THE Western Architect

AN ILLUSTRATED MONTHLY JOURNAL
DEVOTED TO ARCHITECTURE AND ALLIED ARTS

Entered November 24th, 1902, at Minneapolis, Minn , as second-class matter, under act of Congress, March 3, 1879.

VOL. 2. DECEMBER 1903 No. 12.

THE WESTERN ARCHITECT
IS PUBLISHED ON THE 15TH OF EACH MONTH
BY
THE WESTERN ARCHITECT PUBLISHING CO.
(Incorporated.)

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Subscriptions in United States and Canada, mailed flat, $5.00 a year, strictly in advance.

Advertising Rates made known on application.

Remittance for Subscription and Advertising may be made by check, bank draft, express or post office order, always payable to The Western Architect Publishing Co., Insurance Exchange Building, Minneapolis, Minnesota.

SPECIAL NOTICE.

For the convenience of Architects and Draughtsmen the Western Architect has organized a Department of Information. Draughtsmen wanting employment, or Architects wanting draughtsmen or perspective work may apply to this department, which will place the parties in communication without charge.

SANDRINGHAM PALACE is pretty sure to have two new sleeping room floors, and fireproofed at that.

MR. CASS GILBERT, having succeeded in arranging for the most promising scheme of mural decorations for Minnesota's new State house of anything yet attempted in the country, is not resting on his oars, but is stirring up the St. Paul people and Park Board for a new arrangement of streets and new building regulations applying to the surrounding district, which will give the building suitable approaches in time. The undertaking, as outlined by Mr. Gilbert, will involve an outlay that will needs be spread over a number of years.

EVERY now and then the dailies make public the dreadful disclosures of some chemist who has become burdened with a knowledge of the composition of the foods on the market. One who made a wide investigation in New York, found nearly everything adulterated but the whiskey. Another, one of the "synthetic" sort, seeks to unburden his conscience by confession and tells formulas he has sold to manufacturers for making sweets and salads, jams and jellies, butters, beverages and many other foods, most of which he is free to say are unfit to eat, as well as fraudulent. Inasmuch as people live longer than they used to, it is clear that some great cause is at work more than counteracting the baneful effect of the bogus foods we eat. What is this beneficent cause? Surely nothing else than better housing; modern life could never hold its own against such victuals were it not for the great improvements in building. Indeed, if we read the dailies with diligence we will learn that in some directions the building arts have been too highly developed. Such a crowd of "well-dressed ladies" surrounded the scene of a recent swell wedding that a squad of 75 policemen were unable to make a clearing for the bridal procession—proof enough that building progress has reached a point where housekeeping has been made too easy.

MR. EDWARD ATKINSON is very optimistic about the future of New England—and other—"bog fuel." Those who have kept track of recent literature on the subject will recall that the composition of the muds that have been found suitable for working up into briquettes for fuel is by no means restricted to what have been known as peats. There are other bogs in abundance that are equally rich in deposited carbon, and the art of mixing is now so well understood that Mr. Atkinson predicts that localities favored with these bogs may, if they will, become largely independent of the coal mines, the bog fuel being little inferior to bituminous coals. Some of these bogs will, he predicts, furnish superior cokes. The success attending the molding of some of this bog fuel suggests the mixing of it with powdered lignite as a binder for the latter in making briquettes. The Dakota lignites appear to have been unable to compete with coal in heating or steaming tests at any considerab'e distance from the lignite quarries, because when freshly quarried they carry too much water, and when quarried for sufficient time for this water to evaporate they become badly slacked. Possibly the mixing of moderate quantities of suitable bog mud with the dried lignite might form a ready and cheap solution of the question.

WM. CHANNING WHITNEY, Architect.

Complaints about the high cost of building are largely the vogue just now, mostly coupled with reference to the high cost and inefficiency of labor. At a late banquet of the Builders' and Traders' Exchange of Minneapolis, which was so largely attended by guests from the outside as to be representative to a degree, this question of high cost was so often used in banter as to bring out serious statements of fact from one after another representing different staples entering into building. Everybody connected with building, has realized that building practice in the classes of buildings controlled by architects, has greatly changed and simplified within a decade or so, but the testimony of these men as to former and present prices and goods was needed to show the gain in quality and decline in price that has really been going on during the period.

Another feature of this gathering of builders which speaks eloquently for its future, was the sincere and intelligent purpose in evidence among them. One speaker after another showed that, before other things, he took a proper pride in the advancement of his calling, that he realized that hard, unsolved problems still obstructed its progress and was himself working on those problems. So marked was this feature of the evening as to leave the listener altogether hopeful for the future of building interests. Most wholesome views of the purposes of organization were also noticeable, as when Mr. Wallender proposed an application of the principle of the black list to rascally agents of employers' liability insurance companies who would try and get employers to help them escape payments to injured workmen. When he paid insurance companies for assuming the risk of injury to his men, he wanted the men to have the benefits, and he believed builders should have a system of information that should rule out the companies who tried to evade their agreements.

Dowie, having succeeded in getting his complex business freed from the court, will possibly see that a continued disregard of what people have elected to call economic laws will not tend to the ultimate success of his enterprises. If his people eschew tobacco and liquors they escape what is in effect a heavy tax on the average community, but if they support a goodly corps of guards to see that visitors and others do not use the weed, they are taxed all the same. Certain Semitical peoples have during all history abstained from the pig as food; and yet they have not impressed their neighbors as being so superior in mind. muscle or morals that any considerable number of eaters of pig have abandoned the practice. Abstaining from eating pig has never been recognized as an insurable asset even. Millions of most hardy and industrious people eat pig, and will continue to do so and to compete. A Zion City candy factory might easily supply the wants of that community—very good and wholesome candies can be made from materials of low cost—but it is doubtful if a working community can be sustained to any great extent upon candy as a food. If Zion-made candy is to be sold to outsiders, it will have to be attractive goods and well advertised through the ordinary channels. Lace is not a great staple and to be of value to Dowieites it must be to a great extent sold to the unregenerate. To create a market for any considerable amount of factory made laces might prove a task—but a light task compared with preventing fashion from shifting at any moment to some other kinds of lace or no lace at all. To suppose that any considerable number of people in this country can be supported by making lace in competition with the laces made by the peasantry of the old world, or that the people who buy such laces would continue to buy them if turned out in large quantities by factory methods, is to suppose Dowie's persuasive powers to be without limitations. Zion-made lace would suffer from wanting the traditions of old world lacemakers, and specimens of Dowie's strenuous talks do not impress one as likely to aid in establishing such an art atmosphere in Zion City as will offset the want of these traditions. Lovers of beautiful laces have not heretofore been known to be attracted by spectacular religious services by lace makers. The withdrawal of a large percentage of the workers for a costly crusade against a sinful far-away city may advertise Zionite wares, but signs do not point that way just now. Religio-industrial communities which have succeeded in this country have always used other methods, and it is to be hoped for the sake of the thousands of people who have thrown up their jobs and invested their savings in Zion that more sensible management may succeed.

Cement tests are coming to be so much more practical and instructive than formerly, and cement constructions in buildings so much more important relatively, that the whole subject should have the earnest and immediate attention of those having buildings in charge. In particular, the relations of cities to cement constructions need attention. These relations may be roughly stated thus: City authorities generally assume, probably under their police powers, to regulate building operations, and in the case of drainage systems not only to specify materials but to test workmanship. City ordinances in St. Paul and Minneapolis undertake to require a (quite inadequate) test for cements to be used in private building work. No such requirement is to be found in the building laws of most other western cities. The test referred to is only a strength test of neat cement—no test for fineness or boiling test is required. A neat cement might pass this strength test, if so coarsely ground that it would not have half the value in a mortar of the same cement properly ground. It might pass a 24-hour strength test if so charged with free lime as to be actually unsafe. But this is of little importance as the law is administered in both cities, for there is not enough testing done to seriously affect general results. Builders use such cements as they see fit and lose no sleep over interference by the authorities.

Engineering departments of cities test cements pretty thoroughly for city work—in some cities controlling to a large extent the grades and proportions of cement used in sidewalk work. Much cement is rejected by these engineering authorities as a result of tests. Minneapolis authorities have rejected some 7 per cent of the Portland cement offered the past season. Some of this failed in the boiling test and might have passed after standing a few weeks. Tests at both St. Paul and Minneapolis have revealed an effort on the part of some makers of Portland to get high 24-hour and 7-day tests at the expense of labor showings. St. Paul tests show one kind that falls off in strength after 30 days. This is very serious, as such cements would pass the ordinary tests, and perhaps a chemical test not now employed should be used to detect things added to the composition to produce these results. Domestic cements in this market are more uncertain of results than Portland. There are many reports of failure in private and country railroad work where only the test of actual use has been applied. The Milwaukee cement used in one private building proved entirely worthless, and when removed the broken stone of the concrete were saved by simply screening. Had common clay been used enough would have adhered to render the stone worthless. This company obtained the contract for supplying the city of Minneapolis for the season just past, but above 80 per cent of their cement was rejected by the official tester. They fared better in St. Paul, having only some 5 car loads rejected. Briquettes from one of these showed no hydraulic properties whatever. Their appearance after immersion and drying is about the same as would be that of so much unburned marl if manipulated in the same way.

As nothing is more certain than that these rejected cements find their way largely into building work, it must be obvious that building work suffers by reason of official tests as they exist. Cements rejected by cities may be only one per cent short of what is necessary to pass, or they may be entirely worthless, as were some lots cited above. Of course, no man of sense would undertake large and important work without being well assured of the character of cements to be used, and such works can well bear the expense of tests. Meanwhile it would be a comfort to people having smaller works in hand—works for which independent tests would be unduly burdensome—if they might have the benefit of official tests to show how cements from a given lot are liable to act. It would even be a comfort, if people might know that the sale of cements rejected by city authorities as unfit for city use were prohibited in the city—that if such could not be sent to the dump, they could and would be shoved out of town—with police escort if necessary.

* *

Hobson, the much saluted, is seeking a new introduction to the public by a bill that he is preparing to be introduced by a Southern congressman, appropriating $2,750,000,000 for naval construction during the next 20 years—$50,000,000 for the first year, $60,000,000 the second year, and so on till 1915, at which time the public will be accustomed to it and will be expected to deposit the remaining billion and a half to the credit of the department. Sec. Moody is clamoring for something over $100,000,000 for the navy the coming fiscal year, while ship subsidy people are confident of their standing with the powers that be. With anything like this amount of naval architecture, what will become of the sections that want public buildings?

By the way, it isn't much of a warship nowadays that doesn't cost $5,000,000 by the time it is placed in commission, and there is every reason to believe that a really skillful use of modern explosives would show every type of warship now afloat or building to be back numbers. An urban population of 500,000 might easily be supplied with public schools for $5,000,000, all of the most advanced type, too. How would the cost of keeping the warship in commission in peace times, if she were to cruise considerably, be so greatly different from the cost of running the public schools?

* *

Contractors, if some reports are to be believed, are to meet combinations among workingmen by better organization among themselves, after which there is to be a locking of horns. Other reports have it that after this better organization there will be something nearer a clasping of hands—something like the "armed peace" of the greater political powers, none of whom cares to tackle another of its own size, but all of whom are anxious to show their prowess at the expense of small and poorly armed peoples. But the small and poorly armed peoples are now and then favored with a portly national debt, and call upon the bond holders to save them. So if contractors and unions are bent on raiding the people who want buildings, they may yet be baulked by the holders of the purse strings.

SIDEBOARD FOR F. P. SHEPARD, ST. PAUL, MINN.
French Renaissance Style.
Designed and Executed by
Wm. Yungbauer, St. Paul.

RESIDENCE OF F. B. FORMAN.

The F. B. Forman residence, illustrated in this issue of the Western Architect, stands upon a commanding site on the eastern shore of Lake Calhoun, the site of the old Lyndale Hotel, which was destroyed by fire some 15 years ago. The place contains several acres, the principal entrance being at the corner of Irving Avenue and Thirty-fifth Street, from which point a winding driveway passes under the commodious porte-cochere, and thence by a graceful curve to the stables located on the south side of the property, and out at the southeast corner.

The house stands back about forty feet from the edge of a bluff overlooking the lake, from which the ground falls away quite sharply to the boulevard some 25 feet below. This side of the house has a wide veranda the full length of the house proper, which is screened in and forms a most enchanting retreat in the hot summer-time, with its inside awnings, and set with tables, chairs, divans, etc. Steps at either end lead to graveled walks, which lead to a parapet with seats overlooking the bluff, from which may be had a most enchanting view of the lake and boulevard below; to the north is a pergola leading to the electric railway pavilion; to the south a walk to the kennels and stables where are kept the owner's fine collection of blooded dogs and horses.

The main frontage is toward the east, the entrance being under the spacious 2-story portico, with a balcony opening from the second story above entrance. This entrance leads into the 30x50 ft. living-room, which has heavy beamed ceiling, and is paneled to the ceiling in Flemish oak; at the left is a huge brick fireplace, with the staircase at the right and the entrance to dining-room at left of same; at the right end is a large bay-window nook, elevated several steps above the floor. This living-room has several pieces of antique furniture which deserve more than passing notice; the tall clock in the staircase angle is several centuries old; then there are two or three carved oak chests and cupboards which look the patrician in every line, giving a tone to the place which nothing else could.

The dining-room, 20x30 ft. in size, has a beamed ceiling and large brick fireplace and a paneled wainscot 8 ft. high, with plate-rail. A large ledge bay-window for plants is at the east end, and on the west both the dining and living-rooms open onto the broad veranda facing the lake. The dining-room is done in mahogany.

The second floor extends out over the veranda and contains Mr. and Mrs. Forman's sleeping rooms and four large guest chambers, besides baths, linen-rooms, etc., with recessed set bowls in each bedroom. At the north end of the hall is an attractive nook formed with angle-nooks for books, and a seat between under the hall window. Mrs. Forman's room deserves especial notice, being done in natural Georgia pine with ceiling beams, a picture rail and brick fireplace. A wide hall leads to the balcony over front door.

In the basement the owner has fitted up model bowling-alleys and billiard room in natural pine. There is a complete steam heating plant here, the house being intended for use the year around. The kitchen wing contains, besides the kitchen, a laundry, man's room, large pantries with refrigerator, etc., and above are the servants' sleeping quarters.

Besides the pergola already mentioned, the grounds have been enriched with an attractive pavilion near the main entrance to the grounds, and with marble statuary, griffins, settees, etc., besides the formal gardens, fountains, trees and shrubbery, and along the north and eastern lines of the property run hedges; all of which ensures a most attractive and original result in a few years' time, giving the owner all the benefits of a country place within easy reach of business by either auto, carriage or electric cars.

The place has cost upwards of fifty thousand dollars.

A STUDY in what now passes as the correct and neighborly thing among nations is given in a late number of the Canadian Architect and Builder. With a proper pride and a pretty modesty making the nicest of blends that journal tells of important orders for leaded glass received by a Canadian firm for works on this side the line. The principal material is American opalescent glass, upon which a duty of 20 per cent is paid when imported into Canada, and the finished work pays an import duty of 45 per cent when brought into this country. The Canadian Architect rightly gives the superior character of the work as the reason for the main transaction, and emphasizes this superiority by the statement that "this duty was added to the price and paid by the purchaser." Then comes a statement which is probably based more on estimate than knowledge, "Notwithstanding that a great deal of American ornamental glass is purchased in Canada, every obstacle was thrown in the way of the Canadian firm seeking to do business in the United States."

After this a case is cited where the shoe intended for the other foot is robbed of its pinch through the fault of the Canadian minister of customs. It seems that a Montreal church had given a large order for ornamental glass to an American firm, and the duties had been remitted because the glass was for religious uses, thus making "our so-called National Policy a farce."

What a mercy that the Mississippi, or the Ohio or the Ottawa are not picketed by rows of custom houses as are the St. Lawrence and Great Lakes.

COUNTRY RESIDENCE OF F. B. FORMAN, LAKE CALHOUN, MINNEAPOLIS, MINN. (SOUTHEAST VIEW.)
Edwin P. Overmire, Architect, Minneapolis.

(See Description and Floor Plans on Pages 18 and 19)

THE ENTRANCE AND RECEPTION HALL TO Y. W. C. A. BUILDING, MINNEAPOLIS, MINN.
Wm. Channing Whitney, Architect, Minneapolis.

Photo by Western Architect Staff,
Carl Zeiss Probar Lens.

RESIDENCE M. H. COOLIDGE, KENWOOD, MINNEAPOLIS, MINN.
Bertrand & Chamberlin, Architects, Minneapolis.

(See Floor Plans on Page 19)

Photo by Western Architect Staff,
Carl Zeiss Probar Lens.

RESIDENCE OF GEO. R. LYMAN, MINNEAPOLIS, MINN.
L. S. Buffington, Architect, Minneapolis.

VIEW IN NORTH END OF LIVING ROOM IN F. B. FORMAN'S COUNTRY RESIDENCE, LAKE CALHOUN, MINNEAPOLIS, MINN.
Edwin P. Overmire, Architect, Minneapolis.

PERGOLA AND GARDEN, F. B. FORMAN'S COUNTRY RESIDENCE, LAKE CALHOUN, MINNEAPOLIS, MINN.

THE ENTRANCE AND RECEPTION HALL TO Y. W. C. A. BUILDING, MINNEAPOLIS, MINN.
Wm. Channing Whitney, Architect, Minneapolis.

Photo by Western Architect Staff,
Carl Zeiss Probar Lens.

LIVING ROOM IN COUNTRY RESIDENCE OF F. B. FORMAN, LAKE CALHOUN, MINNEAPOLIS, MINN.
Edwin P. Overmire, Architect, Minneapolis.

RESIDENCE M. H. COOLIDGE, KENWOOD, MINNEAPOLIS, MINN.
Bertrand & Chamberlin, Architects, Minneapolis.

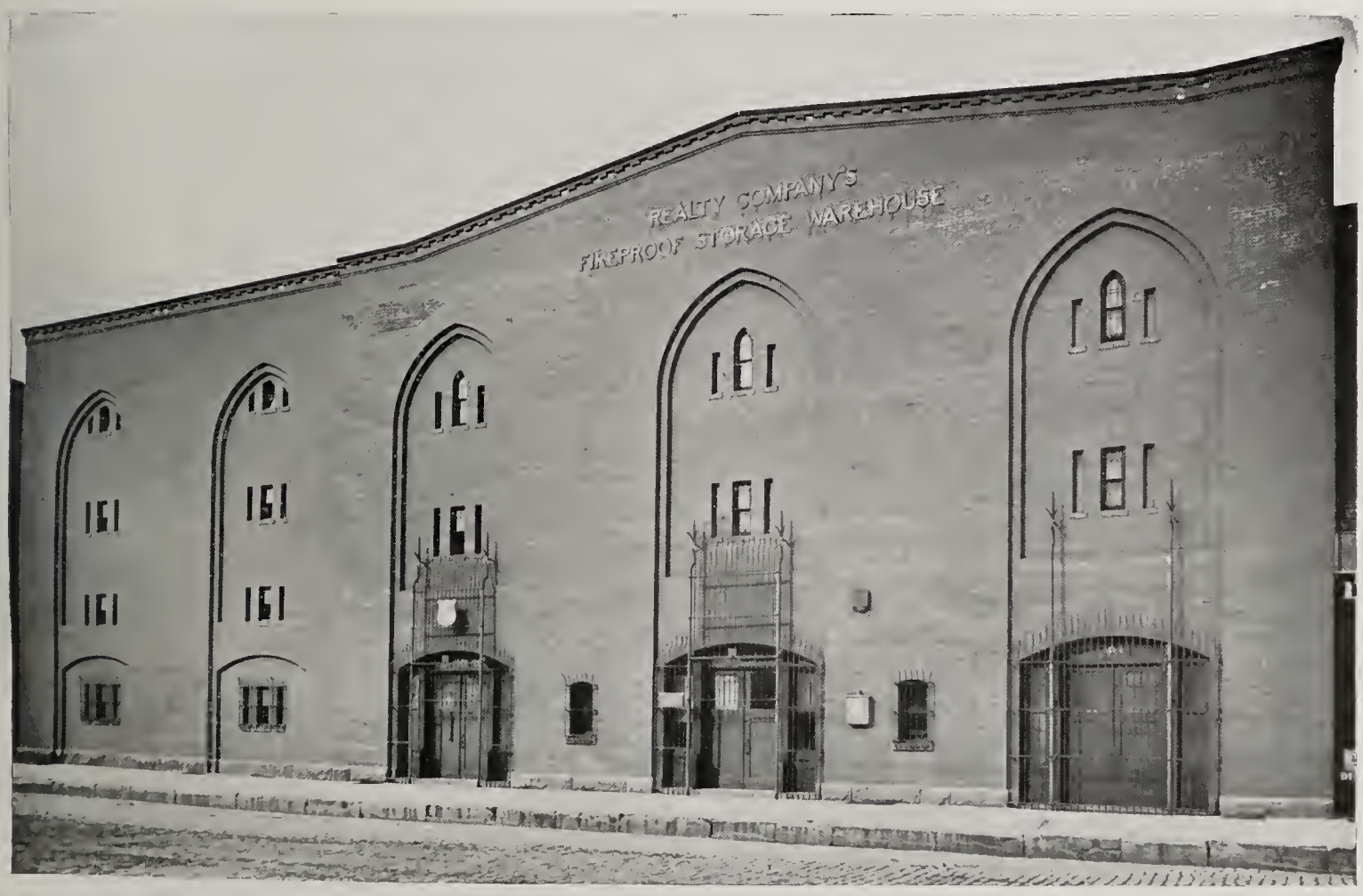
(See Floor Plans on Page 19)

Photo by Western Architect Staff,
Carl Zeiss Probar Lens.

RESIDENCE OF GEO. R. LYMAN, MINNEAPOLIS, MINN.
L. S. Buffington, Architect, Minneapolis.

MISSOURI STATE BUILDING, ST. LOUIS WORLD'S FAIR.
Isaac S. Taylor, Architect, St. Louis, Mo.

LIBRARY IN Y. W. C. A. BUILDING, MINNEAPOLIS.
Wm. Channing Whitney, Architect.



REALTY COMPANY'S FIREPROOF STORAGE WAREHOUSE, MINNEAPOLIS, MINN.
Cass Gilbert, Architect, St. Paul and New York.

VIEW OF VERANDA—COUNTRY RESIDENCE OF F. B. FORMAN, LAKE CALHOUN, MINNEAPOLIS.
Edwin P. Overmire, Architect, Minneapolis.

SOUTHWEST VIEW OF COUNTRY RESIDENCE OF F. B. FORMAN, LAKE CALHOUN, MINNEAPOLIS, MINN.
Edwin P. Overmire, Architect, Minneapolis.

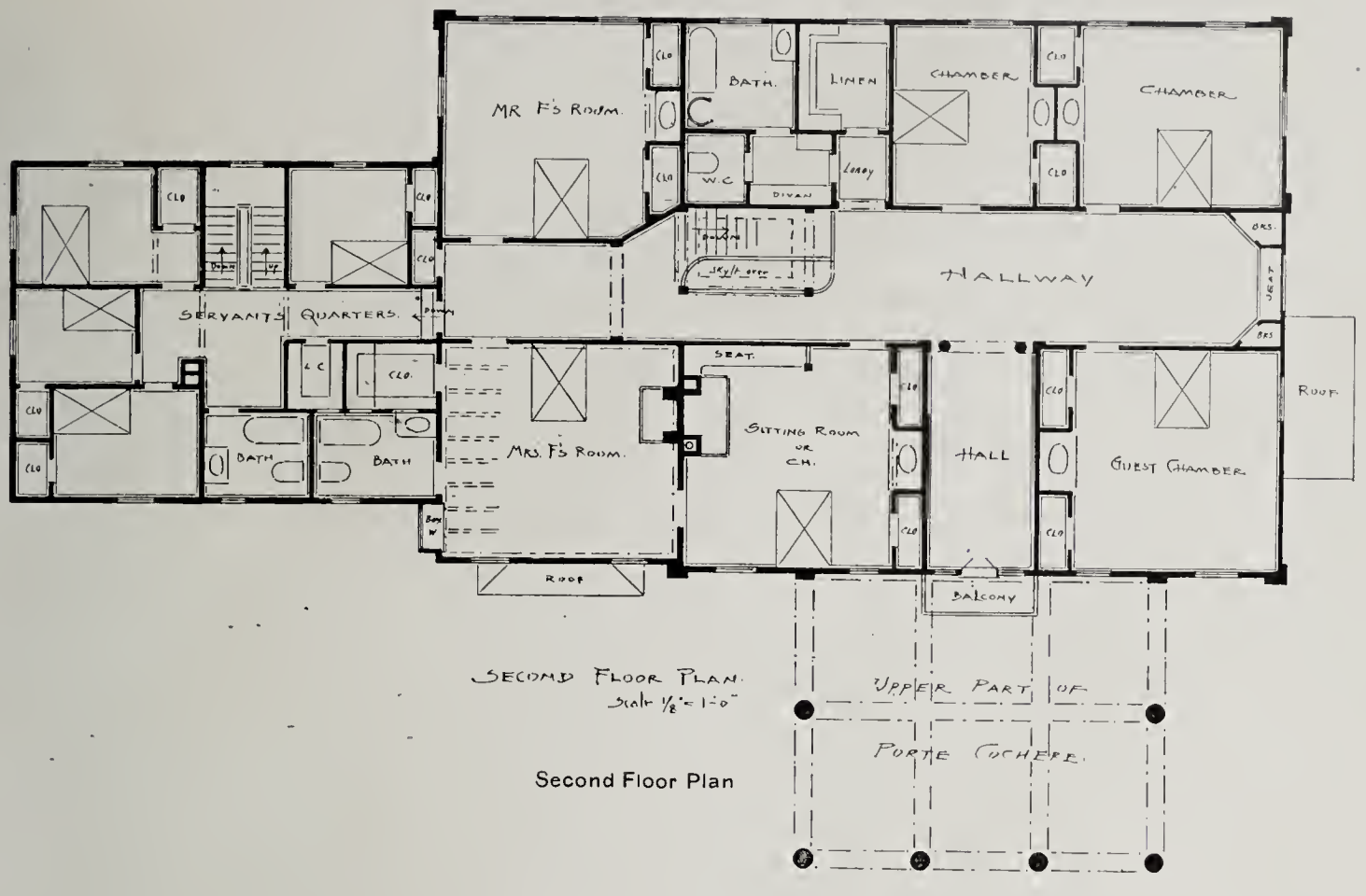
YOUNG WOMEN'S CHRISTIAN ASSOCIATION BUILDING, MINNEAPOLIS, MINN.
Wm. Channing Whitney, Architect, Minneapolis.

ENTRANCE TO WESTMORELAND PLACE, ST. LOUIS, MO.

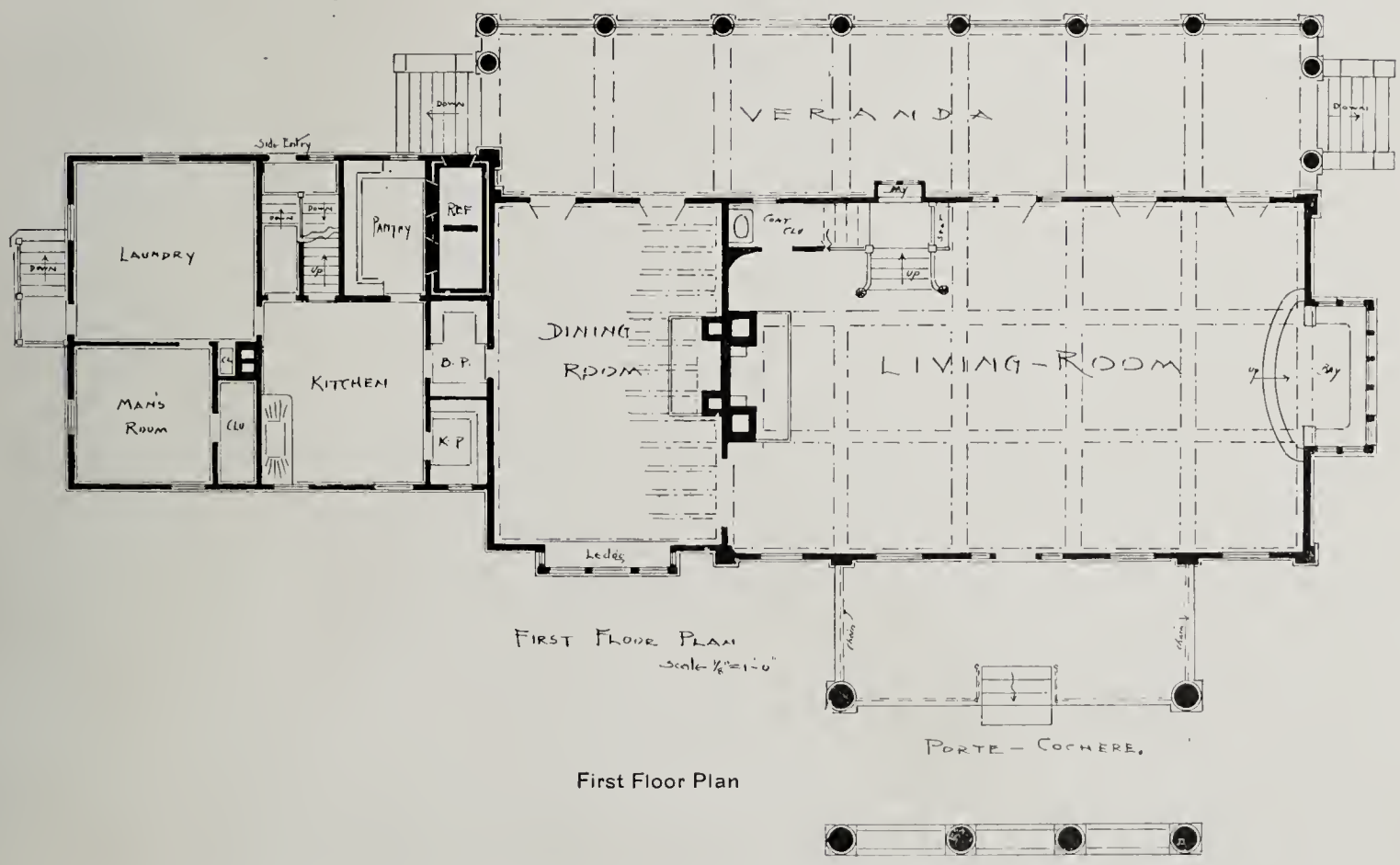
RESIDENCES, BERLIN AVE., ST. LOUIS, MO.

RESIDENCE OF MR. W. H. ELLIS, AVONDALE, CINCINNATI, OHIO.
Harry Hake, Architect, Cincinnati.

PERGOLA AND GARDEN, F. B. FORMAN'S COUNTRY RESIDENCE, LAKE CALHOUN, MINNEAPOLIS, MINN.



Second Floor Plan



First Floor Plan

FLOOR PLANS OF F. B. FORMAN'S RESIDENCE, LAKE CALHOUN, MINNEAPOLIS, MINN.
Edwin P. Overmire, Architect, Minneapolis.

A TRIP TO OLD SALEM, MASS.

By E. P. Overmire, Architect.

The average western man is usually surprised to learn that Boston observes two holidays during the year, to which he is not accustomed: Fast Day, which comes in April, and Battle of Bunker Hill Day, which comes on June 17th. The latter, while legally a holiday only in Charlestown, is observed by Boston generally since Charlestown became a borough of that city.

It was on the 17th of June, 1889, that the writer, in company with several fellow draughtsman from the office wherein he was then employed, had the pleasure of spending the day in Old Salem, renowned for its witches as well as its famous old colonial homes,

POST OFFICE, SALEM, MASS.

about which cluster so much of romance and history; situated about an hour's ride from "the hub." Well do I recall the difference of opinion of the members of our firm upon the holiday question at that time; the senior was of the opinion that we were having too many holidays, while the junior held to the opinion that we were entitled to them all, saying that if he had his way there would be at least one legal holiday in every month of the year, a sentiment to which we all most heartily voted yea. With Fast Day in April, Decoration Day in May, Bunker Hill Day in June, and the glorious Fourth in July, one cannot altogether blame the senior for his position, particularly if he look at it from that man's point of view, which makes all the difference in the world, I find.

Well, four or five of us got together and in due season arrived in the old town full of expectancy, and we were not disappointed in the least. Armed with camera, sketch-blocks, colors, etc., we were fully prepared to do full justice to the many good things which enrich the old place. We took a hurried glimpse of the business section, followed by a hasty trip through the aristocratic residence section, where we got delightful glimpses of such venerable places as the Nichols, Endicott, Forrester, Phillips, Emmer-

NICHOLS HOUSE, SALEM, MASS.

ton and others, whose very names conjure up visions of past glories. Especially interesting were the high old gate-posts still standing at the entrances of many of the houses, many of which appear in the accompanying illustrations.

This hurried, general survey of the field being concluded, we returned to the business section and adjourned to the old Essex House for dinner; in this ancient hostelry we saw the old mantel dating from 1801, which Frank Wallis has made so well known in

TYPICAL SALEM ENTRANCE.

EMMERTON HOUSE, SALEM, MASS.

his book on Colonial Architecture, and which has been so much copied since. This recalls a part of one of the verses of Oscar Enders' famous song, "Stoffa di Italiano," which was one of the songs so well enjoyed at the recent American Institute banquet at Cleveland, which runs as follows:

"Brunelleschi's name shone out in fame,
When he drew the Palazzo Pitti;
But, alas and alack! should he come back,
He'd find one in every city."

Our repast concluded, we visited the old Customhouse where Hawthorne worked, and many of the old-time houses in a more or less dilapidated state of repair, among them the Hodges, or Witch house (since destroyed), which had a good old colonial stairway, which has been much used like the mantel in the Essex House.

We now returned to the real scene of our labors, the fine residence section, and settled down to work studying, sketching and photographing until compelled to "fold our tents and steal away" back to the station in season for our train back to Boston; the station being below the street, which was a novelty then. Near to the station we saw the post-office, a recent work by Peabody & Stearns of Boston, which has become well-known through the architectural journals; a well studied effort in the style so dear to the local inhabitants.

At the time of our visit the Hon. Mr. Endicott was Secretary of War, and the Hon. Joseph Chamberlain had not as yet married into his family. We were shown over his premises and became quite chummy with the hostler and gardener, who gave us a great many private tips about the place and family, which were very ticklish to our ears at the time. The house being closed during the absence of the family abroad, as well as the fact that we were not properly accredited as upon our Newport trip, prevented our seeing the interior of these old houses, hence we had to make the most of what we could gather on the outside.

The privilege of seeing these noted old places and the natives, and through conversation and otherwise getting into personal touch with them—getting the local color that artists talk so much about, is something to be remembered most gratefully; it emphasizes the wisdom of the younger men availing themselves of the opportunity, while free to go and to stay as long as necessary, to acquire something of the nature and environment in which these people have been born and bred; an atmosphere to be found only in Boston and New England.

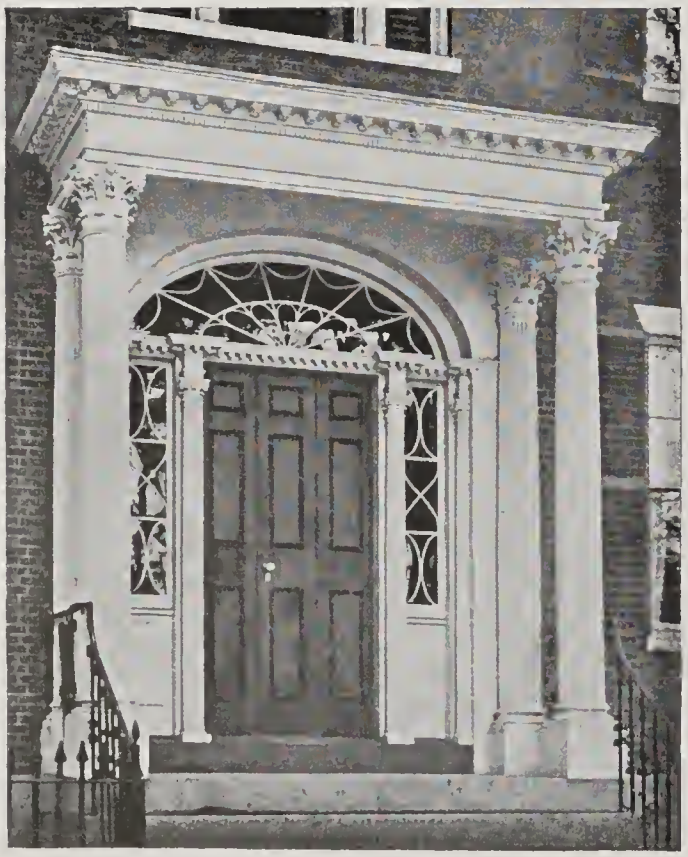
Permit me to urge upon all young men who are studying architecture the necessity of this personal contact, the acquaintance and fellowship of such people as one will meet while studying and working in the best Eastern offices, the study at first hand of the best in art, the advantage of the art exhibits, galleries and sketch clubs, which do not appear to flour-

ENTRANCE TO EMMERTON HOUSE, SALEM, MASS.

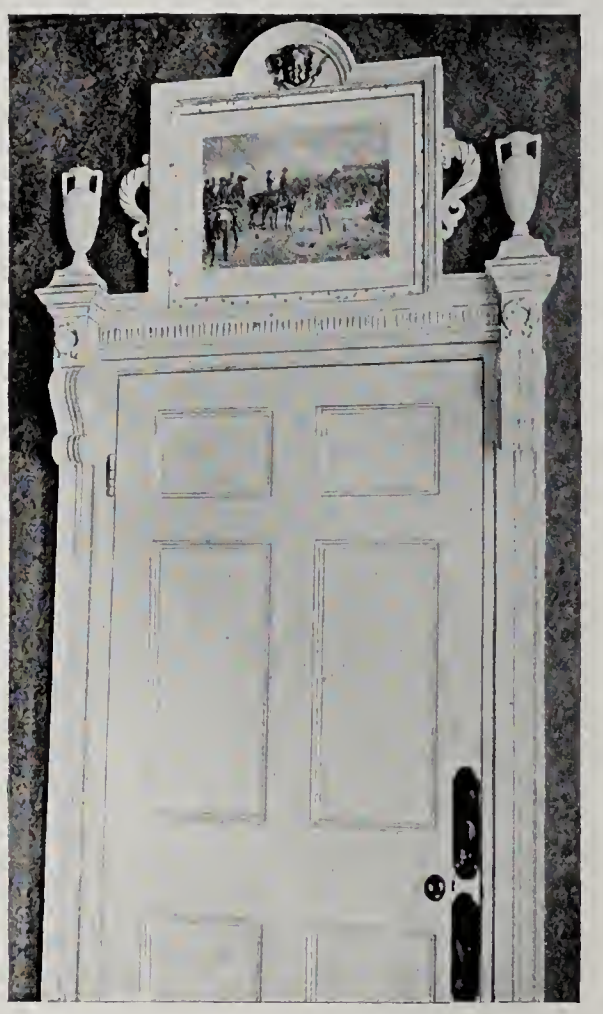
AN ENTRANCE, OLD SALEM, MASS.

ish in our Western soil. To my mind nothing can compensate one for the loss of these privileges; their effect upon receptive minds can only be broadening and ennobling, and to just that extent make the subject more susceptible to the best passing influences, making for both practical and artistic success.

After one has spent several years in such an atmosphere, he cannot consistently descend to the common practices which obtain in the average western office, whose one criterion of success is based on money alone, without any thought of the ennobling possibilities inherent in every man, which will lie dormant and valueless unless properly aroused and educated. Too commonly does the end sought justify the means, which, being construed into common English, means the abasement of the best that is in one's nature to the one consuming, base desire for wealth. Verily, what is one profited if he shall gain the whole world at the expense of all that is best in his nature, as well as the capacity to properly enjoy that wealth which he has so selfishly earned? For answer look at our greatest financial successes and compare them with others who were satisfied to be clean in dealing



ENTRANCE TO PHILLIPS HOUSE, SALEM, MASS.

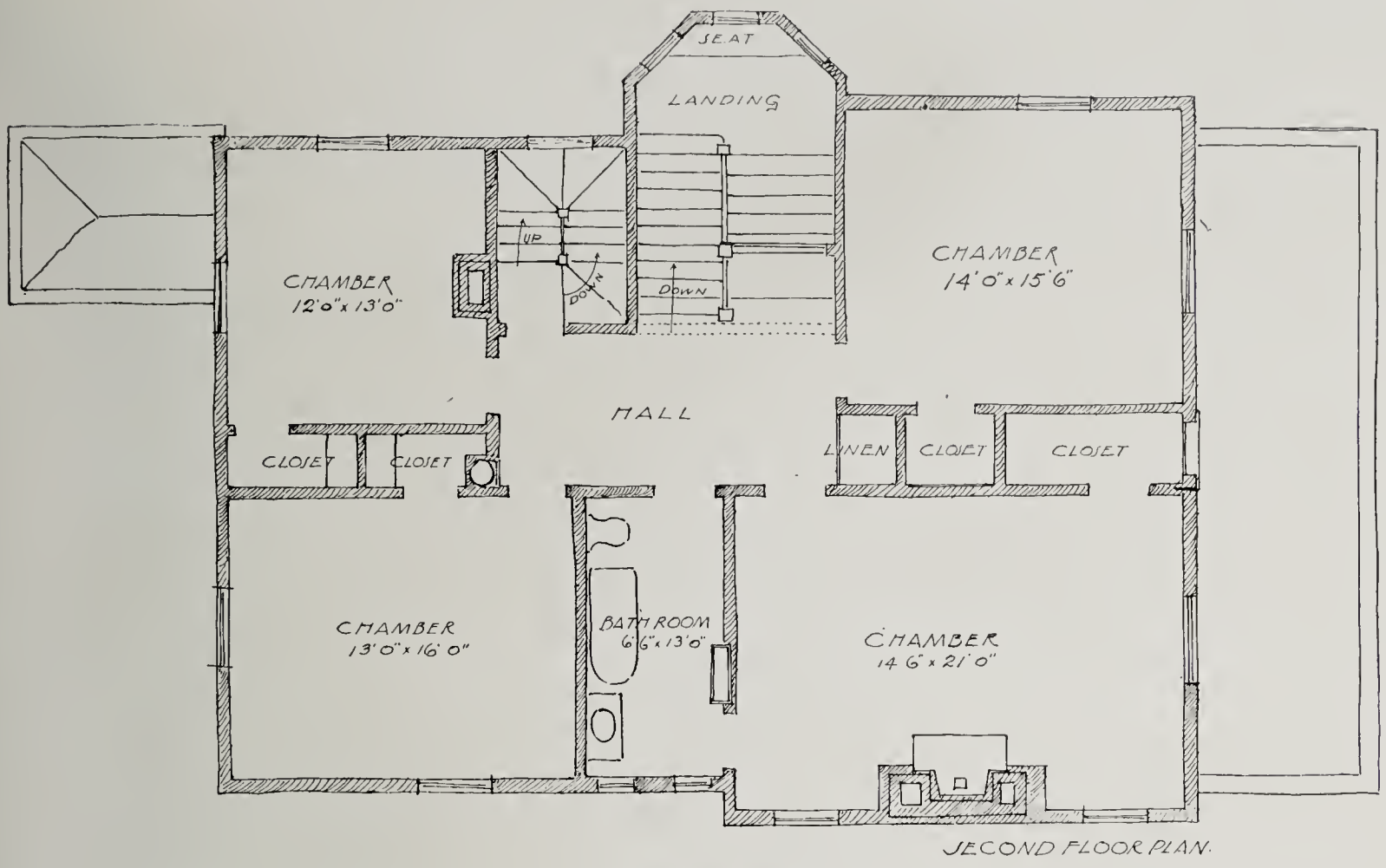


SPECIMEN OLD COLONIAL DOOR, SALEM, MASS.

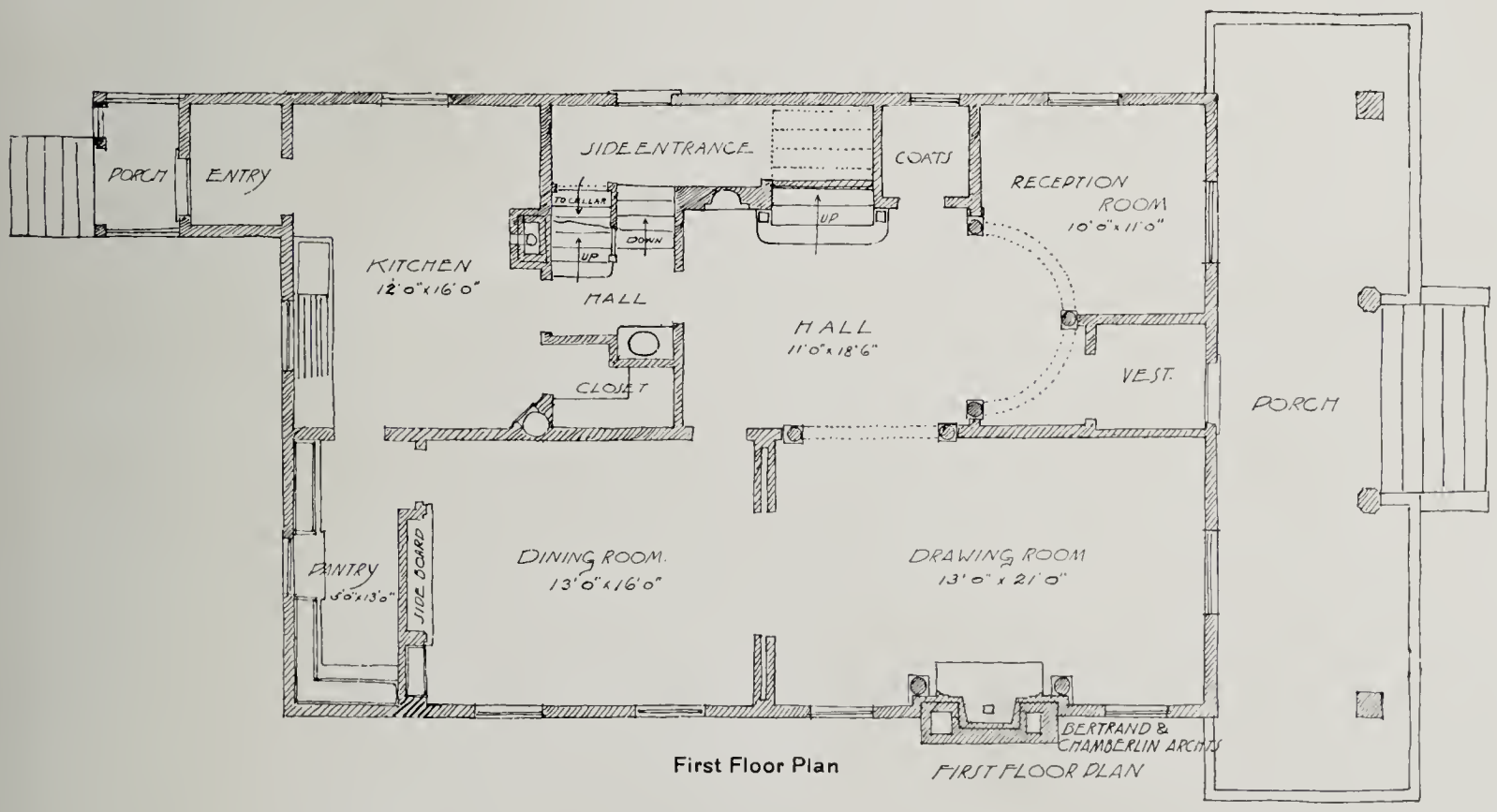
with their fellows, enjoying life while passing and achieving an old age full of the blessings that go with self-respect, and with it, necessarily, the respect of all who know them.

Allen H. Stem, architect, St. Paul, has had his plans accepted by the New York Central railway for its new passenger station in New York city. There were numerous Eastern architects in competition. The building will be one of the finest passenger stations in the country.

Advertising is a plain business proposition, and should form the foundation of every business venture.



Second Floor Plan



First Floor Plan

FLOOR PLANS OE M. H. COOLIDGE'S RESIDENCE, KENWOOD, MINNEAPOLIS, MINN.
Bertrand & Chamberlin, Architects, Minneapolis.

DEVELOPMENT OF AMERICAN ARCHITECTURE.

It is often claimed that the United States has no architectural history and that little or nothing can be learned by a study of the architecture of the last two centuries in America. It is perhaps worth while to run over the work of these years and see if this is not a mistaken idea.

The first period of our architectural history was that which saw the development of the simplest type of settler's dwelling. Every house which is an honest expression of circumstances and surroundings is useful as an example. The log cabin, built with the by-product of clearing the land for cultivation, taught our New England ancestors the fine craft of woodworking, which still is found in the skillful handling of the axe displayed by the guides in the backwoods. It taught, also, first hand the art of dressing and framing timber, which would undoubtedly have had as marked an influence on early architecture here as it had on that of England in the forestry districts in the fourteenth and fifteenth centuries, but for the fact that, as soon as the country became fairly settled the classic influence, entirely predominant in the old country, took possession here and modified the frank expression of a timber frame.

The first period of our architecture terminated about the middle of the eighteenth century. Before that the type was an extremely simple building, with no pretense at being architectural in the sense of conforming to any of those rules which taken together form a style. The little old house of the Albees at New Castle, N. H., is an excellent example of this. A simple, quiet, lowly house, nestling under the great elms, its beauty lies in its restful character, its modesty and reserve. A very similar character is found in the Fairbanks at Dedham, and in a number of the early Rhode Island houses, like the Manton House, at Manton.

But this utter simplicity was running counter to the ever-increasing influence of English civilization and culture, which was rapidly taking the places of the simpler modes of living and methods of thought of the days of the settlers and pioneers. The houses of the governors of the States and of the merchants and of other prominent men were modeled on the houses which were common among people of that class in England. The handling of wood had, however, become so thoroughly ingrained in the American carpenter that the English types were modified by and made to conform to the conditions of wood construction.

The clumsy lap-boarding of England which one still sees occasionally, wide boards, overlapped and tarred, produced the shaved-pine clapboards. Neither tile nor slate were available for roofs, and to replace this the split shingle of spruce, pine or cedar was produced by the handy lumberman. This was the precursor of the modern sawn shingle. The house which was the outcome of this second phase was generally a two-story building—the early one was practically one-story and a big roof—with hipped or gambrel roof. The plan was more regular and the exterior showed more study of architectural precedent. Although the majority of this later eighteenth century work was executed in wood, there was among the wealthy a considerable use of the more durable materials. Brick was imported from England and Holland for New England, Virginia and New York magnates, and in Pennsylvania they used the native stone.

This brings one to the War of Independence, which made a considerable break in our architectural tendencies and traditions, and yet not as much as would have seemed likely, considering the momentous change in our position as a people. Before touching on this, however, let us just glance at another phase of architecture which existed here in the eighteenth century, but which had no influence until later events brought it in contact with us—that is, the work based on the late Spanish Renaissance, which, strongly rooted in Mexico and the West Indies, had spread into Texas and Southern California.—Architects' and Builders' Journal.

PAINTS IN ARCHITECTURE.

Has it ever occurred to any one that, in painting, different woods require different treatment? Of course, in ordinary practice knots and resinous places are "stopped" with shellac before painting; but we see every day the same general procedure used in the painting of white pine, yellow pine, poplar and cypress. That iron and steel work are not included in the same category is probably due to the fact that such work is under the control of engineers rather than of painters.

The painting of brick walls is mainly for the purpose of preservation, but the fact should not be forgotten that paint is an excellent preventive of dampness and that a house with well painted walls is dryer and consequently healthier than one with the walls exposed. The best paints for this purpose where the color is not an objection, are the natural ochre pigments united with zinc oxide. Thus yellow ochre and zinc would give a pleasing buff. Whatever impairs the usefulness of a paint by attacking its tenacity and waterproofing quality, is to be avoided.

It is to be hoped that the merits of a new process for puddling iron have not been overstated in the reports. The machine is said not only to effect a saving in labor which will make iron a formidable competitor of steel in cost per ton, but that fine grades of iron can be assured. The experience of people who build with latter-day steel in sheets and tubes has created a great longing for good iron in its place. All sorts of reasons have been given for the quick corrosion of sheets and tubes since low-priced steels displaced iron, but none seem so good as the reason that iron is the better.

MONUMENTAL ARCHITECTURE UNVEILED.

The Completion of the Greatest World's Fair Building Attended With Dramatic Features—Some Startling Figures.

By W. C. McCarty.

The final act that marked the completion of the mammoth Palace of Agriculture at the World's Fair, though unaccompanied by ceremony or demonstration, was as spectacular as the launching of a war ship and as impressive as the unveiling of a noted statue.

On the top of a high hill, almost in the center of the Louisiana Purchase Exposition grounds, an army of men had been working all summer. An enormous structure had been reared, but if it possessed beauty or symmetry it was effectually concealed behind a network of weather stained timbers that the workmen called the "false work."

It was when this "false work" was removed, simultaneously on all sides, that the building instantly assumed majestic proportions. Architectural beauties that had been concealed sprung into view as if by magic, and in the twinkling of an eye there appeared to rise before one a magnificent palace, of unrivaled proportions, with graceful facades, vaulted entrances, large expanses of windows, and walls and columns that appeared as if carved from flawless ivory.

Workmen had been sent throughout the "false work" that had served its purpose. With saw in hand, boards and timbers that held the scaffolding together were cut, and ropes were attached to the topmost timbers. Then the men who paved the way for the demolition of the false work sought places of safety on the ground near by. The superintendent under whose orders the building had grown, gave a loud blast on a shrill whistle and the men on the ground gave a sharp pull on their ropes. There was a creaking and a groaning of parting timbers. Then a wavering of scaffolding and a great crash as a tangle of scantlings and boards nearly a mile long and seventy-five feet high fell at the base of the great building.

The usual description of this Palace of Agriculture fails to convey an adequate idea of its magnitude. The fact that it is 1,660 feet long and 540 feet wide, covers 23 acres, cost $529,000 and is the largest exhibit building ever constructed to contain a single department, has been told. When one is informed that over 10,000,000 feet of lumber were used in the construction of the building he may yet have an indistinct conception of its magnitude. The amount grows on one when he is told that 600 cars were fully loaded with this lumber. Thirty cars, thus loaded, makes a heavy train, so it will be seen that 20 full trains were required to transport the lumber for this one building to the World's Fair ground.

Vast forests were denuded that this building might rise. In the Southern pineries one acre of forest will on an average yield 6,000 feet of lumber. A little calculating will show that 1,666 acres, or nearly two and one-half square miles were required to furnish this lumber.

As the Palace of Agriculture represents only one of the many exhibit palaces of the World's Fair, or about one-twentieth of the total building construction it will be seen that 33,320 acres, or over 50 square miles of forest were cut for the erection of the World's Fair buildings.

The nails that were used in joining the timbers for this one building, when one pauses to think of them, speak startling facts. Five cars were required to haul the nails. In each car were 450 kegs. In each keg were 100 pounds. The five cars, or 2,250 kegs of nails, weighed 225,000 pounds, or one hundred and twelve and a half tons. The 10-penny nail was the average size used. It requires a strip of steel wire four inches long to make one nail. One hundred and six 10-penny nails weigh one pound, and in the 225,000 pounds used there were 23,850,000 nails. The total length of the wire from which these nails were made was 94,400,000 inches. Reduced, these figures read 7,950,000 feet, or 1,506 miles. Then if the wire were uncut and strung in the form of a cable it would more than reach from Kansas City to New York.

Eighteen cars of sand were consumed in the plastering of the building. There are 12,000 yards of plaster on the interior and 52,000 yards on the exterior. Of laths used on the inside there were 180,000. There were 18,000 casts of staff eight feet long, and 18,000 pounds of fibre were used in making the staff.

Figures on the painting reveal something of the enormity of the structure. On the inside alone eight cars of sanito were sprayed on the walls and timbers. There were 70 barrels to the car, and each barrel contained 450 pounds of paint. With the aid of his pencil a ready mathematician would soon discover that 252,000 pounds of paint were required on the interior alone. And the exterior consumed an equally large amount.

The roofing of the Palace of Agriculture gives one with a penchant for freakish figures a rare opportunity. There are 1,062,400 square feet in the roof. The roofing paper, which was first put on, weighs 50 pounds to a square. A square is 10 feet square or 100 square feet. Thus the paper alone weighs 500,000 pounds. The paper is covered with pitch, 60 pounds to the square. Here is another weight of 600,000 pounds added. Then comes the gravel. One yard of gravel, weighing 2,700 pounds, will cover eight squares of roofing. There were 1,250 yards of gravel used on the roof, and this weighed 3,375,000 pounds. The combined weight of the paper, pitch, and gravel is 4,475,000 pounds. Should snow fall on the roof

to a depth of one foot another weight of 5,182,000 pounds would be added and the pillars would have to bear a total weight of 9,657,000 pounds.

The bolts and rods used in joining the heavy timbers weighed 529,000 pounds.

There are 9,840 feet of 8-inch water pipe under the building to be used only in case of fire. Besides this are service pipes and gas pipes that will make the iron pipes in the building reach four.

The hill on which the building was erected is not level, though it appears so. The north end of the building is 20 feet lower than the south end. But so great is the length of the structure that it appears perfectly level.

One hundred and forty-five thousand six hundred and forty-nine panes of translucent glass, each 18x23 inches were placed in the sash in the Palace of Agriculture. It required 10 tons of putty to do this. Were all of the glass made into one piece it would cover a surface of 185,439 square feet, or over four acres.

In erecting the building there were 796 posts, 60 to 67 feet tall, and made by joining and bolting four 10x12 timbers. There were 80 trusses 106 feet long, each weighing 12 tons. There were 536 smaller trusses that weighed seven tons each.

Caldwell and Drake, the contractors who built the Palace of Agriculture, with a force of 750 men completed the frame work of the great structure in 46 working days. Mr. Caldwell says that if the occasion had demanded faster work he could have done it in 30 days.

WOMEN AS ARCHITECTS.

Many calls and letters from girls who wish to study architecture have been received by me, and its growing popularity as an occupation for women is a recognized fact. A few suggestions and a little advice on the subject from one who has "been through the mill," so to speak, may be of help to others who are contemplating such work, writes Josephine Wright Chapman in Success.

In the first place, we will consider the qualities which are necessary for success in architecture. The most essential of these is artistic ability, but, in addition to this, one must have a thorough knowledge of construction, business ability and a certain amount of physical endurance. The average girl who desires to enter the profession thinks only of the artistic side of the work, and, as a rule, knows nothing of construction and has little business ability or physical strength. While the artistic ability is the most essential, it can easily be seen that one must also be mechanical, although he may acquire a knowledge of construction far more easily than he can cultivate an artistic temperament. Although girls are lacking in many of the qualifications necessary for success in the work, yet in many ways they are eminently fitted for it. They are naturally more studious and conscientious than men and will take more trouble over details. Then, too, they know far better than any man the needs of a home. For this reason, if for no other, I am convinced that a woman architect, as a rule, should confine herself to domestic architecture and interior decoration. She should, at present, be content with this. Domestic architecture is not so small a field as it might seem at first thought, for there are great possibilities for improvement there, and it remains for thoughtful, painstaking women to study the problem.

As to the training which is necessary for a woman architect, if it is possible, she should obtain a college education, for this is the best foundation for any profession, and the mental training thus received is of inestimable value. After leaving college she should enter one of the best of the schools of architecture and designing under the advice of some good architect or professor of architecture, if she should be so fortunate as to find such a one who is willing to help her. If she cannot do this, let her ask a good, practical draughtsman who has been through the schools to lay out a course of study for her to follow. Under no consideration should she attempt to study architecture through correspondence schools. While these institutions may be of the greatest value to students of other professions, it is time and money wasted for a student of architecture to attempt to learn her profession by "absent treatment." She should read the histories of architecture. The public libraries all over the country have collections of photographs and drawings of the best architecture in the world, and, if one cannot see the originals, these are next best for students. She should also make free-hand sketches, beginning at first with merely the outline of such objects as Greek vases, then art-museum casts, and, finally, buildings. In sketching, however, she must select only those objects which are considered best in design.—Exchange.

LANDSCAPE ARCHITECTURE.

Landscape gardening—architecture, as it is now called—has taken great steps forward in America during the past few years. In the past suburban palaces on grounds barely large enough for porters' lodges had been the despair of landscape gardeners, but men of wealth are now giving up the compromise between a town and country residence and are copying the great country estates of the Old World. As much skill and money are often put into nature's setting as into the residence itself.

Landscape architects borrow freely the art and grace of Italy's gardens, the fountains of the French Renaissance and the pools and water gardens of the Spanish Moors.

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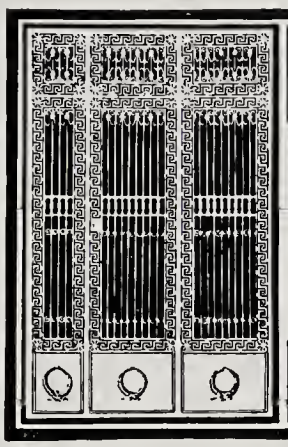

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THE GRANT OVERHEAD WINDOW PULLEY.

In the accompanying illustrations we show an improved overhead pulley now being put on the market by the Grant Pulley and Hardware Company, of 25 Warrent st., New York.

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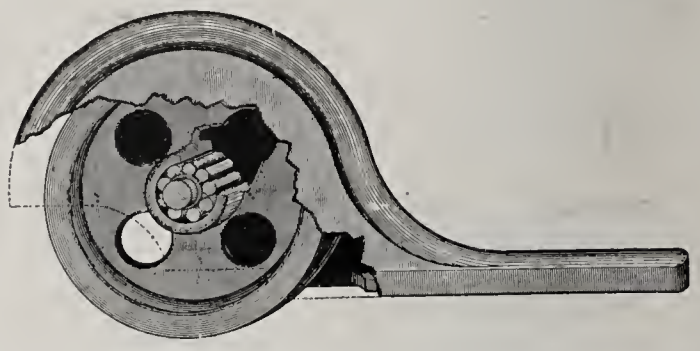

FIG. 1.—SECTIONAL VIEW OF GRANT OVERHEAD PULLEY, WITH ROLLER BEARINGS.

ball bearings, roller bearings and the plain pinion—which are sold at different prices, according to the requirements of the specifications. The housing is made in one piece of iron, which will resist any possible load without fracture. The housing connects with the soffit, so that mortar will not clog the wheels. The sash chain or cord is easily inserted with a mouse, which is furnished with each order. The manufacturers say that with this pulley even, for the heaviest plate glass windows, iron weights may be used instead of lead, thus greatly reducing cost. The pulleys can be cut in the frames with the regular pulley machine. Some of the advantages of using this pulley are referred to by the makers as follows: They can be used in segment head window frames. They hang the weight in the center of the boxes in circle window frames. They are concealed from view when the window is closed, as illustrated in Fig. 2. Only laequered face pulleys are necessary, as they are concealed from view when in use. They can be easily re-

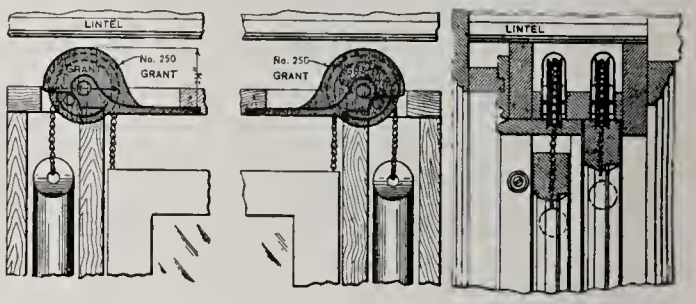

FIG. 2.—SINGLE FRAME AND SECTION OF PULLEY.

moved, if required, after the trim is placed. They require 8 inches less of pocket room than the side pulleys, and thus an iron weight may be used in many places instead of lead. This, it is said, will save from 100 to 200 pounds of lead to each sash, with a corresponding reduction in the cost of material. They are made in four sizes, with pulleys 2, 2¼, 2½ and 3 inches in diameter, with lacquered, bronzed, Bower-Barff and bronze metal faces. Fig. 2 shows a single frame and section, showing pulleys in place concealed from view. Fig. 3 illustrates a twin

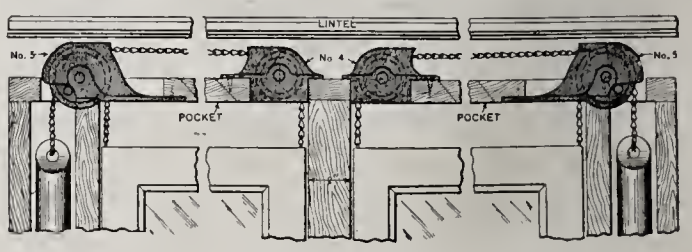

FIG. 3.—TWIN WINDOW, WITHOUT WEIGHTS IN MULLION.

window without weights in the mullion. These pulleys ean also be used in triplet and quadruplet window frames. Used as in Fig. 3 only 2½ inches of head room is required, and even the triplet and quadruplet frames require but 3 inches head room. Another form of this pulley is made embodying the same principles but adapted for metal fireproof windows.

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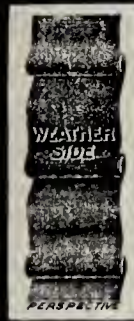

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