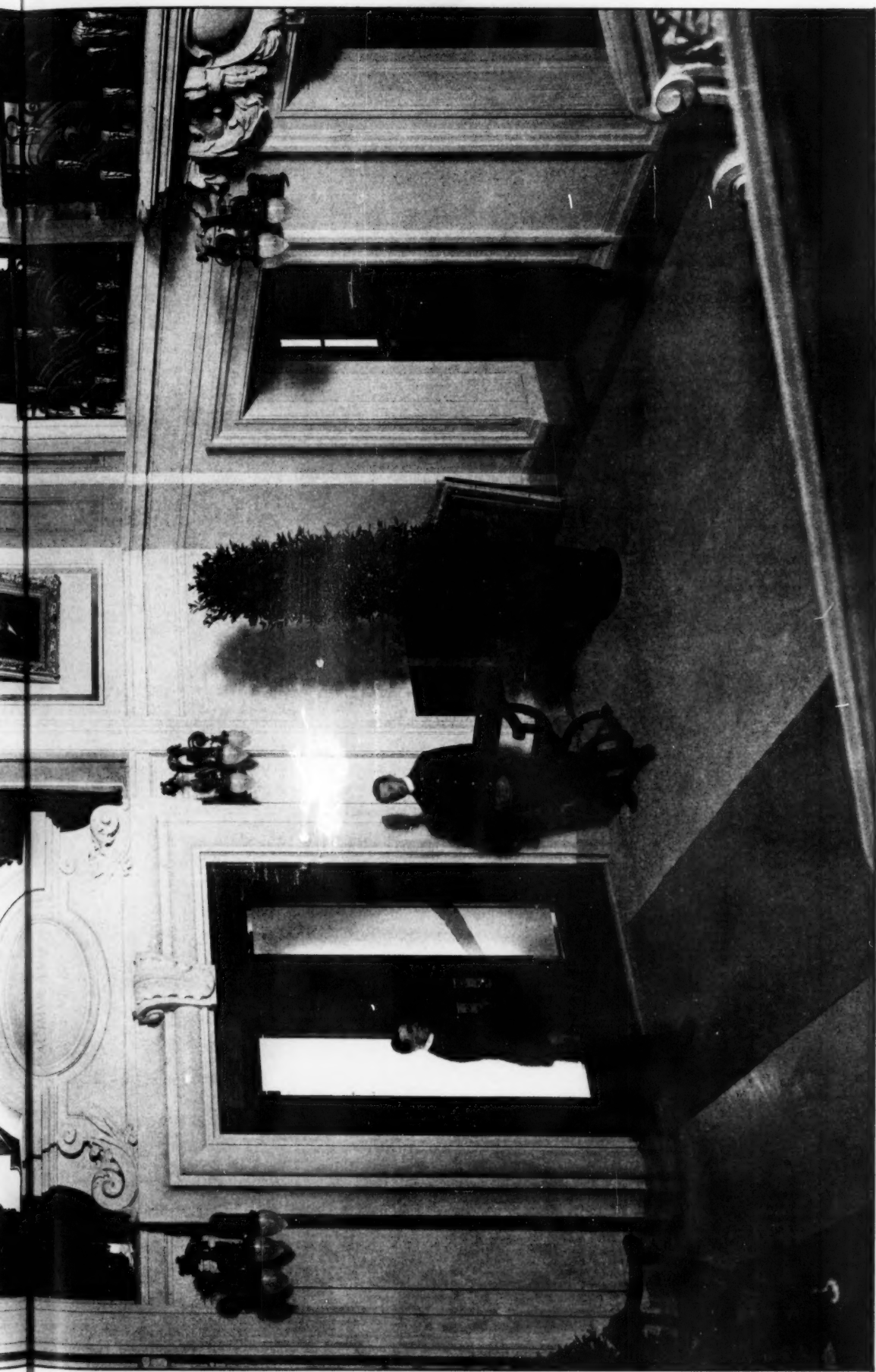


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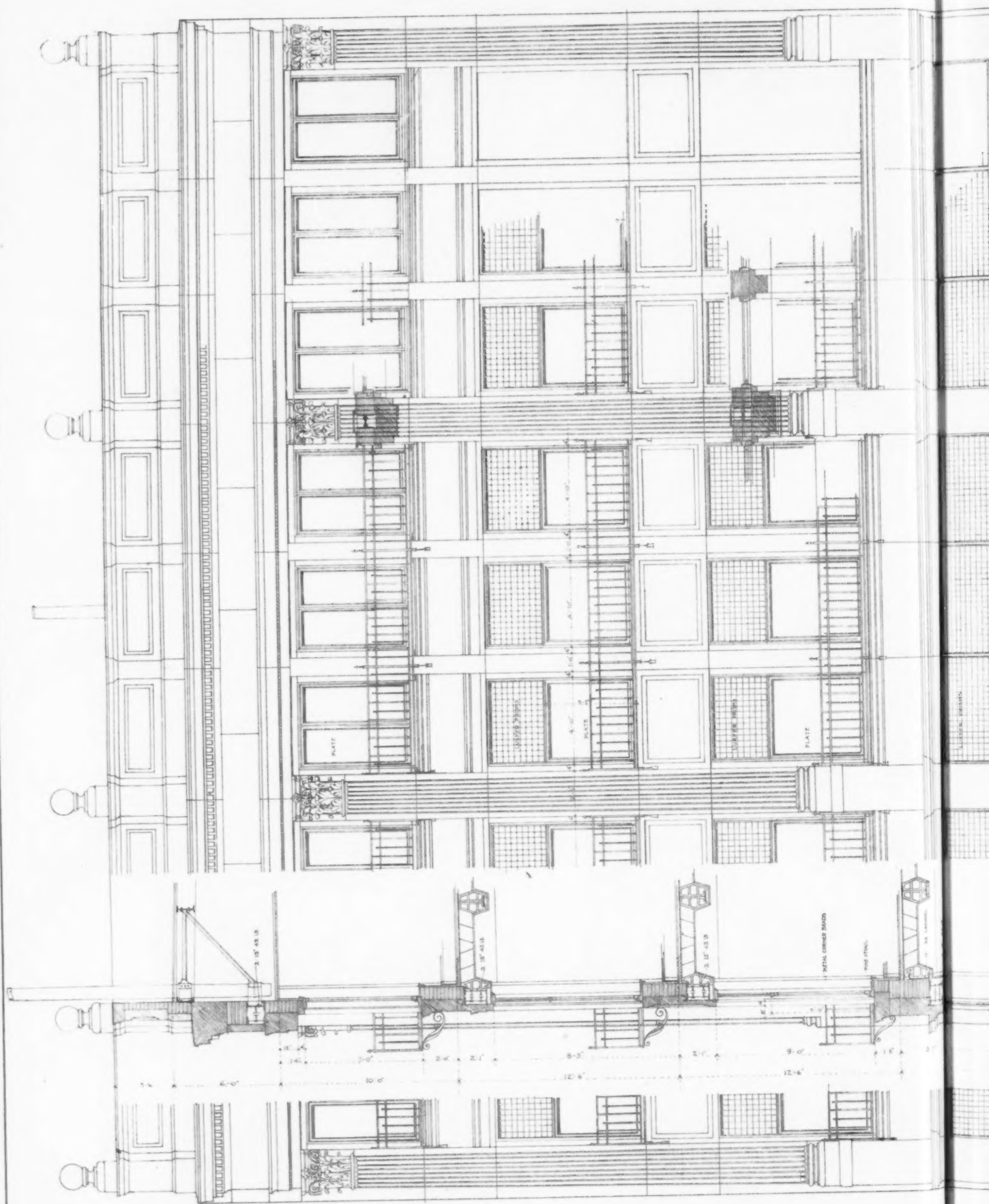


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A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

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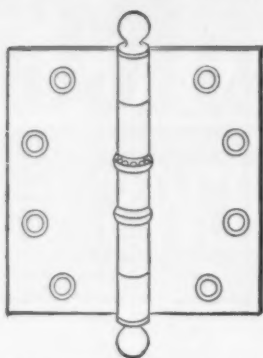
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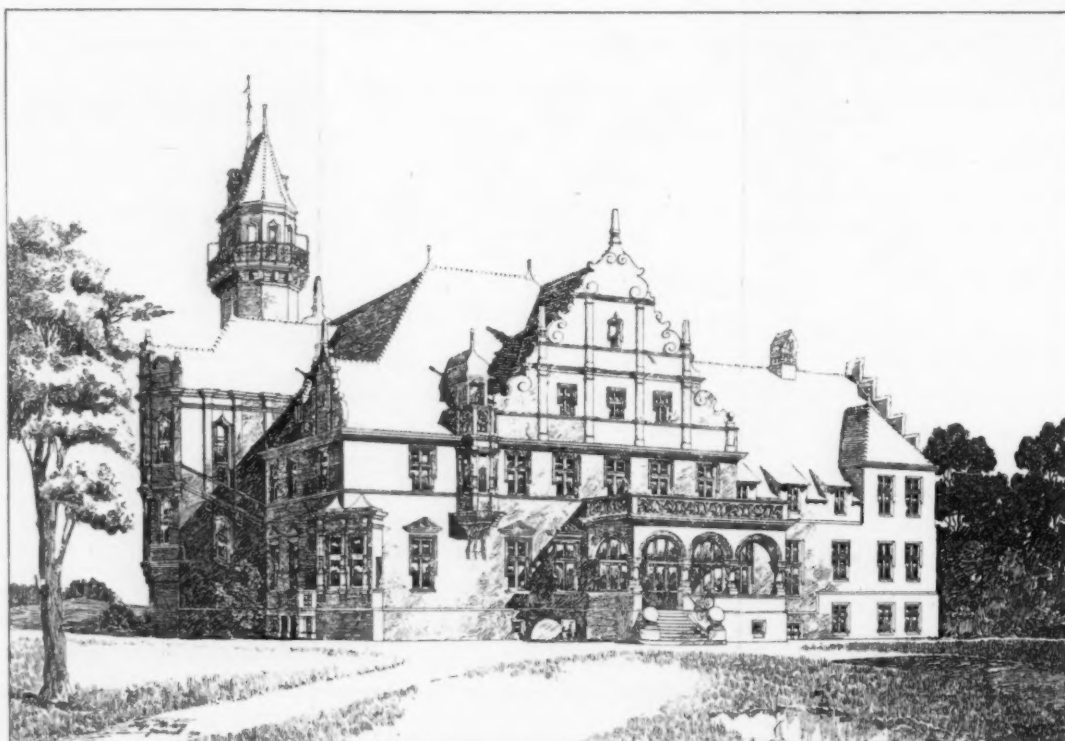
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City Hall, New York, N. Y.	Date 1803-12
Old State House, Boston, Mass.	" 1748
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Carpenters' Hall, Philadelphia, Pa.	" 1770
Independence Hall, Philadelphia, Pa.	" 1729
Faneuil Hall, Boston, Mass.	"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

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Fairbanks House, Dedham, Mass.	Date 1636
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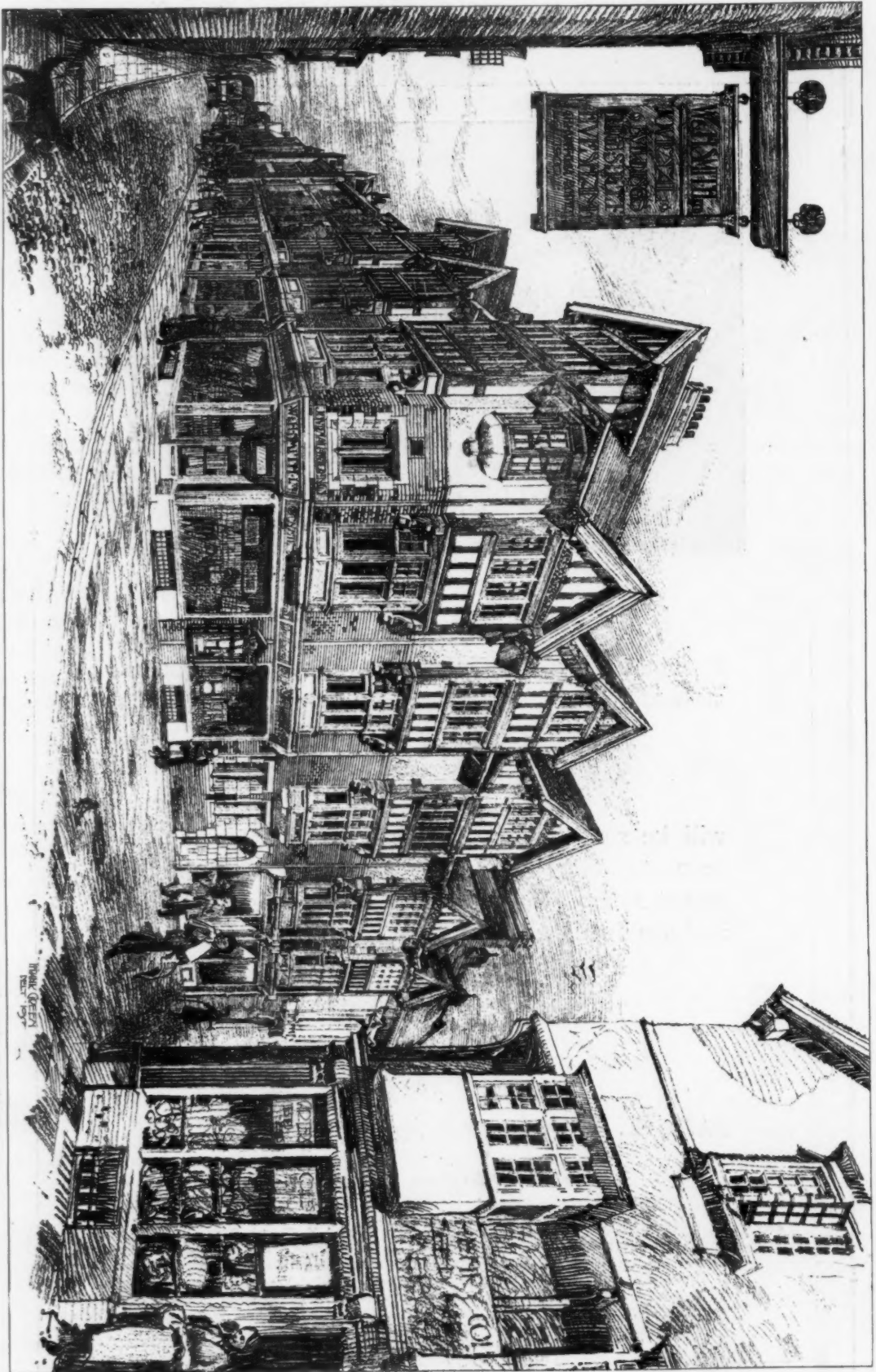
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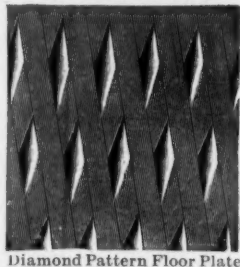
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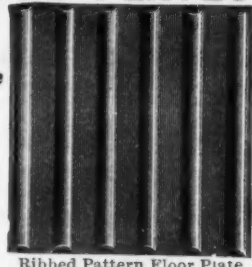
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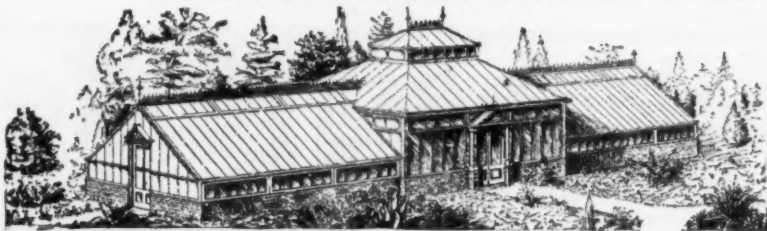
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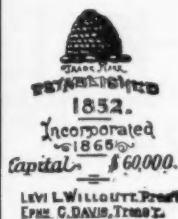
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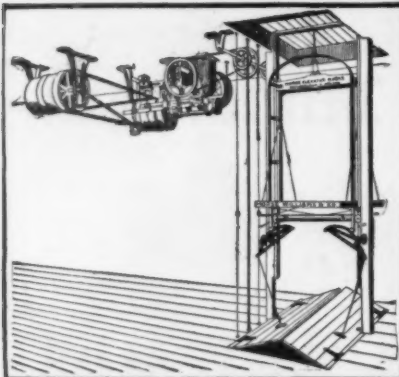
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ADVANCE RUMORS.

Asheville, N. C.—The Central Church congregation will erect a \$30,000 edifice.

Atlanta, Ga.—A new Episcopal Church is to be erected at the corner of W. Peachtree and North Ave. Mrs. Jane Peters donates a \$20,000 lot.

Beaufort, S. C.—It is reported that the Beaufort Board of Trade will erect a new hotel to cost \$100,000.

Brookline, Mass.—The sum of \$85,000 was voted at a recent town meeting for a new group of buildings at the contagious hospital.

At a recent town meeting \$100,000 was voted for a manual training high school.

Chicago, Ill.—At the annual banquet of the Allegheny College Alumni Association the following gifts were announced: For Ford Memorial Chapel, by Capt. Ford, of Pittsburgh, \$36,000; for a new library building, by a friend, \$40,000; for the endowment fund, by a friend, \$60,000; from other sources, \$40,000.

Chicopee Falls, Mass.—The site of the new engine-house has been decided upon and \$19,000 appropriated for the lot, building and equipment. It will be located on the Buxton lot, in the rear of the Methodist Church on East St.

Chillicothe, Mo.—The corner-stone was recently laid of the new church for the Southern Methodist Society; cost, \$15,000.

Cleveland, O.—The Euclid Ave. Congregational Church Society contemplate the erection of a stone chapel and making extensive alterations on the church at Euclid and Logan Aves., at a cost of about \$60,000.

Kansas City, Mo.—It is stated that the Parlin & Orendorff Implement Co. will improve and enlarge its factory, expending \$100,000.

Lexington, Ky.—A \$200,000 Administration Building will be erected for this city.

Lincoln, Ill.—Mr. James Milliken, a Decatur banker, offered to give \$50,000 to be added to the endowment of Lincoln University, providing the citizens of this city contributed \$25,000 for an additional building. The desired amount has been pledged, and work will proceed on the new building at once.

Montgomery, Ala.—It is said that the Presbyterian Synods of Alabama will erect a college here as soon as a site can be selected.

Newark, N. J.—It is announced that the architectural firms of Babb, Cook & Willard, Carrère & Hastings, Cass Gilbert, McKim, Mead & White, and George B. Post, have been invited to participate in a closed competition for the \$750,000 Essex County Court-house. Each firm will be paid \$1,000

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

for its plans. Prof. Warren P. Laird, of the University of Pennsylvania, will arrange the conditions of the competition. A large plant, to cost \$1,000,000, for the manufacture of insulated wire, is soon to be built in this city.

New York, N. Y.—The Council of the Scientific Alliance of New York announces an undertaking which promises to give the city her proper rank as a scientific centre. A building will doubtless be erected in the near future costing in the neighborhood of \$300,000, upon land to cost \$20,000, or more. Plans and elevations have been prepared by R. W. Gibson.

Norfolk, Va.—A new \$20,000 school-building is to be erected here.

Olympia, Wash.—The State of Washington will purchase the Thurston County court-house, for use as a temporary capitol. An addition, estimated to cost \$175,000, will at once be constructed. Designs are being prepared by W. A. Ritchie, Jameson Building, Spokane.

Omaha, Neb.—Count John A. Creighton has given to Creighton University \$75,000 with which to erect an addition to that institution. The new improvements will include an auditorium, a library room for 11,000 volumes, enlarged class-rooms, gymnasium and reading-rooms.

Oyster Bay, L. I., N. Y.—A movement is on foot to build a \$75,000 hotel here. Elliott Norton, Geo. Guy and George E. Carter, Jr. of New York, have subscribed \$15,000 of the stock and guaranteed to provide subscriptions for \$30,000 more.

Philadelphia, Pa.—Rankin & Kellogg, 10th and Walnut Sts., have prepared plans for a large clubhouse and auditorium to be built for the Ridley Park Country Club at Ridley Park. The cost will be about \$20,000.

Seattle, Wash.—The Electric Co.'s new power-station will soon be under way. The building will be of brick and stone, with steel frame, and when completed will represent an investment of nearly \$1,000,000.

Springfield, Ill.—The bid of the Tri-City Construction Co., of Davenport, Ia., has been accepted by the board of trustees of the Western Illinois Normal School for the construction of the school-building. The bid was \$157,850.

Stamford, Conn.—The Yale & Towne Mfg. Co. has plans for the erection of several large brick buildings in addition to its already great plant.

St. James, Mo.—The board of trustees of the State Federal Soldiers' Home are considering plans and specifications for new hospital and dormitory buildings.

St. Joseph, Mo.—Andrew Carnegie, John D. Rockefeller and the Arbuckles will aid the movement to erect a new United Presbyterian Church in this city.

St. Paul, Minn.—A sale of all the Yellowstone National Park property, valued at \$1,000,000, has been made by the Northern Pacific Railway Co. to the Yellowstone Park Transportation Co. The new owners will erect a handsome new hotel at the upper geyser.

Washington, Pa.—It is stated that representatives of the firm of W. Jessops & Sons, Ltd., of Sheffield, Eng., are looking for a site in the city for the establishment of a mammoth cutlery manufactory.

Watertown, N. Y.—Mrs. Emma Flower Taylor, of this city, daughter of the late Gov. Roswell P. Flower, has offered to give the city \$60,000 for a public library providing the city will contribute \$5,000 per annum to maintain the same.

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ASSISTANT.—Wanted, a first-class experienced and well recommended assistant to take charge of and to represent an architect's office in New York City. Must be a good and trained designer, especially familiar with the erection of large fireproof business buildings, must know all details of their construction, must be able to write specifications fluently and accurately, to attend to ordinary business intercourse or correspondence, and to supervise construction. State terms, education, experience and references. "A. X." care M. Carleton, Agent American Architect and Building News, 5 Beekman St., New York City. 1321

BUILDING INTELLIGENCE.**APARTMENT-HOUSES.**

Brooklyn, N. Y.—Willoughby Ave., nr. Tompkins Ave., 3 four-sty bk. flats, 26' x 68', steam heat; \$45,000; o. M. Schaffner, 808 Broadway; a. W. Debus, 808 Broadway.

New York, N. Y.—One Hundred and Fourteenth St., nr. 1st Ave., 2 six-sty bk. flats, 25' & 40' x 80' 3/4'; \$60,000; o. Louis Levy, 54 E. 48th St.; a. M. Bernstein, 245 Broadway.

Thompson St., Nos. 40-42, seven-sty bk. flat & stores, 41' 3/4' x 81'; \$50,000; o. Leopold Kaufmann, 2487 Second Ave.; a. Schneider & Herter, 46 Bible House.

Park Row, cor. James St., seven-sty bk. flat, 41' 3/4' x 51' 5"; \$50,000; o. Leopold Kaufmann, 2487 Second Ave.; a. Schneider & Herter, 46 Bible House.

Ninety-fifth St., nr. West End Ave., seven-sty bk. flat, 75' x 87' 10"; \$150,000; o. Lorenz Welther, 76 E. 86th St.; a. Schneider & Herter, 46 Bible House.

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(Apartment Houses Continued.)

Seventh Ave., cor. 140th St., seven-sty bk. flat & store, 87' x 100'; \$240,000; o. William H. Livingston, 60 St. Nicholas Ave.; a. Fred'k C. Browne, 143 W. 125th St.

Fourth St., Nos. 140-144, 2 six-sty bk. flats, 32' x 94'; \$40,000; o. Paley & Lapin, 144 Division St.; a. M. Bernstein, 245 Broadway.

Forty-sixth St., Nos. 66-68, seven-sty bk. flat, 33' x 89'; \$80,000; o. The Holland Realty Co., 41 W. 53d St.; a. Israel & Harder, 124 Broadway.

Eleventh St., Nos. 533-535, 2 six-sty bk. flats, 25' x 89' 7/8"; \$46,000; o. Elias Kempner, 35 Nassau St.; a. Geo. F. Pelham, 503 Fifth Ave.

E. Fifty-first St., Nos. 332-336, 2 six-sty bk. flats, 28' 2/4' x 90'; \$70,000; o. Gerson Hyman, 227 E. 10th St.; a. Schneider & Herter, 46 Bible House.

Fifth Ave., cor. 127th St., seven-sty bk. & st. flat, 49' 11/4' x 95'; plastic slate roof; \$125,000; o. Harry C. Browning, 674 E. 162d St.; a. Neville & Bagge, 217 W. 125th St.

Fortieth St., Nos. 222-228, 4 six-sty bk. flats, 25' x 85' 10"; \$92,000; o. Elias Kempner, 35 Nassau St.; a. Geo. F. Pelham, 503 Fifth Ave.

W. Forty-second St., Nos. 317-325, 5 five-sty bk. flats with stores, 25' x 86'; \$75,000; o. Francis S. K. Seagrist, 131 W. 48th St.; a. Jas. W. Cole, 403 W. 51st St.

Third Ave., cor. 183d St., 5 five-sty bk. flats, 25' & 26' x 80' & 95'; \$97,000; o. John Eichler Brewing Co., 169th St. & 3d Ave.; a. M. J. Garvin, 3307 Third Ave.

Seventh Ave., cor. 140th St., seven-sty bk. flat & store, 95' x 99'; \$275,000; o. Sigmund Adler, 415 E. 107th St.; a. Neville & Bagge, 217 W. 125th St.

Thirteenth St., Nos. 324-330, 3 six-sty bk. flats, 28' 7/8' x 90'; \$120,000; o. Gerson Hyman, 227 E. 10th St.; a. Schneider & Herter, 46 Bible House.

West End Ave., cor. 101st St., seven-sty bk. flat, 95' x 97'; \$215,000; o. Elias Kempner, 35 Nassau St.; a. Geo. F. Pelham.

Elizabeth St., Nos. 84-88, 3 six-sty & base, bk. flats, 25' x 74'; \$75,000; o. Louis Rinaldo, 233 Grand St.; a. M. Bernstein, 245 Broadway.

Broome St., cor. Orchard St., seven-sty bk. flat with stores, 50' 4/4' x 87' 5/8"; \$55,000; o. A. Silverson, 236 E. 61st St.; a. M. Bernstein, 245 Broadway.

Rivington St., cor. Allen St., six-sty bk. flat with stores, 44' x 70'; \$50,000; o. Friedman & Feinberg, 329 E. 116th St.; a. M. Bernstein.

Central Park, cor. 102d St., ten-sty bk., st. & iron apart., 100' x 109', comp. roof, steam; \$400,000; o. Philip Braender, 47 W. 125th St.; a. F. C. Browne, 143 W. 125th St.

One Hundred and Forty-third St., cor. 7th Ave., 5 five-sty bk. & st. flats, 4 on the avenue & one on the street, 25' x 87'; \$150,000; o. Frank A. Seitz, 123 W. 125th St.; a. John Hauser, 1961 Seventh Ave.

Ludlow St., Nos. 155-157, 2 six-sty bk. flats with stores, 25' x 73' 6/8"; \$50,000; o. Max Weinstein, 190 Bowery; a. M. Bernstein, 245 Broadway.

One Hundred and Twenty-fourth St., nr. Amsterdam Ave., seven-sty bk. flat & store, 90' 11/4' x 100'; \$200,000; o. H. A. Webster, 112 W. 114th St.; a. F. C. Browne, 143 W. 125th St.

Park Ave., cor. 80th St., seven-sty bk. & st. flat, 92' x 102'; \$210,000; o. Rothschild & Hallman, 109 E. 81st St.; a. G. F. Pelham, 503 Fifth Ave.

Ninety-ninth St., nr. West End Ave., seven-sty bk. & st. flat, 90' 11/4' x 120'; plastic slate roof; \$210,000; o. Central Building and Impt. Investment Co., 440 Washington St.; a. Henri Fouchaux, Broadway & 162d St.

E. Fifty-sixth St., Nos. 218-222, 2 six-sty bk. & st. flats, 32' x 90' x 100'; \$70,000; o. Mr. Edelman; a. Sass & Smallheiser, 23 Park Row.

One Hundred and Twenty-fourth St., nr. Amsterdam Ave., 5 five-sty bk. flats, 27' & 27' 6/8' x 84' 7/8"; \$120,000; o. J. C. O'Brien and M. Caravatta, 651 Sixth Ave.; a. Geo. Keister, 1133 Broadway.

CHURCHES.

New York, N. Y.—Central Park West, cor. 96th St., five-sty bk. & st. church, size, irregular, tile roof; \$150,000; o. First Church of Christ Scientist; a. Carrère & Hastings, Madison Ave. & 40th St.

Sixty-third St., nr. Amsterdam Ave., one-sty bk. church, 22' x 70'; \$40,000; o. Fred King, 62 Amsterdam Ave.; a. W. A. Gorman, 1059 Ogden Ave.; b. Ralph H. Reid, 62 Amsterdam Ave.

CLUB-HOUSES.

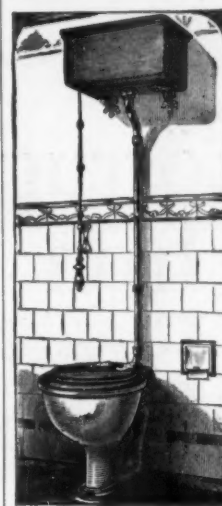
New York, N. Y.—E. Eighty-sixth St., Nos. 153-155, four-sty bk. & st. club-house, 51' 1/4' x 100' 8/8", gravel & asphalt roof; \$75,000; o. Y. M. C. A., 3 W. 29th St.; a. Jas. E. Ware & Son, 3 W. 29th St.

FACTORIES.

Brooklyn, N. Y.—Johnson Ave., cor. Leonard St., four-sty bk. candy factory, 50' x 100', gravel roof, steam heat; \$20,000; o. A. D. Schulman, 150 Manhattan Ave.; a. Th. Englehardt, 905 Broadway.

New York, N. Y.—Twelfth Ave., cor. 51st St., one & two-sty bk. factory, 100' x 100', asphalt roof; \$130,000; o. David J. Brown, Jr., 102d St. & Riverside Drive; a. Edgar K. Bourne, 18 Broadway.

Twelfth Ave., cor. 51st St., one & two-sty bk. factory, 100' x 100' 5/8", asphalt roof; \$30,000; o. estate J. J. Astor, 23 W. 26th St.; lessee, David J. Brown, Jr., 102d St. & Riverside Drive; a. Edgar K. Bourne, 18 Broadway.

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(Factories Continued.)

First Ave., cor. 36th St., six-sty bk. factory, 46' 3/4' x 100'; \$50,000; o. Anderson Estate, 27 William St.; a. Frank H. Quinby, 99 Nassau St.

HOSPITALS.

New York, N. Y.—One Hundred and Thirty-sixth St., nr. Amsterdam Ave., five-sty bk. & st. emergency hospital, 50' x 100', plastic slate roof; \$70,000; o. Hebrew Benevolent Asylum Soc., 138th St. & Amsterdam Ave.; a. Brun & Hauser, 1125 Broadway.

HOTELS.

New York, N. Y.—Forty-first and Forty-second Sts., nr. Park Ave., eight-sty bk. & st. hotel, 53' x 197', tile roof; \$237,000; o. Ford & Shaw, 121 Park Ave.; a. Jas. B. Baker, 156 Fifth Ave.; m'n, Chas. T. Wills, 156 Fifth Ave.

HOUSES.

Brooklyn, N. Y.—Beverly Road, nr. E. 12th St., 2 two-sty & attic fr. dwells, 26' x 44', shingle roof; \$12,000; o. & a. W. R. Lusher, on premises.

Lincoln Road, nr. Brooklyn Ave., 2 two-sty bk. dwells, 29' x 38'; \$8,000; o. A. Mahon, 133 Franklin Ave.; a. A. McLean, 833 E. 85th St.

Reid Ave., nr. McDonough St., 5 three-sty & cellar bk. stores & dwells, 16' x 55', gravel roof; \$30,000; o. J. H. Doherty, 286 Flatbush Ave.; a. A. S. Hedman, 371 Fulton St.

E. Nineteenth St., nr. Avenue K, two-sty & attic fr. dwell., 26' x 44', shingle roof; \$6,000; o. G. Soderstrom, 1336 Sixtieth St.; a. B. Driesler, 1432 Flatbush Ave.

E. Nineteenth St., nr. Avenue K, two-sty & attic fr. dwell., 16' x 39' 8/8", shingle roof; \$5,000; o. Gust. Soderstrom, 1336 Sixtieth St.; a. Benj. Driesler, 1432 Flatbush Ave.

E. Seventeenth St., nr. Caton Ave., two-sty & attic fr. dwell., 24' x 42', shingle roof, steam heat; \$6,500; o. John C. Sawkins, 81 Church Ave.; a. A. D. Isham, 1134 Flatbush Ave.

E. Seventeenth St., nr. Albemarle Road, two-sty & attic fr. dwell., 35' 6/8' x 40', shingle roof, steam heat; \$8,500; o. G. W. Egbert, 126 E. 19th St.; a. A. D. Isham, 1134 Flatbush Ave.

E. Nineteenth St., nr. Avenue D, two-sty & attic fr. dwell., 35' 6/8' x 45', shingle roof, steam heat; \$6,000; o. F. L. Bryant, 943 Flatbush Ave.; a. G. W. Egbert, 126 E. 19th St.

Benson Ave., cor. Bay 26th St., 2 two-sty & attic fr. dwells, 28' x 50', shingle roof; \$16,000; o. F. Fournier, Avenue C & E. 36th St.; a. A. D. Isham, 1134 Flatbush Ave.; b. J. P. Walsh, 991 Manhattan Ave.

New York, N. Y.—Nineteenth St., nr. 1st Ave., five-sty bk. dwell., 16' x 51'; \$10,000; o. Evangelical Lutheran Church of Christ, on premises; a. F. A. Minuth, 289 Fourth Ave.

Clay Ave., nr. 166th St., two-sty bk. dwell., 20' x 52'; \$7,500; o. Ernest Wenigmann, 179th St. & Morris Ave.; a. W. C. Dickerson, 149th St. & 3d Ave.

Creston Ave., nr. 183d St., 2 two-sty fr. dwells, 25' x 54'; \$14,000; o. Henry Koch and Henry Gundlach, 204 E. 80th St.; a. John Hauser, 1961 Seventh Ave.

Nelson Ave., nr. 169th St., three-sty fr. dwell., 20' x 64'; \$5,500; o. Christopher J. Kiernan, on premises; a. W. A. Gorman, 1059 Ogden Ave.

Clay Ave., nr. 165th St., two-sty bk. dwell., 20' x 52'; \$7,500; o. Ernest Wenigmann, Morris Ave. & 179th St.; a. W. C. Dickerson, 149th St. & 3d Ave.

Sixty-seventh St., No. 2, five-sty bk. dwell., 29' 4/4' x 100' bk., tile & slate roof; \$60,000; o. Henri P. Wertheim, Morristown, N. J.; a. J. H. Duncan, 21 W. 24th St.

Seventy-fifth St., No. 110, three-sty bk. & st. dwell. & stables, 25' x 90', tin & slag roof; \$17,000; o. Jas. H. Benedict, 14 E. 70th St.; a. Chas. W. Romeyn, 55 Broadway; b. Charles T. Wills, 156 Fifth Ave.

Fifth Ave., nr. 89th St., 3 six-sty bk. dwells, 25' & 27' & 23' x 63' & 68', tar & gravel roof; \$230,000; o. George Edgar, 2 W. 88th St.; a. Turner & Kilian, 2291 Broadway.

Two Hundred and Thirty-seventh St., nr. Oneida Ave., 2-sty fr. dwell., 23' x 48'; \$5,000; o. Wm. J. Frey, 229 E. 87th St.; a. A. F. A. Schmitt, 604 Courtlandt Ave.

Eighty-fifth St., nr. West End Ave., 3 five-sty bk. & st. dwells, 17' & 16' x 60'; \$73,500; o. Charles Glenn, 1871 Seventh Ave.; a. Neville & Bagge, 217 W. 125th St.

Ninety-second St., No. 62, five-sty bk. & st. dwell., 22' x 78' 2/4'; \$40,000; o. Mrs. Hattie W. Schmidt, 32 W. 92d St.; a. Sass & Smallheiser, 23 Park Row.

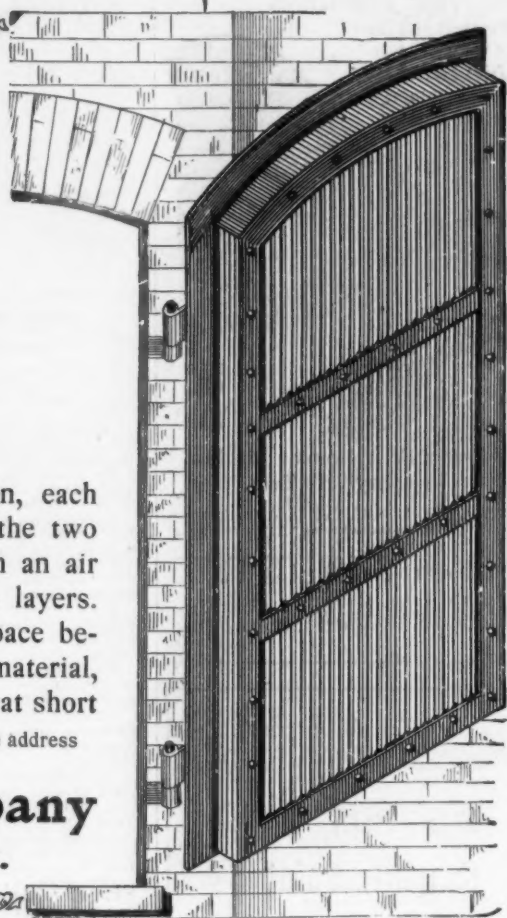
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BUILDING INTELLIGENCE.

STABLES.

Brooklyn, N. Y.—Watkins St., nr. Riverdale Ave., two-st'y & attic stable & shop, 25' x 75', asbestos roof; \$2,500; o. L. Benjamin, on premises; a. L. Dananacher, 92 Watkins St.

Lexington Ave., nr. Patchen Ave., one-st'y bk. stable & shed, 80' x 100', gravel roof; \$10,000; o. F. W. Smith, 862 Putnam Ave.; a. F. Holmberg, 1153 Myrtle Ave.

Bay Thirty-first St., nr. Benson Ave., two-st'y fr. stable, 30' x 41' 4"; \$2,000; o. Ernest Gerlach, 22d Ave., nr. 86th St.; a. J. Petit, 186 Remsen St.

Bristol St., nr. Pickin Ave., one-st'y fr. stable, 29' 6" x 50', gravel roof; \$1,000; o. J. Michien, 65 Bristol St.; a. J. Dhuy, 798 Herkimer St.

New York, N. Y.—One Hundred and Sixth St., nr. Amsterdam Ave., six-st'y bk. stable, 50' x 95' & 100'; \$35,000; o. Michael A. Hoffman, 429 E. 85th St.; a. S. B. Ogden & Co., 954 Lexington Ave.

STORES.

Brooklyn, N. Y.—Hoyt St., nr. Livingston St., five-st'y bk. stores & lofts, 43' 2" x 78' 3"; \$25,000; o. A. Friederich, 286 McDougal St.; a. G. M. Walgrove, 42 E. 23d St., N. Y.

New York, N. Y.—Third Ave., No. 605, two-st'y bk. loft & stores, 21' x 65'; \$6,000; o. Condert Bros., 71 Broadway; a. Hill & Stout, 1123 Broadway.

Ludlow St., No. 135, two-st'y bk. store, 9' x 25'; \$6,000; o. Friedman & Feinberg, 329 E. 116th St.; a. M. Bernstein, 245 Broadway.

Crosby St., Nos. 13-17, six-st'y bk. lofts & stores, 75' x 85' & 75'; \$150,000; o. T. M. Olsen, 2312 Southern Boulevard; a. O. A. French, 406 W. 52d St.

TENEMENT-HOUSES.

New York, N. Y.—First Ave., cor. 59th St., 4 six-st'y bk. tenements with stores, 25' & 25' x 87' & 95'; \$107,000; o. George and Emanuel Doctor, 410 E. 66th St.; a. John Hauser, 1961 Seventh Ave.

Twenty-fifth St., Nos. 320-322, five-st'y & base bk. tenement & store, 40' x 88'; \$25,000; o. J. L. Barclay, 280 Broadway; a. S. B. Colt, 287 Fourth Ave.

Tenth Ave., Nos. 814-816, seven-st'y bk. store & tenement, 41' x 53'; \$60,000; o. Leopold Kaufmann, 2487 Second Ave.; a. Schneider & Herter, 46 Bible House.

Broome St., cor. Forsyth St., 2 six-st'y bk. tenements with stores, 35' & 40' x 64' & 69'; \$80,000; o. Mandel & Maran, 1013 Third Ave.; a. M. Bernstein, 245 Broadway.

Eighteenth St., Nos. 336-338, six-st'y bk. tenement & stores, 40' x 79' 6"; \$50,000; o. A. Simon, 235 E. 13th St.; a. M. Bernstein, 245 Broadway.

BUILDING INTELLIGENCE.

(Tenement-Houses Continued)

Stanton St., cor. Forsyth St., six-st'y bk. tenement & store, 48' x 70'; \$48,000; o. Samuel Barkin, 128 Bowery; a. M. Bernstein, 245 Broadway.

Avenue D, cor. 4th St., six-st'y bk. tenement & stores, 41' x 75'; \$45,000; o. Goldberg & Sons, 29 E. Broadway; a. M. Bernstein, 245 Broadway.

Grand St., Nos. 249-253, seven-st'y bk. tenement & store, 50' x 69' & 70'; \$100,000; o. J. & M. Levy, 372 Grand St.; a. C. B. Meyers, 1 Union Sq.

Scammel St., cor. Madison St., six-st'y bk. & st. tenement, 41' x 95'; \$35,000; o. Rosenberg & Feinberg, 458 Grand St.; a. Saks & Smallheiser, 23 Park Row.

McDougal St., Nos. 103-105, 2 seven-st'y bk. tenements, 25' x 135'; \$70,000; o. Israel Lippmann, 70 Elm St.; a. M. Bernstein, 245 Broadway.

THEATRES AND HALLS.

New York, N. Y.—Forty-seventh St., Nos. 164-170, W. Broadway, No. 1654, five-st'y bk. studio & theatre, 20' & 70' x 90' & 100', asphalt & gravel roof; \$175,000; o. Kirk La Shelle, 1402 Broadway; a. J. B. McElfatrick & Son, 1402 Broadway.

WAREHOUSES.

New York, N. Y.—Centre St., No. 251, Broome St., No. 407, seven-st'y bk. warehouse, 25' & 26' x 52' & 118'; \$35,000; o. August Trenkmann, 403 Broome St.; a. A. V. Porter, 621 Broadway.

Broome St., cor. Varick St., six-st'y bk. warehouse & store, 69' x 99', plastic slate roof; \$65,000; o. William C. Dewey, 69 Maple St., Springfield, Mass.; a. Jas. H. Dewey, 5 E. 14th St.

MISCELLANEOUS.

New York, N. Y.—Twentieth St., No. 216, four-st'y bk. nursery, 22' 2" x 73', tile roof; \$32,000; o. Way-side Day Nursery, 216 E. 20th St.; a. William Strom, 39 Cortlandt St.

E. Seventy-first St., Nos. 31-37, eight-st'y bk. & st. nurses' home, 102' x 104', tile roof; \$300,000; o. Presbyterian Hospital, 71st St. & Park Ave.; a. Jas. B. Baker, 156 Fifth Ave.; m'n, Chas. T. Willis, 153 Fifth Ave.

COMPETITIONS.

JAIL.

[At Lewistown, Minn.] Plans and specifications will be received by the County Commissioners until April 27 for a two-story stone jail. C. M. KELLY, es. clk. 1321

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4 inches to 20 inches deep.

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

COMPETITIONS.

LIBRARY.

[At Houston, Tex.] Designs will be received by the Trustees of the Houston Lyceum and Carnegie Library Association of Houston, Texas, until 12 o'clock, noon, of the 1st day of May, 1901, for the Carnegie Library Building, to cost not to exceed \$45,000. For prospectus, address H. H. DICKSON, Chairman Building Committee, Houston, Texas. 1321

PROPOSALS.

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

SCHOOL.

[At Watertown, N. Y.] Sealed bids are wanted until May 1, 1901, for the

NOW READY

PART VIII of the GEORGIAN PERIOD

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

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

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PROPOSALS.

construction of a stone high school on Sterling St. FRANK S. TISDALE, superintendent school. 1321

CONSTRUCTION.

[At Fort Baker, Cal.] San Francisco, Cal. Sealed proposals will be received here until May 3, 1901, for construction (including plumbing and electric wiring) at Fort Baker, Cal., of officers' quarters, barracks, hospital (including steam heating) guard-house and other buildings. Proposals will be received for construction of the buildings both frame and brick. Information furnished on application to J. M. MARSHALL, assistant quartermaster general, chief Q. M. 1321

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

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

GRANOLITHIC SIDEWALKS.

[At East Cambridge, Mass.] Sealed proposals will be received at the courthouse 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

PROPOSALS.

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 & KEINHOLD, 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. E. 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

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 remodeling the present court-house. O. ST. DIZIER, chmn. police jury com. 1323

OFFICE-BUILDING.

[At Shreveport, La.] Sealed proposals will be received by the First National Bank Building Co. until April 30 for the erection of a five-story fireproof office-building. The James Riley Gordon Co., architects. 1321

SCHOOL.

[At Washington, D. C.] Sealed proposals will be received at the office of the commissioners until April 27, 1901, for constructing a twelve-room school, corner of Lincoln Ave. and Prospect St. HENRY B. F. MACFARLAND et al., commissioners, D. C. 1321

PROPOSALS.

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

Treasury Department, Office Supervising Architect, Washington, D. C., April 4, 1901. Sealed proposals will be received at this office until 2 o'clock P. M., on the 22d day of April, 1901, and then opened, for constructing a waiting-shed addition to the covered way and for completing the second story of the Kitchen and Restaurant, Bath and Laundry, and the Boiler-house, all at the U. S. Immigrant Station, Ellis Island, New York, in accordance with the drawings and specification, copies of which may be had at this office or at the office of Boring & Tilton, architects, 32 Broadway, New York City. JAMES KNOX TAYLOR, Supervising Architect. 1321

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

BUILDING MATERIALS, ETC.

[At West Point, N. Y.] Sealed proposals will be received here until May 2, 1901, for building materials, plumbing materials, gas and steam fittings, hardware, tools, paints, glass and other miscellaneous stores specified on schedules to be had on application and addressed to Q. M. U. S. M. A. 1321

SEWER CONSTRUCTION.

[At Rocky Mount, N. C.] Sealed proposals will be received by the Board of Mayor and Commissioners, of Rocky Mount, N. C., until April 25th, 1901, for constructing pipe-sewers and for furnishing sewer pipe. Extent of proposed work approximately 6 miles of pipe-sewers from 8 to 15 inches diameter. J. L. LUDLOW, engineer, Winston, N. C. 1321

IRON PIPE, ETC.

[At Governor's Island, N. Y.] Sealed proposals will be received until April 26, 1901, for furnishing iron pipe, fittings and hydrants. S. R. JONES, Q. M. 1321

BRIDGE.

[At Springfield, Mass.] Bids will be received until May 1, 1901, for the erection of a bridge having two 150-foot spans, 20-foot roadway and two 5-foot walks. Estimated to cost \$20,000. COLLINS & NORTON, engineers. 1321

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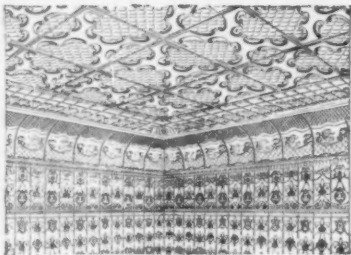
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