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ONE of the most interesting tendencies of American life at present is the disposition on the part of people who can afford it to spend the greater part of the year in country-houses, using their city dwellings only for a residence of a few months in winter. Undoubtedly, the example of the rich English and French families, who stay in London or Paris only for the season, spending the remainder of the year at their châteaux or country-seats, has had something to do with the spread of the new fashion among wealthy Americans; but the very rich Americans are, as a rule, disposed to do as they like, without troubling themselves about foreign examples, and the fact that it is now almost the rule with them to build and occupy great establishments in the country is good evidence that the practice is something more than mere caprice. As an incident of the change, the position in the community of the great summer hotels has been greatly modified within a generation. Some of us can remember when an annual sojourn of a few weeks in one of the immense hotels at Saratoga, or Niagara, or Newport, was a mark of the highest fashion, and it was only the unpretending people among the well-to-do who preferred having their own houses in the country, or at the seashore, where their families could spend the summer comfortably, without the parade and expense of hotel life. All this has now gone by. Although Saratoga is still frequented by many people who prize its pure air and healing waters, the idea that a month in one of its hotels confers social distinction has long been ridiculous; while the hotels of other watering-places, once renowned, have either been closed, or subsist on the precarious patronage of tourists; and the descendants of the people who, perhaps, blazed with diamonds at a Grand Union or Ocean House hop now spend their summers in their quiet homes in Lenox or Beverly, on the Hudson River or in the little villages of Long Island or Connecticut.

WITH the development of the country-house has come, however, a new set of conditions to be fulfilled, and the manner in which these conditions have been met is not the least interesting subject of study in connection with contemporary American architecture. We have here absolutely nothing of the feudalism of Europe, under which the lord of the manor or the seigneur of the parish lives in the middle of a multitude of tenants and peasantry, all of whom expect to be furnished at the château with blankets, medicine, cold dinners and good advice, which they pay for by dancing on the green on their lord's birthday, and, perhaps, by praying over his remains in the church which is maintained at his expense; and our architects, instead of providing for the swarms of dilapidated retainers who infest, we might almost say, a great English country estate, are required to accommodate the serv-

ants necessary for the family, and no more, either in the house or in buildings attached to it; anything like the parasitic cottages which often surround a French château as a flock of sheep surrounds its shepherd being strictly avoided. Even the village church, although often virtually maintained by one or two rich families, preserves, in this country, at least a semblance of independence, and, except in the very few mansions which include a private chapel, the rich American is glorified in the church nearest his country estate only by a marble tablet on the wall, or, at most, by a stained-glass window. With all this, there is much that is inspiring to the artist in the conditions of the great American country-house. If the magnates of Mamaroneck, or Stamford, or Summit find their fellow-townsmen sometimes unpleasantly independent, they do not, at least, suffer from the poison of sycophancy, which often, in England, gives an unpleasant flavor even to the village churches; and there are plenty of examples in America of people who, on establishing themselves in country villages in a manner suitable to their wealth, have, by their courtesy and sympathy for their neighbors, gained an affection more precious than anything that the feudal relation can show, and capable of being expressed, some time, in the most beautiful architecture.

WITHIN a short time there have been several elevator accidents in and about Boston of a kind which deserves the attention of the profession and the public. In manufacturing buildings or warehouses, where elevators are used primarily for freight, and are employed for conveyance of persons only by the employés of the house and under explicit warnings about the risk, it is to be expected that accidents will occasionally occur; but a passenger-elevator in one of the newest first-class office-buildings on State Street is said to have fallen four times within about as many weeks; and, still more recently, an elevator in a new and fine apartment-house in the suburbs fell through a distance of eight stories. Ten years ago, elevator accidents were not uncommon, both in apartment-houses and office-buildings; but, since that time, the construction of hoisting-machines has been improved, and the system of insurance and inspection, now applied to nearly all passenger-elevators, has provided against the effects of wear and corrosion which, without such inspection, would pass unnoticed. That accidents should have begun again in a class of elevators which have for years been practically free from them is a matter of much significance, and it is to be hoped that the official inspectors of elevators, who now hold office in all our large cities, as well as the casualty insurance-companies, which have a serious interest in efficient inspection, will be able to reassure the public, not only by an explanation of the mishaps which have already occurred, but by satisfactory assurances that similar accidents are not to be looked for elsewhere.

FORMER pupils of the Massachusetts Institute of Technology will be interested to learn that Prof. E. B. Homer, for fourteen years connected with the Architectural Department of the Institute, has resigned, to take charge of the Rhode Island School of Design, in Providence. Professor Homer will, however, maintain a connection with the Institute as lecturer on the History of Architecture. Every one who has known Professor Homer will join in sincere good wishes for his success in his new field, and those who have been his pupils will be glad that the Institute is not to lose entirely the benefit of his brilliant and devoted work.

WE take pleasure in printing in another column what may be called a model programme for a mixed competition. It seems to have occurred to the committee having the matter in charge that an architect's services in preparing the programme would be quite as valuable as in extricating them from the difficulties into which committees who prepare their own programmes usually fall; and it would have been difficult to select a better adviser than Mr. Rosenheim. With his help, the committee have been able to state clearly what they want and how much they are willing to pay for it, and there is every reason to believe that they will be conspicuously successful in getting it.

THE French Ambassador at Washington has bought land, in the name of his Government, for an Embassy residence, following an example which will, we hope, be taken to heart by our own Government. So far as we know, while nearly every great power owns official residences for its representatives in all the principal capitals of Europe, the American Ambassador at London, Paris, Berlin, Vienna and Rome is obliged, as soon as he is appointed, to engage in an anxious search for a house which shall be suitable for the business of the Embassy at the same time that the rent is within his means. The pay of our representatives abroad is very small, seventeen thousand five hundred dollars being the largest salary, we believe, allowed to any ambassador, and it is practically impossible to hire a house in any important capital, large enough for the entertainments which the American Minister is expected to give to his countrymen, and in a reasonably pleasant situation, for such a rent as will leave enough of the salary to maintain it; so that, of late years, foreign embassies have been, almost of necessity, given to rich men, who were not limited to their salaries for their income. It must be said that our rich ambassadors have, almost without exception, done honor to themselves and their country; but, in their anxiety to support their position creditably, they have, in many cases, maintained establishments far beyond the reach of persons of moderate income, and have thus made it more difficult than ever for such persons to succeed them. For a Commonwealth like ours, which often needs to be represented abroad by its best and ablest citizens, it is a misfortune to be, practically, limited to millionaires for a selection, and the provision of adequate, even if modest, residences in the more important capitals for the American Embassy would make it possible to appoint persons of moderate means. It is likely, moreover, that the establishment of permanent quarters for the principal American representatives abroad might materially increase the influence of their country. The British Embassy in Paris has been for many years a centre of something much more important than social interest; and the German Embassy, although neither pretentious nor fashionable, has been at different periods a point of most anxious interest. Americans would be sorry to see their ambassadors mixed up with a Dreyfus scandal; but it is possible for our foreign representatives to be influential without being concerned in the local politics of the country to which they are accredited; and it certainly conduces more to the dignity of an ambassador's position to have him lodged in a permanent habitation than to see him, shortly after dickering for a house, obliged to resort to law against his landlord, as happened to our ambassador at Berlin not long ago.

PROF. LORRAIN SMITH, of Belfast, Ireland, has been studying the bacterial purification of sewage with some unexpected results. It is known that the bacterial beds, consisting of coke or gravel, over which the sewage is allowed to flow, to be purified by the colonies of microbes which collect on the stones, have not been so successful in England, where they have been very largely used, as was expected, the sewage, after the purification-beds have been for some months in operation, flowing from the beds nearly unchanged. Professor Smith, therefore, thought of studying the beds while they were in successful operation, to see if the bacterial transformation was the last step in the process. To his surprise, he found in the sediment deposited around the microbe colonies a great variety of infusoria, which seemed to eat the microbes, while the infusoria themselves were eaten by worms. The worms, in their turn, appeared, in this particular case, to float off with the effluent into the sea, there to be eaten by fishes; but the bacteriologists seem to have now a new problem before them: to determine whether the purifying effect of a bacteria-bed is injured or improved by having the nitrifying microbes eaten by infusoria; and, if not, how the infusoria are to be kept out of it.

THE city of St. Petersburg, in Russia, has announced an open competition for two bridges across the river Neva, with their approaches. Each bridge forms the subject of a separate competition, but competitors may include both in their designs. Those who wish for further particulars are invited to apply, in person, by letter or by telegraph, to the Stadtmagistrat, St. Petersburg, Russia, for the programme of competitions, which is printed in Russian, German, French and English, and includes a plan of the site of each bridge, profiles of the banks, geological sections of the bed of the river, and

other information. All competing designs must be submitted on or before September 1, 1902.

WE so frequently find in our foreign exchanges illustrations of projects for utilizing mountain-torrents for the manufacture of calcium-carbide or for setting up factories in the most beautiful Alpine valleys that it is rather a satisfaction to learn that, as is shown by statistics, these mountain-establishments are not, as a rule, commercially profitable. To the average Philistine, the sight of a thousand-horse-power cascade "going to waste" suggests thoughts of reclaiming it; but the reclamation is not such a simple matter as it seems. Is it true that flumes can be built and turbines installed in almost any situation; but the turbines furnish nothing but power, and the cost of power is a comparatively small item in the expense-account of a manufactory. Many owners of factories driven by water-power, on reckoning up at the end of the year the cost of repairs to turbines or flumes, damage done by freshets, loss of time and interest, and forfeiture of contracts or loss of customers, by delays incidental to scarcity of water, have regretted that they did not use a steady-going steam-engine in place of the capricious forces of nature; and many more, who, after a few years' experience, have abandoned the water-power for the steam-engine, have regretted, and still regret, that, for the sake of appropriating what they supposed to be cheap water-power, they have placed their factories where transportation, both of materials and finished product, is costly, where labor is expensive and not easily procured, and where markets are almost out of reach; while, if they had only known in the first place how little saving there would be in using water-power, they might have invested their money much more profitably in building their establishments near their customers and the public, close to competing railway-lines, and in the vicinity of an unlimited population of intelligent working-people. It is said that certain plans for utilizing the immense power of the Rhone, near Bellegarde, have already been abandoned, in consequence of a thorough inquiry made by those interested; and the lovers of nature would not be sorry to see some of the existing Alpine industrial establishments dismantled.

THE experiments with navigable balloons in Paris have been sufficiently successful to make it interesting to speculate on the military significance of any important progress in the art of navigating the air. Captive balloons have been used by the English in South Africa, as they were by the Italians in Abyssinia, to determine the strength and position of the enemy's forces, but this is a very different affair from the employment of an air-ship capable of carrying destructive agents over the heads of an opposing force in any direction required. It is hardly too much to say that the appearance of a modern cruiser, armed with rapid-firing guns, on the Greek or Persian side in the battle of Salamis would not have had a more important influence in deciding the result of the conflict than would be exerted by the intervention of a navigable balloon, supplied with high explosives, in a modern war. We may imagine, for example, without doing injustice to the excellent motives of the English in their present war, or to their courage and constancy in pursuing their intentions, that it might occur to some Boer officer to defend his country with his head, instead of his hands. Starting from the present state of knowledge of the subject, it would not take an unprecedented mental effort to devise a balloon which, starting, let us say, from the mountains near Ladysmith, could be steered, in a favorable wind, over the town of Natal. Once in the proper position, charges of explosive gelatine or showers of those interesting compounds known to chemistry every drop of which will set fire to any combustible substance that it may touch could be distributed over the town, the balloon subsequently proceeding out to sea or returning to a safe refuge in the mountains. Even Cape Town, although much farther than Natal from the scene of Boer activity, and less exposed to danger from fire, would be by no means safe from an attack of this kind, which might, conceivably, be made with a multitude of small balloons, carried in Boers' farm-wagons, and inflated from cylinders of compressed hydrogen, as effectively as by a single large one. Of course, it would not be necessary actually to burn Natal or Cape Town, any more than it is necessary to bombard great cities in modern warfare. The mere threat to do so, accompanied with satisfactory evidence that the threat could be carried out, would be quite sufficient to bring Great Britain to a choice between arbitrating South African questions and losing her South African colonies altogether.



THE MARSHALL FIELD BUILDING. — DRY-GOODS-BOX ARCHITECTURE. — THE "TRIBUNE" BUILDING. — PROGRESS ON THE POST-OFFICE. — THE UNION LEAGUE CLUB-HOUSE COMPETITION. — ACCIDENT IN THE ROTHSCHILD BUILDING. — ST. LOUIS TURNS THE COLD SHOULDER ON CHICAGO. — THE LOUISIANA PURCHASE EXPOSITION.

NEVER has the old adage "Happy are the people who have no annals" come home to us with more force than now in these days of crowded events. Here in Chicago in architectural and building circles the calm that demands no annals seems to have settled down. Real-estate men report healthy activity in all directions, and the same atmosphere pervades architects' offices. Labor questions are for the present settled, with apparently no dark clouds overhanging the immediate future. Many of the large down-town buildings for which plans were made last spring are now in process of erection, having reached the stage which compels the public to walk around them in the street while foundations and walls are being gotten under way. Marshall Field's new addition to his retail dry-goods store, to cover a quarter of a square, is now in this stage. The space where it is to rise was once filled by the old Central Music-hall, and is now letting in floods of sunlight onto State Street, which make a positively glaring effect. Looking down from an occasional opening or door in the present store, the foundations are plainly visible, and from the street, red-painted columns loom up over the fence. This is all of interest to the casual observer, aside, as I have said before, from the unexpected stretch of sky which seems to change the tone of the street for a block in either direction.

From the illustrations of the new portion it can be seen that an entirely different treatment of façade is to be used from that of the part already standing on State Street. When the present building was first erected, if our memory serves us rightly, it was of the old mansard variety, at one time so dear to the American heart. It was not a bad building: in fact, rather good of its kind, and certainly was interesting as marking an epoch in our architectural history. More space was wanted, and the mansard was removed, two new stories not especially in keeping with the rest of the building being added. The original front was of limestone. The two later stories were of white terra-cotta. The original character of the old building was further lost by remodelled entrances, not in keeping with the rest of the façade, and now comes the new portion, — twelve uncompromising, unornamented layers of rows on rows of windows. The last two stories have the divisions between the bays marked with columns, and, for the height, a rather light cornice crowns the whole. If it were not for this slight variety the building could stand on one side almost as well as on the other, so far as design is concerned. The whole composition is entirely "Chicago" in character. In other cities the large down-town buildings have some architectural pretensions, but here in Chicago they are oftenest simply huge engineering feats. In this special structure an entrance, not very definite in character, but still an entrance, is placed near the centre of the block, which would seem to indicate that eventually the present old building would be torn down. In its present heterogeneous character this would be no great loss, though it is still a serviceable building, in a good state of preservation; but had its original character been kept it would be with regret that some of us would see it disappear. The architect who will advise additions made in the style of the original building must love his work better than himself. The old façade was rather modern French in treatment and a pretty good building of its kind, and could it have grown along these lines it would have become almost an interesting monument from an architectural point-of-view, as marking one period in our development. Certainly, the result would have been about as pleasing as is this idealized dry-goods box. Rome, like a good many other places, was not built in a day; and when the builder is content to annihilate self and make his work part of a great whole, how good is the result. To be sure, the criticism of this special case applies only to a large dry-goods store, but the same thing is happening all over our country all the time. The old, whether good or bad, is constantly being removed, to make room for the new, whether good or bad, and all interesting records of our architectural growth and development, yes, of our growth other than architectural, are being destroyed. It is fortunate that our Capitol at Washington, which is as impressive as any building in the country, was happy enough to have been developed along the lines originally laid out for it.

The part of the Marshall Field Building known as the Annex, fronting on Wabash Avenue, departed entirely from the style of the original building; but this was in fact a separate building with an alley between, only the connecting underground passages and the bridges across the alley serving as conveniences for the inside of the building. The Annex at the time of its completion was mentioned in these letters as a successful composition, where beauty was not entirely sacrificed to utility. In fact, quite the opposite course was taken, and the result was a building quite as well suited to the

needs of a large down-town store as is the idealized box with holes cut in it. Strange to say, these two very different compositions, the Annex and the present new building, come from the same office. The Annex was said to be designed by two comparatively young men, who have, since, branched out for themselves.

Too many of the recent buildings on State Street are of this uncompromising character, — walls with large holes poked through them at regular intervals as if cut out with a mammoth cookie-cutter or punch-machine. Several Wabash-Avenue fronts have good architectural points, notably the Field Annex, and the stores of Schlesinger & Myer and Mandel Brothers.

It certainly is a crying shame to erect these mammoth creations, which have hardly one element of beauty, aside from the dignity which they gain from size.

It is a difficult problem to bring much beauty into a ten or twelve story sky-scraper, but it has been done right here in our city, both in some of the later buildings as well as in some of the earliest high office-buildings, though of late the majority have been of this uncompromising nature, which certainly many people will have cause to regret as encumbrances to our city. The building known as the Woman's Temple has even an element of the picturesque, which in so high an office-building was a bold thing to attempt. Another one of the earlier high buildings which is extremely successful is the Rookery. Both of these buildings bear the impress of the genius of John Wellborn Root.

The new Tribune Building is in about the same stage as the Marshall Field Building. The public narrowly escape death from trolley and cable cars and horses' hoofs, while walking around the high board fence or gazing in at the opening to try and discover something more interesting than piles of earth or I-beams and rubble. The same surprising stretch of sunlit sky takes the place of the old brown-stone building, which almost since the great fire has been known as the Tribune Building. This building was doubtless inadequate for even the needs of the paper which was published then, and as an office-building was undesirable, — consequently a poor investment. The old office-buildings, with poor lighting and lack of general accommodation, must go. They cannot compete with the new buildings.

This summer has seen the Post-office assuming something like form from the chaos in which it has so long been. The steel skeleton is now rapidly being covered with a granite mantle, and though it in its turn is hung with scaffolding in many places, it begins to assume the appearance of a building, not as yet an impressive building, but it is entirely too early to judge of it as a whole, with the board fence still around it and its roof not apparent.

It will not be long before the Union League Club, directly south of the Post-office, will erect a new club-house to replace its present building. Last March a piece of ground, 100' x 50', was purchased directly at the rear of the present club-house. This purchase will give a lot for the new structure of 100 feet frontage by 150 feet deep. Upon this the proposed club-house is to be erected at a cost of \$800,000. Jenney & Mundie, Shepley, Rutan & Coolidge, D. H. Burnham & Co., are among the several architects who have been invited to submit plans for a nine-story club-house, suitable for a membership of two thousand.

A matter which has created considerable interest the last week has been an accident which befell the building of the department-store of A. M. Rothschild & Company. The accident occurred on the evening of Thursday, September 19, fortunately coming late in the day when the crowds had left the street, so few people were hurt and none killed. At first it seemed to be a curious case of explosion, but on further investigation the mystery proved to be not at all great, if one can believe the accounts of what was really going on in the building. A 36-foot arch was said to have been cut in the second story in a 38-inch wall, between the old and new portion of the building. Some reports state that directly on a line with this arch was a water-tank which naturally increased the weight the wall had to carry. That there should have been a settlement, with its consequent collapse, seems small wonder, while the apparent explosion, with accompanying outbreak of flames from the crossing of electric-wire, was the natural result. No city permit was obtained for the work, and a law-suit for the violation of a city ordinance seems inevitable, while the insurance-companies are also ready for a fight, as they maintain no fire broke out till after the wall collapsed. No architect had charge of the work, so far as is known. As the licensing of architects is carried on to avoid the possibility of incompetent men doing just this kind of thing, it is to be hoped that the way of the transgressor will be hard and that victory will sit on the colors of the attacking parties. One shudders to think what would have been the result of such an accident had it occurred a few hours later, on the next morning, when the store was crowded with customers and its army of employés. Such carelessness cannot be too severely dealt with, if the facts which are more than suspected at present are substantiated later when testimony is brought in at the investigation which most certainly will follow.

It has been announced that Isaac S. Taylor has been chosen Director-General of Construction and Maintenance of the World's Fair at St. Louis in 1903. In view of the fact that no St. Louis architects were invited to contribute to the beauty which made the Columbian Exposition a success, it is not at all surprising that no Chicago men were asked to do anything for the Louisiana Purchase Fair. The letting of contracts aggregating about \$11,000,000 for construction-work on the buildings and grounds will begin about the

last of the year. Seven millions of the amount is to be used for buildings alone, and the other four will be applied to improving and laying out the grounds. Four of the large buildings will cost about one million each, the main building, it is planned, to be larger than any building at any previous exposition. The park in which the Exposition is to be held will also be larger than the grounds of any other exposition, containing at present 668 acres, to which 300 acres of surrounding property will be added. It makes one tired in anticipation, when one remembers the fatigue of our own Fair. A St. Louis lady, a German, made the criticism on our Fair, "It is grand, but very weakening." What will theirs be?

"The designs for the separate buildings, assigned to the individual members of the commission of architects, will be submitted in scale-drawings by the middle of October, and the working-drawings of the main buildings to be first erected will be ready by November 1. The lettings will be advertised for three weeks in the leading technical journals throughout the world. There will be no geographical restriction on bidders. The main stipulation will be that the buildings be ready for occupancy at a date sufficiently earlier than April 30, 1903, the date fixed for the opening of the Exposition, to allow exhibitors time to prepare their displays for the opening. To secure the completion of the buildings by this time, a sufficient bond will be required of the successful bidders." The contract for an entire building will be let to a single contractor, who will have control of all the sub-contractors. Mr. Taylor says, "This plan is by far the most satisfactory. When the Exposition Company lets sub-contracts itself, each sub-contractor must be watched, and it is difficult to fix responsibility for faulty work. For this reason, in former expositions the company had to pay extra for reconstruction of faulty work, and the cost of the extras swelled the total cost immensely."

OFFICE-BUILDING ELEVATORS.¹

WITHOUT an efficient elevator-service the office-building is a failure; yet, notwithstanding the many elevators which have been installed, the elevator-service causes the operating-engineer and the manager of the building more anxiety than any other single item of the installation.

Each tenant of the building must be carried at least four times a day, and provision made for the outside public. The transportation should be as rapid as possible within the limits of safety.

The number of passengers carried in some large and densely populated buildings amounts to from 10,000 to 20,000 per day.

In the Drexel Building, Philadelphia, ten stories high, and having 120,000 square feet of office-space above the first floor, between 1,500 and 1,600 passengers were carried in one hour.

After the building is completed it is always difficult, and sometimes impossible, to modify the elevator-installation, so that the proper number and size of the elevators is an important question to determine.

The speed and size of the car, the height and office floor-area of the building and the method of operating must be considered. In tall buildings where more than four cars are installed, the service may be improved by running some of the cars to stop at all floors and others to run "express" beyond the lower floors and "accommodation" above.

TABLE NO. 1.

Building.	Stories.	Office-area above first floor.	No. of cars.	Square feet per car.	Area of car, sq. ft.
St. Paul Building, New York...	25	83,200 sq. ft.	6	13,900	23.6
Empire Building, New York....	21	150,000 "	10	15,000	42.0
N. American Building, Philadelphia.....	18	90,500 "	5	18,100	27.6
Real Estate, Philadelphia.....	17	155,650 "	10	15,560	23.7
Bowling Green, New York.....	16	222,000 "	9	24,700	...
Land Title, Philadelphia.....	15	65,400 "	5	13,300	29.6
Stephen Girard, Philadelphia...	13	67,000 "	4	16,750	29.0
Drexel Building, Philadelphia	10	130,000 "	6	21,700	21.4

The writer has attempted to formulate a rule, based upon the operation of elevators in various buildings, by taking for factors in the calculation the office floor-space, the number of trips per hour and the size of the cars, which is subject to modification for "express" service.

An idea of the practice in elevator-installations may be obtained from Table No. 1, which gives the story-heights, the approximate area of office-space above the first floor, the number of cars, the office-area per car and the area of each car.

To determine the number of trips and car-travel per hour, observations were made at four office-buildings in Philadelphia:—

Drexel Building, ten stories high. Stephen Girard Building, thirteen stories high. Land Title and Trust Building, fifteen stories high. Real Estate Trust Building, seventeen stories high.

TABLE NO. 2.

Building.	Stories.	Height, feet.	Travel per trip, feet.	Trips per hour.	Average feet per minute.	Miles per hour.
Drexel Building.....	4	40	80	60	80	.910
" " " " " " " "	5	50	100	52	87	.984
" " " " " " " "	10 ²	108	216	35	126	1.431
" " " " " " " "	10 ³	108	216	35	126	1.431
Stephen Girard Building...	13	150	300	30	150	1.704
Land Title Trust Building..	15	180	360	27 ²	162 ²	1.840 ²
" " " " " " " "	15	180	360	24 ³	144 ³	1.636 ³
Real Estate Trust Building.	17	200	400	25	167	1.894

¹ Extract from a paper by Mr. Charles G. Darrah read before the American Society of Civil Engineers, October 2, 1901.

² Actual.

³ Estimated.

From these data the following are estimated:—

Bowling Green.....	16	190 ²	380	26	164	1.87
Empire	21	250 ²	500	22	183	2.08
St. Paul.....	25	300 ²	600	20	200	2.273

In the Drexel Building, which has six elevators, one elevator ran from the first to the fourth story; one elevator from the first to the fifth story; two elevators from the first to the tenth story, stopping, if required, at any of the floors, and two elevators ran to the fifth story "express," and served all the stories above.

At the Stephen Girard Building there were four elevators, which ran "accommodation" through.

At the Land Title and Trust Company's Building there were five elevators which ran on schedule time, "accommodation" to all floors except the second.

At the Real Estate Building all the cars ran "accommodation" through.

Table No. 2 shows the results obtained, and also an approximate estimate of the running-time for the Bowling Green, Empire, and St. Paul Buildings, New York City.

From observations at the Drexel Building in 1897, during the noon-hour, the up-travel from the first floor reached 800 passengers, with a maximum of twelve to thirteen passengers in the car. The cars were also overtaken all day, from 10 A. M. until 4 P. M.

At the Land Title Building, running twenty-four trips per hour, the service was very satisfactory. There was a slight crowding during the noon-hour; this, however, can be remedied by the use of the improved car-signalling apparatus.

At the Stephen Girard Building, the cars are crowded during the noon-hour, and also between three and five in the afternoon.

All three of these buildings are well filled.

The Real Estate Building is not fully occupied, so that the elevator-service there cannot be fairly judged. At present the installation is very satisfactory.

Using the trips per hour as observed and estimated, and equating the car-area by the formula:

$$a = \frac{A}{T \times 22}$$

a = Square feet of car-area.

A = Square feet of office-area.

T = Total trips per hour.

TABLE NO. 3.—EQUATED CAR-AREAS.

Building.	Stories.	Number of cars.	Sq. ft. of office-area per car.	Actual car-area in sq. ft.	Equated car-area in sq. ft.	Estimated trips per hour.
St. Paul.....	25	6	13,900	23.6	31.5	120
Empire.....	21	10	15,000	42.0	31.0	220
Real Estate.....	17	10	15,560	23.7	28.3	250
Bowling Green.....	16	9	24,700	...	43.1	234
Land Title.....	15	5	13,300	29.6	22.4	135
" " " " " " " "	15	5	13,300	29.6	25	120
Stephen Girard.....	13	4	16,750	23	25.4	120
Drexel.....	10	6	21,700	21.4	28.2	210

At the Drexel Building, the two cars which ran "express" to the fifth floor, and the two cars which ran "accommodation" through, made the same number of trips, and carried practically the same number of passengers. It would be interesting to know whether similar results are obtained in any other buildings, and the advantage gained in arranging the travel of the various cars to serve "accommodation" through the entire trip, "express" part way, or providing separate service to different heights in the building.

Using the same formula, and equating to obtain the square feet of office-space per car, with given sized cars, and the number of through trips heretofore used, we have the following results, with cars of 25 and 30 square feet area.

TABLE NO. 4.—SQUARE FEET OF OFFICE-AREA PER CAR.

Stories.	Car area = 25 sq. ft.	Car area = 30 sq. ft.
25.....	11,000 sq. ft. per car.	13,200 sq. ft. per car.
21.....	12,100 " " "	14,500 " " "
17.....	13,750 " " "	16,500 " " "
16.....	14,300 " " "	17,160 " " "
15.....	14,850 " " "	17,820 " " "
13.....	16,500 " " "	19,800 " " "
10.....	19,250 " " "	23,100 " " "

The style of elevator will depend upon the kind of power adopted, the space which can be provided for the operating-machinery, and the location of the elevators in the building.

The lifting-machinery is driven either by electricity or by water under pressure.

Electric-elevators are operated by a motor revolving either a drum carrying a hoisting-cable, or a screw with a travelling-nut connected with a system of multiplying sheaves and cables.

In another type of electric-elevator two independent motors are connected by endless ropes which run over travelling-pulleys suspended from overhead sheaves, the hoisting-cable being connected with one of the travelling-pulleys. The direction and motion of the car is regulated by varying the speed of the driving-motors.

Hydraulic-elevators are operated by water from a tank at the top of the building, or from a pressure-tank containing compressed air, or by pressure obtained by weights. The car is moved either by a vertical ram or hoisted by cables attached to the car and running around overhead sheaves to pistons in horizontal or vertical cylinders;

the length of the cylinders being reduced by multiple power-transmission in the hoisting-cable.

The elevators descend by their own weight and the cars are counterbalanced so that they may descend empty at the required speed.

The water is pumped either directly by steam-engines or by electric-motors.

The apparatus should be as simple in construction as possible, to obtain speed and efficiency, with economy in power and cost of repairs, and should be so devised that the failure of the principal parts of the machine, or even of some minor part or safety-device, will not be the cause of accident.

Increased economy in power by complicated mechanism may be more than counterbalanced by the cost of the machine and by repairs and supervision.

To provide against accident, each hoisting-machine should, whenever possible, have a speed-governor to prevent the car from running faster than the maximum required running-speed, and, in addition, the car should be provided with independent automatic safety-clutches to clamp the car to the guides should the speed-governor fail or the car fall. The clutch should stop the car gently, without jolt or jar, and should be under the control of the operator.

The power-operating machinery should be automatically cut off and stop the cars gently at the top and bottom landings.

The overhead sheaves and beams should be sufficiently high to prevent the counterweights striking them when the car is at its lowest limit of travel, or to prevent the car from striking when at its highest limit of travel. Clearance should be provided at the lowest landing, of sufficient depth to prevent the car striking when at the lowest limit of travel.

A device should be provided to prevent the opening and closing of the hatchway-doors, except when the car is at the landing, so arranged that the doors must be closed before the car is put in motion and opened only when the car is stopped.

The hatchway should be kept clear of all operating-machinery, and the machinery should be placed where it can at all times be conveniently inspected and repaired.

The cars in electric-elevators are controlled by electric contact, in hydraulic-elevators by either a hand-wheel or lever operating the starting-valves. The lever arrangement requires a pilot-valve which controls a small hydraulic-motor operating the main-valve. The lever and pilot-valves reduce the labor of the car-attendant, but add extra mechanism to the apparatus.

The car-doors are operated either directly by hand or by a pneumatic apparatus controlled by the foot or by the starting-lever.

Where a large number of elevators is installed, a successful signalling device, operated by electricity, is in use. Two push-buttons only are placed on each floor, one signalling the cars going up, and the other those going down. When the push-button is pressed a light is shown in the next arriving car and notifies the attendant in time to stop at the proper landing. Other lights are located over the hatchway-door, notifying the passenger, a white light for the up trip and a red light for the down trip.

The hydraulic-elevator, unless complicated with a differential water-supply, uses the same amount of power for light as for heavy loads.

The hydraulic-ram elevator is limited in speed and range.

The electric-elevator uses power in proportion to the load, and is more economical than the hydraulic-machines.

The objection to this form of elevator has been the difficulty in controlling the large starting current, which makes the lamps fluctuate when the elevator is operated from the same source of electricity that serves the lamps.

With this defect remedied, all the machinery in the building, including that serving the electric-lights, may be driven by electricity from the same source.

In addition to the transportation of passengers from the street to the various floors, special elevators are frequently installed to serve several stories occupied by the same tenant.

Provision must also be made to carry freight and heavy safes to all the floors.

Elevators must also be provided for furnishing supplies to and removing ashes and wastes from the basement.

THE LOUISIANA PURCHASE EXPOSITION.



THE letting of contracts aggregating about \$11,000,000 for construction-work on the buildings and grounds of the Louisiana Purchase Exposition will begin about December 1. It is planned to apply about \$7,000,000 of this amount on the buildings and about \$4,000,000 on the grounds. The letting will begin with the contracts for four big exhibit buildings which, with their surroundings, will, it is estimated, cost about \$4,000,000. The main buildings will be larger than those of any previous exposition in Europe or America. Some will exceed similar buildings at former expositions by over 25 per cent.

This is the stage which work on the big Louisiana Purchase Exposition has reached:—

The site has been selected to embrace the unfinished half of one of the largest public parks on earth—Forest Park. The part of the park to be used contains 668 acres, and about 300 acres of surrounding property will be added to bring the entire area of the site up to about 1,000 acres.

The ground-plans of the Exposition have been drawn up by a Commission of Architects in which every section of the country was represented. Isaac S. Taylor, of St. Louis, was its Chairman. The other St. Louis members are Eames & Young; Barnett, Haynes & Barnett; Widmann, Walsh & Boisselier; and Theodore C. Link. New York was represented by Carrère & Hastings and by Cass Gilbert, of New York and St. Paul; Boston by C. Howard Walker; Kansas City by Van Brunt & Howe; Omaha by Thomas R. Kimball. The Commission of Architects had the advantage of the advice of a board composed of a sculptor, Mr. F. W. Ruckstuhl, of New York; a landscape-engineer, Mr. Julius Fitzmann, of St. Louis; and a landscape-architect, Mr. George E. Kessler, of Kansas City, who laid out the Boulevard and Park System of Kansas City.

The details of the general arrangement have been worked out by Mr. E. L. Masqueray, of New York, as chief designer. Mr. Masqueray received his early training in architecture at the Ecole des Beaux Arts, Paris, and took a gold medal at the first Salon at which he exhibited. He has for the past five years conducted an atelier in New York with a mission to introduce in America the educational methods in architecture used in France and on the European Continent.

The site has been surveyed and the lines of buildings and avenues staked off.

The designs for the separate buildings, assigned to the individual members of the Commission of Architects, will be submitted in scale-drawings by the middle of October, and the working-drawings of the main buildings to be let first will be ready by November 1. The lettings will be advertised for about three weeks in the leading technical journals throughout the world. There will be no geographical restriction on bidders. The main stipulation will be that the buildings be ready for occupancy at a date sufficiently far ahead of April 30, 1903, the date fixed for the opening of the Exposition, to allow exhibitors time to prepare their displays for the opening. To secure the completion of the buildings by this time, a sufficient bond will be required of the successful bidders. Materials will be employed in the construction-work and conditions will be so adjusted that contractors may fulfil their contracts.

All this work will be in direct charge of Mr. Isaac S. Taylor, of St. Louis, who is at the same time Chairman of the Commission of Architects and Director of Construction and Maintenance for the Louisiana Purchase Exposition. Over him will be only the unsalaried officials and directors of the Louisiana Purchase Exposition Company. It has been decided to do away entirely with the position of Director-General, who, in most former important expositions, was at the head of the salaried forces and controlled practically all the departments, supervising the Department of Works, of Exhibits, of Publicity and Promotion, of Accounts and of Concessions.

On advice of President Higginbotham of the World's Columbian Exposition at Chicago, and for patent reasons, one being that it would tax too severely the energies of one man to attend to all departments, the work will be divided among four chiefs—Director of Construction and Maintenance, whose duties will be those of the Director of Works in former expositions; Director of Exhibits, who will have supervision over exhibits in all departments; Director of Concessions and Admissions, who is to supervise the granting of all concessions and to have charge of the collection of revenues from them and from admissions; and Commissioner-General, who is to have charge of the accounts of the Company.

All these department-chiefs are to report to the Executive Committee and the Board of Directors, either through another committee or directory. Mr. Taylor, Director of Construction and Maintenance, reports to the Committee on Grounds and Buildings, a committee of seven members, and through them to the Executive Committee and the Board of Directors.

The St. Louis World's Fair is the first at which the same man was Chairman of the Commission of Architects as well as Director of Construction and Maintenance. This is the first great exposition in which the same man who led the planning of the exposition has the chieftaincy in carrying out the construction. The arrangement adopted in St. Louis is pronounced the ideal one by every person who has had a part in the construction of former expositions. Mr. Taylor had a large voice in the selection of the Commission of Architects and presided at their meetings from the beginning. On a trip to the East he engaged the Chief Designer, Mr. E. L. Masqueray, in New York.

The plan which will be pursued in the construction of a building at the St. Louis Exposition will be to let the entire building under a single contract, the contractor to have control of all the sub-contractors. "This plan is by far the most satisfactory," says Mr. Isaac S. Taylor. "Where the Exposition Company lets sub-contracts itself, each sub-contractor must be watched, and it is difficult to fix responsibility for faulty work. For this reason in former expositions the company had to pay extra for reconstruction of faulty work, and the cost of the extra swelled the total cost of construction immensely."

Mr. Isaac S. Taylor has been in St. Louis all his working-life. He was born in 1851 in Nashville, Tenn. He was graduated from the St. Louis University with class honors in 1868. After studying for six years under the preceptorship of George I. Barnett, architect, of St. Louis, he was taken into partnership, and the business was then conducted under the firm-name of Barnett & Taylor. The Southern Hotel, the first fireproof hotel in St. Louis, and still one of the finest hotels in the city, was erected by this firm. In

1879, Mr. Taylor severed his connection with George I. Barnett, and since then has been in business for himself in St. Louis. He has erected some of the biggest and best buildings in the city, and has done much work in Illinois and Texas. X.

A GOOD COMPETITION-PROGRAMME.

THE Board of Directors of the Rosenberg Library Association, a corporation of the city of Galveston, Tex., organized under the laws of the State of Texas, herewith respectfully invites you to submit a design, in competition, for the proposed Rosenberg Library, to be erected on a plot of ground, 120' x 215', situated at the northwest corner of Tremont Street and Sealy Avenue, in said city of Galveston. A survey of said ground showing correct grades and levels and containing all other needed information is hereto attached. The plot is practically level. The soil is sandy and capable of sustaining safely a load of three tons per square foot. The bottom of footings cannot extend more than 2½ feet below the level of the sidewalk curb.

It is the purpose of the Directors to raise the grade of the entire lot to a point 5 feet above the sidewalk level, and to establish the level of the main floor at a point 10 feet above said sidewalk, so as to permit of a 9 foot basement.

The building must be of modern fireproof-construction, and cost not exceeding the sum of \$100,000, including heating and ventilating apparatus, plumbing and gas piping, electric-wiring, mantels and hardware; but excluding the book-stacks, gas and electric fixtures, furniture and decorations, filling and grading of the lot and architect's fee.

The exterior is to be of such material as each competitor deems best suited to the execution of his design, and the interior is to be finished generally in first-class style.

Note.—There is no available acceptable stone in the State of Texas, with the exception of a "red" and "gray" variety of coarse granite, which might be utilized for the facing of the basement-walls from the finished grade to the first-floor level; also for steps, retaining-walls, etc.

In general, the requirements will be as follows, the dimensions of the various rooms, etc., being left to the judgment of each individual competitor:—

Basement.—Receiving and packing room, with lift; storage-rooms, bicycle-room, living-rooms for janitor, boiler and fuel rooms, separate toilet-rooms for men and women.

Main Floor.—(The necessary amount of space to be allotted to lobby, corridors, stairways, etc.) General reading-room (which may be also used as a reference-room), newspaper and periodical room, directors' room with vault, librarian's room with vault and toilet-room, cataloguing-room with lift to receiving-room, delivery-hall, stack-room.

Second Floor.—(The necessary amount of space to be allotted to corridors, stairways, etc.) Lecture-hall, with seating-capacity for from 500 to 700 persons, equipped with stage and anterooms and provided with a gallery at one end—if necessary to accommodate that number of people. Children's reading-room. Separate toilet-rooms for boys and girls. Two rooms to be used as studies. (If deemed advisable the newspaper, periodical and file room may be located on this floor.) Stack-room.

The building is to occupy only so much of the entire available area of the site as may be necessary to fully incorporate the foregoing requirements. The stack-room must be large enough to accommodate 60,000 volumes.

Entrances to the building must be from both streets, and an entrance to the basement arranged on the alley-side for the reception of books, etc. The principal architectural front should be on Tremont Street, which is a boulevard and one of the leading thoroughfares of the city. The building must be set back from the sidewalk not less than 50 feet on Tremont Street and 25 feet on Sealy Avenue. The view of the building from the north will be equally as conspicuous as that from the south, so that the treatment of the north elevation should be such as will harmonize with the street-fronts. Competitors are warned that the prevailing winds in this vicinity are south and southwest, and that warm weather prevails during nine months of the year, making high ceilings and large openings desirable.

This competition is limited to three invited non-resident architects or firms of architects, as follows: Ackerman & Ross, of New York, N. Y.; Eames & Young, of St. Louis, Mo.; Thos. H. Kimball, of Omaha, Neb.; and all the resident architects of the City of Galveston.

The Board of Directors has engaged Mr. A. F. Rosenheim, architect, of St. Louis, Mo., to act as their professional adviser and consulting architect, to aid them in preparing these instructions, in making the award and in other ways.

The architect whose design is selected as being the best will be retained to prepare the working and detailed drawings and to supervise the construction of the building. He will receive, in compensation for his full professional services, a fee of five per cent upon the total cost of the building when completed, as established by the American Institute of Architects. To provide for the contingency of delay or of the discontinuance of the work, the architect so retained will be paid the sum of \$1,000 upon the award of the competition, the said payment to be regarded as on account of the final commission.

The unsuccessful non-resident competitors will each receive the sum of \$250, together with their drawings, not later than ten days after the award of the competition. Of the designs submitted by the unsuccessful resident Galveston architects, the two best will be selected by the Board of Directors, with the assistance of the Consulting-architect, and the authors of the designs so selected will each receive the sum of \$250 at the same time the invited unsuccessful competitors are paid.

Drawings.—Each design submitted shall consist of the following drawings only (no alternate design will be considered), and shall be enclosed in a portfolio, or between stiff cardboard, securely wrapped, sealed, and addressed to Mr. A. J. Walker, President, Rosenberg Library Association, Galveston, Tex.

1. Plan of basement.
2. Plan of main floor.
3. Plan of second floor.
4. Rendered elevation of Tremont-Street front.
5. Sketch elevation of Sealy-Avenue front.
6. Sketch elevation of north front.

7. Block section through the building, showing height of stories and the proportions of the most important rooms.

All to be drawn to the scale of ¼ inch to the foot, excepting the Tremont-Street front, which should be ½ inch to the foot.

No perspective sketch will be received.

All drawings must be on "Whatman" paper, unmounted, sheets to be 19" x 27". Plans to be blacked-in solid. The Tremont-Street elevation is to be rendered with shadows accurately cast, with the light falling at an angle of 45 degrees from the left side of the drawing. One figure only may be shown on this rendered elevation to give scale.

Drawings to be titled "Competitive design for 'Rosenberg Library,' Galveston, Tex., (name), Architect," and must be addressed as before indicated, and delivered at Galveston not later than October 21, 1901.

Any competitor whose drawings fail, in any respect, to conform with the foregoing requirements and conditions will be placed out of the competition.

Inquiries for additional information must be made in writing only, and forwarded by mail to Mr. A. J. Walker, and any answer or additional information given will be simultaneously communicated by mail to each competitor, by circular letter; but no such information will be given after October 7, 1901.

A brief description of the building, typewritten or on plain legal cap, calling attention to any special points of the design, materials proposed, etc., must accompany the drawings, together with a detailed estimate of the cost. Said estimate to cover all parts of the work necessary to complete the building, with the exception of the "book-stacks, gas and electric fixtures, furniture, decorations, and the filling and grading of the lot."

The final decision will be rendered and the award made not later than November 4, 1901, at which time each competitor will be promptly notified and a copy of the report of the Consulting-architect sent to him.

No drawing will be exhibited or made public until after the award, and not then without the consent of the author.

Nothing original, as to this competition, in the unsuccessful designs shall be used without compensation to the author of the design in which it appears. The amount of this compensation shall be agreed upon between him and the board, and, in case of disagreement, it shall be referred to the Consulting-architect, whose decision shall be final, in regard not only to the amount to be paid, but in regard to the real existence of any such claim.

Very respectfully,

Board of Directors of Rosenberg Library Association, Galveston, Tex.

A. J. WALKER, President,
M. F. MOTT, Vice-President,
J. P. ALVEY, Treasurer,
I. LOVENBERG, Secretary,
H. A. LANDES,
JOHN SEALY,
WM. T. AUSTIN.

A. F. ROSENHEIM, Consulting-architect.

GALVESTON, TEX., August 23, 1901.

PROTECTION OF BUILDINGS FROM LIGHTNING.



PAPER by Mr. Killingworth Hedges was read before the British Association, in which it was said that the last time the subject was brought before the Members was at the Bath meeting in 1888, when a joint discussion of Sections A and G was held; but there has been no official report as to the effect of lightning-stroke upon buildings protected by conductors since the Lightning-rod Conference of 1882. Interest in the subject has been again revived, first, by the Electro-Technische Verein of Berlin, who have this year published a set of rules; and, secondly, by the establishment in this country of the Lightning Research Committee, organized jointly by the Royal Institute of British Architects and the Surveyors' Institute. The author compared Continental and American practice, and gave an account of his rearrangement of the system used at St. Paul's Cathedral, where the conductors, erected as recently as 1872, were found to be totally inefficient, both as regards the conductivity of the joints and the resistance of the earth

connections. In the plan recommended, both for that installation and for the more recent one at Westminster Abbey, the number of ordinary conductors from air to earth has been greatly increased, and, besides these, horizontal cables are run on the ridges of the roofs and in other prominent positions so as to encircle the building, being interconnected to the vertical conductors wherever they cross one another. The horizontal cables are furnished at intervals with aigrettes, or spikes, which are invisible from the ground level, and are designed to give many points of discharge. At the same time they, in conjunction with the cables, would receive any side flash which might occur should any portion of the building receive a direct stroke of lightning.

The unreliability of soldered joints for conductors, whether of cable or tape, has led the author to design a special joint-box, which can be applied for uniting any portion of the system together in such a manner as to give great mechanical strength as well as good electrical contact; at the same time any box can have points inserted so as to form an aigrette in any desired position. Owing to the difficulty of sinking an earth-plate of sufficient area, on account of old foundations, a special form of tubular earth has been designed which takes up little space and has the advantage that if a suitable moist ground is not obtainable the desired low electrical resistance is attained by leading a tube in connection with the rain-water pipes, so that a portion of the rainfall is diverted to the tubular earth.

The author alluded to the immense amount of damage to property annually occurring which might be prevented if efficient conductors were installed. He mentioned that instead of every church having its lightning-conductor, not 10 per cent are so provided; and in the case of other public buildings the percentage is not much larger, the reason in the case of the former class of buildings being that a vicar wishing to safeguard his church has usually to pay the cost out of his own pocket.

Architects, according to Mr. Killingworth Hedges, as a rule, treat the question of lightning-conductors in a very brief manner, and in their specifications seldom say anything as to the way in which they are to be run, or the necessity for good joints and good earth connections. — *The Architect*.

BOOKS PAPERS

WHETHER it be fact or fiction, the old story of the discovery of form by the lover who traced the shadow of his beloved upon the sunlit wall is a pretty conceit, and makes a good text upon which to write many words of wisdom.

Mr. Crane begins his book¹ by pointing out that the silhouette is the child's first idea of form, the relief of black upon white, or white upon black; but most of us have observed that the ordinary child and the ignorant adult are confused by silhouettes, and yet understand outline drawings as if they were absolute imitations of the various forms they represent. If only the young could be made to see tree-forms, for example, as masses, like the reverse side of a Japanese fan, half the trouble of teaching drawing would fade away.

But this difference of opinion is of no consequence, as, in the main, we must endorse Mr. Crane's dicta. His division of graphic and ornamental art from one another is just; but he points out that both require faithful study and practice, and knowledge of form. Hence, the idea that any one can design, whereas it requires special talent to paint pictures, is absurdly fallacious. To make a successful design, to adapt nature to a decorative form, "requires as much art as to make a graphic picture, *perhaps more*." Just so; hence, the art education of the designer should be as thorough as that of the painter or sculptor. Nor can the decorative-artist get on without imagination, and his memory should be a store-house of natural forms, "that selective kind of memory which, by constant and close observation, extracts and stores up the essential serviceable kind of facts for the designer; facts of form, of structure, of movement of figures, expressive lines, momentary or transitory effects of color—all those rare and precious visual moments which will not wait, and which happen unexpectedly. They should be captured like rare butterflies and carefully stored in the mind's museum of suggestions, as well as, so far as possible, pinned down in the hieroglyphics of the note-book."

All through his book, Mr. Crane insists upon line—the differing lines required to represent, say, fur, feathers, textures, plants and figures, when drawn with pen, pencil or brush; and he writes of the latter in such a way that all the adversaries of infantile brushwork cannot but greatly rejoice. "We can all feel the charm of the broad brush washes and emphatic brush touches of a master of water-color landscape such as De Wint. This is mastery of brush and color in one direction—tone and effect. A Japanese drawing of a bird or a fish may show it equally in another—character and form. . . . The empire of the brush . . . is very large; and it commands, in *skilled hands*" (we must emphasize this in italics), "both line and form, in all their varieties, and leaves its impress in all the departments of art." "*Skilled hands*!" Just think for a moment of the "skill" of little hands of three or four years of age, and then contemplate the daubs perpetrated by the children who draw with the brush in

our Kindergarten schools! What becomes of prolonged observation, of proportion, of accuracy, of carefulness of touch? Surely this is putting the cart before the horse, with the result that yet another generation will be able to say truthfully, "We can paint, but we cannot draw." Why should not children sketch in freely in lead-pencil, before using the brush, what Mr. Crane calls a "mere scaffolding of preliminary lines," so as to "make plans for the cheap masses and forms."

To the following we must demur. "The water-color painter would find that blocking-in in flat local color all his forms and the colors of his background was an excellent method of preparatory work, and afforded good practice in direct painting, since he could add his secondary shades and tints in the same manner." How this method could "preserve that fresh effect of the undisturbed washes which is the great charm of water-color," we fail to see, as the "great charm" is the transparency of single washes of color. For a preliminary sketch, the advice is good.

The "Tree of Typical Pattern Forms, Units and Systems" is well worth study, giving, as it does, the constantly recurring and yet varying types of "form and line, such as the lotus of the Egyptians, the anthemion of the Greeks, the pineapple-like flower and palmette of the Persians, the peony of the Chinese." It is ingenious and, like all Mr. Crane's illustrations, masterly; indeed, they alone make the volume a valuable text-book, some of the bird and flower designs being exquisite. On page 138 may be seen radiating and recurring lines, counterbalancing other lines in the human skeleton and muscles, and on the opposite page the general form of foliage and masses of trees—all showing the variety of structures in nature. Mr. Crane is a mast of line, and his illustrations of composition, formal and informal, should be studied carefully. Indeed, every artist can gather an immense amount of information from the book whether he means to apply it to Graphic or Decorative art; and the intelligent amateur might do worse than lay Mr. Crane's advice to heart. For instance, when young ladies paint plates and design chair-backs, let them consider the following: "The painter and sculptor often seek as *complete representation* as possible, and what may be called complete representation is within the range of their resources. Yet, unless some individual choice or feeling impresses the work of either kind, it is not a *representation*, but becomes an *imitation*, and, therefore, inartistic. The decorative designer and ornamentist seek to *suggest* rather than to *represent*. . . . The painter will sometimes feel that he only wants to suggest forms, such as figures and buildings, half-veiled in light and atmosphere, colors and forms in twilight, or half lost in luminous depth of shadow. The decorative designer will sometimes want to emphasize forms with the utmost force and realism at his command, as in some crisp bit of carving or emphatic pattern, to give point and relief in his scheme of quantities." Had our grandmothers adhered to these rules, we should not have been obliged to make great holocausts of Berlin-wool on canvas screens, representing the distorted features of the "Apostles receiving the Gift of Tongues" in chrome and scarlet, and the equally curious (as regards drawing) "Rebecca at the Well" surrounded by attendants and camels. Many are the pages which we have marked for comment, but space will not permit us to extract any more jewels from their setting; we may be allowed, however, to conclude with the following: "The language of line and form we use will neither be forcible nor convincing, neither faithful to natural fact nor true to the imagination, without close and constant study of external forms, and of its structure as well as its aspect."

ILLUSTRATIONS

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

A COMPETITIVE DESIGN FOR THE CITY-HALL, NEWARK, N. J.: TWO PLATES. MESSRS. O. C. HERING, G. PIKE AND E. M. WHEELER, ASSOCIATED ARCHITECTS, NEW YORK, N. Y.

DESIGN FOR A HOUSE. MR. WILLIS POLK, ARCHITECT, SAN FRANCISCO, CAL.

THEATRE, HERMOSILLO, SONORA, MEX. MESSRS. G. W. PERCY AND WILLIS POLK, ARCHITECTS, SAN FRANCISCO, CAL.

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

A VILLA AT SAINT-CLOUD, FRANCE. M. E. ARNAUD, ARCHITECT.

This plate is copied from *La Construction Moderne*.

¹ "Line and Form," by Walter Crane. London: Bell & Sons. 12s.

[Additional illustrations in the International Edition.]

BRYANT PARK STUDIO BUILDING, NEW YORK, N. Y. MR. CHARLES A. RICH, ARCHITECT, NEW YORK, N. Y.

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THE COMMUNS: NEW PALACE, POTSDAM, PRUSSIA.

ST. ETIENNE, TOULOUSE, FRANCE.



BLUE-PRINTS WHICH WILL NOT DISCOLOR.—Architects and all who use blue-prints are frequently annoyed by the discoloring of their prints and the blurring consequent upon exposure to rain or moisture. The following preventive is recommended by *Mines and Minerals*: Immerse in melted paraffin until saturated a number of pieces of an absorbent-cloth a foot or more square, and when withdrawn and cooled they are ready for use at any time. To apply to a blue-print, spread one of the saturated cloths on a smooth surface, place the dry print on it with a second waxed cloth on top, and iron with a moderately hot flat-iron. The paper immediately absorbs paraffin until saturated, and becomes translucent and highly waterproof. The lines of the print are intensified by the process, and there is no shrinking or distortion. As the wax is withdrawn from the cloths, more can be added by melting small pieces directly under the hot iron. By immersing the print in a bath of melted paraffin the process is hastened, but the ironing is necessary to remove the surplus wax from the surface, unless the paper is to be directly exposed to the weather and not to be handled. The irons can be heated in most offices by gas or over a lamp, and a supply of saturated cloths obviates the necessity of the bath. This process, which was originally applied to blue-prints to be carried by engineer-corps in wet mines, is equally applicable to any kind of paper, and is convenient for waterproofing typewritten or other notices to be posted up and exposed to the weather.

PAVEMENTS OF CRYSTAL.—You would scarcely expect to read of streets paved with crystal in any other than a fairy book, yet a new paving-material, called ceramo-crystal, which is of great strength and durability, has been invented by M. Garchey, the well-known scientist, and preparations are now being made to use it on some of the main streets in several European cities. Ceramo-crystal is mainly composed of pounded glass, which has simultaneously been submitted to a considerable pressure and to a very high temperature. Its hardness is described as perfectly astonishing by those who have seen it tested, and it has a resisting-power of 2,718 pounds to 4,828 pounds to every hundredth part of a square yard. Moreover, neither cold nor hot weather has any influence on it. A weight of 8,400 pounds was recently allowed to fall on a flagstone of this material, yet it did not make the slightest impression on it, and not until it had fallen twenty-two times from a height of 3 feet did a crack appear in the crystal. The authorities of more than one city say that if the tests which they propose to make on a few main thoroughfares prove satisfactory, it is practically certain that all the streets will in time be paved with ceramo-crystal. They point out, however, that a few years must elapse before it can be really known whether or not this new material possesses all the merits that M. Garchey's friends claim for it. — *London Mail*.

POWER FROM BLAST-FURNACE GAS.—The *Iron Age* makes the following interesting editorial comments on the progress made in Germany in connection with the utilization of blast-furnace gas for power as described in a recent paper by Herr F. W. Luermann, before the *Verein Deutscher Eisenhüttenleute*, viz: "Herr Luermann, after some incidental reference to the apparent inactivity in this field of American engineers, records the fact that furnace-gas engines to the extent of 77,545 horsepower have been delivered or are under construction in Europe, Germany being credited with 44,665 horsepower, while Great Britain is in the list with 600 horsepower. The editor believes, however, that the apathy of American furnace-managers is much more apparent than real. Engine-builders and iron-makers are somewhat mysterious as to what they are really doing. Suffice it to say that our engineers are not by any means satisfied with the designs brought forward, particularly in blowing-engines, and that, quietly, a good deal of work is being done. Luermann has been doing splendid work as a recorder of current progress, and his latest paper, the third of the series, brings developments close up to date. His reports are all the more interesting and valuable since he is not in any way connected with any make of gas-engine, and occupies the position of an independent and a frank critic. At the outset Luermann took the ground that the furnace-gas must first be thoroughly cleaned not only of dust, but also of metal vapors and of steam. He draws the conclusion from the experience gathered in practice thus far that fluctuations in the composition of blast-furnace gas have no appreciable effect, and, further, that the low calorific value of some gases is no serious obstacle, a Koerting-engine, for instance, being operated at the Mansfeld copper-smelter at Eisleben with gas having only 700 heat-units per cubic metre. The cleaning of the gas, however, is now acknowledged to be a vital point. Luermann de-

scribes the Kloenne washer, the Theisen centrifugal machine, the plant at Frieden, Gutehoffnung, and Georg-Marie works, which are pronounced the most elaborate in Germany. At Differdingen the first catching and cooling installation proved inadequate, and the records show that the blowing-engines did not run as steadily as the gas-engines used for operating dynamos. Luermann also describes the different types of gas-engines in use, the Sersing, the Oechselhaeuser, the Koerting and the Nuernberg. The question of water-cooling the piston is one which seems to have come forward lately, and the conclusion has apparently been reached that up to a certain size of cylinder, such precautions are not necessary. It seems that designers are also turning to the question of reducing the waste of gas at the tunnel-head by more elaborate and efficient arrangements. Luermann reports that data relative to the consumption of gas in engines are not yet numerous, and vary from 2.56 centimetres to 3.67 centimetres per horsepower. With the high cost of coke in Germany, the saving figures out about \$1.50 per ton of pig-iron produced, which is certainly a very tempting sum. There can be no doubt but what the utilization of the waste-gas from the blast-furnace for the operation of blowing-engines, for the production of electric-power, and possibly for the manufacture of calcium-carbide, has proved practical. While our lower fuel-cost does not hold out so large a saving as that realized in Europe, and while the powdery ores of many of our leading districts threaten to give us special trouble, it seems absolutely necessary that our gas-engine builders on the one side and our furnace-men on the other must soon seriously attack the problem of adapting these improvements to our special conditions."

A SAMPLE OF HYDRAULIC MINING.—"The extent of these mining operations may be further illustrated by a glance at two of the large hydraulic mines as types of the class—viz, the North Bloomfield, in Nevada County, Cal., and the Spring Valley, at Cherokee, Butte County. The capital invested in the North Bloomfield was \$2,500,000. To gain outlet for the tailings into the nearest canyon, a tunnel 7' x 9', 6,900 feet long, had to be cut through solid rock. The sluice-line was over 2 miles in length and 6 feet wide. The "bank," or auriferous-gravel deposit, was 400 feet deep and 600 feet wide, the company owning a mile and a half in length of this deposit. A 6-inch giant was used under a 500-foot head delivering 32.8 second feet of water and developing nearly 1,690 horsepower; and a 7-inch nozzle under a 250-foot head, delivering 31.54 second feet and developing about 1,560 horsepower. From 15,000 to 18,000 cubic yards of gravel were washed away each day of twenty-four hours. The Spring Valley bank was about 400 feet in height. The bed-rock tunnel was much shorter, but to obtain a dumping-ground the company had to purchase over 700 acres of valuable farm-land. At the time of the writer's visit in 1882, they had buried this land 12 feet deep with tailings, were expecting to add 3 feet to this depth, and still would be under the necessity of buying more land." — *From a paper by Mr. Latham Anderson*.

PEAT-WOOD IN AUSTRIA.—The adaptability of peat as material for fuel is at the present time of particular interest. The United States Consul-General at Vienna says that, although, as yet, peat cannot successfully compete as a fuel with anthracite coal, since in proportion to its heating value it is of great bulk, and, hence, makes transportation dearer, nevertheless, with the necessity of making practical use of it, invention cannot fail to be stimulated. The problem of so saturating and compressing it into bricks as to make it a substitute for anthracite coal for household and industrial purposes can, without doubt, be eventually solved. Machines have already been constructed by means of which this valuable product can be mixed with facility; and peat has been put to a variety of industrial uses. Progress in Austria in the employment of peat is shown in the manufacture of a patent artificial wood—so-called peat-wood. This artificial wood is especially distinguished by the property that, in moist soil it hardens steadily, owing to the formation of calcareous hydrosilicate of alumina. It is perfectly adapted as a material for street-paving, being, it is said, absolutely free from dust, noiseless, and exceedingly durable. Natural-wood blocks, on the other hand, in the opinion of Consul Hughes, do not sufficiently resist atmospheric influences, and soon warp. Peat-wood is also excellently suited for railroad-sleepers. Screws, rivets and nails become as firmly fastened therein as in the best of oak. Wood-sleepers rot in damp soil, while moisture only renders the peat-wood harder. All kinds of wood, from willow to oak, can be excellently imitated in this new material, which, adds the Consul, holds out, in suitable districts, fair promise of growing into a source of profitable business enterprise. — *Journal of the Society of Arts*.

OXYGEN BY CENTRIFUGAL POWER.—A machine for increasing the percentage of oxygen in air before using it in furnaces is described in *Le Génie Civil*, Paris. *Engineering*, London, gives the following abstract: "The machine is said to be due to M. Mazza, an Italian engineer, and is merely a centrifugal separator. On passing air into this centrifugal machine, the oxygen molecules, being heavier than the nitrogen ones, tend, it is stated, to concentrate at the periphery of the machine, and on drawing off the air at this surface it is found to be considerably richer in oxygen than normal air. In fact, the oxygen contents can, it is said, be readily brought up to twenty-six per cent of the total. Common air, it will be remembered, contains but 23.2 parts by weight of oxygen. The centrifugal machine used acts at the same time as a blowing-fan, the enriched air being delivered under a slight pressure, while the impoverished air is drawn off continuously from near the centre of the machine. About 2 horsepower is needed, it is stated, to operate a separator capable of delivering 18,000 cubic feet of enriched air per hour. This enriched air has been used for supplying the furnaces of a boiler, and has led, it is stated, to an increase of water evaporated per pound of coal from 9.5 pounds with natural draught to over 12 pounds with the Mazza apparatus."

THE AMERICAN ARCHITECT AND BUILDING NEWS

ADVERTISERS' TRADE SUPPLEMENT

No. 233

SATURDAY, OCTOBER 5, 1901

VOLUME LXXIV
No. 1343

THE FLUSHOMETER.

KENNEY SYSTEM.

THE modern way of operating and flushing water-closets in public and private buildings by means of the Flushometer marks a distinct



Fig. 1.

advance in sanitary plumbing, and solves many troublesome problems in a unique but thoroughly practical and satisfactory manner.

The installation of this system does away entirely with the individual overhead flush-tank, with its troublesome pull and chain and ball-cock, and there is practically no rushing and hissing of the water in the bowl. In buildings where there are a number of water-closets one tank is sufficient for them all. This, of course, simplifies the installation.

The absence of flush-tank overhead saves room and disfigurement of the wall, and enables the architect to arrange his plans more conveniently than by any other system, permitting the placing of windows in the space that would otherwise be occupied by the flush-tank, and the construction of bath-rooms and lavatories of the airiest, lightest and most healthful description.

The Flushometer is applied close to the bowl, and no space exists for foul air or odor to collect, as is the case in an empty flush-pipe from the ordinary tank. To operate the device the handle is simply pulled forward and then let go, when the valve will close slowly of its own accord.

Figure 1 shows the application of the Flushometer.

If more desirable, the Flushometer itself

can be concealed as well as the pipes, and the manner of accomplishing this is shown in Figure 2. This latter system is largely used for office-buildings, depots, public buildings, etc., where as few parts as possible are desired to be shown, thus obviating the necessity of cleaning nickel-plated work and at the same time lessening the chances of any one interfering with the working parts of the Flushometer.

When one considers the advantages that lie in the adoption of the Flushometer and that it may be obtained at less expense for installation and maintenance than is possible by any other means, the wide popularity of this system of operating and flushing water-closets is readily appreciated.

Prominent architects everywhere are specifying the Flushometer.



Fig. 2.

The Kenny Company, 72-74 Trinity Place, New York City, who are the sole manufacturers, will be pleased to furnish further particulars and list of recent installations upon application.

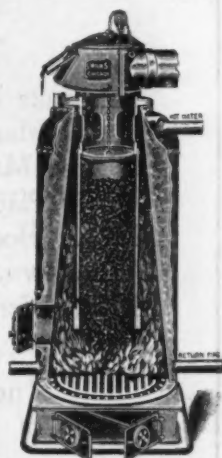
I. P. FRINK, 551 Pearl Street, New York, has just issued a very attractive catalogue of lighting specialties, which merits attention. It is handsomely bound, with a most artistic cover, and shows over 150 illustrations embracing every conceivable style of reflector and reflecting fixture for oil, gas or electric light, with a supplement of gas and electric fixtures, chandeliers, brackets, drop-lights, etc. Any problem in lighting that may pre-

sent itself can be successfully elucidated by a study of its contents. We find illustrated many designs suitable for lighting churches, halls, theatres and large assembly-rooms generally; special ceiling-fixtures for drawing-rooms, art-galleries, etc., where a system of concealed lighting is desired; special cluster reflectors for store interiors, hospitals, schools, offices, asylums and institutional buildings; reflecting-shades which can be used in a variety of ways to great advantage; their peerless system of window-reflector, which has been adopted by the finest stores in the country, and is so well known as to hardly need comment, and many other fixtures for all classes of work, from the plainest to the most ornate. A copy of this catalogue will be a useful addition to every architect's files.

THE WILKS HOT-WATER HEATERS.

THE Wilks, while being one of the oldest of the hot-water heaters on the market, still retains great prestige. The only way in which heat will move hot water is in a vertical direction, say the manufacturers, and these heaters give the greatest vertical space and height in proportion to size, and the conical-shaped inner cylinder, in connection with the openings all round the chamber of the magazine, so distributes the heat as to give great heating surface and capacity.

The heaters being made of steel, are strong as well as light, as the thicker the metal, the more heat required to heat any given quantity of water through it, and they have no sections, coils or pipes to fill up, be kept tight or leak. In the larger sizes, self-feeders, by filling the coal-magazine with coal, fire can be kept for twelve hours or longer without attention, which is a great advantage. They have recently improved the construction of these heaters, and are making all sizes from 10 inches to 4 feet in diameter, for all purposes for which hot-water or steam is required. The S. Wilks Manufacturing Company, of Chicago, who are the manufacturers, write that they will be pleased to send catalogue on application.



Wilks Hot-water Heater.

(Continued on page 3.)

"The Georgian Period"

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

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

PUBLIC BUILDINGS

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

CHURCHES

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

IMPORTANT HOUSES

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

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

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

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

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Skilled workmanship, combined with the highest grade of material and ingenious ideas, have here produced the best type of manufactured product.

In support of these statements we have issued a new catalogue showing a few illustrations of "Kinnear" Steel Rolling Doors and Shutters in actual use which will serve to convey a general idea of their utility.

Here these useful articles may be seen not only covering the great openings in the car-houses of a street-railway, but also keeping company acceptably with works of pure Fine-Art, since one view shows how they give in-

side protection to the galleries of the Art Institute in Chicago.

The catalogue is sufficiently illustrated, too, with detail-drawings which give a clear idea of the mechanism employed, and inform the architect what provision he must make for the installation of this useful protective adjunct of fireproofing.

Compact construction, durability and ease of operation combine features not hitherto obtainable.

Details of special requirements promptly furnished upon application.

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NEW PIPE-CUTTING PLANT.

CRANE COMPANY, of New York, a branch of Crane Company, Chicago, manufacturers of valves, fittings, pipe, etc., has added to its already large quarters a plant for the cutting, threading and flanging of large and small pipe and for pipe-bending.

It is located at 497 to 505 Cherry Street, connecting in the rear with the pipe-storage

warehouse at 742 and 744 Water Street, and being opposite the main warehouse at 490 and 502 Cherry Street. Being directly on the East River, and very easily accessible to lighters, it is in an exceptionally convenient location for handling heavy work.

The building is 125' x 100', the main shop being 110' x 63' and devoted to the cutting, threading and flanging of large pipe. The rear shop is devoted to the handling of small pipe and to pipe-bending.

A paved driveway runs through the building at one end from the pipe-storage yard to Cherry Street.

The pipe is brought from the yard to the machine on trollies with air-lifts and, when ready, is loaded into the trucks in the same way.

There are thirteen pipe-machines in the main shop, and, in addition to these, there are machines for screwing up flanges of all sizes, and facing-lathes for refacing flanges after they are screwed on.

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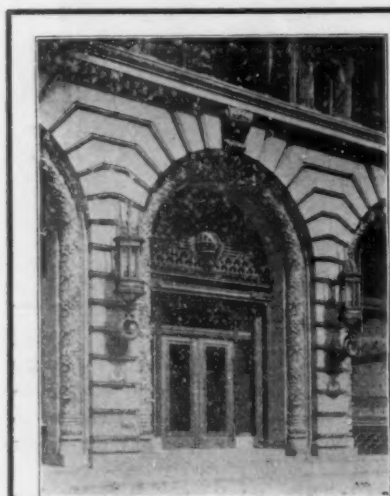
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to any shop in the East for the handling of pipe-work and, practically, sketch-work, which is made a specialty.

NOTES.

THE use of a battery of "Chloride Accumulators" in mills and factory buildings should be brought to the notice of architects and builders as a most economical and satisfactory solution of the difficulty in supplying the few lights needed for all-night use or office-work after the mill machinery is shut down, the

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operation of generators at such times being usually undesirable.

The Electric-storage Battery Company of Philadelphia has issued several illustrated bulletins describing the application of "Chloride Accumulators" to factories and mills which will be forwarded upon request.

On account of the fact that the space devoted to floor-moulding has been entirely inadequate to the demands of the business, and in order to relieve the works at Canal and Judd Streets of some of the heavy work, Crane Company, Chicago, has this summer erected at its works at Jefferson, Van Buren and Desplaines Streets, a foundry which is to be devoted exclusively to very heavy work, i. e., flanged fittings and large valves.

It is a one-story brick building with a slate roof, and is equipped with two cupolas, an electric travelling-crane, and every other modern convenience.

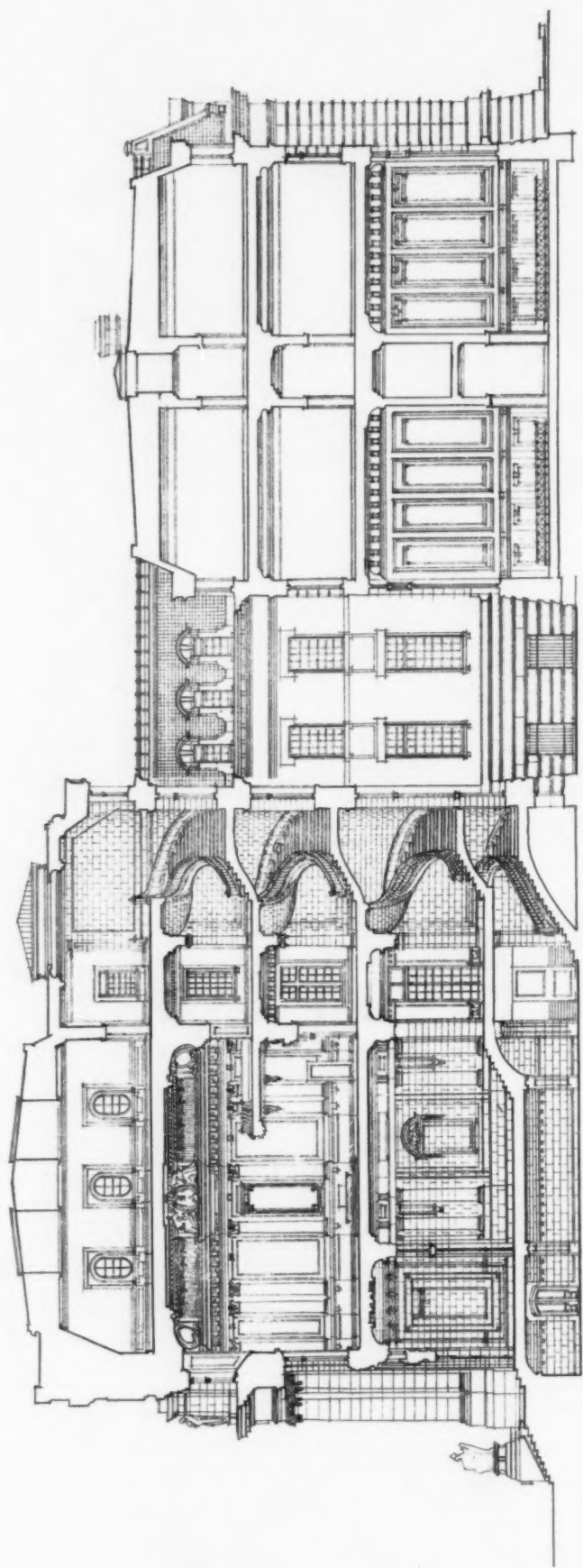
This new foundry will increase Crane Company's capacity for very heavy work about 50 per cent, and it is expected to be in operation in about thirty days.

The Soderlund Twin Faucet

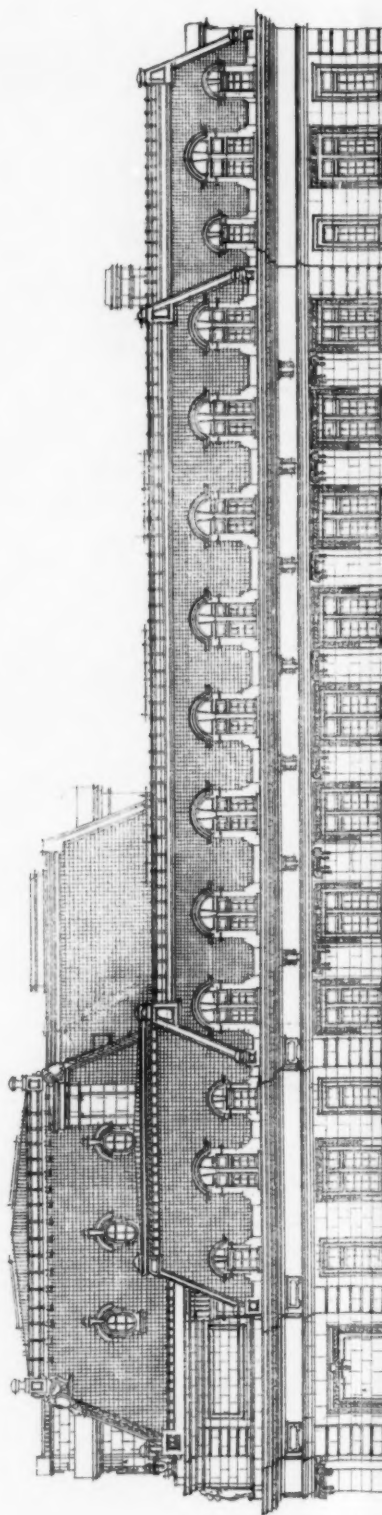


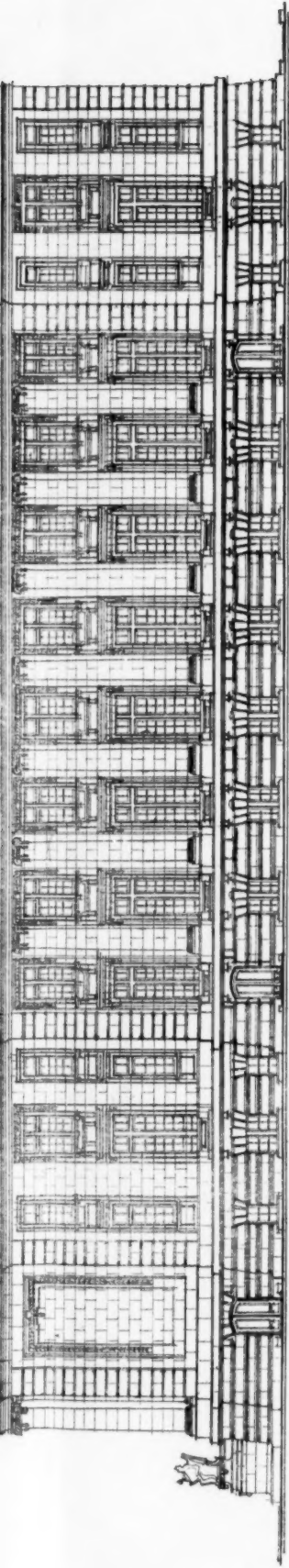
And in all places where hot and cold water is used
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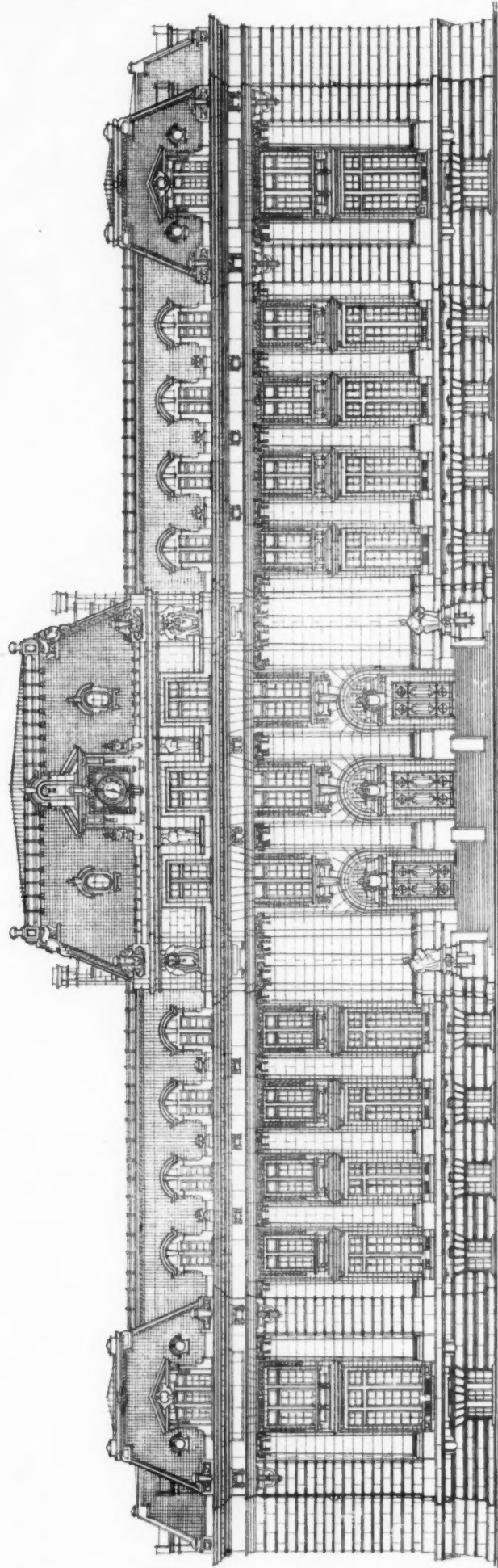


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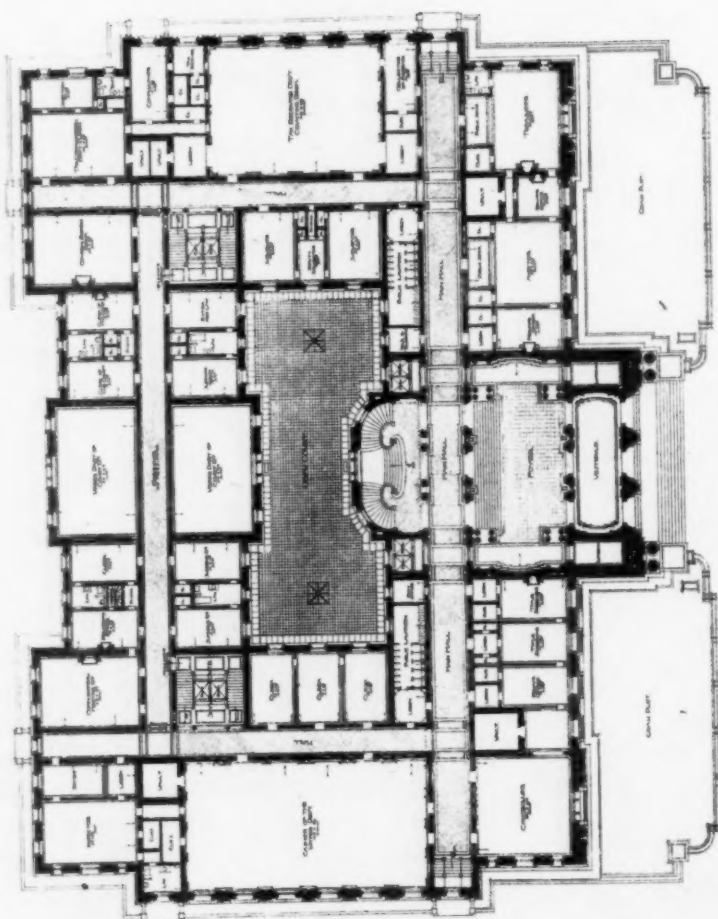


SIDE ELEVATION

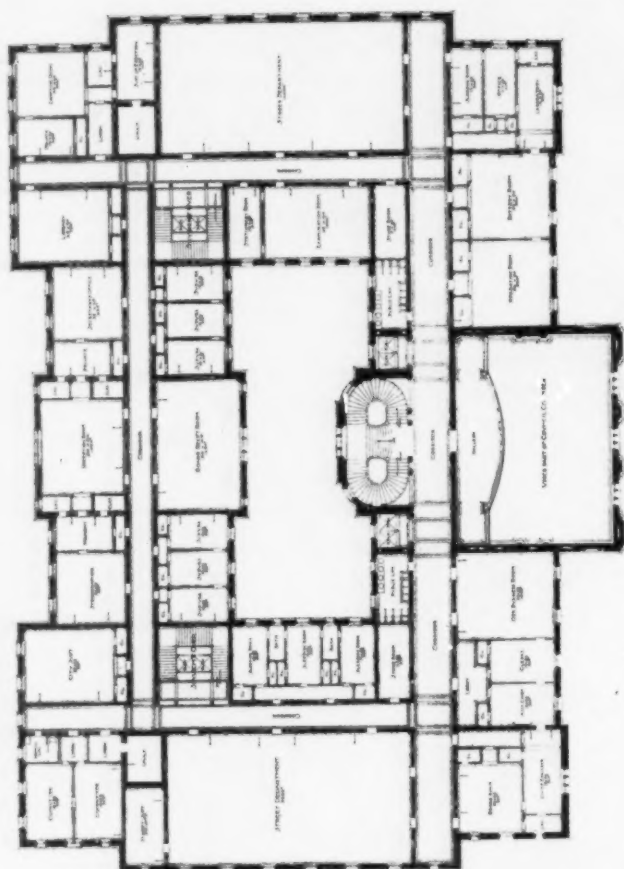


FRONT ELEVATION

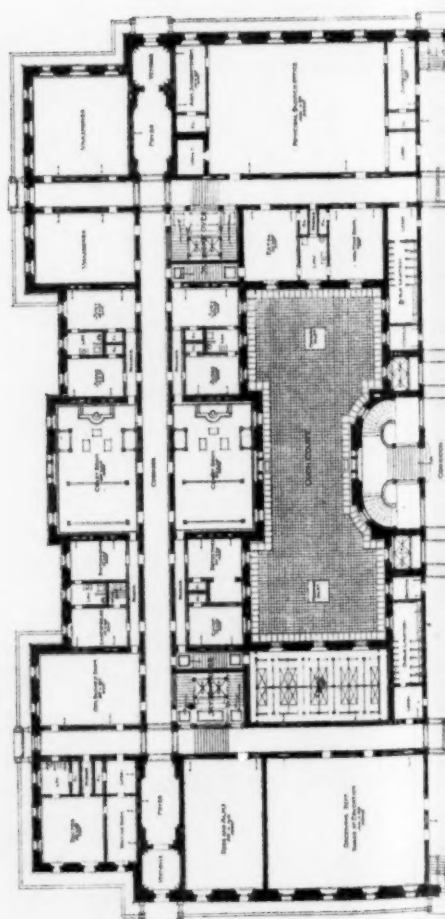
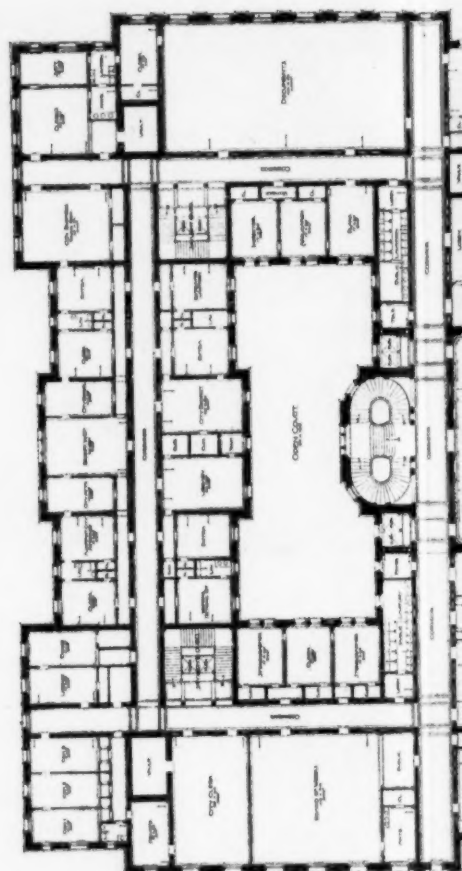
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FIRST STUDY PLAN



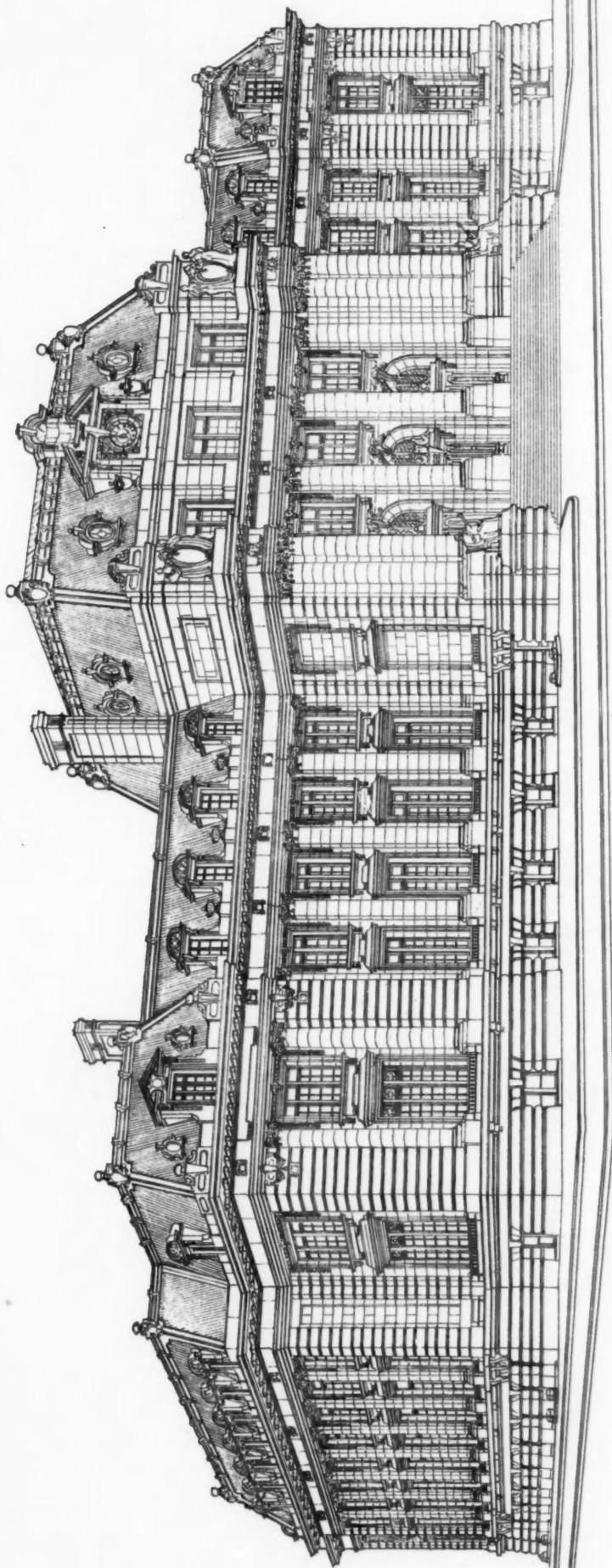
THIRD STUDY PLAN





SECOND STORY PLAN

GROUND FLOOR

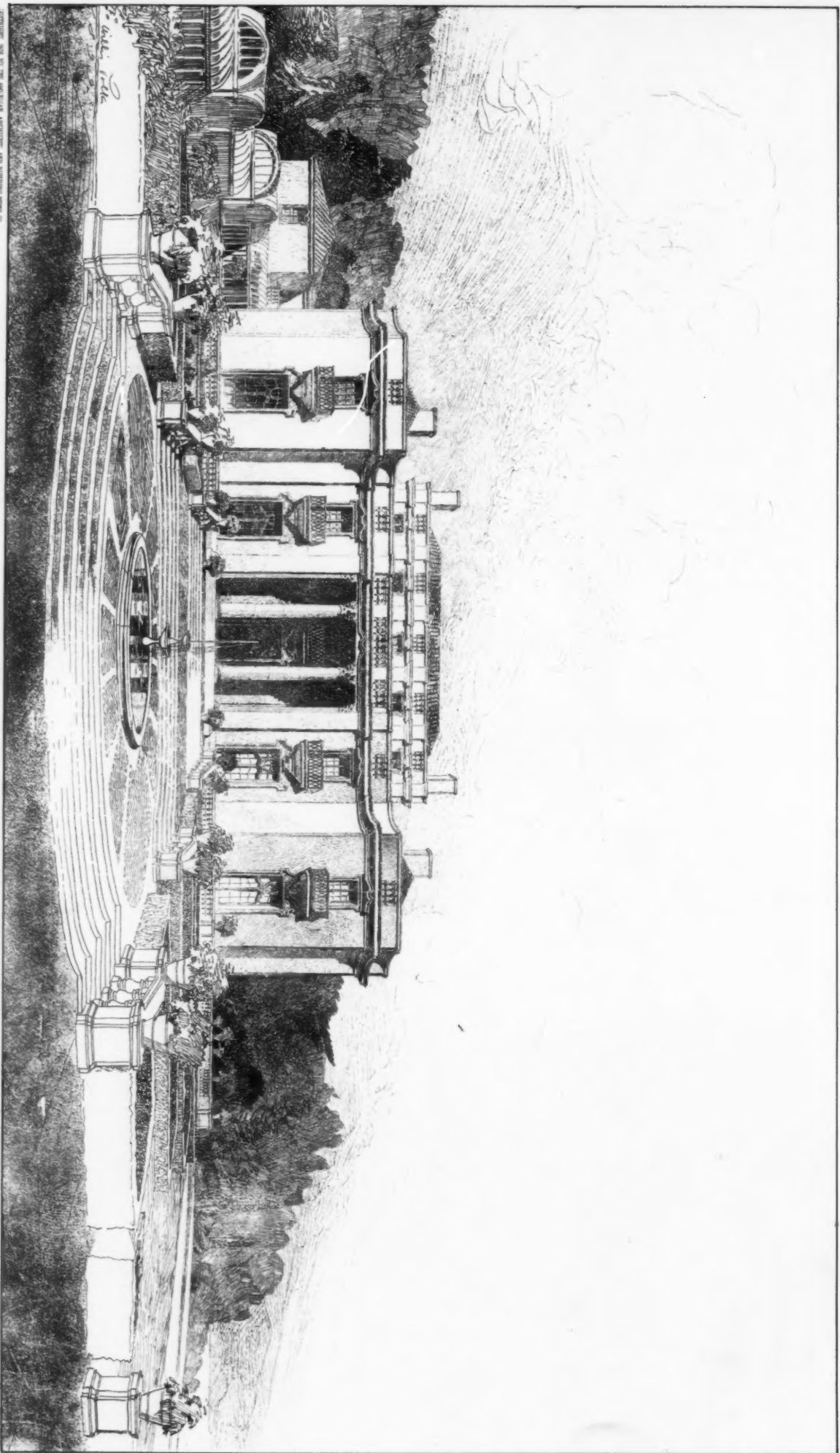


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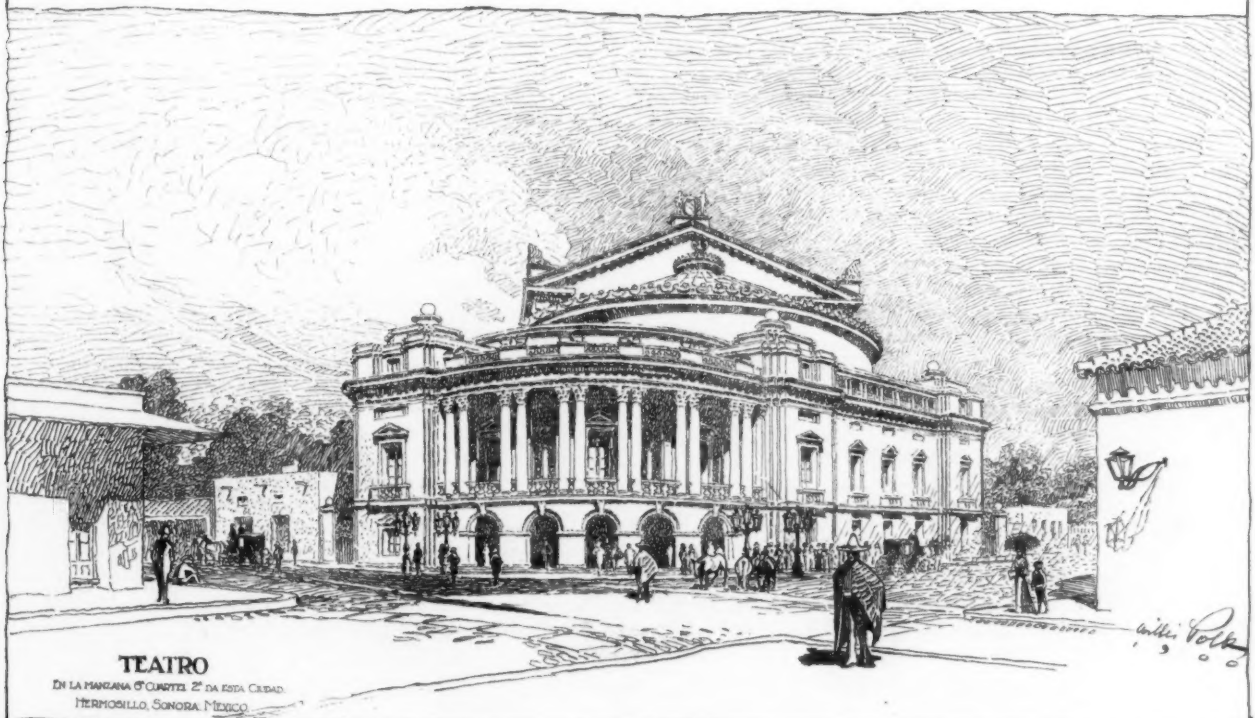
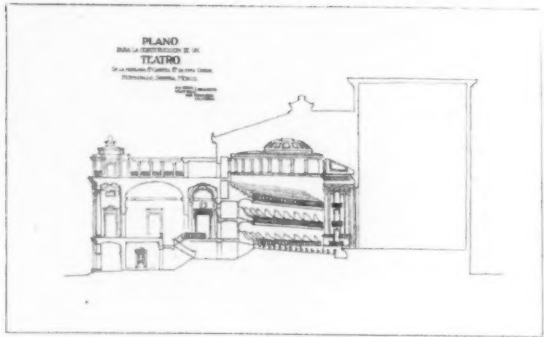
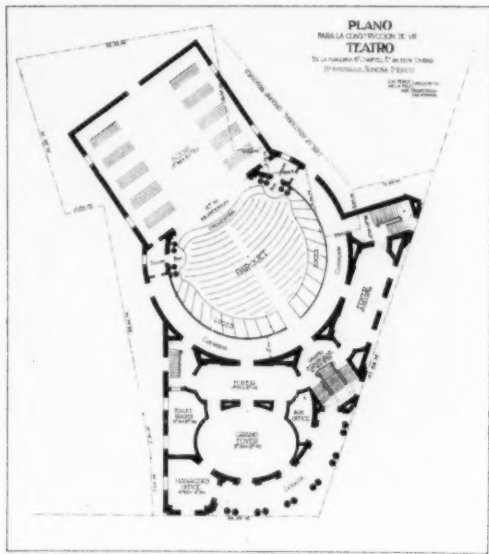
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Oct. 5, 1901.
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THE AMERICAN ARCHITECT AND BUILDING NEWS

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART

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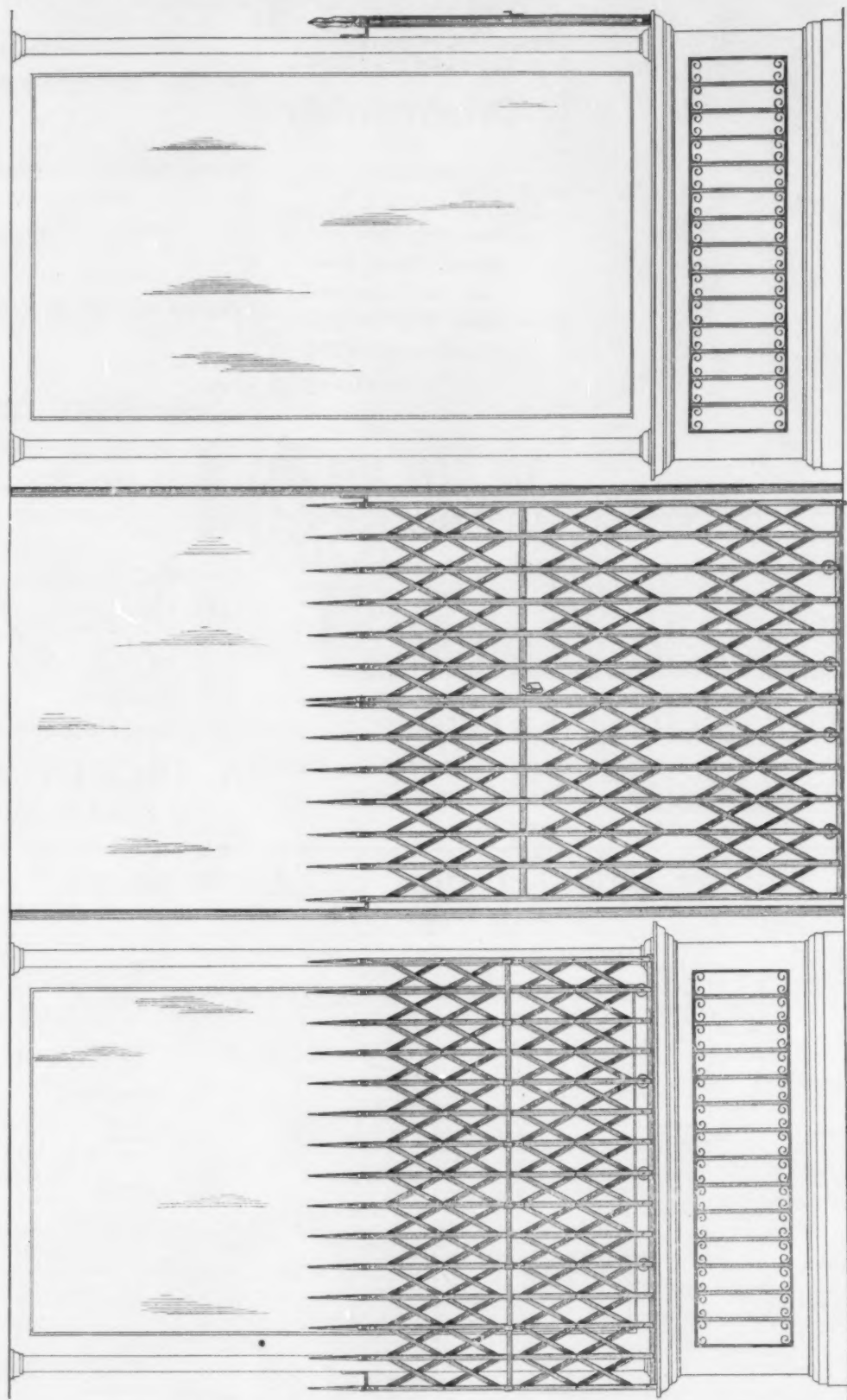
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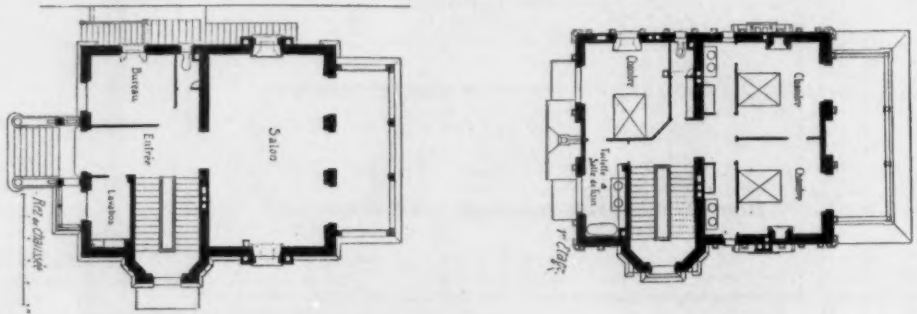
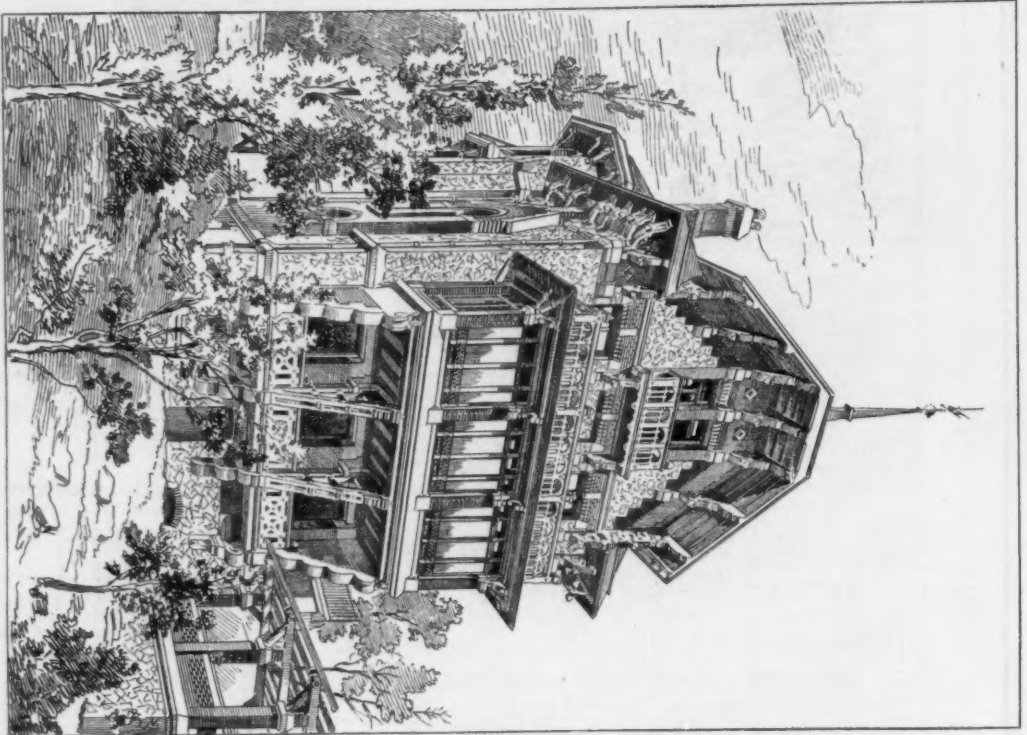
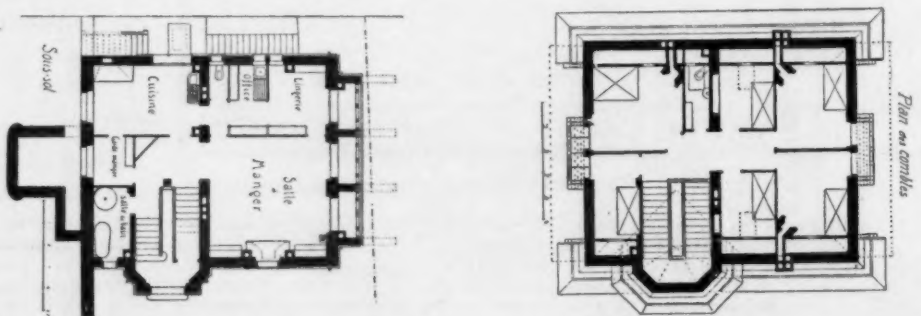
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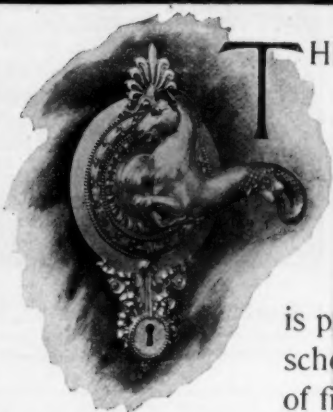
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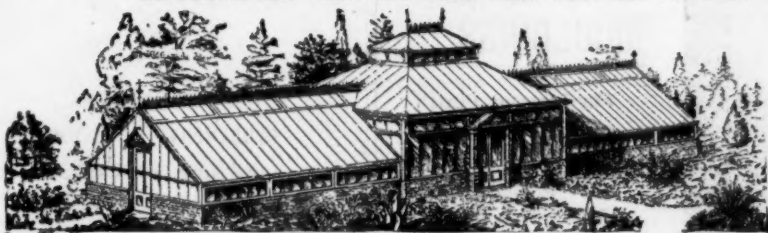
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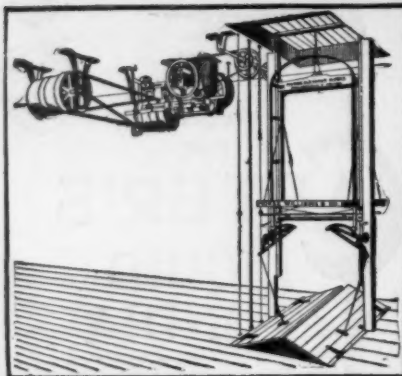


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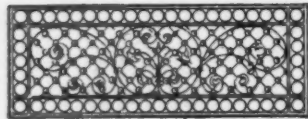
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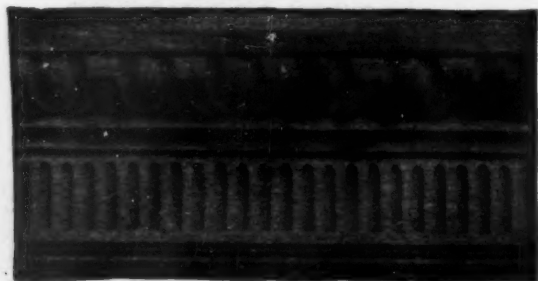
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Bristol, Tenn.—A new \$100,000 depot is to be erected here for the Norfolk, Western and Southern Railways.

Chattanooga, Tenn.—T. R. Read, proprietor of the Read House, expects soon to remodel his hotel at a cost of about \$50,000.

Chicago, Ill.—Plans have been completed for a new factory for the Standard Varnish Co., to be built at 26th St. and Armour Ave., at a cost of \$20,000.

An eight-story printing establishment will be erected by W. P. Henneberry & Co., at 552 to 556 Wabash Ave., after plans by Howard Shaw, 115 Dearborn St.; cost, \$100,000.

The Deering Harvester Co. has had plans prepared by T. M. Brooks for the construction of a four-story building, 118' x 377', in connection with its plant at Fullerton and Clybourn Aves.; cost, \$100,000.

It is stated that Frost & Granger, the Temple, are taking general bids on a brick freight-house and offices for the Lake Shore & Michigan Southern Railway Co. to be erected in Pacific Ave. and Polk St.; cost, \$125,000.

Paul Gerhardt, Schiller Building, is taking figures on a bakery building, 50' x 200', at Indiana Ave. and 31st St.; cost, \$35,000.

L. M. Mitchell has drawn plans for B. F. George for a six-story manufacturing building to be built at 86, 88 and 90 W. Washington St.; mill-construction, steam heat; cost, \$75,000.

The Board of Education will erect a number of large school-buildings and the plans will shortly be prepared. They will include an English high and manual training school at Van Buren St. and Oakly Ave. to cost in the neighborhood of \$275,000, the west division high school, which will cost \$250,-

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

000 and the south division high school, which will be erected at Forest Ave. and 39th St., and will cost \$250,000.

Cincinnati, O.—Burger Bros. are about to erect 2 seven-story malt-houses costing \$200,000 each, one to be erected in the West End and one in Norwood, for Norwood syndicate of six brewers.

Columbus, O.—It is stated that Wilbur T. Mills, Wesley Block, has plans for a row of 16 houses and one of 10 houses for Samuel L. Black, to cost \$50,000.

Plans have been drawn by McAllister & Restleaux, Broad and High Sts., for a modern red pressed brick dwelling to be built at Arlington for Mr. Stone; cost, \$30,000.

F. L. Packard, Y. M. C. A. building, has completed plans for a \$50,000 Masonic Temple, to be erected at Chillicothe, to be 100' x 130', and four stories high.

Plans have been drawn by H. A. Lintwaite, High and State Sts., for a two-story brick business block, 100' x 150', for Frank E. Powell, to be occupied by the Gold Mine Department Store; cost, \$50,000.

E. W. Hart & Co., Columbus Block, have plans for a four-story pressed brick and stone business block to be erected by Thomas Johnston, at a cost of \$30,000.

Detroit, Mich.—It is proposed to remodel the City-hall, \$150,000 will be expended.

Malcomson & Higginbotham are preparing plans for a six-family apartment-house to be built on Trumbull Ave.; cost, \$15,000. Chas. K. Latham, owner. They are also preparing plans for a new church building for the Church of Christ congregation at Durand; cost, \$10,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Greene & Oldfield are preparing plans for a six-family apartment-house to be built on Warren Ave. East, for H. W. Holcomb; cost, \$20,000.

Boyd McKay is preparing plans for a brick carriage factory for the Fisher Carriage Co., corner Fort and 6th Sts.; cost, \$15,000.

N. Wardrop is preparing plans for a double brick dwelling to be built on Woodward Ave. Terrace for J. W. Gray; cost, about \$10,000. Also preparing plans for a four-story brick building for the manufacture of clothing. The building will be 37' x 97' and equipped with two elevators, hot-water heat and pneumatic sprinklers. Hamilton Carhart, owner. Cost, about \$16,000.

S. C. Falkenburg is preparing plans for a three-story brick apartment-house to be built corner Congress and St. Antoine St.; cost, \$8,000.

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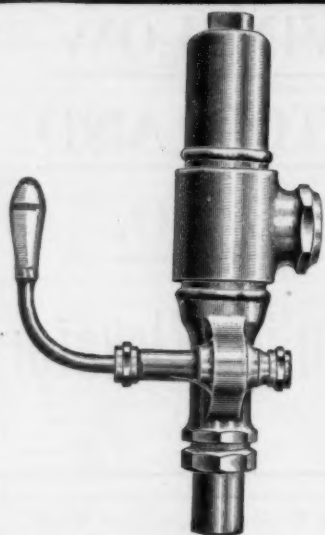
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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

El Paso, Tex.—It is stated that Architect Hughes has drawn plans for a \$100,000 exhibition hall, three stories high, 75' x 345'.

Fort Worth, Tex.—It is reported that the Fort Worth Compress Co. will erect buildings here. Capital stock, \$50,000. Neil M. Anderson is interested.

Glenville, O.—Jarvis Hunt, Monadnock Building, Chicago, Ill., has drawn plans for a \$125,000 residence for Daniel R. Hanna.

Gloucester, Mass.—George O. Stacy, proprietor of the Hawthorne Inn and the Moorlands, has just purchased land at Eastern Point, and overlooking Gloucester Harbor and the Atlantic Ocean, upon which, it is his intention, to build a very fine summer hotel.

Hammond, La.—Three new school-buildings will be erected at a cost of \$80,000.

Helena, Mont.—The trustees of St. Peter's hospital have invited local architects to submit plans for a new building; cost, about \$50,000.

Indianapolis, Ind.—Plans for the new Methodist Church, 109' x 155', were drawn by Crapsey & Lamm, Groton Building, Cincinnati; cost, \$70,000.

Jersey City, N. J.—St. Mary's R. C. Church is to erect a new church building to cost, with the grounds, \$300,000. Rev. H. B. Ter Woert, rector.

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

Miami, Fla.—S. Graham, proprietor of the Hotel Biscayne, will erect a \$50,000 hotel on 12th St. and Avenue B.

Milwaukee, Wis.—Russell & Schnehardt, 106 Mason St., have drawn plans for a \$20,000 club-house, to be erected on the East Side.

It is stated that Wolff & Lammer, 139 Rees St., Chicago, have completed plans for an addition to the brewery of Victor Schlitz & Co. on 2d and Cherry Sts.; cost, \$200,000.

The Lutherans of the city propose to raise funds for the erection of a home for aged and indigent Lutherans to cost about \$20,000.

Minneapolis, Minn.—There is a proposition under way to erect a Government weather station at the State experimental farm, if an appropriation of \$50,000 can be secured from Congress for a suitable building.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Montgomery, Ala.—A two-story library building, costing \$50,000, will be erected. Address the Montgomery Library Association.

Mystic, Conn.—The Mystic Mfg. Co. is to make extensive alterations to its plant, which is to be enlarged by the addition of a story to one section.

Newark, N. J.—The Flower City Kid Works in Magazine St., were nearly destroyed by fire recently. Loss, \$20,000; partly insured. Neighboring factory buildings were slightly damaged.

Plans have been completed for a four-story business block, to be erected at 693 Broad St., by Wm. E. Seelman, at a cost of \$60,000.

New Britain, Conn.—The New Britain Hospital is to have a \$20,000 addition, consisting of a two-story brick building, 52' x 104'. Plans by W. H. Cadwell, 213 Main St.

New Haven, Conn.—The National Wire Corporation has let the contract for a wire mill to cost \$40,000. It will be of brick and steel, three stories, 75' x 175'.

New York, N. Y.—The Cathedral Club, at 150 E. 50th St., is to be remodelled. The plans for the alterations have been filed at the Department of Buildings by C. O'Reilly, the architect.

Mr. Carl Berger, proprietor of Bellevue Lodge, Newport, R. I., and of a similar house in W. 36th St., has secured options on two sites—one in W. 38th St. and the other in W. 40th St., just east of 5th Ave. It is Mr. Berger's intention to erect a ten-story apartment house on one of these sites. Whitney Warren will draw the plans for the new structure.

The National Park Bank has purchased the plot 157 Fulton St., adjoining its present property. It is the intention of the bank to improve its building, and this purchase was made to carry out that purpose.

A site for the Rapid Transit power-house has been selected by John B. McDonald, the contractor. It is the block bounded by 58th and 59th Sts. and 11th and 12th Aves., and the water-front on the Hudson River, across 12th Ave. The plant will cost several million dollars.

It is stated that Theodore M. Macy and another have transferred title to a plot at the corner of Prospect Ave. and Macy Pl. to the New York City Church Extension and Missionary Society of the

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Methodist Episcopal Church for \$14,500. The plot will be improved at an early date.

Plans have been filed for a one-story brick church at 127 Elizabeth St. and 359-361 Broome St. The church will have a frontage of 26.1 feet in Elizabeth St. and 47.6 feet frontage in Broome St. The Italian Mission Protestant Episcopal Church is the owner, and Hoffman & Hoen, the architects. The estimated cost is \$35,000.

Plans have been filed at the Department of Buildings for a four-story brick dwelling-house at 19 W. 55th St., by Col. Daniel S. Lamont. The building will have a frontage of 25 feet and a depth of 91.5 feet. Little & O'Connor, of 20 W. 34th St., are the architects. The estimated cost is \$25,000.

Norwalk, Conn.—The offer of Andrew Carnegie to donate \$20,000 for a public library has been accepted.

Oil City, Pa.—C. M. Barthberger, Bissell Block, Pittsburgh, has designed a three-story office-building for the Oil City Supply Co.

Parkersburg, W. Va.—W. H. Ellis & Co. have been awarded the contract for the erection of a \$150,000 hotel at the corner of Market and 7th Sts.

Philadelphia, Pa.—Report states that another mammoth building will be erected in the centre of the city. It will occupy the site of Epiphany Protestant Episcopal Church, corner of 15th and Chestnut Sts., and will be known as the Pennsylvania Building. It will be seventeen stories high and used as an office-building and hotel. It will be finished throughout in mahogany and equipped with every latest appliance known to the architect and builder. Bronze work and Italian marble will compose the stairway and corridors, the project representing the outlay of about \$5,000,000.

Pittsburgh, Pa.—Plans were drawn by D. K. Miller, 237 Fourth Ave., for a \$25,000 brick residence for Miss Childs, 6847 Penn Ave., to be erected on N. Linden Ave. George Cochran, of Allegheny, has the contract.

Nine brick veneered dwellings, to cost \$58,000, will be built on Collins Ave., for D. E. Yohn, after plans by George Balsey, 7440 Finance St.

Report states that F. C. Sauer, Hamilton Building, has made plans for a \$20,000 brick residence, 36' x 40', which he will build on Perrysville Ave., Allegheny.

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BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

West & Wilson will erect 18 brick houses on Baxter St.; cost, \$90,000.

Richmond, Va.—The American Cigar Co. will build a stemmy and reordering plant at 24th and Cary Sts. to replace the Wright factory recently destroyed by fire. Messrs. Lockwood, Green & Co., of Boston, who have charge of the company's new cigar factory adjoining, have drawn the plans also for this building, which will be similar in style and five stories high; cost, \$30,000.

Savannah, Ga.—A large hotel is to be erected by Mr. DeRenne on his property at the corner of Liberty and Drayton Sts.

Sewickley, Pa.—A \$25,000 municipal building will be erected on Chestnut and Washington Sts.

Sharon, Pa.—Frank H. Buhl, former president of the Sharon Steel Co., recently offered to erect and equip a \$200,000 public building at this place, which offer the city has accepted. It will be a three-story stone building containing a public library, gymnasium and auditorium.

St. Louis, Mo.—Wm. R. Ittner has completed plans for additions of six rooms each to the Washington School, to cost \$32,000, and the Grant School, to cost \$35,000.

Report states that \$11,000,000 will be expended on the buildings and grounds of the Louisiana Purchase Exposition which will be held at Forest Park, this city. \$7,000,000 of this amount will be used for the buildings and \$4,000,000 for the grounds. Isaac S. Taylor, 318 N. 8th St., is chairman of the Commission of Architects and Director of Construction and Maintenance.

It is reported that plans have been made for a \$1,000,000 hotel to be built on Washington Ave., near Grand Ave. It will be a stone and terra-cotta structure of ten stories and basement, with a roof-garden, 160' x 245'. Address Mr. McCrory, of the Nicholls-Ritter Realty & Financial Co.

The Purina Mills, owned by the Robinson-Danforth Milling Co., which were destroyed by fire recently, will probably be rebuilt.

Sturgis, S. D.—The cornerstone will be laid shortly for the new building at St. Martin's Academy. Cost of building, \$20,000.

BUILDING INTELLIGENCE.

(Advance Rumors Continued.)

Tacoma, Wash.—The Northern Pacific Beneficial Association will erect a modern complete hospital here to cost \$100,000.

Tampa, Fla.—Work is to commence upon Tampa's new Government building January 1st. It is to be erected on Florida Ave., and will be a handsome structure costing in the neighborhood of \$296,000.

Trenton, N. J.—The State Armory Commission has selected a site on E. State St. for the proposed armory, for which \$150,000 was appropriated by the last legislature.

Washington, D. C.—We see by the Washington Post that a site has been purchased for the proposed new building for the French Embassy. Construction will begin next spring.

Worcester, Mass.—Plans have been drawn by Frost, Briggs & Chamberlain, 518 Main St., for the Administration Building for Clark University. Estimated cost, \$90,000.

ALTERATIONS AND ADDITIONS.

Brooklyn, N. Y.—Rogers Ave., cor. Robinson St., two-st'y & base, & cellar extension, 58' x 72', interior alterations & repairs on school; \$55,000; o., City of New York; a., C. B. J. Snyder, 59th St. & Park Ave., N. Y.

CHURCHES.

Georgetown, Conn.—One-st'y st. church, slate roof, hot air; \$20,000; a., J. W. Northrup, Bridgeport.

FACTORIES.

New York, N. Y.—Twelfth Ave., cor. 56th St., one & three-st'y bk. repair shop, 56' x 412'; \$200,000; o., City of New York; a., Horgan & Slattery, 1 Madison Ave.

Thirtieth St., Nos. 445-447, seven-st'y bk. factory, 50' x 90'; \$45,000; o., Louis and Herman Runkel, on premises; a., G. F. Pelham, 503 Fifth Ave.

HOUSES.

Boston, Mass.—Sutherland Road, nr. Beacon St., Ward 25, three-st'y bk. dwell., 40' x 40', flat roof, hot water; \$14,000; o., a. & b., W. B. Andrews, 408 Sears Building.

Mather St., nr. Dorchester Ave., Ward 20, two-

BUILDING INTELLIGENCE.

(Houses Continued.)

st'y fr. dwell., 27' x 45', pitch roof, furnace; \$6,000; o., L. H. Foster; a. & b., K. S. De Witt, s Norfolk Terrace, Dorchester.

Cambridge and Temple Sts., Ward 9, 2 three-st'y bk. dwells., 27' x 48', flat roofs, steam; \$15,000; o., W. J. Jennings; a., S. D. Kelley, 209 Washington St.

Park View St., No. 15, Ward 21, two-st'y fr. dwell., 24' x 39', pitch roof, furnace; \$5,000; o., E. G. Graham; a. & b., J. P. Campbell, 26 Boylston St., Jamaica Plain.

Washington St., cor. Gaylord St., Ward 20, 2 three-st'y bk. dwells., 30' x 50', flat roofs, steam; \$20,000; o., Sarah Davidson; a., A. B. Pinkham, 36A Warren St., Roxbury.

Park St., nr. Centre St., Ward 23, two-st'y fr. dwell., 36' x 41', pitch roof, furnace; \$5,000; o., Florence M. Swallow; a., Jas. Murray; b., W. H. Warner, Roslindale.

Norton St., nr. Bowdoin St., Ward 20, two-st'y fr. dwell., 28' x 45', pitch roof, furnace; \$5,000; o., Mrs. W. A. Lord; a. & b., F. J. Rockwell, Dorchester.

E. First St., nr. L St., Ward 14, two-st'y fr. dwell., 40' x 90', flat roof, steam; \$9,000; o., D. Webster King; b., W. T. Eaton, 734 Broadway, S. Boston.

Brooklyn, N. Y.—Degraw St., nr. Bedford Ave., 5 three-st'y bk. dwells., 23' x 90' & 19' x 90'; \$25,000; o., W. F. Rohr, 373 Rockaway Ave.; a., C. Infanger, 90 Glen St.

Eastern Parkway, nr. Bedford Ave., 5 three-st'y bk. dwells.; \$25,000; o., W. F. Rohr, 373 Rockaway Ave.; a., C. Infanger, 90 Glen St.

Eighty-fifth St., nr. 24th Ave., two-st'y & attic fr. dwell., 26' x 31'; \$5,000; o., H. Kuntz, 136 N. 1st St.; a., T. Bennett, 198 Fifty-third St.

Brooklyn Ave., cor. Sterling Pl., three-st'y bk. dwell., 19' x 57'; \$6,500; o., C. G. Reynolds, 999 Sterling Pl.; a., A. S. Hedman, 371 Fulton St.

Brooklyn Ave., nr. Sterling Pl., 7 three-st'y bk. dwells., 19' x 45'; \$38,500; o., C. G. Reynolds, 999 Sterling Pl.; a., A. S. Hedman, 371 Fulton St.

E. Sixteenth St., nr. Avenue D, 3 two-st'y & attic fr. dwells., 26' x 40', steam; \$18,000; o., W. F. Steinmetz, 350 Flatbush Ave.; a., A. W. Pierce, 1127 Flatbush Ave.

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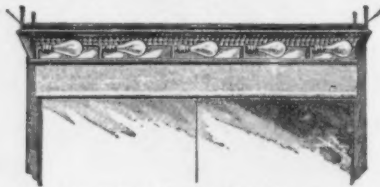


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BUILDING INTELLIGENCE.

(Houses Continued.)

dwell., 30' x 34'; \$21,000; o. W. F. Steinmetz, 850 Flatbush Ave.; a. A. W. Pierce, 1127 Flatbush Ave.

Highland Boulevard, nr. Barbey St., two-st'y & attic fr. dwell., 27' x 46', shingle roof, steam; \$6,000; o. H. C. Smith, 16 Court St.; a. A. E. Parmit, 26 Court St.

Eighty-second St., nr. 22d Ave., two-st'y & attic fr. dwell., 28' x 41', shingle roof; \$5,000; o. T. S. Perrin, 352 Clinton St.; a. J. J. Petit, 186 Remsen St.

Albemarle Road, cor. Buckingham Road, two-st'y & attic fr. dwell., 35' x 67', shingle roof, steam; \$15,000; o. Lewis MacDonald, 520 Nostrand Ave.; a. J. J. Petit, 186 Remsen St.

New York, N. Y. — Fortieth St., nr. Park Ave., four-st'y & base, bk. & marble dwell., 11' x 18' x 92'; \$25,000; o. Wm. H. Patterson, 115 E. 40th St.; a. Geo. E. Wood, 63 William St.

Sedgwick Ave., cor. 182d St., 21-st'y bk. dwell., 31' x 52', slate roof; \$16,000; o. E. Harris Jones, 124 W. 45th St.; a. Jones & Leo, 124 W. 45th St.

PROPOSALS.

CHURCH.

[At Altoona, Pa.] F. J. Shollar, Tyrone, Pa., has prepared plans and will receive bids until October 15 for a red pressed brick and stone church and parsonage for the Fifth Avenue M. E. congregation at Altoona; cost, \$20,000. 1345

BUILDING.

[At New York, N. Y.] Office of Bureau of Yards and Docks, Navy Dept., Washington. Sealed proposals will be received here until October 12, 1901, for constructing a three-story brick and steel fireproof building, 65' x 375', at the navy yard, New York. For plans, specifications and forms of proposals address "Commandant, Navy Yard, New York." MORDECAI T. ENDICOTT, chief of bureau. 1345

OFFICE-BUILDING.

[At Washington, D. C.] Bids are wanted October 15 for furnishing material and erecting one office-building for headquarters U. S. Marine Corps, Washington. COI. F. L. DENNY, Q. M., U. S. Marine Corps. 1345

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 30th, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 6th day of November, 1901, and then opened, for the construction, including heating and electric wiring of the U. S. Post-office at Fitchburg, Mass., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Postmaster at Fitchburg, Mass., at the discretion of the Supervising Architect, JAMES KNOX TAYLOR, Supervising Architect. 1346

PROPOSALS.

HOSPITAL.

[At Morris, Minn.] Department of the Interior, Office of Indian Affairs, Washington, D. C. Sealed proposals addressed to the Commissioner of Indian Affairs, Washington, D. C. will be received at the Indian Office until October 22, 1901, for furnishing the necessary materials and labor required to construct and complete at the Morris School, Minn., a brick hospital building, with plumbing, electric lights and steam heat, in strict accordance with plans, specifications and instructions to bidders, which may be examined at this office, the offices of the Pioneer Press, St. Paul, Minn.; the Improvement Bulletin, Minneapolis, Minn.; the Builders & Traders' Exchanges at Omaha and Milwaukee, the Northwestern Manufacturers' Association, St. Paul; the U. S. Indian warehouses at 815 Howard St., Omaha, Neb.; 235 Johnson St., Chicago, and 77 Wooster St., New York City, and at the school. For further information apply to Edwin L. Chalcraft, supervisor in charge, Morris, Minn. A. C. TONNER, acting commissioner. 1346

SEWER PIPE, ETC.

[At Xenia, O.] Bids are wanted until October 17 for furnishing the necessary sewer-pipe, catch-basins, flush-tanks and other accessories for constructing lateral sanitary sewers in sewer district No. 1. HENRY J. FARRELL, secretary board sewer commissioners. 1346

SEWERS.

[At Santiago, Cuba.] Office of Engineer Officer, Santiago, Cuba. Sealed proposals for construction of sewers in the City of Santiago, Cuba, will be received at above office until October 21st, 1901. Plans can be seen and specifications obtained at the following offices: Office of Engineer Officer, Santiago de Cuba; Office of Chief Engineer, Havana, Cuba; The Engineering Record, New York; Engineering News, New York. S. D. ROCKENBACH, Captain 12th U. S. Cavalry, Engineer Officer. 1346

SEWERAGE SYSTEM AND STREET PAVING.

[At Havana, Cuba.] Office of Mayor, City of Havana, Havana, Cuba. Sealed proposals for sewerage system and street paving, City of Havana, will be received at this office until October 23d, 1901. Information furnished on application to Lieut. W. J. Barden, Corps of Engineers, U. S. A., Chief Engineer, City of Havana. MIGUEL GENER, Mayor. 1346

COURT-HOUSE.

[At Lake City, Fla.] Bids will be received by the County Commissioners until October 24 for erecting a court-house. R. T. ROOZER, clm. 1346

COURT-HOUSE.

[At Carrollton, Mo.] Bids are wanted October 18 for erecting a court-

PROPOSALS.

house. Bids will also be received at the same time for the plumbing, steam heating, sewerage and gas piping. R. G. KIRSCH, supt. 1346

HALL.

[At Corvallis, Ore.] Bids will be received by the Building Committee of the Board of Regents of the State Agricultural College at Albany, until October 25, for erecting the Agricultural Hall at Corvallis. JOHN D. DALY, Sec'y Bd., Corvallis. 1347

ENLARGING HALL.

[At West Point, N. Y.] West Point, N. Y. Sealed proposals will be received here until October 28, 1901, for enlarging the Cadet Mess Hall as per plans in this office. Forms and specifications furnished upon application. Address Q. M., U. S. M. A. 1347

COALING PLANT.

[At Washington, D. C.] Office of Bureau of Yards and Docks, Navy Dept., Washington. Sealed proposals will be received here until October 26, 1901, for constructing a plant for receiving, storing and delivering coal at the navy yard, Washington, D. C. For plans, specifications and forms of proposals address MORDECAI T. ENDICOTT, chief of bureau. 1347

COURT-HOUSE.

[At Bainbridge, Ga.] The Board of County Commissioners of Decatur County will on October 15 receive bids for the building and completion of a court-house building to be erected in the city of Bainbridge, Ga., to cost not exceeding \$35,000. B. A. LYTLE, chairman, Bainbridge, Ga. 1345

CONSTRUCTION.

[At Philadelphia, Pa.] Philadelphia, Depot D. M. Dept., 1428 Arch St., Philadelphia, Pa. Sealed proposals will be received here until October 14, 1901, for the construction of an addition to office-building at Schuykill Arsenal, this city, in accordance with plans and specifications to be seen at said arsenal. COL. JOHN V. FUREY, assistant quartermaster general, U. S. Army. 1345

Treasury Department, Office of the Supervising Architect, Washington, D. C., September 23, 1901. Sealed proposals will be received at this office until 2 o'clock P. M. on the 7th day of November, 1901, and then opened, for the general construction of the U. S. Custom-house at New York, N. Y., in accordance with the drawings and specifications, copies of which may be had at the discretion of the Supervising Architect on application to this office, or the office of the architect, Cass Gilbert, 111 Fifth Ave., New York, N. Y. Applications must be accompanied by a certified cheque for \$250 which will be held at this office until the return of drawings and specifications. JAMES KNOX TAYLOR, Supervising Architect. 1345

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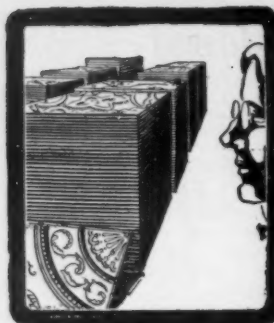
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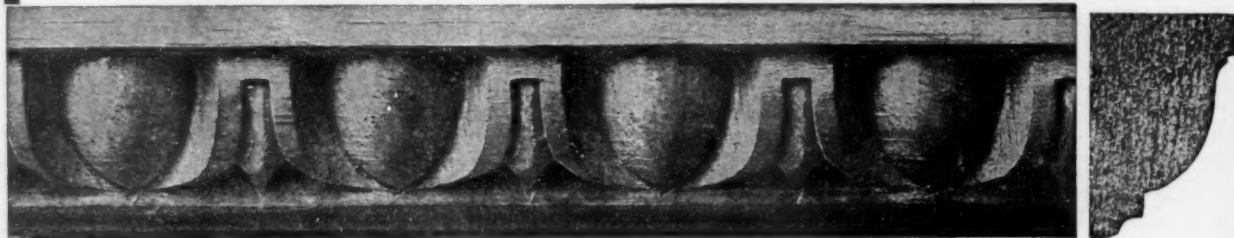
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