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Building Monthly.



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ENTRANCE TO THE RESIDENCE OF GEORGE S. GRAHAM, ESQ., AT BRYN MAWR, PA.—See page 64.
MR. WILLIAM L. PRICE, ARCHITECT.

SCIENTIFIC AMERICAN BUILDING MONTHLY

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*The engravings presented in this issue are made from photographs taken specially for the SCIENTIFIC AMERICAN BUILDING MONTHLY.

MONTHLY COMMENT.

THE use of artificial materials in building and in decorative schemes involves the most fundamental of all artistic problems—the question of honesty. Art must be honest to be good and beautiful, and it can not be beautiful unless it is good. How, then, it may well be asked, can art thrive with false fundamentals, which is what happens when artificial materials are substituted for genuine ones, and the imitation takes the place of the real? The matter is further complicated by the fact that modern ingenuity has produced many substitutes and imitations of materials of every kind, which not only approximate the genuine in appearance, but are so close to reality as to be well nigh undetectable. If we must have splendid buildings, shall their splendor be created by false means? On the other hand, not a few artificial or imitation materials have a higher practicability than the substance they profess to simulate. This is the utilitarian side of the question, which complicates the problem still further.

It is true enough that much of our modern building is imitation and false from core to surface. The old Romans, who taught the world so much in evil, set the fashion in such doings, and set it with such superb grandeur that it has been difficult to find fault with their results. But their methods were quite different from those of the modern decorator with false materials. The Roman built a core of brick, and on it plastered an outer surface of rare marbles and precious stones. The results were often incredibly fine and of the utmost magnificence; yet the modern stickler for truth does not hesitate to criticize them sharply for what they term the dishonesty of this procedure.

But was it dishonest? A wall of solid jasper, a buttress of onyx, are clearly examples of a prodigal waste that even the wasteful Roman emperors would have regarded as preposterous. The beautiful panels of precious marbles which line the walls of the church of San Marco, in Venice, are not less beautiful because they are thin slabs applied to the unsightly cores of rough stone. Nothing more than these slight sheets of precious

materials were needed to adorn and beautify the splendid church, and it would have been a sheer waste of good material to have done otherwise. Any other method would have involved a waste both needless and, in a sense, dishonest.

Such a system of decoration, however, is quite different from building with materials which are dishonest through and through. It has been reserved for our own day to bring such methods into general use. Whether right or wrong, it is very clearly obtaining a certain effect through the use of materials which are quite different from what they profess to be.

NOTHING helps so much as the intelligent care of the house. It is an excellent thing to be satisfied with what one has, and it is a hopeless thing to long for the unobtainable; but it is a useful thing, and often helpful, to strive constantly for betterment. But always within reasonable limits. To better what one has is quite different from wanting something one has not and perhaps can never obtain. One gets very much more joy out of a house by betterments thoughtfully provided than by remaining content with what may be but meager furnishings and comforts.

AMERICAN architects are very prone to conduct their professional work in companies of twos and threes. A single architect, doing business for himself, is somewhat of a novelty in America; in England firms are equally rare. There is a good business reason for the partnerships which are so common among American architects. American practice is large and varied; it often involves many problems of engineering. A division of the labor necessary to the conduct of the business is necessary and quite natural. Moreover, one partner will often have social connections and influence which brings in work to the firm that the other partners might not be able to touch.

THE PORCH AND ITS USES.

THE porch is at once the most ancient and the most useful of human buildings. Primitive peoples used it as their chief dwelling place, as a spot of honor and of utility, wherein their home life was spent, where their courts of honor were held, where their rude justice was administered, and whence the chieftain of the forest viewed the execution of the victims of his judgments.

It is a far cry from such a structure—a rude upbuilding of four poles supporting a rough covering, set up in the midst of a forest—to the broad porch of the American summer hotel, or the richly furnished veranda of the wealthy contemporary citizen—yet the stages of descent can be traced readily enough, and the latter is simply the latest and most developed type of a structure of most ancient origin and most varied history.

Absolutely primitive as the porch is in its origin, it has had a rich history. The Greeks gave it wonderful development when they set up a row of columns around their temples and covered them with the roofing of the within building. The exquisite porch of the Eretheion has never been surpassed in refinement of proportions or of detail, and stands quite alone among the achievements of Greek art. One may indeed hesitate to describe a Greek temple as a small cell surrounded with a continuous porch; yet contemporary language might so describe it with quite intelligible accuracy.

In the middle ages the porch had become a building adjunct, frankly recognized and frankly used, and always with much beauty of form and often with great richness of detail. The vast doorways of Amiens and Reims cathedrals are but splendid porches affixed to the great churches they adorn, decorated with incomparable sculpture. The cathedral of Chartres, in its transept porches, has real porches directly applied to the church, porches lavishly humanized with countless sculptured figures, the most sumptuous porches in the world.

The monumental porch as interpreted by the Greeks and the cathedral builders is as remotely associated with the modern house porch as anything can possibly be. Analysis alone establishes the relationship, which is so slight as scarce to have artistic kinship, and which certainly is without structural significance. The modern American, comfortably seated on his comfortable rocking chair on his spacious veranda, might well reject with amazement the suggestion that his porch and the sculptured portals of the cathedral of Reims had anything in common. And as a matter of fact they have not, although they form links in a single and common chain.

The porch, in its universal application to domestic buildings, is largely an American idea and an American development. In this land of architectural liberty almost anything can be called a porch. As a matter of fact we have developed a very considerable series of types. We have porches for doors only and porches for sitting upon and for recreation; we have porches with roofs and porches without. We have, in brief,

come to regard any external addition to the house that is open to the air as a porch; and then in winter we enclose it, and have an outer room, which we call a porch, and yet is wholly different from the summer variety.

Some light on the current acceptations of the word "porch" is shown by the definitions of related words in recent dictionaries. The Century Dictionary gives these solemn definitions:

PORCH: "An exterior appendage to a building, forming a covered approach or vestibule to a doorway; a covered way or entrance, whether enclosed or unenclosed."

VERANDA: "An open portico, or a light gallery attached to the exterior of a building, with a roof supported on pillars, and a balustrade or railing, and sometimes partly enclosed in front with latticework. By a popular, but erroneous, usage often called *piazza* in the United States."

PORTICO: "A structure consisting essentially of a roof supported on at least one side by columns, sometimes detached, as a shady walk, or place of assemblage, but generally, in modern usage, a porch or an open vestibule at the entrance of a building; a colonnade."

LOGGIA: "A gallery or arcade in a building, properly at the height of one or more stories, running along the front or part of the front of the building, and open on at least one side to the air, on which side is a series of pillars or slender piers."

BALCONY: "A stage or platform projecting from the wall of a building within or without, supported by columns, pillars, or consoles, and encompassed with a balustrade, railing, or parapet."

PIAZZA: "An arcaded or colonnaded walk upon the exterior of a building; a veranda; a gallery [a less correct use]." (Second definition.)

Here, then, is a very considerable variety in definitions, and most inadequate definitions most of them are. A little more light is thrown on the subject by the late Henry Van Brunt, who contributed a brief article on "Porch" to Russell Sturgis's Dictionary of Architecture:

PORCH: "A covered place of entrance and exit attached to a building and projecting from the main mass. . . . The term 'porch' is somewhat inexact applied to an open arcade or loggia forming the first story of a building and giving sheltered entrance to it; also to a classic portico with columns. But the modern veranda of modern American houses, where it serves to give entrance to them by a principal doorway, is a true porch."

These quotations are from very modern authorities, yet already the meaning and use of the word porch in America has progressed so rapidly and so completely that they no longer correspond to contemporary usage. The modern American porch is by no means a structure attached to the entrance of a house. On the contrary, it is very good usage, perhaps the best of usage, to have no porch or covered entrance at this point at all; but to reserve the porch for the garden side of the house—if it be a country house—where it is used as a place of rest and recreation, an outdoor room, giving pleasure by its exposure to the air, shelter by reason of its roof, and thorough enjoyment, because here one's family gathers and one's friends are received. In other words, the porch no longer has peculiar architectural significance, but has become a social feature, promoting social life and of broad social association and significance.

And this marks the supremacy of the American porch. The evolution has been rapid. A shallow covered space, scarce wide enough for a reclining chair, gave way, in time, to a broad space, whose width was only limited by the quantity of light needed within the room behind its enclosing wall. Then came the furniture maker, the rug weaver, the manufacturer of decorative pottery, the florist, the delicate woman-touch which refines everything it is applied to; and lo! the furnished porch, the open air room, the new space of resort and rest was complete.

One more step alone remained to complete the evolution, and that was to enclose the porch. The pleasant outdoor room speedily became useless in our harsh American winters. The space was good and useful; why not enclose it, and produce a warm winter sun-room? This idea has happily been put into execution so frequently that the enclosed porch has become a recognized feature of contemporary house building. It is a useful disposition of useful space. It has confounded the dictionary makers, but has permanently entered into the regards of those who care more for comfortable building than for the pedantry of word-definers.

NOTABLE AMERICAN HOUSES*

BY BARR FERREE.

THE COUNTRY SEAT OF STANFORD WHITE, ESQ.,
ST. JAMES, L. I., N. Y.

It must always be a matter of astonishment to those who have occasion to travel on the Long Island Railroad why persons of discernment should locate themselves on a railroad that, to the chance traveler, seems operated with a singular lack of regard to public convenience. It is probably the only railroad in the world that has two starting points, neither of which any one wishes to visit, namely, Flatbush Avenue and Long Island City. Thence it spreads itself out over the whole of Long Island like a great hand, leaving hardly a roadway uncrossed, and branching off in an apparently irresponsible way to places one seldom hears of and certainly seldom visits. Of scenery it offers almost nothing of interest, the journey to St. James being only truly picturesque at Cold Spring, where there are some hills pleasantly wooded.

offer Long Island City, and that strange fragment of the metropolis known as East New York, in support of this statement.

It is not the weird railroad journey that attracted Mr. Stanford White to St. James, but the attractions of its wonderful scenery—none of which, of course, is visible from the railroad—and the further fact, and one of quite unusual interest, that this was the early home of Mrs. White, to whom the whole region has been familiar from early childhood. This gives a real personal interest to the White house, since many of the large Long Island estates are now occupied by people who are strangers to the soil and who have neither known nor loved it in early youth.

Another special and peculiar interest attaches to this house, because it was built and designed for his own occupancy by one of the most distinguished of living American architects. Mr. White's firm, Messrs. McKim, Mead & White, have been associated with many notable building enterprises in this country, and one looks for a house of unusual interest when built for his own use by one of these conspicuous architects.

shade, and thoroughly shuts off this part from the inquisitive eye of the passer by.

Of the latter there are few enough. St. James is quite remotely located, being nearly two hours from New York, and Mr. White's house is so situated that positively no other house is visible from it save the houses of the immediate relatives of Mrs. White. One may drive into it almost directly from the highroad, or turning into a pleasant wood, drive through a roadway lined with thick rhododendrons; a semicircle of Ionic columns stands at the turning of the road; more trees—a veritable forest—more rhododendrons—which surely, in the spring time, must give this path a wonderful border of color—and then great orange trees in huge boxes, lining each side of the roadbed; you pass stables and outbuildings—one of them decorated with figures in relief—glance hastily at a little garden in which hollyhocks seem to be the dominant flower—and before you have quite grasped the surroundings, the carriage has deposited you at the entrance doorway of the house.

And here are sights a-plenty to interest one. Across



THE HALL—THE COUNTRY SEAT OF STANFORD WHITE, ESQ., ST. JAMES, L. I., N. Y.

But if the railroad journey lacks interest, this certainly can not be said of the places one may reach by means of this extraordinary railroad. It is the place of arrival that counts on the Long Island road, and very charming and delightful many of the places are that have been built and created on the countryside of Long Island. One realizes quite completely, after a few visits into the wilderness of this spot, that the inhabited portions of Long Island—the cities and towns which crowd its western end—occupy the least interesting sites, and are, in themselves, some of the least interesting places in the world. I respectfully

Yet the personal note in this house is rather in its surroundings and in its interior than in its design. Mr. White has built for himself a house quite ample in its dimensions, and entirely spacious enough for his family, and yet marked by none of the outward magnificence and splendor which has characterized so many of the great houses built by his firm. It is a thoroughly charming house, a thoroughly livable house, a house of quiet dignity and simple treatment, obviously the house of a man of taste who has built for his own comfort and convenience.

An old house once occupied a part of the site on which the present building is erected; a portion of it has been retained, but so transformed and modified as to be entirely lost in the present house, which is thus practically an entirely new building. Three gables, front and back, form the striking feature of the exterior, the service wing to the right being recessed on the front and not counting in the impression received from the entrance road. The walls, including the gables, are pebbled throughout, the quoins of white cement, the woodwork painted white. The kitchen wing is wholly enclosed on all sides by a close lattice of delicate wood, a device that gives plenty of air and

the driveway—and we are now entirely within Mr. White's own grounds—is a veritable museum of interesting things; two old sarcophagi alive with brilliant hydrangeas; four hermes—those fascinating, bodyless heads that so solemnly look out from their quadrangular bases; a fine old well head, arranged as a fountain in the center circle, with queer bronze fowls standing in the grass. Beyond is a great lawn, closed by a hedge against the highway which bounds its outer edge; before the center of the hedge are four great bay trees in boxes—a distant note of foreign foliage which brings the lawn in harmony with the myriad of exotic plants immediately around the house.

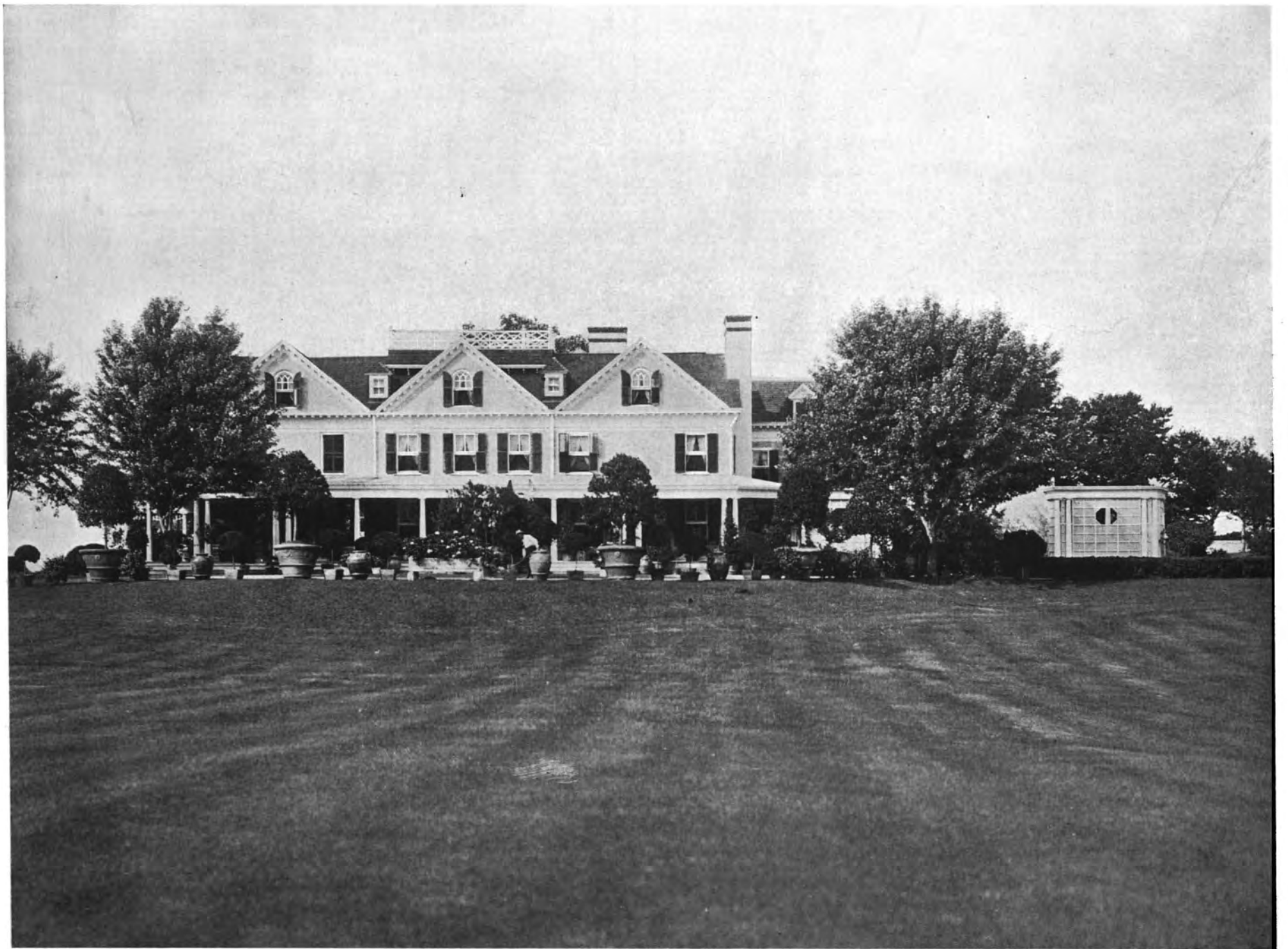
The entrance porch, which stretches wholly across the front of the house, is shallow, as befits a porch where guests may be welcomed and whence they can be speeded on their departure; in no sense is it a porch for pleasure or recreation. Along its front edge are mimic trees from Japan—strange, curious, twisted little trees which have become familiar enough of late years, but which are seldom seen so naturally in place as here. Larger plants stand on the grass; on one side of the approaching roadway are great oleanders; on

Continued on page 62.

* Previous articles in this series: "BILTMORE," THE ESTATE OF GEORGE W. VANDERBILT, ESQ., BILTMORE, N. C., February, 1903. "THE GARDEN AT 'GEORGIAN COURT,'" THE HOUSE OF GEORGE J. GOULD, ESQ., LAKEWOOD, N. J., August, 1903. "HARBOR HILL," THE ESTATE OF CLARENCE H. MACKAY, ESQ., ROSLYN, N. Y., September, 1903. "THE ORCHARD," THE COUNTRY SEAT OF JAMES LAWRENCE BREESE, ESQ., SOUTHAMPTON, N. Y., November, 1903. "THE RESIDENCE OF W. J. STOW, ESQ., ROSLYN, N. Y., December, 1904. "WHITE HALL," THE HOUSE OF HENRY M. FLAGLER, ESQ., PALM BEACH, FLA., January, 1904. "FAULKNER FARMS," THE ESTATE OF MRS. CHARLES E. SPRAGUE, BROOKLINE, MASS., March, 1904. "THE HOUSE OF E. J. BERWIND, ESQ., NEWPORT, R. I., April, 1904. "GREY CRAIG," THE ESTATE OF J. MITCHELL CLARK, ESQ., NEWPORT, R. I., May, 1904. "BLAIRSDEN," THE ESTATE OF C. LEDYARD BLAIR, ESQ., BERNARDSVILLE, N. J., June, 1904. "KILLYSART," THE COUNTRY SEAT OF DANIEL O'DAY, ESQ., DEAL BEACH, N. J., July, 1904. "THE ESTATE OF HENRY W. POOR, ESQ., TUXEDO, N. Y., August, 1904.

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THE LIVING-ROOM.



THE DINING-ROOM.



ONE END OF DINING-ROOM.

THE COUNTRY SEAT OF STANFORD WHITE, ESQ., ST. JAMES, L. I., N. Y.—See page 49.
MR. STANFORD WHITE, ARCHITECT.



THE FORMAL GARDEN.

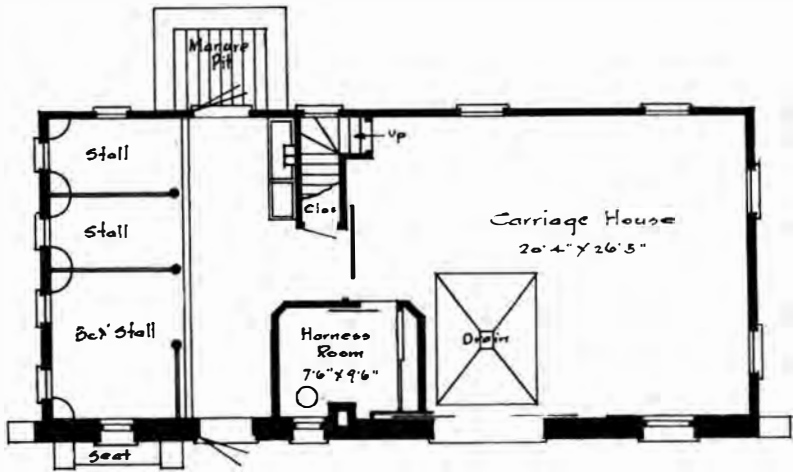


THE DRIVEWAY.

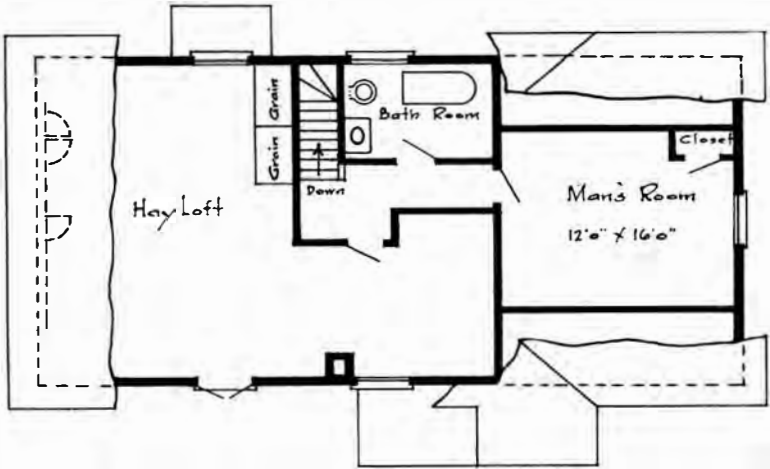


THE PIAZZA.

THE COUNTRY SEAT OF STANFORD WHITE, ESQ., ST. JAMES, L. I., N. Y.—See page 49.
MR. STANFORD WHITE, ARCHITECT.



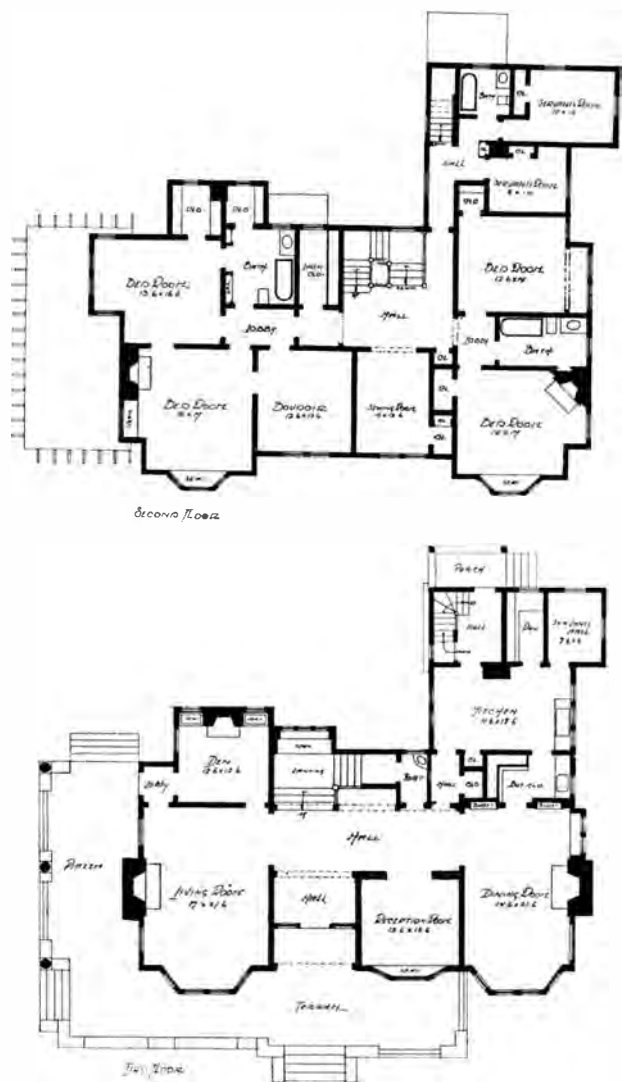
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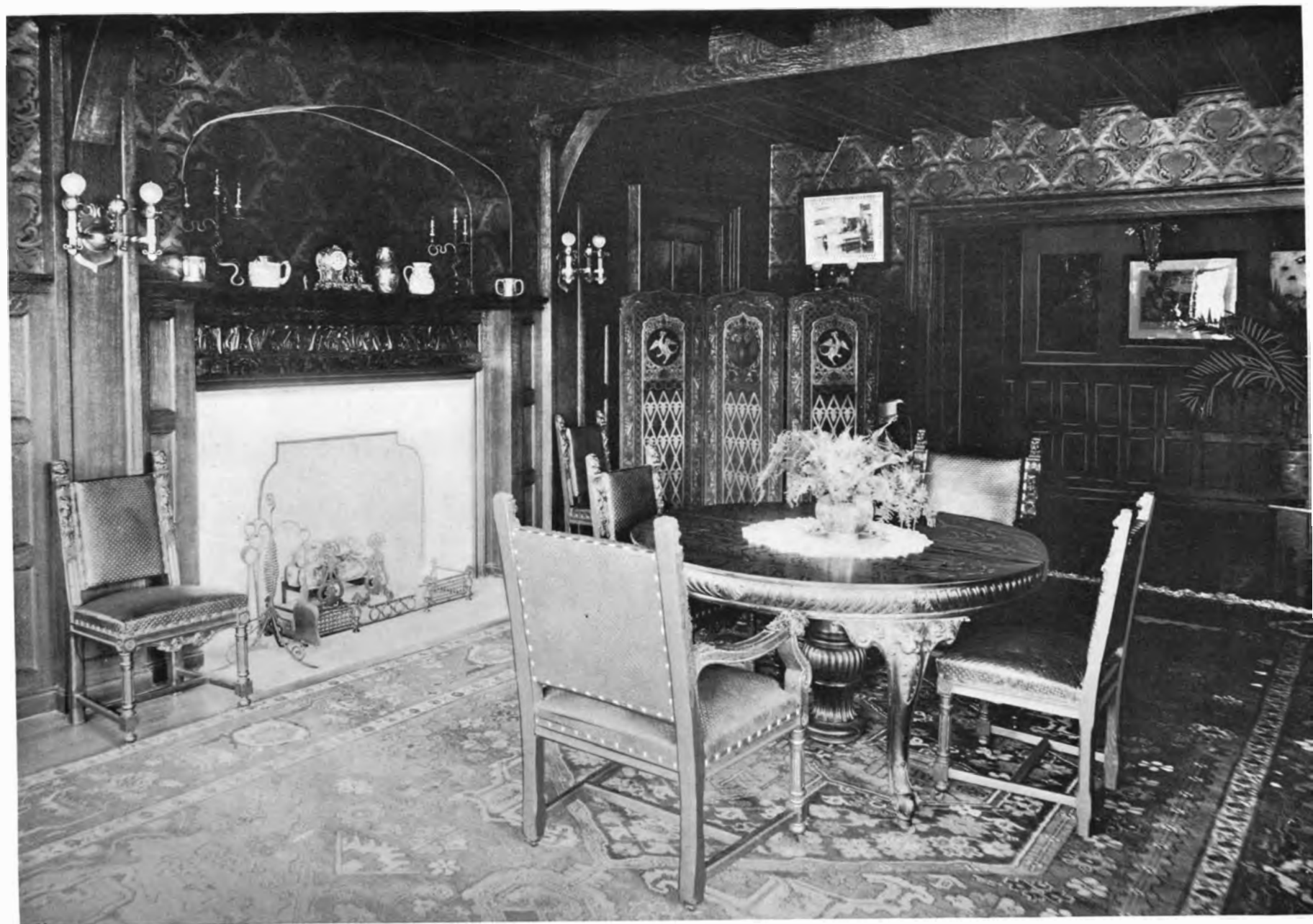
A STABLE AT ELKINS PARK, PA.—See page 65.
MR. LAURENCE VISSCHER BOYD, ARCHITECT.



THE RESIDENCE OF CAPTAIN P. A. NICKERSON, AT WINCHESTER, MASS.—See page 64.
MR. ROBERT COIT, ARCHITECT.



THE RESIDENCE OF GEORGE S. GRAHAM, ESQ., AT BRYN MAWR, PA.—See page 64.
MR. WILLIAM L. PRICE, ARCHITECT.

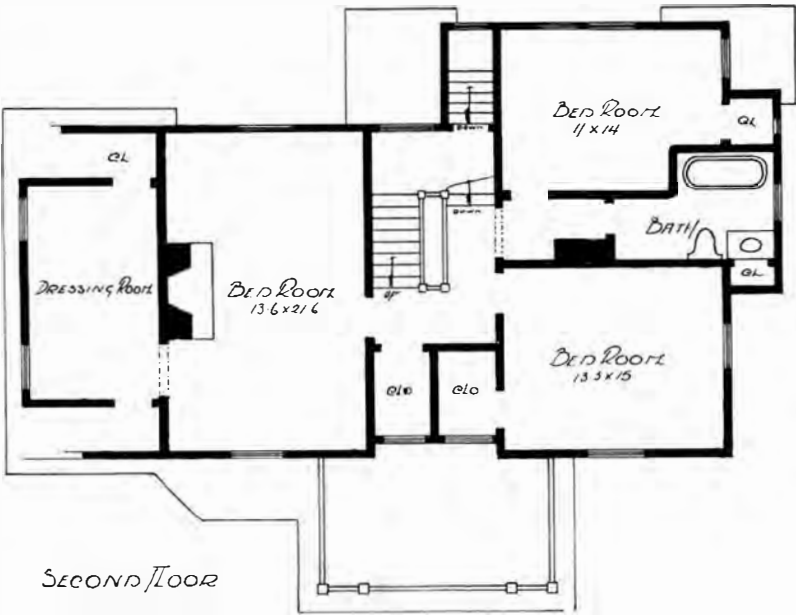
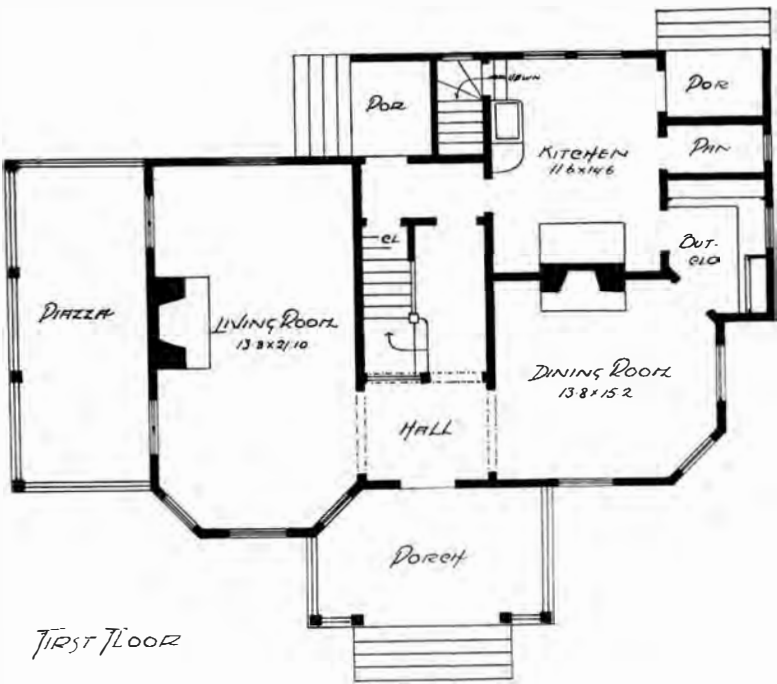


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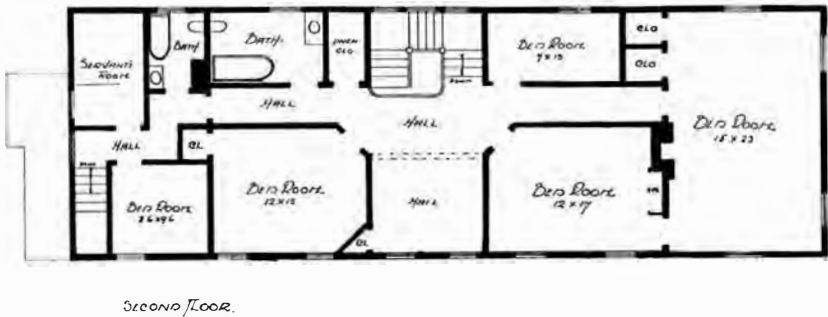
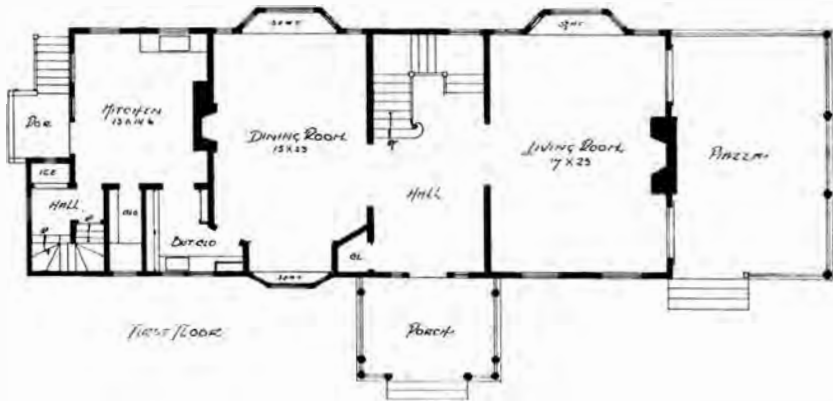


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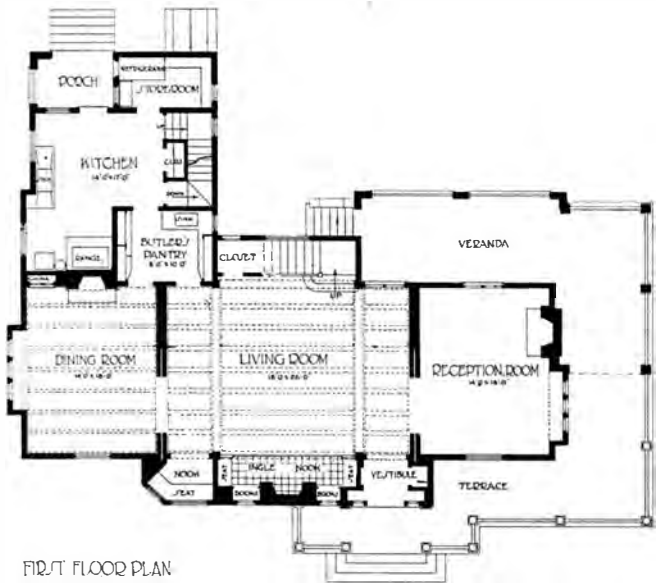


A HOUSE AT UPPER MONTCLAIR, N. J.—See page 65.
MR. L. L. BISHOP, ARCHITECT.



THE HALL.

RESIDENCE OF HENRY C. MEYER, ESQ., AT MONTCLAIR, N. J.—See page 65.
MR. FRANK E. WALLIS, ARCHITECT.



RESIDENCE OF A. G. HOOLEY, ESQ., AT PLAINFIELD, N. J.—See page 63.
MR. A. L. C. MARSH, ARCHITECT.

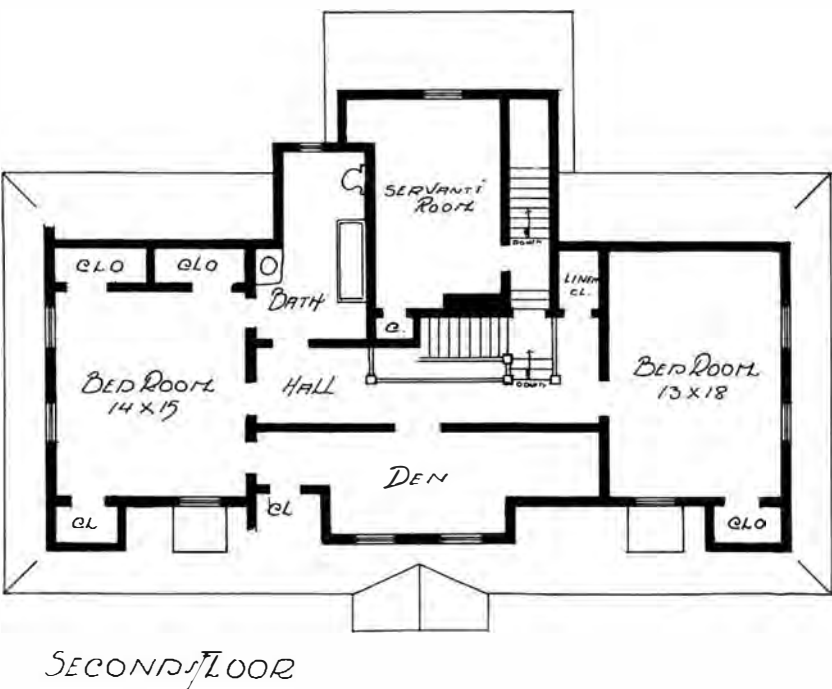
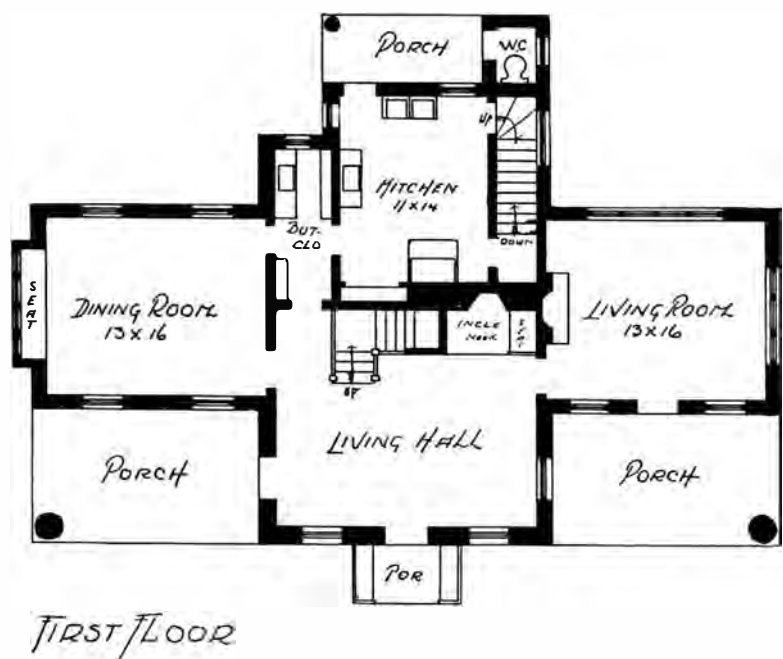


THE HALL.



DINING-ROOM.

RESIDENCE OF A. G. HOOLEY, ESQ., AT PLAINFIELD, N. J.—See page 63.
MR. A. L. C. MARSH, ARCHITECT.



A HOUSE AT WOODMERE, LONG ISLAND.—See page 64.
MR. CHARLES BARTON KEEN, ARCHITECT.



ENCLOSED PORCH TO THE RESIDENCE OF MRS. CHARLES C. EMOTT, AT MORRISTOWN, N. J.
MR. OSCAR B. SMITH, ARCHITECT.



ENCLOSED PORCH TO THE RESIDENCE OF S. L. SCHOONMAKER, ESQ., AT PLAINFIELD, N. J.
MR. G. E. W. DIETRICK, ARCHITECT.

ENCLOSED PORCHES.—See page 64.

**THE COUNTRY SEAT OF STANFORD WHITE, ESQ.,
ST. JAMES, L. I., N. Y.**

(Continued from page 49.)

the other a row of small bay trees; and if, perchance, there is a vacant spot, a rare jar or vase is stood erect with only its own inherent beauty to give charm. And against the house wall, standing on the porch are larger plants, in tubs, in pots, in jars, on the floor and on pedestals—many filled and others empty; palms, bay trees, rubber plants, bamboos—a treasure house of curious things.

The side porch, at the end, is narrow like the front porch; here one has a view of the Italian or formal garden that lies below a terrace wall, on which are more Japanese mimic trees, each in a characteristic vase or dish. The garden is small, but brilliant with color, with cannas, geraniums, begonias, lilies and other flowering plants. It is a small square, with walks bounded with box and an outer higher box border for a final enclosure. In the center is a large circular basin and fountain, with a stooping Venus in the middle. Further down, below a lower terrace, is the pergola which closes the garden, beyond which are the trees of the forest. There is a small basin of water below the pergola, which is covered with blooming plants, including some fine oleanders.

Beautiful as the flower garden is as seen from the porch, its real beauty is best seen from walking down the driveway which runs beside it. This, at this point, is a lordly avenue, bordered on each side with a low stone wall, on the emphasized points of which are great aloes, flowering hydrangeas and other plants. To one's right is the Italian garden; to one's left a smaller enclosed garden ablaze with hardy phlox, a brilliant, living, seething mass of bloom; with lofty dahlias beyond in the first glory of their later flowering. The road leads on into a deep wood, and then turns to the right and left, forming the boundary to the property on this side.

Returning to the house, and continuing the journey around the porches, one comes to an expansion on the inward corner which forms a true outdoor room. And now one realizes, as one has not before, the real charm of this delightful house. For spread out before one is a view, so broad and entrancing that even Long Island, with its host of pleasant spots, can scarce equal it. To the farthest right stretches Crane Neck Point, that reaches far out into Long Island Sound. Immediately below one is Stony Brook Harbor, and beyond the quiet waters of Smithtown Harbor. And then beyond the blue waters of the Sound, filling in the horizon. All this is at one's feet; but before it can be reached one must cross a gently swelling lawn, that spreads in delightful green to the forests and low bushes which entirely surround its distant borders. Far off, and quite some distance below the house—whose altitude is exceeded by but two other spots on Long Island—is a Grecian temple, a graceful circular structure with Doric columns, whence one may view in quiet and peace the waterscape below, or look upward toward the house and lawn at one's back.

The space immediately behind the house has, like all the grounds, individual treatment. A low wall supports a grassed terrace immediately below the porch. On the steps stand box trees trimmed in the shape of sitting birds, a charming grotesquery that seems entirely in place. On the wall on either side are vast tubs of flowering cannas; and against the house more bay trees and other curious plants. It is the house of a true plant lover, who stands his

cherished flowers around his dwelling that he may the more admire them, and gain color and life. And quite obviously, too, it is the house of an indefatigable collector of fascinating old jars, chiefly from Italy, of most delightful shape and coloring; jars one longs to carry away with one, jars that one has but to see to become immediately impassioned of.

On a pleasant knoll, not far off and shaded by trees, is a great semicircular seat, and just before it is a white reproduction of the Diana designed by Mr. Augustus St. Gaudens for the Madison Square Garden Tower.

There is so much to see and interest one without the house, both in what belongs there by right of nature's lavish gifts and by what Mr. White's rare taste and active search abroad has brought to it, that one might be quite satisfied with the outside without so much as going within. But in truth, more than half the joy of Mr. White's house would be lost by not

Europe, but chiefly from Italy and Spain. Arranged against the side wall of the corridor are twisted Spanish carved columns, six in all, standing in the corners and on each side of the doorways to the living-room. Fine tapestries are hung on either side, with old mirrors in richly carved gilt frames, and many curious carved ornaments.

In the stair hall are a host of things. Both it and the corridor are paved with dull red enamel bricks, on which rich Turkish rugs are spread. The stairs are open and without banisters, the stair wall, like the other parts, being covered with bamboo. High up on the outer stair wall is a fine figure tapestry with a larger tapestry on the hall wall below. The mantel is treasure-trove from Italy—two giants upholding a decorated cornice. Above is a carved Italian panel in blue and gold, with small standing figures on either side. All sorts of trophies are hung on the walls—a couple of rare old portraits, trumpets with banners, an

inscription in iron in a rich gold frame. On the side is a vast carved chest, surmounted with four gilt candlesticks and a gilded eagle; before it are two high brass standard lamps. A high case clock stands just beside the entrance doorway. There is some yellow covered furniture in the hall, which, with the light yellow of the bamboo walls and the many old carved and gilded ornaments, give a positive note of color to the whole space, a joyous, welcoming color, a brilliant opening to this delightful home.

Then down the passage to the dining-room. It is white in tone and color. Toward the lawn it is wholly lit with windows, a continuous series giving a rare sense of openness to the room. A low seat is built below them, with a shelf at the window base, and on it are a host of pottery things—jars, bowls, and vases, with geraniums in bloom. Over the windows are plates hung against the wall, plates and baskets of open pottery work, chiefly of Italian origin, and many of large size; they are mostly white in color.

The two side walls are paneled in small square wood panels with shallow moldings, all painted white. Here are more plates, delicate in color and in texture like the others; mirrors, also, in rich gold frames, round and oval in shape; gilded ornaments of carved wood likewise; a host of treasured articles. Against the further wall is a fine old sideboard, richly furnished with silver and cut glass; on either side of the entrance door is a small old console, decked with silver and china ornaments. The service door, on the opposite side, is hidden behind a fine old bamboo screen, the central panel of each wing being carved and colored.

The remaining side of the room, which is directly opposite the windows, is wholly covered with old Dutch tiles in white and blue. In accordance with the old Dutch custom, a curtained shelf runs across the top, and on it are stood more things of interest; old glass bottles, a colored bust, gilded ornaments. In the center is the fireplace, likewise lined with tiles, with open iron screen in front, and quaint Chinese dogs in color on either side. An old carved serving table stands on one side by the service entrance. The floor, to complete the description, is covered with wide boards stained, with a yellow and blue rug in the center for the dinner table. The furniture is old mahogany. The ceiling is plain white plaster; in the center a simple circle enclosing a sunburst. There is no wood door at the entrance, but an old piece of tapestry in blue and colors serves as a portiere. It is a rarely brilliant room, flooded with light, and filled with a myriad of things of interest, most detrimental to the peace of mind of those



ENTRANCE DOORWAY—RESIDENCE OF A. G. HOOLEY, ESQ., PLAINFIELD, N. J.—
See page 63.

going inside it, so interesting is its interior, so crowded with works of art and of interest is it.

Roughly speaking, the house consists of three parts. To the right, as one approaches it from the station, is the kitchen and service department; in the center is the entrance hall, which is L-shaped, enclosing the dining-room on two sides; to the left is the living-room, a vast apartment which occupies fully a third of the ground floor.

The hall, by which the house is entered, consists of two parts. One portion of the L is a corridor, which runs directly through the house; the other, at right angles to the passage, is a large rectangular room containing the stairs to the upper floor. The walls are entirely covered with split bamboos, a novel and interesting surface covering that gives a quiet note of color and quite distinguished texture of surface. But it would not be Mr. White's hall if it had been left with this surfacing for finality. The bamboos form the background for a rich collection of objects which this indefatigable collector has gathered from all parts of

whose own dining-rooms are more modernly and less artistically furnished.

Thence to the living-room. One may, indeed, be more likely to visit it first, and, as a matter of fact, I did so; but it is so aboundingly furnished with objects of curiosity and interest that it has seemed best to reserve it to the end.

I am sure I do Mr. White no injustice by remarking, at the outset, that one is at once abashed and astonished at the contents of this room. That the floor is stained and spread with splendid rugs; that the walls are of bamboo, largely covered with tapestries; and that the ceiling is of bamboo, are facts easily grasped and, perhaps, quickly comprehended. But within these tapestried walls and beneath this bambooed ceiling are gathered a veritable wealth of curious, beautiful objects which I could readily believe are so beloved as to be regularly carried back and forth from town each fall and spring. There are fine old carved chairs, some with leather backs, some finished with damask, others with bits of church embroidery hung

but a catalogue of a museum. A room to live in? Truly and most delightfully so; for the very multiplicity of its contents speaks not alone of comfort, but of interest, and real, living interest, in everything it contains. If Mr. White's house is unique—and this much overworked word can rightly be applied to it—this room is clearly its most unique part. There is so much of real interest in the room, so much of beauty and curiosity, that I positively did not feel safe until I had left it and the house behind me, and felt of my pockets that I had not, in honest admiration, carried off a hundred or two things I should have liked to have had myself. A sinful thought, no doubt, and certainly vainglorious of me to proclaim the decorous nature of my going away.

RESIDENCE OF A. G. HOOLEY, ESQ., AT PLAINFIELD, N. J.

ON pages 58, 59, 62, and below will be found illustrations of a residence erected for A. G. Hooley, Esq., at Plainfield, N. J. This house is treated in a modification of the Dutch and Colonial styles. It has an under-

The reception room is trimmed with pine and painted with ivory white, with plain moire silk paper of a metallic green shade. The fireplace has tiled facings and hearth and a Colonial mantel. The dining-room is trimmed with pine and is treated with white enamel. The walls have a paneled wainscoting to the height of six feet, finished with a plate rack. The wall space above the wainscoting is covered with tapestry, and the whole is finished with a wooden cornice. The ceiling is beamed, forming panels, and the whole is finished to match the trim. An alcove built for the buffet is provided with a cluster of windows glazed with leaded glass of a pleasant tone. The fireplace is built of Roman brick, with the facings and a hearth of the same. The mantel, of Colonial style, has a carved panel in the center under the shelf, while at either side there are fluted columns supporting the shelf, above which the overmantel is paneled. At one side there is a china cabinet built in, with drawers under the counter and shelves over, containing a door glazed with small lights. On the other side of the fireplace the door



THE INGLE-NOOK IN HALL—RESIDENCE OF A. G. HOOLEY, ESQ., AT PLAINFIELD, N. J.

against them. There are spacious sofas and chairs of ease and of state; there are lamps and candelabra of all sorts and descriptions; some supporting modern lamps, others—gilt figures almost life size—holding the original lanterns they were planned to hold; there are silver lamps dependent from the ceiling; and in the center a curious, mermaid-like affair, with branching antlers carrying candles. There are mirrors in rare old frames; fine old pictures; ornaments of shell and beads; Persian blue and white tiles over the doors to the side porch; singular carved window frames from Holland over the entrance doors from the hall; wonderful Italian twisted columns—of quite rare beauty and elaborateness—stand in the four corners of the room. A great gilded chest stands between the entrance doorways, and is loaded with a host of beautiful objects in metal and other materials. There is some rare old furniture against the walls; a grand piano covered with an exquisite piece of blue and white tapestry; and there are gilded figures and carved ornaments hung and stood where some note of color has been needed. It is a room to be seen and not described, for a description of it would, in a certain sense, be

pinning and chimneys built of brick, which are stuccoed and tinted a soft gray color, while the superstructure above the underpinning is covered with shingles stained a silvery gray color. The trimmings are painted ivory white. The roof is also shingled. The striking feature of this house is the large hall, which is 18 x 26 feet, exclusive of the nooks and stairs. This room is trimmed with chestnut, stained and waxed a dull rich brown. The walls are wainscoted to the height of five feet with a deep red burlap, over which there are placed strips of chestnut, forming panels of the burlap and stiles of the strips. The walls above the wainscot are rough coated, and are tinted a lighter shade of red than the burlap. The ceiling is beamed with chestnut, and the panels between are tinted a dull orange. The staircase, separated by an archway, is paneled and provided with an ornamental newel and balustrade. The ingle nook is also separated by an archway same as the staircase, and it has a plate rack over the arch, and contains an open fireplace built of Roman brick, with the facings and hearth of the same, and a mantel. On either side of the fireplace there are bookcases and seat built in, with windows over the same.

opening into butler's pantry balances the treatment at this end of the room. The butler's pantry is fitted up with drawers, shelves, and cupboards complete. The kitchen is fitted with all the best modern conveniences. The chimney breast at the back of the range is faced with white enamel brick. Both coal and gas ranges have been provided, with separate water heating appliances. The refrigerator in the storeroom is built in, and is provided with opaque glass lining and aluminum shelves.

The second floor is trimmed with pine and is treated with white painted trim, with mahogany finished doors. It contains three large bedrooms, fitted with large closets, and two bathrooms; two servant rooms, with a private stairway to the kitchen. The bathrooms are furnished with porcelain fixtures and exposed nickel-plated plumbing. The third floor contains one large studio with an open fireplace, one large bedroom, one storeroom and trunk room. The cellar contains a laundry, servants' bathroom, store cellar, cold storage, fuel rooms, and steam heating apparatus.

The house was designed by Mr. A. L. C. Marsh, architect, 97 Nassau Street, New York.

THE RESIDENCE OF CAPTAIN P. A. NICKERSON, AT WINCHESTER, MASS.

THE illustrations shown on page 53 present the residence of Captain P. A. Nickerson, at Winchester, Mass. The house is designed in the English half-timbered style. The terraces to the porch and the underpinning are built of rock-faced stone laid up at random in white mortar. This stonework is particularly attractive with its many rich colorings. The first story is covered with shingles, stained a soft gray color. The second and third stories are beamed with cypress, and the spaces between are filled in with plaster of a grayish tone. The beams are stained a soft brown color. The roofs are covered with shingles, and are stained a moss green.

From the terrace the hall is reached through a vestibule, which is enclosed with glass in winter. This hall is trimmed with mahogany, and has a high paneled wainscoting and a wooden cornice. The staircase is of a very handsome design, with a newel post rising up to the ceiling and supporting a beam, which extends from one end of the hall to the other, and finally finding a resting place on pilasters placed at both ends of the opening. A coat closet and toilet are provided underneath the staircase. The reception-room, to the right of the entrance, is trimmed with white pine and is treated with white enamel. There is a false fireplace with white enamel tile facings and hearth and a mantel.

The living-room is trimmed with mahogany, and it has bookcases built in and a beamed ceiling. The open fireplace is built of brick, with the facings and a hearth of the same and a mantel of excellent design. The den, at the rear of the living-room, is trimmed with oak and treated in the Flemish style. It has a high paneled wainscoting, a wooden cornice, and a dome ceiling. There is also an open fireplace built of brick, with the facings and hearth of the same, and a paneled mantel; on either side of the fireplace there is a paneled seat.

The dining-room is placed at the opposite end of the building from the living-room, and has mahogany trim, a high paneled wainscoting, finished with a plate rack, above which the walls are covered with tapestry, and the whole finished with a wooden cornice. The fireplace is built of Roman brick, with the hearth and the facings of the same, and a mantel. At one side of the fireplace there is a paneled seat, over which there is a cluster of small windows; and at the end of the room and at either side of the door opening into the butler's pantry, there is a buffet built in, with drawers underneath the counter shelf and glass cabinets over the shelf, which are built in a very artistic manner. The butler's pantry is fitted with drawers, dressers, cupboards, and bowl, etc. The kitchen, servants' hall, stair-hall and its dependencies are fitted up with all the best modern conveniences.

The second floor contains four bedrooms, with large closets, two bathrooms, one boudoir, sewing-room, linen closet, etc. The trim of this floor is treated with white enamel paint. The bathroom is furnished with enamel tile wainscoting and paved floor, and porcelain fixtures with exposed nickelplated plumbing. The extension over the kitchen contains two servant bedrooms and bathroom, with a private stairway to the kitchen.

The third floor is trimmed with whitewood, and is treated with white enamel paint. It contains five bedrooms and bath, besides ample storage room. A cellar, with a cemented bottom, is placed under the entire house, and it contains a steam heating apparatus, laundry, fuel rooms, cold storage, etc.

Mr. Robert Coit, architect, 85 Water Street, Boston, Mass.

A COLUMN IN A GARDEN.

THE Ionic column photographed on this page stands in the beautiful grounds surrounding the house of Nathan F. Barrett, Esq., the well known landscape engineer and architect, Rochelle Park, New Rochelle,

N. Y. This garden, which is remarkable in many ways, was illustrated and described in the BUILDING MONTHLY for September, 1901.

The present illustration shows how effective a bit of architecture may be if surrounded by luxuriant foliage, even though itself disconnected and unrelated to a structure.

A HOUSE AT WOODMERE, LONG ISLAND.

ON page 60 will be found an illustration of a house at Woodmere, Long Island, which has been built for the Woodmere Land Association, of which Mr. R. L. Burton is the owner. The house has a gambrel roof overhanging the piazzas, the center of which covers the living hall, while the two ends are supported on massive stucco columns. The front entrance, with a hood over the same, and a brick porch in front, with quaint settles on either side, are also noticeable. The underpinning is built of stone, with a layer of brick on top, and from this grade to the second story the building is constructed of stucco with small lighted windows and wooden shutters, the whole of which is



AN IONIC COLUMN ON THE GROUNDS OF NATHAN F. BARRETT, ESQ.,
AT ROCHELLE PARK, NEW ROCHELLE, N. Y.

Painted white. The second story is covered with shingles, and is also painted white. The roof is shingled and left to weather finish. Dimensions: Front, 55 ft.; side, 39 ft., exclusive of piazza. Height of ceilings: Cellar, 7 ft.; first story, 9 ft.; second, 8 ft.

The plan of the house is in the shape of a cross, with a central square hall forming one arm, the kitchen forming the other, while the living and dining rooms form the other extremes. The first story is trimmed with oak, except the kitchen, and is finished in Flemish brown. The living-hall contains an ornamental staircase and an angle nook, provided with an open fireplace trimmed with brick facings and hearth, a mantel, and a seat at one side. The living-room has an open fireplace furnished with Roman brick facings and hearth and a mantel. Windows on three sides make the room cool, and a door opens on to a porch. The dining-room is provided with an attractive window with seat. The butler's pantry is fitted with drawers, cupboards, sink, etc. The kitchen is trimmed with white pine treated with hard oil, and is fitted with all the best modern conveniences.

The second story is trimmed with white pine treated with ivory white paint, and it contains two bedrooms,

bathroom, den, and a servants' room over the kitchen wing, with a private stairway to the same. A cemented cellar contains furnace, fuel rooms, etc.

Mr. Charles Barton Keen, architect, 1604 Chestnut Street, Philadelphia, Pa.

THE RESIDENCE OF GEORGE S. GRAHAM, ESQ., AT BRYN MAWR, PA.

THE residence of George S. Graham, Esq., which is illustrated on pages 47, 54, and 55, has been built at Bryn Mawr, Pa. The building is treated in the Tudor style, with Gothic feeling, and is constructed of red brick with Indiana limestone trimmings. The gables have half-timbered work and ornamental verge-boards. The roof is covered with green slates. The plan is of the elongated type, and includes a vestibule and hall with a groined and vaulted ceiling. This hall is trimmed with quartered white oak, and has a paneled wainscoting four feet in height. The vaulted ceiling is supported on oaken pilasters with carved capitals. The staircase, of ornamental character, has a broad

landing thrown out into a bay window, which is glazed with leaded glass. The reception-room is trimmed with white pine, treated with white enamel. The library, which is placed two steps below the level of the hall so as to secure a greater height, is trimmed with quartered oak finished dark. It has a seven foot paneled wainscoting, a massive beamed ceiling, paneled seats, and bookcases built in with leaded glass doors, and an open fireplace with mantel facings of Indiana limestone.

Beyond the library is the billiard-room, which is treated in the Gothic style. The ceiling is open to the roof, is trussed, and it has beams springing from the pilasters, which are placed at intervals on the sides of the room. There is a high paneled wainscoting, windows glazed with leaded glass, and an angle nook provided with an Indiana limestone mantel and facings. A private stairway leads to the second story, under which there is a toilet-room fitted with tiled floor and wainscoting and porcelain fixtures.

The dining-room is trimmed with oak, finished dark, and has a paneled wainscoting and ceiling beams. The open fireplace, built of brick, has Indiana limestone facings and a mantel of oak. The opening on to the side porch, which is enclosed in winter, is an attractive feature. The butler's pantry is trimmed with chestnut, and has a dresser, bowl, cupboards, etc., complete. The kitchen, storerooms, servants' hall, and the stairway and hall are trimmed with chestnut, and each apartment is fitted with all the best modern conveniences.

The second story hall is trimmed with quartered oak, and the remaining rooms are

trimmed with curly poplar and white enameled pine. This floor contains seven bedrooms, four bathrooms, dressing-room, and a large linen closet, besides four servant bedrooms and bath. The bathrooms are paved and wainscoted with tile, and each is furnished with porcelain fixtures and exposed nickelplated plumbing. All of the rooms have large closets, and several of the rooms have open fireplaces. The servant quarters are trimmed with chestnut. The cellar contains the heating apparatus, bowling alleys, cold storage, etc.

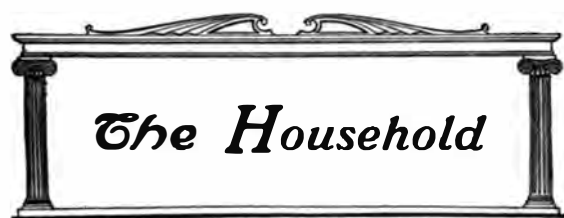
Mr. William L. Price, architect, 1604 Walnut Street, Philadelphia, Pa.

ENCLOSED PORCHES.

Two illustrations of enclosed porches are shown in the photographs reproduced on page 61.

One is attached to the residence of Mrs. Charles C. Emott, Headley Road, Morristown, N. J., which was designed by Mr. Oscar B. Smith, architect. The other is from the home of S. L. Schoonmaker, Esq., Plainfield, N. J., designed by Mr. G. E. W. Dietrick, architect.

The illustrations are interesting types of the enclosed porch, which has become a recognized feature of large suburban and country houses.



THE BABY'S BED.

THE most approved nests for wee ones, says a New York paper, are made of willow and woven palm. The canopied cots are the daintiest things imaginable. The feet are stationed upon rollers, so the cot may be easily moved about from one room to another, without disturbing the little occupant. One of these ideal nests has curtains of pure Irish linen, with rows of hem-stitching, and narrow ribbons run through eyelets. The design of the embroidery takes the form of a French bow-knot with sprays of lilies of the valley and forget-me-nots; embroidered with the padded satin stitch, done with white silk floss. The ribbon may be of color or pure white, or very faint coloring may be introduced in the embroidery, matching the shade in the embroidered flowers. Baby blues and pinks are charming. The colors chosen for the bed drapery follow through the other furnishings.

Another cot is trimmed with pin-dotted Swiss and Valenciennes lace. The lining is of colored china silk, where the purse can afford it; sateen and dimity are also used. The curtain drapery is shirred around a circular arm or frame at the top, surmounted by a dashing bow of satin ribbon. In using ribbon, both for the narrow and wide widths, it is best to get the washable Louisine, which launders beautifully. One or two ruffles may be used for the valance; the spread is separate, and matches the pillow in decoration.

Even more picturesque and less expensive are the bassinette and Moses baskets, the latter being modeled after the Biblical basket, and made of willow and woven palm. They are very light in weight. They are fitted with hair mattresses and down pillows, precisely like the cots. They are trimmed inside and out with sheer materials, lined with silk, lace, and ribbon decoration. Stands come with these pieces.

MEN'S FURNITURE.

"JOLLY furniture" is the term that best expresses the "Mission" and "Early English" chairs and couches, tables, china closets, etc., now much in vogue, says an exchange. Every piece is good to look at, sensible, comfortable, practical, substantial, and picturesque—a combination of qualities truly as rare as desirable.

Take a library or hall set, for example. There is a monster high-backed seat of fumed native ash, light brown in hue and of soft, dull finish. It has fat cushions of sealing wax red leather fastened with straps and buckles. A big writing table is solid enough to hold a heavy lamp and any amount of books and magazines, and yet leave room for writing materials. It has two large and two small drawers for papers, etc. The keys and handles are of burnished brass.

Fumed ash in pale tones, white, cream, gray, with tinges of pink and green and very light brown are odd and summery looking. They are relieved by ornaments of black iron in fretted designs.

The most delightful hall-stands are in black and brown oak and ash, ornamented with panels of burnt wood or of colored posters of sporting scenes set in flat frames. One settee with a rack for hats and wraps, canes, golf clubs, etc., above the seat, has a hunting panel set in the back, the gleaming colors of the fields, with pink-coated huntsmen and spotted beagles in hot pursuit of the fox, showing brilliantly in its setting of dull, black wood.

A hall screen has a poster panel set across the top and a valance of green leather at the bottom. Some of these new screens are made like the five-barred gate beloved of the huntsmen, with posters set between the bars. The "Dutch boy" and "Dutch girl" posters of Cecil Aldin are favorites for screens, as well as the Fallowfield and other hunt pictures. Green and yellow are the predominant tints in the former, while scarlet, green and brown stand out most clearly in the latter.

Octagonal tables, with "gate-legs," as the old furniture makers called them, and tops covered with leather secured by large brass nails; settles with leather cushions and a book cupboard at one end; clocks with brass chains and weights, and side shelves for china or bric-à-brac; Dutch desks with curious three-cornered drawers and cupboards for books with leaded glass doors—all these and many other charming, quaint pieces are offered to the woman who is in search of something odd, artistic, useful and not atrociously costly for her summer home.

A USEFUL towel rack for the bathroom consists of rounds strung across a corner. It is often more convenient than a straight rack which stands on the floor.

RESIDENCE OF HENRY C. MEYER, ESQ., AT MONTCLAIR, N. J.

THE house which is illustrated on page 57 has been erected for Henry C. Meyer, Esq., at Highland Avenue, Montclair, N. J. It is designed in a unique style. The underpinning is built of red brick, while the superstructure is covered on the exterior with matched sheathing, and then with white pine boards, which are in the form of clapboards. The whole of the house is painted white, and the blinds bottle green. The roof is covered with shingles and is finished naturally. The plan is so arranged that all the rooms are well lighted and ventilated.

The interior throughout is trimmed with white pine and treated with white enamel. The hall, which is a central one, contains an ornamental staircase with newel posts and balusters finished with white enamel and a rail of mahogany. The walls have a paneled wainscoting and a wooden cornice. The living-room has a bay window, with a paneled seat, and an open fireplace built with red brick facings and hearth, and a mantel of Colonial style. The dining-room is treated in an attractive manner, and has two bay windows, one at each end of the room, with paneled seat, and it also has a paneled wainscoting, wooden cornice, and a fireplace with a Colonial mantel. The butler's pantry is fitted up with bowl, cupboards, and dresser complete. The kitchen and its dependencies are fitted with all the best modern conveniences.

The second floor contains a large open hall, four large bedrooms provided with large, well fitted closets, linen closet, and a bathroom, and also two servant rooms, and a bathroom. The bathrooms are furnished with porcelain fixtures and exposed nickelplated plumbing. The cellar, cemented, contains a laundry, heating apparatus, and fuel rooms.

Mr. Frank E. Wallis, architect, Townsend Building, 1123 Broadway, New York.

A HOUSE AT UPPER MONTCLAIR, N. J.

A HOUSE built for William H. Parsons, Esq., at Upper Montclair, N. J., is illustrated on page 56. The materials are red brick for the underpinning and chimneys and stucco for the exterior walls. The exterior framework is covered with matched sheathing boards, plaster boards, and three coats of Portland cement, rough cast, of a grayish color. The trimmings and beamed work are painted a cream white, and the blinds a bottle green. The roof is covered with red cedar shingles, and is stained a soft red color. The cemented cellar contains a three part, white enamel wash tub in the laundry, Thatcher tubular furnace, fuel rooms, etc.

The first story is trimmed with white pine treated with white enamel. The hall, a central one, contains a Colonial staircase with painted posts and mahogany rail. The living-room has an open fireplace with facings and a hearth of brick and a mantel of Colonial style. The dining-room has a similar fireplace, and has a butler's pantry fitted with a butler's bowl, dresser, and drawers. The kitchen and its dependencies are fitted up complete with all the modern conveniences.

The second story contains three bedrooms, provided with large, well fitted closets, a large dressing-room, and a bathroom furnished with porcelain fixtures and exposed nickelplated plumbing. The third floor contains the two servant quarters and two trunk rooms.

Mr. L. L. Bishop, architect, Westhampton, L. I.

A STABLE AT ELKINS PARK, PA.

THE stable illustrated on page 52 was erected for W. M. Ostrander, Esq., at Elkins Park, Pa. It is constructed on the front of long, flat local stone, laid in such a manner as to present a varied color effect. The joints are wide and are pointed with white cement. The frame part of the building is covered with the old-fashioned hand split cypress shingle, laid in courses of ten inches to the weather and painted white. The roof is covered with a similar shingle and is stained a moss green. Dimensions: Front, 48 ft.; side, 22 ft. 6 in. Height of first story, 11 ft.

The carriage room has a wainscoting of yellow pine to a height of five feet, above which the walls and ceiling are plastered and are tinted a buff color. All the woodwork is finished natural. The floor is cemented and is provided with a carriage wash, connected with a drain.

The harness room is lined, ceiled, and floored with yellow pine boards, and is fitted with a harness closet with sliding doors and a chimney. The stable is ceiled throughout with $\frac{7}{8}$ -inch yellow pine board, finished natural. There are two single stalls and one box stall, which are fitted with ornamental ironwork. The stalls are drained by Snow's patent floor drain.

The second floor contains a man's room and bathroom and a large loft for the storage of grain and hay. A feature of the exterior is the clock in the gable at the front.

Mr. Laurence Visscher Boyd, architect, Harrison Building, Philadelphia, Pa.



THE PROGRESSION OF AUTUMN FOLIAGE.

LIKE the procession of the seasons, says a recent writer, the various tree species assume their autumn garb in the regular order. In some localities it may be early or late; but, then, our spring or fall does not always arrive in accordance with the almanac. Here and there individual trees may be slow in donning their gay livery, and there are spots where winter lingers, though all around the land is warm with returning spring. The prevailing colors might be tentatively summed up thus:

Pure yellow—Tulip tree, yellow and canoe birches, white maple, yellow locust, honey locust, yellowwood, Norway and sycamore maples, beech, willow, cucumber, ailantus.

Yellow ocher—Larch, poplar, aspen.

Lemon yellow—Hickory, black walnut.

Dull yellow—White elm, chestnut, white birch, basswood, butternut, catalpa, cottonwood, bur oak.

Vandyke brown—Sycamore or buttonwood.

Orange—Black birch, horse chestnut, ginkgo.

Red—Scarlet oak, sumac, dogwood, hornbeam.

Scarlet, crimson, and yellow—Red maple.

Red, yellow, and green—Hard maple, sassafras.

Scarlet, crimson, and purple—Sour gum.

Purplish red—Red oak.

Red and russet—Black oak, white oak.

Red, yellow, and brown—Sweet gum.

Brown, purple, and salmon—White ash.

Raw umber—Scrub oak.

A WATER AND BAMBOO GARDEN.

A WATER and bamboo garden in County Kilkenny, Ireland, described in an English contemporary, presents many points of novelty and interest. It was begun in a small way with a planting of *Arundinaria japonica* (*Bambusa Metake*), *A. Simoni*, *Phyllostachys aurea*, and *P. viridiglaucescens*. As they succeeded well many more were planted; and two years afterward the lily-ponds were made, and planting has been continued at intervals ever since.

When the excavations were made for the ponds, the soil was thrown up to make a high bank on the side farthest from the walk, the bank being planted with a variety of plants, with a view of providing immediate effect, but with the idea of weeding out any that proved to be unsuitable after trial. Here were placed *Gunnera manicata*, throwing its gigantic leaves over the water; bamboos in variety (as *Arundinaria japonica*, *Phyllostachys flexuosa*, *P. Henonis*, *Arundinaria Simoni*, *Berberis stenophylla gracilis*, and *B. empetrifolia major*, which were planted so as to hang over large stones thrown up with the soil), hydrangeas, *Cordylina australis*, phormiums, eulalias, osmundas, aralias, *Spiraea japonica* and other smaller species on the water's edge. Behind the plants named above are clumps of *Arundo Donax*, pampas-grass, *Eucalyptus globulus*, *Leycesteria formosa* and *Arbutus unedo*, the whole having a background of large evergreen oaks.

In the water different varieties of nymphaeas are growing, also a small group of *Richardia africana*, some plants of *Cyperus longus*, and *Carex pendula* on the edge.

A running stream from a spring in the clump of trees has little waterfalls, and at the highest part a small rockery was formed. This is now well furnished with rock-plants, some hanging down to the water's edge; and there is a background of taller plants, such as bamboos, yuccas, cordylines, and veronicas. Lower down the stream and planted in the turf are some good clumps of *Libertia grandiflora*, which in the spring afford a beautiful effect with hundreds of pure white, wax-like flowers which are reflected in the water. Higher on the slopes are belts of daffodils in the grass; a clump of *Crimson Rambler Rose*, climbing at will over a large heap of roots and stones, and the white climbing *Rose Rampant*, growing vigorously round an old tree-stem, sawn off about eight feet from the ground. Lower down, right on the banks of the stream, are ferns in quantity, *myosotis*, *funkias*, *Saxifraga peltata*, *Polygonum Brunonis*, and in a shady spot *Rodgersia podophylla*, which is very effective.

Other species made use of, and planted largely in clumps, are phormiums, cordylines, kniphofias, polygonums, pampas-grass, gunneras, *Rhus typhina*, *Berberis Thunbergi*, lupins, both the tree and perennial varieties; *Anemone japonica*, *Bocconia cordata*, iris, *aconitum*, *montbretias*, hydrangeas, hardy fuchsias, *hypericum*, two varieties of *epilobium*, *Aralia Sieboldi* spiraeas, veronicas, and many varieties of bamboos.

Fire Protection

SOME CONSTRUCTIVE HINTS.

A WELL-MADE floor with the ends of the joists well bedded in the walls, flooring boards not less than one inch thick, well tongued together, the spaces between the joists filled with pugging, and the underside coated with plaster one inch thick on wire laths, says an exchange, will resist the action of fire either from above or below for a very considerable time, only giving way when burnt right through. Although the use of timber in the floors may to some extent increase the smoke, this does not amount to anything of great importance, since everything else in the room, the hangings, etc., must be well alight before the floor begins to burn.

Stud partitions covered with lath and plaster and hollow in the middle are extremely dangerous, acting as a ready channel for the fire from one point to another; nor is there any necessity for their use, now that so many different kinds of solid and fireproof partitions are to be obtained. Staircases of stone, although generally recommended as a fireproof construction, should not be used unless they can be placed in a well apart from the main building. As pointed out above, stone stairs are very untrustworthy when exposed to heat; being for part of their length built into the wall, the expansion is bound to be unequal, and they are apt to snap off at the point of junction when exposed to heat. A staircase made of hard wood, such as oak or teak, with its underside coated with plaster, will remain in position and serviceable long after it has been impossible for any human being to go up and down it, and even if it does catch alight the first jet of water will make it passable again; heat sufficient to set alight such a staircase would either break off stone steps or render them impassable. In a large preparatory school built not long ago the staircases in the boarding house were made of oak, after consultation with the fire brigade authorities as the safest method of construction. A safe and satisfactory form of stair can be constructed out of concrete, with solid two inch treads of teak or oak.

The arrangement of the fireplaces and flues is, of course, a matter of extreme importance, particularly in the case of wooden floors; care should be taken to see that the wooden centering is removed from the small arches that carry the hearth stones. A better plan is to carry these on concrete, carried the full depth of the floor with the plaster applied directly to the underside of the concrete. Flues, unless surrounded with a full nine inches of brickwork, should have fire clay linings. A danger in the case of buildings warmed by means of air brought in over hot pipes may be mentioned here. It often happens that on a mild day in winter all the registers are closed, in which case the temperature inside round the pipes rises dangerously high; some of the registers should be made so that they can not be closed, in order to insure a movement of air.

WATER SUPPLY AND HYDRANTS.

THE practice in the large Eastern cities, pointed out Mr. H. W. Bringham, in a paper read before the Fire Underwriters of the Pacific, is to have two steamer openings on each hydrant, and as many of the latter as possible—often two at each street intersection and one at alley corners. This same principle is just as valuable to the smaller towns, and should have careful consideration. A pressure of seventy-five pounds at hydrant or steamer will throw a stream 111 feet high through 100 feet of hose, and only fifty feet when 1,000 feet is required, and in each case with inch nozzles. Larger streams and pressures result in much greater waste, for the friction increases as the square of velocity with which the water moves in the hose. Consequently, much is gained by having plenty of hydrants, and it should be remembered that, while there is not much difference in cost between a section of hose and a hydrant, the latter is practically a permanent investment and will outlast a very large value in hose.

How much easier it is to handle a large fire when the lines of hose do not exceed 300 or 400 feet! This matter of the waste of power by friction has resulted in the trial of hose with larger diameters than the standard two and one-half inches; but here we are again restricted by the great weight of the big hose when filled. An increase of but a quarter of an inch makes an additional weight of twenty-two pounds of water and a total excess of about one-fifth, while fifty feet of three-inch hose holds 152 pounds of water, a weight nearly equal to that of a section of standard hose filled. These diameters effect considerable saving in friction, but it is a question whether this is not counterbalanced by the great additional weight and the complication and confusion resulting from couplings of different diameter.

The Camp

MRS. T. M. CARNEGIE'S ADIRONDACK PLACE.

A SWISS chalet has replaced a log cabin on North Point, Raquette Lake, and marks a departure from the accepted type of rustic camp which has so long been typical of the Adirondack country, says Kenneth Goldthwaite, in the Rider and Driver.

Raquette Lake has rare charm in the rich beauty of its shore lines and its emerald isles. The Indians who first camped along its shores called it "Pa-po-ha-koh-mak," because of its many bays and confusion of headlands and islands, but it eventually came into its present title through a bit of history connected with the war of the Revolution, when a party of Indians and British soldiers, under command of Sir John Johnson, a son of Sir William Johnson, set out for the Canadian country from the valley of the Mohawk on snowshoes. Upon reaching Raquette Lake they were overtaken by a sudden thaw, which made the use of snowshoes impossible, and they piled their "raquettes," as they termed them, in a heap on a point of land at South Inlet. The snowshoes remained there until they decayed.

It is a queenly body of water and stirs the deep sentiments of the lover of the wilderness, for the wild lands are preserved here; it is a rare sporting ground, as trout loiter and spawn in the sharp angles of its inlets and outlets, where there are rare patches of sand and manifold spring holes; the silence of the forest is not broken by the baying of hounds, and the still hunter revels in his art; the canoeist may measure his strokes over twenty miles of its shore line in a day and then require four days at least to make the circuit; the State owns nearly all the land for miles around, and it is an exclusive camping ground for the few who possess plots not owned by the Commonwealth, and those who make their homes here have builded behind the fringe of trees without despoiling the beauty of it all.

Mrs. Carnegie has a mile of shore line, or about 400 acres of land for her camping ground on North Point. The chalet occupies an elevation of fifty feet above the water, and faces the southwest, where the horizon is broken by wooded hills which are revealed in pretty vistas through the pines and the balsams and the silver birches that shield the camp from the sun and break the winds. There is but a single roof top, the only evidence of human activity, in that broad panorama. Now and then a guide, accompanied by a sportsman, may undertake the journey through Raquette Lake bound for Forked Lake and the Raquette River, but it is only rarely, indeed, that the calm serenity of this secluded camping ground is disturbed.

Mrs. Carnegie has a score of buildings, but they are scattered among the trees, so that a number are not visible to the voyagers on the lake. The main building, which includes the assembly hall and the apartments of Mrs. Carnegie, together with several guest chambers, is connected by an enclosed veranda with the building, in which are the dining-room, kitchen, and several sleeping-rooms. The main building is built throughout of spruce timbers that have been sawed in squares and stained brown. The assembly-hall is open through to the roof, and the trusses show. There is a balcony across either end of the hall. The balcony in front opens upon an outside balcony, while that in the rear of the room leads to sleeping chambers. The front balcony is reached by a winding stair leading out of the corner of the assembly-hall, while the approach to the other leads from the vestibule off the closed passageway to the dining-hall. The feature of the assembly-hall is the ingle nook fireplace, which is twelve feet wide and about six feet deep. A door to the left leads to Mrs. Carnegie's apartments, which are on the first floor of the gable. The entire building is surrounded by a wide veranda, over which extends the roof of the cabin and the gables. The exterior of the first story of the building containing the dining-hall is lathed and plastered, above which there is timberwork similar to that in the main cabin. The dining-hall contains another great fireplace; the walls are ceiled with novelty siding, and studs of hewn pine support the ceiling. The roofs are of shingles, while boulders, placed at various intervals, carry out the Swiss chalet idea.

In the rear of the dining-cabin is a picturesque Swiss windmill, the sweeps of which are stationary, the pumping being done by modern machinery. In addition to the cabins mentioned are the lodge of the superintendent, Jerome Wood, two boat-houses and various outbuildings necessary for the housing of wood, ice, etc. The principal boat-house is in the bay northeast of the camp, and its upper story is cut up into bachelor apartments. It is a fine place and is finely kept up.

The Kitchen

THE PANTRY.

IN planning a home too much care, points out a writer in the Housekeeper, can not be given to the pantry, for here it is many unnecessary steps may be taken, many false movements made, if the place is not convenient in every detail. In most homes it is here the baking is prepared, for unless it is possible to prepare many dishes on a broad shelf in the pantry, it means that all the ingredients used must be carried from the pantry out into the kitchen to the table, and back again into the pantry when the cooking is finished.

In a most convenient pantry there is a broad shelf, sufficiently large to hold a wide bake board, this shelf being at right angles with the shelves on which the supplies are placed, and it is possible to stand in one place while preparing a baking, and, at the most, take but a step or two to the farthest end of the shelves. In front of this shelf is a large window, which gives perfect light with which to work, without straining the eyes. All up and down the sides of this window small brass hooks are fastened into the woodwork, and on each of these hooks is placed one utensil used in cookery. When one is at work it is possible to lift any one article without disturbing the rest, and, as each article is always kept on its own screw, it becomes almost a mechanical movement to reach for any article that is needed.

On the wall, at the right hand side of the bake board, is a knife rack, and all around the woodwork of the door, as well as on the back of the door, more brass screws are fastened, and on these saucepans, baking pans, and larger utensils are hung, each one on a hook by itself.

The worker in this kitchen believes in saving work as much as possible. So papers are kept at hand all the time to use in various ways, and on the upper part of the pantry door is fastened a receptacle for the papers. It is very simple in construction. An oblong piece of denim is turned in on all the edges, a selvage edge being used for the top of the bag. The denim is then laid against the back of a door and tacked into place with large headed tacks. Another line of tacks down the middle divides it into two compartments, and in one side newspapers are kept, while in the other are kept paper bags of all sizes and pieces of clean white wrapping paper. The linings of all cracker and cake boxes are saved, for these may be used underneath a flat iron, as a lining for cake tins and for wrapping the various parts of a luncheon, so that one article of food will not be contaminated by the rest. There are many other uses to which these box linings may be put.

A large bake board is a home made affair, and is most convenient, since it is sufficiently large to hold all cups, bowls, and even a pan placed on the edge, so that everything is kept on the board and the shelf or table underneath is not soiled.

This bake board is made of a single piece of board 19 x 30 inches—white pine. A long cleat was placed across the back, making a kind of ledge, which holds the utensils on the board, preventing them from falling off. Two shorter cleats were nailed to the sides, and these cleats slope down toward the front edge of the board, where they end almost even with it.

A splendid idea for pantry shelves is to use two coats of white paint—ordinary paint—and then a third, finishing coat, of white enamel. Wash the shelves with cold water as soon as the enamel dries, and then it will harden quickly. Over this place no oilcloth nor papers, but leave the shelves bare and notice the improvement; since there are no covers under which crumbs can collect, there is no encouragement for mice, the enamel is easily wiped off with a damp cloth, and with such a finish it is never necessary to clean the entire pantry at once—it keeps clean all the time.

FURNITURE OF CONCRETE.

FURNITURE of concrete surely comes as a novelty in these days of novel furnishing devices. A gentleman living in New Jersey has come forward with this new suggestion, and offers actual examples of the availability of concrete for many articles of household utility. He confesses to a dog kennel, to cellar shelves, to an outdoor ice house or ice chest, and even to a stove. The latter article is hardly intended for indoor domestic use, but has been found serviceable for stables, cellars, greenhouses, and similar places where somewhat rough articles can be used.

A good cookstove works not only under favorable conditions, but under all circumstances.

Cooling Notes

HOW TO COOL DWELLINGS.

With the advent of midsummer temperatures, says Cassier's Magazine, the cooling of buildings becomes a refreshing subject for consideration. The more one inquires into it, however, the more one wonders why buildings are not more generally cooled by such means as are readily available. It can not be altogether that cost of operation is a controlling factor, for, to begin with, it would not be a serious item; then, too, since much money is freely expended in equipping buildings with heating systems and in operating these in cold weather, assuredly a fair expense ought to be cheerfully assumed to secure a somewhat corresponding degree of comfort during the heated term. An indirect steam or hot-water heating system would lend itself well to a reversal of functions, and would be comparatively simple and cheap to operate. A fan or blower would be necessary to drive air over the coils underneath the lower floor and into the rooms through the usual ducts and registers; and the supply pipes for the coils would have to be connected with a water cooler or other means of refrigeration, with a pump interposed for circulating the cooling agent through the system. Essentially there is nothing complicated or expensive about the outfit, and the comforts which it promises are alluring. Having the cooling pipes directly in the room is not a good plan, and, hence, a house equipped with a heating system or radiators would not lend itself so well to cooling. It would be coolest near such radiators, enough so, possibly, to be unpleasant, while it would be warm in the middle of the room, owing to lack of circulation.

COOLING APPARATUS.

PLACES of amusement, such as theaters, etc., are empty during the summer, not only because of the chance to enjoy the open air or seashore, but largely on account of the unbearable inside temperature. Attempts made in the past to cool halls of this kind have been primitive, to say the least, such as blowing air through racks filled with ice or pumping cold water through what serves during the winter months as the heating apparatus. The result has only been to increase the already high percentage of humidity prevalent in our seacoast cities.

A device for cooling our offices and homes would make city life more bearable during the summer months, even though such luxuries will only be possible for the well to do. Yet it is reasonable to predict for the manufacturer of liquid air a bright future, and the possibility of seeing the cooling apparatus on sale at the country tinker's just as the heating stove is to-day.

Regarding the cost of cooling with liquid air, according to Director Kruger, of the Gesellschaft für Markt. und Kühlhallen, of Berlin, the theoretical energy necessary to liquefy air is nearly twice as great as the cold energy stored in it. But in practice it is found to be six times as great. If we assume that all the stored cold is given off, which, no doubt, is correct, then, theoretically, the same amount of energy is necessary to cool a room ten degrees as to warm it ten degrees. In a low pressure steam or hot water heating plant three times as much benefit is derived from coal as when it is burned in a stove. But this advantage is lost in the manufacture of liquid air, owing to the large amount of energy necessary to produce it. Hence it is right to assume that even when liquid air is made in large quantities, and the demand has reached such a high point that the selling price is reduced to a minimum, to cool a room ten degrees must cost from four to six times as much as it now costs to warm the same room ten degrees with a coal stove.

Naturally the time is still distant when the cost of production will make the manufacture of liquid air a commercial success, as to-day 1 1-3 horse-power are necessary to produce one pound of liquid air, and the present selling price in Germany is 11½ cents per pound. By reducing the energy necessary to ¼ horse-power per pound, the cost of production would be about 1.13 cents and the selling price between 1.8 and 2.25 cents per pound.—Charles F. Hauss, in the Metal Worker.

PROTECTIVE masks and jackets, constructed for the admission of air, and intended chiefly for firemen's use, are often used in England in refrigerating plants in case accidents should occur in the ammonia chambers. They enable the wearers to venture into such spaces with entire impunity. They have been found entirely successful in handling fires.

New Building Patents

The following list of New Patents relating to Building and Sanitary Science is prepared expressly for the SCIENTIFIC AMERICAN BUILDING MONTHLY by MUNN & Co., Solicitors of American and Foreign Patents. A PRINTED COPY of the specification and drawing of any patent in this list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, if exact date or number is furnished. Remit to MUNN & Co., 361 Broadway, New York.

BRICK, STONE, AND TILE.

BUILDING BLOCK.	S. D. Hackman, Burroak, Mich.	July 5	764,459
BUILDING BLOCK.	L. M. Lanowe, Muncie, Ind.	July 12	765,086

CARPENTRY.

PARQUETRY FLOOR.	C. M. Krebs, New Albany, Ind.	July 12	764,948, 764,949
VERTICALLY PIVOTED WINDOW.	J. E. McGinness, Pittsburg, Pa.	July 12	764,955
DOOR.	A. Ritter, Cincinnati, Ohio.	July 19	765,196
WINDOW.	H. E. Brown, Chicago, Ill.	July 26	765,810
WINDOW.	C. E. Gale, Utica, N. Y.	July 26	765,828
WINDOW FRAME AND SASH.	A. Rasner, Pittsburg, Pa.	July 26	765,857
WINDOW.	R. H. Wunder, Baltimore, Md.	July 26	765,949

CONSTRUCTION.

SECTIONAL COLUMN.	J. D. Buckley, Fort Worth, Texas.	July 5	763,957
CONSTRUCTION OF BUILDINGS.	H. F. Lightner, New-castle, Pa.	July 5	764,061
CONCRETE ARCH CONSTRUCTION.	W. C. Parmley, Cleveland, Ohio.	July 5	764,302, 764,303
BUILDING CONSTRUCTION.	C. W. Stevens, Harvey, Ill.	July 5	764,313
METAL AND CONCRETE COLUMN.	R. A. Cummings, Beaver, Pa.	July 12	764,883
METAL AND CONCRETE GIRDER.	R. A. Cummings, Beaver, Pa.	July 12	764,884
PARTITION OR PLASTER STRUCTURE FOR BUILDINGS.	G. Boeckel, Mockern, Germany.	July 12	764,982
METAL LATH.	F. S. Chester, Hartford, Conn.	July 12	764,989
BUILDING CONSTRUCTION.	T. O'Shea, Chicago, Ill.	July 19	765,397
FLOOR THIMBLE.	J. H. Zetty, Columbus, Ohio.	July 26	765,760
METALLIC LATHING.	J. R. Evans, Pittsburg, Pa.	July 26	765,963
PORTABLE WALL SECTION FOR HOUSE BUILDING.	E. C. Mahoney, Vancouver, Canada.	July 26	765,930

ELEVATORS.

SAFETY CATCH FOR ELEVATOR CARS AND COUNTER-WEIGHTS.	H. F. Gusney, Jersey City, N. J.	July 5	763,976
SAFETY DEVICE FOR ELEVATORS.	A. Perri, Haverhill, Mass.	July 12	764,762
ELEVATOR.	J. Rice, Chicago, Ill.	July 26	765,752
ELEVATOR.	J. Rice, Chicago, Ill.	July 26	765,791

FIREPROOFING AND FIRE EXTINGUISHMENT.

FIRE CURTAIN.	Uncapher and Andrus, Chicago, Ill.	July 5	764,083
FIRE RESISTING SHUTTER OR DOOR.	J. Volp, Grove City, Ohio.	July 5	764,219
FIREPROOF SKELETON FLOORING.	H. G. V. Rydahl, Stockholm, Sweden.	July 12	764,772
RELEASING DEVICE FOR FIREPROOF WINDOWS.	A. W. Cooper, Chicago, Ill.	July 21	764,918
FIREPROOF CONSTRUCTION.	J. B. Hinchman, Denver, Col.	July 12	765,009

HARDWARE.

SASH LOCK AND STRIKER.	R. B. Hugunin, New Haven, Conn.	July 5	763,980
LOCK.	Sparks and Sparks, New Haven, Conn.	July 5	764,014
SASH HOLDER.	J. L. River, San Francisco, Cal.	July 5	764,305
SASH LOCK.	J. Noseworthy, St. Johns, Newfoundland.	July 5	764,493
AUTOMATIC UNLOCKING DEVICE FOR DOORS.	J. C. May, Peoria, Ill.	July 5	764,535
SHEET METAL HINGE.	C. S. Van Wagoner, Cleveland, Ohio.	July 12	764,785
HINGE.	C. S. Van Wagoner, Cleveland, Ohio.	July 12	764,833
AUTOMATIC SASH CATCH.	J. H. Machen, Norfolk, Va.	July 12	765,025
SASH LOCK AND LIFT.	O. A. Essig, Canton, Ohio.	July 19	765,172
SASH HANGER.	N. H. Campbell, Binghamton, N. Y.	July 19	765,271
COMBINED SPRING AND LOCK HINGE.	W. F. Bading, Grand Haven, Mich.	July 19	765,372
METAL WEATHER STRIP.	H. E. Kenny, Detroit, Mich.	July 26	765,844
METAL WEATHER STRIP.	H. E. Kenny, Detroit, Mich.	July 26	765,845
SASH FASTENER.	S. F. Albright, Sidney, Ohio.	July 26	766,012

HEATING AND VENTILATION.

VENTILATOR.	J. C. Hervis, Philadelphia, Pa.	July 5	763,977
HEATER AND VENTILATOR.	Johnson and Sheridan, Toronto, Canada.	July 5	763,983
HEATING SYSTEM FOR GREENHOUSES OR OTHER BUILDINGS.	C. C. Peck, Rochester, N. Y.	July 5	764,003
AIR HEATER.	W. J. PERKINS, Grand Rapids, Mich.	July 5	764,004
GAS HEATER.	L. L. Rower, Boston, Mass.	July 5	764,010
HEATER.	H. F. Hoesman, San Jose, Cal.	July 5	764,191
VENTILATOR.	F. J. Prochaska, Park River, N. Dak.	July 26	766,063

PLUMBING.

FLOOR CLAMP.	Jeffords and Jeffords, Kansas City, Mo.	July 5	764,128
SELF-CLOSING FAUCET.	J. C. Norris, Kansas City, Mo.	July 12	764,620
SANITARY APPLIANCE.	A. A. Carson, Braintree, Mass.	July 12	764,912
BATH OR BASIN WASTE APPARATUS.	W. Bunting, Jr., Brookline, Mass.	July 26	765,697

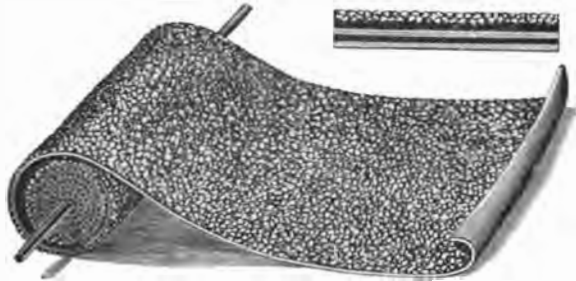
TOOLS.

CARPENTERS' FOLDING SQUARE.	W. Steers, Sr., Chicago, Ill.	July 19	765,208
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Publishers' Department

PERFECTED GRANITE ROOFING.

We are pleased to illustrate herewith a roofing that has demonstrated its value by nearly twenty years of successful use under all kinds of conditions. There is nothing scientifically new to be said of granite roofing as a compound. It is the same old roofing; but it loses nothing of its old preeminence, since there is a steady improvement marked in its adoption by builders, contractors, architects, superintendents of construction, and the guild in general; besides getting the indorsement of coal operators, railroad officials, municipal heads, and private and business enterprises. It has been in use since 1885 throughout the country, and it is known to be thoroughly efficient and durable for the exacting requirements of the roofs of chemical works, bleacheries, dye works, and the like, where the manufactured article must be able to resist acid and chemical fumes, steam, and gas. Natural enemies, such as heat, cold, rain, and snow, have no terrors for this granite roofing on any buildings, whether of stock-yard dimensions or the ordinary outhouse of a farm, whether a State house or a country cottage. This waterproof roofing chars only under long continued subjection to intense heat, which makes it extra appropriate for structures liable to ignition from sparks of chimneys, foundries, engines, and locomotives. In this relation we furnish the details given us by the Harrisburg Manufacturing and Boiler Company, that "The building on fire was a frame structure, and while the sheathing and rafters were very badly burned, yet the fire did not get through the granite roofing, thus enabling the control of the blaze. Had the roofing material burned furiously, it would have



GRANITE ROOFING.

been impossible to save the firm's building, as the fire had considerable headway before discovery." The White-Warner Company, of Taunton, also informs us that "A fire occurred last year in its foundry No. 1, and running parallel with it was foundry No. 2, which was saved, as it was provided with granite roofing placed right on top of the shingles, not even scorching these, and for good results was superior to the protection given by the tin shingles on the storehouse." This is a fitting time to state that there is nothing unpliant in granite roofing, as it may be laid on top of old shingles and made to conform so well that the roof will not be noticed underneath, and that, besides the adaptability of this roofing to cover over wooden shingles, it can be put on over old tin, without removing this metal, simply by pounding down the standing joints on lock-joint tin. The material sheds water rapidly, and quickly dries. Even in the rays of a tropical sun it will not run from roof or siding, and resists the hardest downpours and the action of flame. This stone-surfaced material, shown by the accompanying engraving, is scientifically made by experienced workers on specially constructed machinery. It is a composition into which pebbles, uniform in size, are pressed by the application of the machinery, and its crowning feature is probably the fact that when once put on, recoating is not required. The material comes in rolls, and each one contains 110 square feet, and is 41 feet 3 inches long and 32 inches wide. Above the roll shown in the illustration is a small band of the roofing material. The first layer is sea grit, the second and fourth are granite composition, the third and fifth wool felt, a combination that under all the varying changes of the seasons will stand impervious to all attacks. Once washed with rain, the next shedding of water from this roofing will remain untainted, and may be employed for factory, household, watering, and drinking purposes. It is one of the most attractive roofings made, and appears equally well as a siding. For cottages and buildings where the roof constitutes a charm to the entire frame, it can be used in ornamental effect in place of shingles. The best results are obtained by laying

it on well-seasoned boards, and it is so simple in its application that any inexperienced workman can lay it quickly, conveniently, and properly by following the simple and complete instructions furnished with every shipment. In the important matter of fire insurance, we are informed that the rate for buildings covered with this standard ready roofing is the same as for tin or gravel. Some important and interesting figures may be given in reference to the vast output of the granite roofing industry. The new railroad shops at Readville, Mass., are covered with 260,000 square feet of this material; over fifty railroad companies are using the roofing continually; 20,000 square feet of roofing is the covering capacity of one car; the stock yard buildings at East Buffalo, N. Y., required 400,000 square feet; and the Hamburg-American pier at Hoboken, N. J., 135,000 square feet. One of the largest contracts completed by the manufacturers is the covering of the enormous new works of the Lake Shore and Michigan Southern Railroad, at Collinwood, Ohio. Any enterprising purchaser can lay it himself, and have the economic satisfaction that he has not paid for high-priced labor, railroad fares, and board for workmen while they are away from home. In order to facilitate the work of laying the compound, the makers supply a special mop of mailable size. The new and extensive works of the Eastern Granite Roofing Company, which manufactures this material, is equipped throughout with the latest improved machinery, invented by its own experts. The address is the Irving Building, West Broadway and Chambers Street, New York, N. Y. Any one interested in this original stone-surfaced product will receive, as soon as requested, the roofing literature.

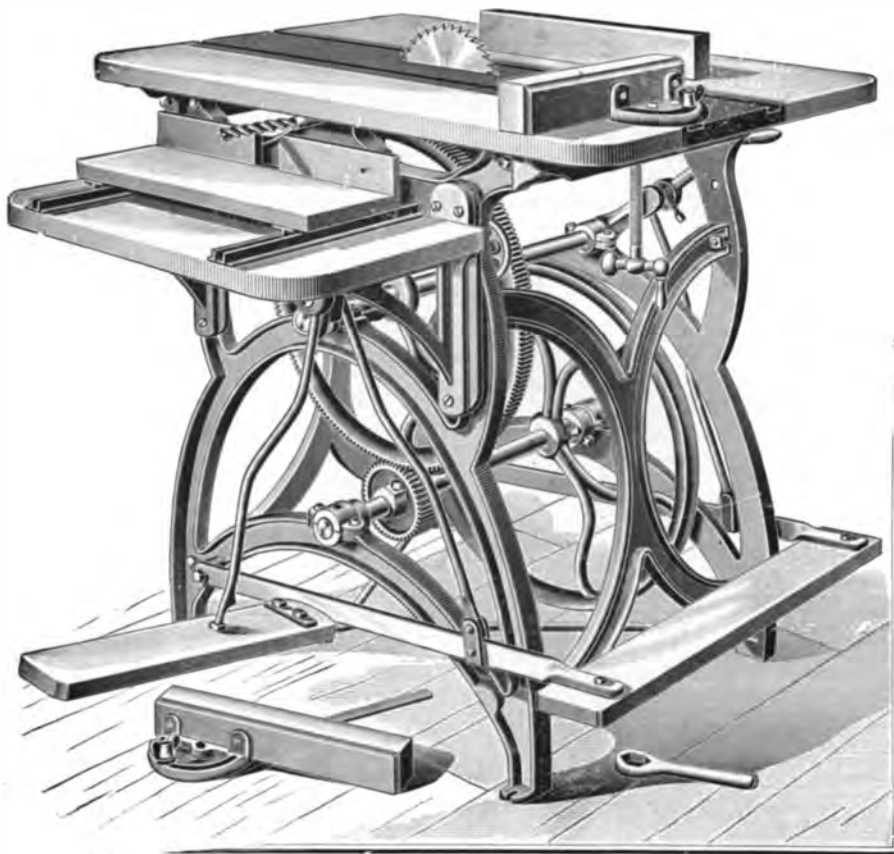
CIRCULAR AND BAND SAWS.

THE iron frame of the "Marston" hand and foot power circular saw shown in the accompanying illustration is thirty-six inches high. It is made of cast iron, well braced and bolted, and occupies a floor space of about 30 x 40 inches. The center part of the top is made of iron accurately planed, with grooves on each

thereto, and the countershaft is made a part of the legs at the back of the machine. The shafts are made of steel, large and good length, lathe-turned and run in iron boxes lined with the best Babbitt metal; the upper band-wheel bearing slides on accurately planed gibbed ways, and is adjustable up and down by means of a hand wheel, and is also adjustable to bring band wheels into line. The saw pulleys are twenty-four inches in diameter, one and three-eighth inches face, and covered with endless pure rubber bands strengthened with canvas. A shipper is furnished with each machine. Guides are both above and below the table, and the top guide is a roller guide wheel made of hardened steel to receive the thrust of the saw. The distance between the table and the upper guide is seven inches. The table is 24 x 24 inches, and made of kiln-dried hardwood, and has an extra table covering the saw pulley. The height of the table is 3 feet 4 inches; the whole height, 6 feet; the weight 340 pounds. A countershaft is furnished on each machine, with two pulleys 9 and 10 inches in diameter. Marston's 20-inch foot power band saw and the power circular saw bench are excellent types of apparatus, and those who are interested in their appearance and capacities may be fully informed by the catalogue, which will be sent free on request, by addressing the company, No. 199 Ruggles Street, Boston, Mass.

TRAVEL TO THE EXPOSITION.

A CAPABLE bit of railroad management, and one very contributory to the comfort of travelers who object to any extra change of cars, is furnished by the Wabash Line in establishing its World's Fair terminal within two hundred feet of the main gate. No other lines land passengers nearer than the Union Station, more than five miles away. The fact that tickets are issued and baggage checked direct to this station, when added to the many facilities of the Wabash system, stamps this as distinctly a World's Fair route, and will warrant the intending tourist, not in near connection with its passenger and traveling agents in the important railroad cities, to send for full information pertaining to routes, rates, service, and time of trains,



HAND AND FOOT POWER CIRCULAR SAW.

side of the saw for gages to slide in. The shafts are made of steel and the metal boxes of the best Babbitt. The gears are all machine cut from solid iron. Two seven-inch saws and two crank handles are furnished with each machine, and with the boring table and side treadle the weight is 350 pounds. J. M. Marston & Company, the manufacturers of this saw, also make power band saws, power circular saw benches, and like apparatus, and have in stock Huther Bros.' patent grooving saws for power machines, Goodell's drill chucks, etc. The grooving saws cut from one-eighth inch up to two inches, and are easily adjusted and sharpened. The chucks are fitted to the Marston machines with or without drills. The firm's twenty-four-inch "Power Band Saw" is made with special reference to the demand for a good, well constructed, accurate machine that will not occupy too large an amount of floor space, but will have power and capacity for all kinds of band sawing, such as to be found in carpenter shops, cabinet shops, and small job shops, etc., and distinctly adapted to run by electric motor. The frame is cast in one piece, the legs securely bolted

and the tourist literature will also give a colored map of St. Louis and complete plan of the buildings and grounds. The Wabash terminal called for an outlay of \$50,000. It is a commodious station, with great capacity for storing special trains and private cars, and is replete with personal accommodations in every department that makes a depot perfect. Some of the ticket features of this route are: The coach excursion tickets, limited to leave St. Louis within ten days from date of sale, will be sold to St. Louis only on specified dates, good only in day coaches. Fifteen-day excursion tickets sold daily, and continuing during the Fair, with final return limit of fifteen days, and honored on all trains. Sixty-day excursion tickets sold daily, and continuing during the Fair, with final return limit of sixty days, but not later than December 15, and honored on all trains. Season excursion tickets sold daily, and continuing during the Fair, with final return limit of December 15, and honored on all trains. The sixty-day and season tickets can be made via variable routes, which passengers must specify on purchasing tickets. Tickets sold at New York

will be available for going or returning on the Hudson River Day Line or People's Night Line Steamers, except that holders of coach excursion tickets will be granted this privilege only on the return journey. Passengers desiring to stop off at Niagara Falls, Detroit, or Chicago will apply to the conductor, who will indorse and instruct. The stop-over is allowed for ten days in either direction, except on coach excursion tickets, which enjoy the privilege at the Falls on the return journey. H. B. McClellan, General Eastern Agent, is at No. 387 Broadway, New York.

ELECTRIC LIGHTS AND SOCKET PLUGS.

No light may be properly said to have a monopoly of all the good points, but the electric lamp called the "Hylo" is as perfect as any incandescent electric lamp can now be made. It is inconvenient for use, the bulb readily fitting any ordinary fixture, and turns down to a soft glow. Once introduced it quickly becomes established, and is absolutely essential to comfort and economy. Anybody can put it in place. That it is adequate to heighten the artistic effects of a home may be seen in its employment in the dining-room, when the table, with its cut glass, flowers, and silver, presents a strikingly beautiful ensemble of results when shown under the soft "Hylo" turned down, and a gentle pull on a string when guests are seated gives a contrasting brightness to the full power radiance of the light. The turn bulb "Hylo" is simple and a current saver. More than a million users, it is claimed, have given it the position it holds as an article of long life and little trouble. Turned down it saves five-sixths of the current an ordinary lamp will use, and also lasts as long as three of the class just named. Where the socket key is too high to be reached easily, it will be found convenient to use the pull string "Hylo." The lamp is provided with strings thirteen inches long, which turn the light down and then out. Key sockets and switches are not needed. The long distance "Hylo" should be used for ceiling clusters, porch lanterns, and other places where the lamp is too far away. A portable switch is attached by a conducting cord and snap fasteners to the lamp. Fifty feet of cord may be used if required. The manufacturers of the "Hylo," the Phelps Company, Detroit, Mich., have a specialty in the "Skeedoodle" socket plug. It fits any Edison type socket, holds any ordinary lamp, flashes the lamp on and off about fifteen times a minute, and will outlast several lamps. Each plug is complete in itself and independent of every other socket. Electric light is doubly attractive when it flashes. Signs and show windows can be fitted with "Skeedoodle" socket plugs so lamps already in use may be retained. The socket plug saves enough current to pay for itself. Besides the common sign letters, it can be used to advantage for transparencies, to flash colored lamps, show windows, festoons, and decorations, street displays, and fairs. It can be used on either direct or alternating current. Another article quite prominent in the output of the firm, and made to take the place of a current tap, is called the "Annex Lyho." The conducting cord snaps on like a glove fastener. Unscrewing the lamp puts out the light and leaves the fan running. To run a fan, connect a reading lamp, or to put up an extension lamp, it is convenient, quick, safe, and makes a good appearance. The fixtures described are shown at the World's Fair, section 16, Palace of Electricity, and they form a very attractive and instructive exhibit. They are not specially made for exposition purposes, but are simply goods manufactured up to the commercial standard of the Detroit company's quality of output for the service of both the store and the home.

MOISTURE IN WOOD.

ACCORDING to M. Deploy, green wood when cut down contains about 45 per cent. of its weight of moisture. In the forests of Central Europe wood cut down in the winter holds at the end of the following summer more than 40 per cent. of water. Wood kept for several years in a dry place retains from 15 to 20 per cent. of water. Wood that has been thoroughly desiccated will, when exposed to air under ordinary circumstances, absorb 5 per cent. of water in the first three days, and will continue to absorb it until it reaches from 14 to 16 per cent. as a normal standard. The amount fluctuates above and below this standard, according to the state of the atmosphere. Mr. Vollette found that by exposing green wood to a temperature of 212 degrees Fahrenheit it lost 45 per cent. of its weight, which accords with observations of M. Deploy. He further found that by exposing small prisms of wood 1/2 inch square and 8 inches long, cut out of billets that had been stored for two years, to the action of superheated steam for two hours, they lost from 15 to 45 per cent. of their weight, according to the temperature of the steam, which varied from 275 degrees Fahrenheit to 437 degrees Fahrenheit (125 degrees Centigrade to 225 degrees Centigrade).

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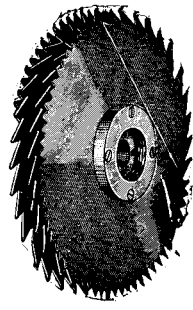
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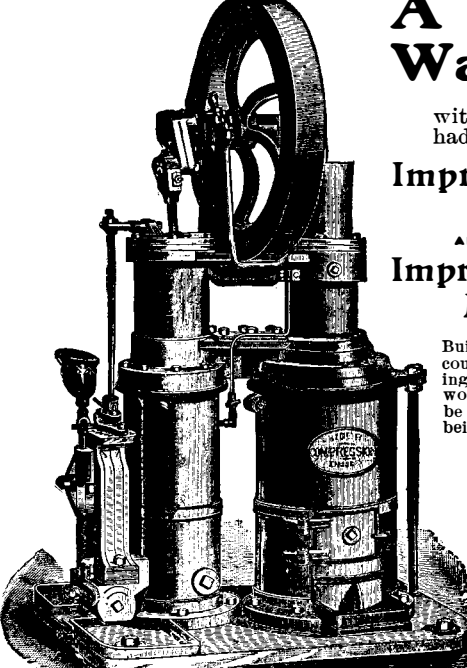
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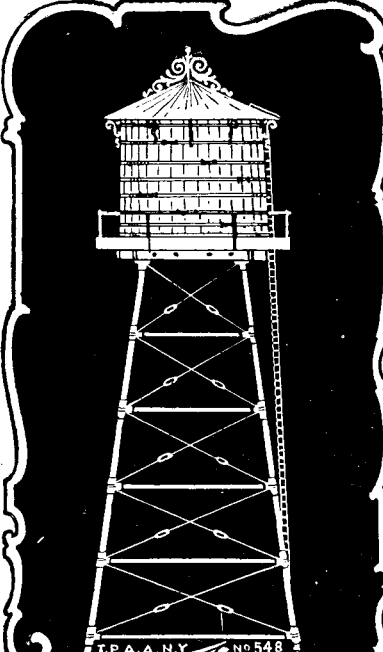




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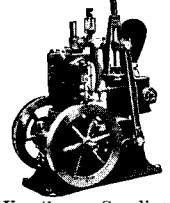
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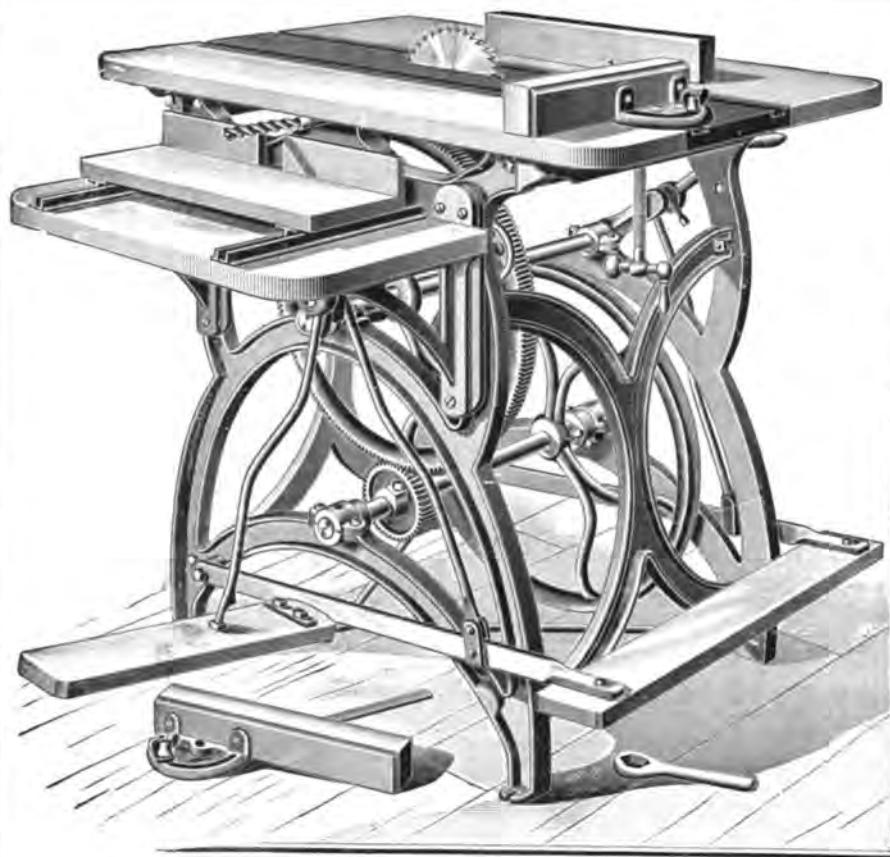
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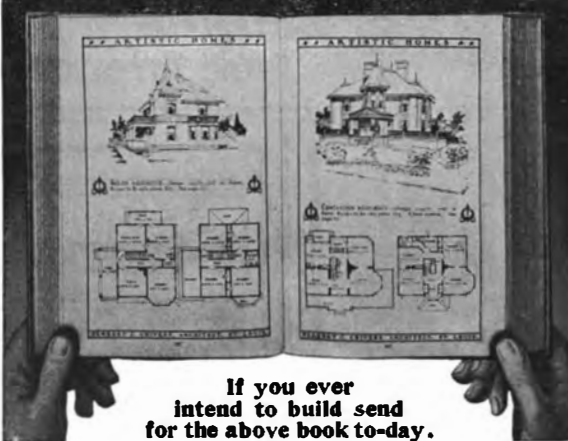
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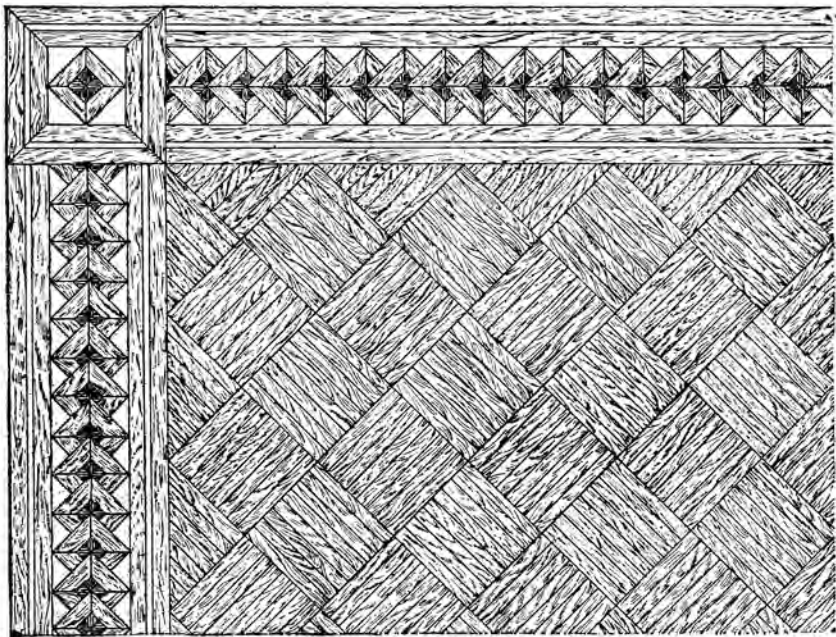


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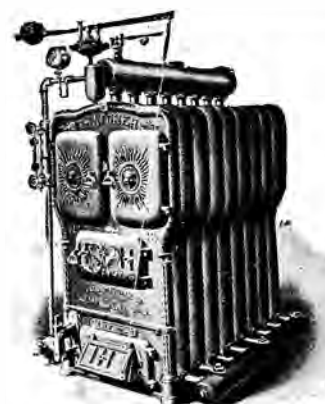
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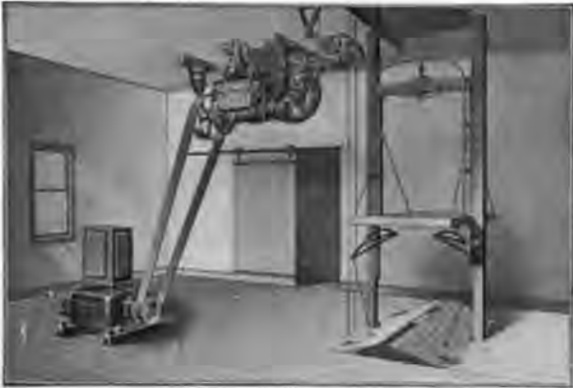
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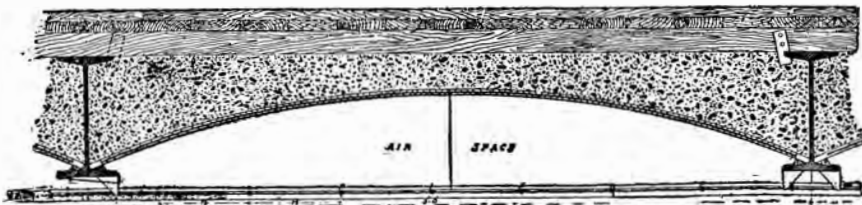


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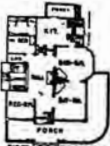
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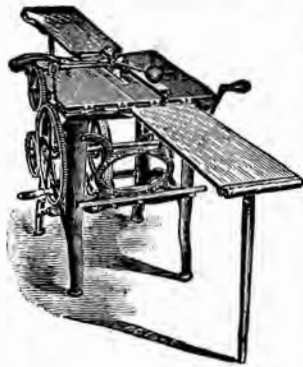
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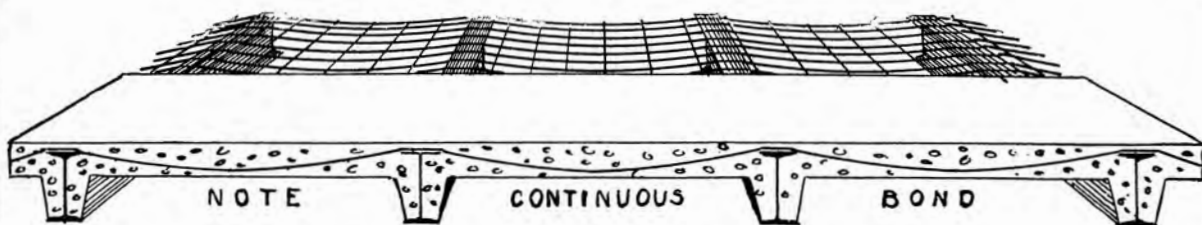
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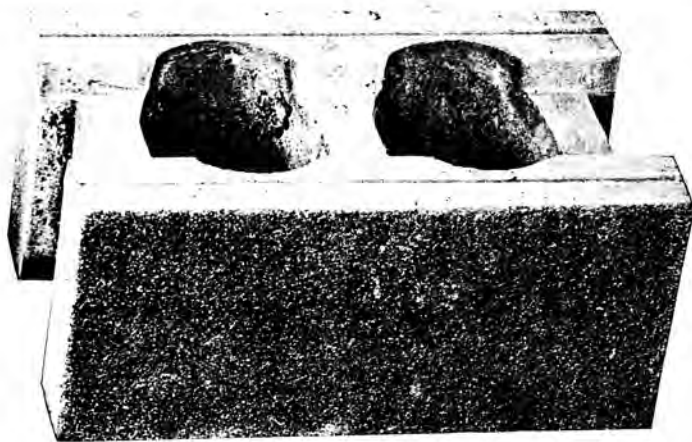
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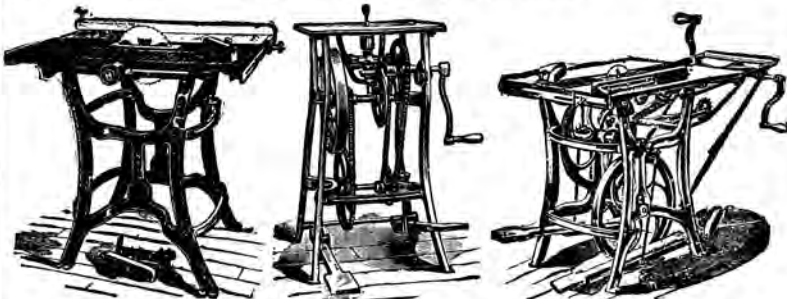
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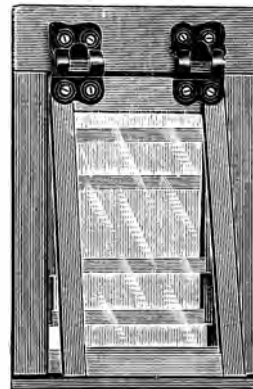
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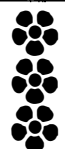
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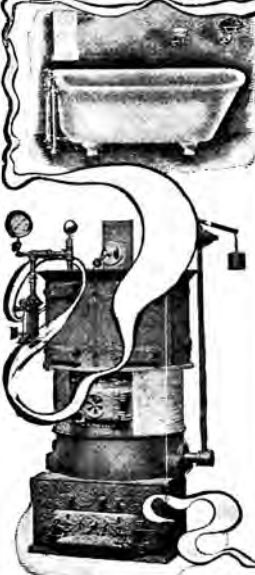
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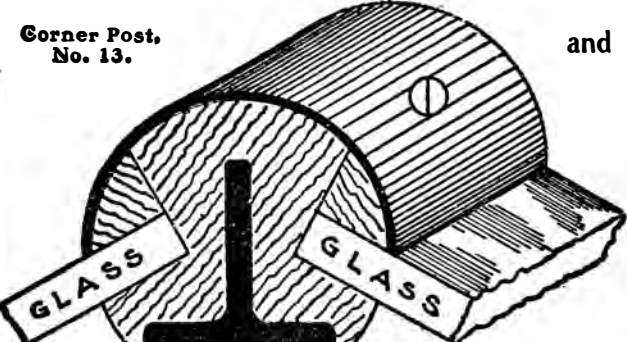
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