

# SCIENTIFIC AMERICAN

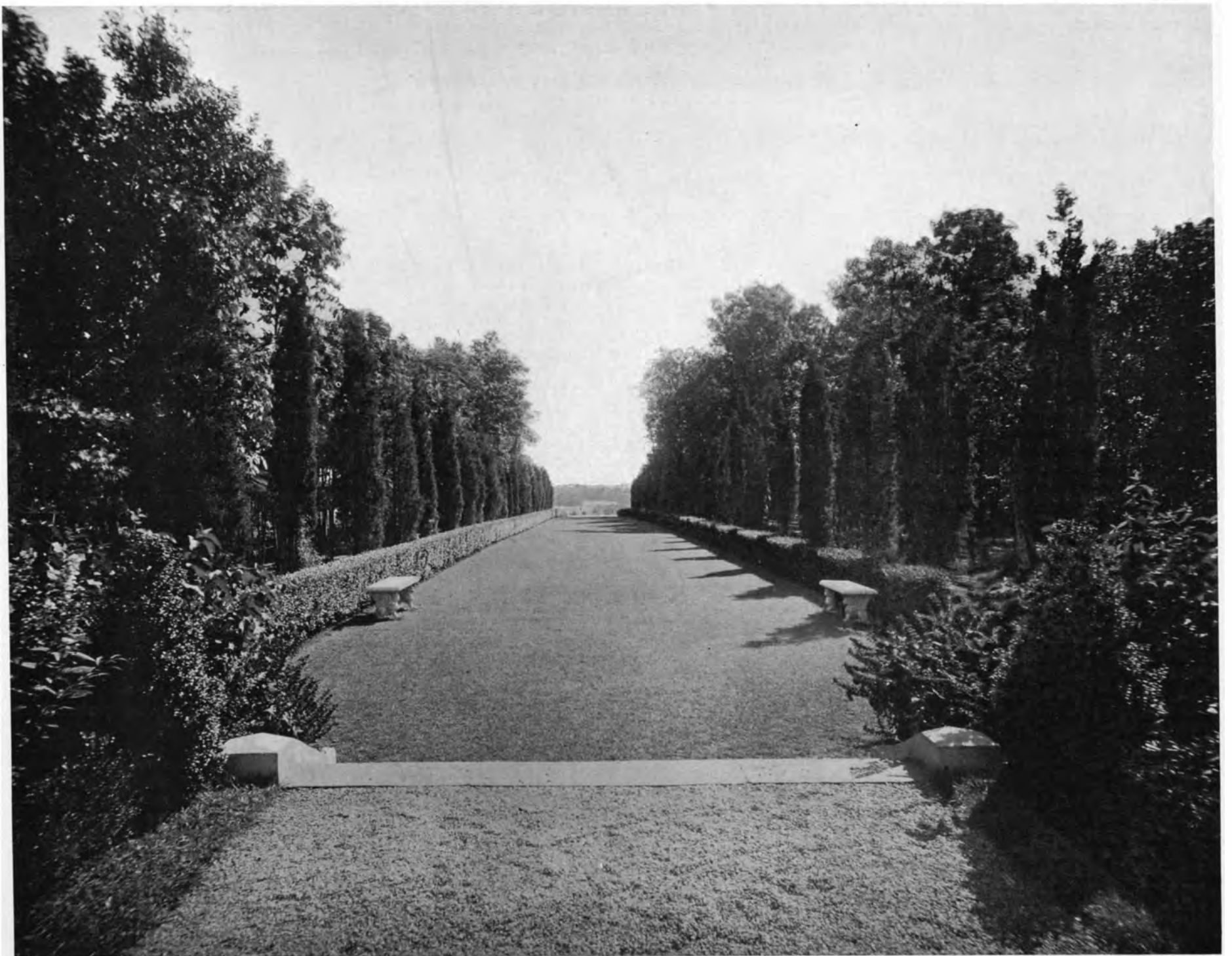
## Building Monthly.

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THE VISTA—THE HOUSE OF HERMAN B. DURYEA, ESQ., OLD WESTBURY, N. Y.—See page 93.  
MESSRS. CARRÈRE & HASTINGS, ARCHITECTS.

# 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 publishers of the BUILDING MONTHLY, Messrs. Munn & Co., take pleasure in announcing for immediate publication an important book on the newest great houses of America, under the comprehensive title of "American Estates and Gardens." This book will be the most richly illustrated work on American architecture which has yet been published, including as it will nearly three hundred illustrations, many of which are full page, and all reproduced in the very finest style of the printer's art. They will include views of exteriors and interiors, and many views of gardens, thus presenting the various estates described in a thoroughly complete and detailed manner. Many of the houses included in the book have not heretofore been illustrated, and it will, in a very real sense, be representative of the best work of the leading American architects. The illustrations will be accompanied with a descriptive text by Mr. Barr Ferree. The volume will form a large quarto of about three hundred and fifty pages, and will be handsomely bound, forming, in many respects, one of the most attractive books of the present season.

A POET has arisen in one of the New York daily papers, and indited an ode to "The House Beautiful." He leaves no doubt as to his dislike and distrust of what he conceives to be the most modern expression of the up-to-date mansion. His smoking-room is too perfect with its "outrageously clean" weathered oak tables; his library is "splendid and rich" with mahogany "frightful to scratch," and the living-room, "with a touch of 'Colonial style,'" is utterly unfitted for its avowed purpose. Poor fellow, what a time he has, and how strange are his notions of a well ordered house! Is there any reason why a smoking-room should be cluttered with dust to make it available? Must nicely polished furniture be kept out of a library because it may be scratched? Is neatness incompatible with the uses of a living-room? The poet, of course, bewails the fate of a man compelled to live in a house furnished in a manner too refined for his coarse taste—that is the lesson of his outpouring. His fate is sad, but is not his own uncouthness chiefly to blame for his unhappiness?

It is, of course, quite possible to furnish and arrange a house on so high a plane of esthetic refinement that the mortals whose lot it is to live in it may be dissatisfied with it. But shame upon those who cry for dust and bewail the splendor of polished tables! Only really fortunate people can possess such articles, and the man who has them should thank the stars for the wifely care that has brought them into his house and surrounded him with the latest ideas in household art. This, it is but truth to say, may often be devoid of genuine merit, but it stands for good intentions and well-meaning effort; and household art, being what it is, deserves encouragement.

THE richly furnished house is apt to be very much overdone. The needs of the wealthy are many; their means of gratifying their needs are ample. To see an object and to desire is often equivalent to possession. And the desire to possess is seldom limited. Too many objects are thus readily acquired, and wealthy drawing rooms become mimic museums of very commonplace things. For richness in itself is of no value unless characterized by taste and art; and to crowd a room with all manner of furnishings is simply to display what one owns and not to give evidence of one's real care for the good and the beautiful.

A CHICAGO lady, having recently secured a divorce, offers some suggestions on the best way of keeping the home life intact, which, under such circumstances, have a semblance of authority. Her remarks are particularly directed to the husband. "Never," she exclaims, "neglect a parting kiss when starting for business. Take your wife to the theater at least once a week, and when you buy the tickets notify her by telephone in season to give her ample time to dress. Then"—and perhaps this is the great secret, after all—"tell your wife at least once a day that you love her. Never compel her to force this confession," she sagely adds, "but just tell it to her of your own free will." The suggestion is made that these rules, implicitly followed, will act as sure cures to home ills. The advice seems well intended and offers no difficulty.

## THE OLD-TIME GARDEN.

THE beauty of the old time garden never lessens. Year after year it has bloomed its fine old flowers; year after year its hedges have thriven, its box grown greener and greener, its flowers more and more redolent of the simple life of the past. Very beautiful these fine old garden spots are, and very rare, for the march of so-called progress, the changes in taste and the spread of newfangled notions anent garden making have swept so many of them away that comparatively few have survived to delight the eye and enchant the fancy of contemporary folk.

The very rarity of these gardens—of good old gardens, of old gardens well grown and well preserved, of old gardens that to-day are as brimful of old plants as of yore—adds vastly to the present-day appreciation of them. The passion for antiques is now well nigh universal. Old clothes, old plates and cups, old china of all kinds, old furniture, old carpets, old wall coverings—the very word "old" gives charm and interest, causes a pricking of ears, excites a new attention whenever it is mentioned. Old gardens are among the rarest of antiquities, because their survival has meant, in most cases, more years of continuous care and thought than Americans, as a people, are apt to lavish on any subject or on any object. An old vase may be stored away in an attic and resurrected by a younger generation as a thing of joy and a new delight in life; but the old garden has had to be maintained and tended year after year, and from sheer love of its beauty and old time-ness. Its survival, amid the rapid rush of American life, is hardly short of a miracle.

If one were to draw a valued lesson from a survey of old time gardens it would surely be the value of constant care and uninterrupted thought and interest. They have not survived by accident nor through inherent sturdiness of growth. Their stout old plants have needed constant replenishing; the borders of box have yearned for trimming; the paths have cried aloud for cleaning; the shrubbery must be cut and the vines trained, and the whole kept in that spick-and-span orderliness which, looking backward, seems so charmingly characteristic of old time life.

No garden has ever yet been made that did not require making and constant attention. The old time garden makers were not concerned with the mighty problems which now beset the designers of modern fine gardens. The materials at their hands were few and unimportant. They planted shrubs easy of cultivation; they made borders of plants close at hand; they planted the seeds of ready growing annual plants, and were content to watch their simple flowers grow and bloom and transform what may have been a waste into a bower of bloom and foliage. The homeliness of the plants was the best evidence of the deep seated love of the old garden maker. He knew little of vistas and

axes, and of garden architecture he had never heard. But out of the simple plants that thrived in the open soil he created gardens that, when they have survived, have been sources of unending joy to those who knew them, who walked in their narrow paths and loved each simple old time flower.

The old time garden was an individual garden. It would be a mistake to suppose that the gardener, the specialist in garden making, is a new fashioned adjunct to the country house. The modern gardener differs from the old gardener exactly as the modern garden differs from the old garden. But ever and always the old time garden was an individual garden, a garden in which the master and mistress took a definite personal interest, a garden in which the mistress often labored with her own hands, and which she regarded as her very own, not alone by right of ownership, but by right of downright labor.

And in seeking out the meaning of these old places this individual note must not be lost sight of. It is a rare, indefinable quality like the gentle perfume of old lavender or dead rose leaves pressed within the folds of old silk. It may not be defined; it certainly can not be measured; but it surely exists, penetrating the whole flower decked space with sweet persistency, until one can almost recall the gentle, refining presences that first watched its growth.

Strangely enough these gardens are most aristocratic in their effect. Perhaps it is because our present-day views of aristocracy are largely based on descent, because we think—and perhaps naturally think—that aristocracy rests on descent, and the longer the descent the greater the pretensions to aristocratic claims of the modern-day representative of the past. If this be true—and there is no harm in the suggestion—then of all gardens, of all American gardens, the old time garden is the very acme of aristocracy, the social leader among all contemporary pleasure grounds of their class.

The modern flower garden, in its most elaborated development, is a very sumptuous and expensive affair. It requires an ample space for the display of the rich horticultural rarities which are deemed indispensable to its enrichment. It needs an army of men to keep it up to the top-notch of modern cultivation. It requires a costly architectural setting; it needs vases and statues, pergolas and decorations of all sorts. Very beautiful it often is, and very fine; but its splendor is apt to be so pronounced that its very wealth of resources speaks aloud of cost and expense.

The old time garden is a modest garden, albeit it is alive with phlox and marigolds, with marvels of Peru and with zinnias, with petunias and with portulacas, with balsams and with nasturtiums, with dahlias and with sunflowers, with hollyhocks and lilacs and roses and with all the other "common" plants that God has given to humanity for its enjoyment and delight. But why "common"? Every one of these lovely old plants—and many others—has a real inherent beauty of its own, that is positive and real, and as inherently present in the single plant as in a whole border. If they are "common," it surely can not be because they are coarse and ugly, but because they can be so readily grown, because so many grow them—and because of their easy culture—that they seem scarce of the same class as the more difficultly grown plants of the costly modern garden.

But let the "commonness" of these homely plants pass, and rejoice the more that so much loveliness is common, and that every one who has a bit of ground and a seed to plant may raise a joyous flower, brilliant and beautiful. Our granddames showed us what could be done with such simple means, showed us grandly and beautifully; and we go into a special state of ecstasy every time one of these fine old places comes within range of our vision.

The old time garden was planned on the simple idea of using plants that grew easily and naturally, with perhaps the slightest effort, and certainly with the utmost flowering. It was not splendor that was sought, but charm, the charm of foliage and of color, perhaps chiefly the charm of color. Plants that gave these results were eagerly sought after and industriously cultivated. The modern seedsman has improved on many of them, but the modern garden maker has seldom produced more charming results than the old time garden makers did in their quiet, simple old gardens. It is a highly significant fact that, beautiful as these old gardens must have been in the days of their first blooming, they are still beautiful, and do not suffer in interest in comparison with the more pretentious efforts of the modern gardener.

Two remarkably beautiful examples of old time gardens are illustrated in the photographs reproduced on page 108. One is the Grinnell Garden, in New Bedford, Mass., and the other from the property of Mrs. Edward C. Jones, in the same place. They are old time gardens of the finest type, rich in flowers, elaborate in planning, abundant in hardy and annual plants. Dating from the year 1835, they have acquired a fine old age, and are fine examples of a rare old art.



**NOTABLE AMERICAN HOUSES\***

By BARR FERREE.

**THE HOUSE OF HERMAN B. DURYEA, ESQ., OLD WESTBURY, N. Y.**

MR. DURYEA'S house is located quite well into the country, and may be reached either from the stations of Westbury or Roslyn. It is a good drive from either place along fine roads that run partly through woods and partly between fields of smiling grass. Immediately at the entrance to the place is the stable, a large Colonial building, quite stately in its front; across the road is the old farmhouse, once the chief building on this land, and still in good preservation, and a fine type of the old Long Island farmhouse. A short drive through pleasantly wooded land brings one to the house.

It is a house of strikingly original design. It is built of white stucco. The first story, being a basement, is treated as such, the walls being marked off in large blocks. Above, in the center, is an ornamental centerpiece of pilasters, carrying a broken curved pediment. The windows of the first story have each a separate balcony supported on decorated brackets. The crowning cornice is of wood, flat and straight, supported on large, open brackets very dark in color, a unique finish that gives quite a foreign character to the house. Below,

way it may be said that the level of the main floor of the inner part, in which the drawing-room and the dining-room are placed, starts about midway the height of the basement story, which contains the entrance. The first story on the front is thus reached from the main hall by a short flight of steps, only half as many, in fact, as is needed to make the full descent to the entrance doorway. It need hardly be said that this arrangement is quite unusual, and adds immensely to the interest and variety of the interior.

The entrance hall is square, entirely encased with Caen stone of a pinkish tint. A narrow white marble base runs around the room, which is floored with red brick tiles. The walls are decorated with pilasters, and immediately in face is a raised corridor, separated from the entrance hall by four Roman Doric columns. Just inside the entrance door is a passage conducting to an office, finished in red.

Above the small circular steps between the columns is a corridor running right and left. To the right it leads to a suite of sleeping apartments; to the left it connects with the service and kitchen. As one enters the house the wall that bounds this hall is closed, save for a central niche containing a fine bronze. Mounting the first steps, one perceives, on either side, a flight of white marble steps curving inward, which leads to the upper hall or foyer. One is now in the center of the

other. To the right it directly leads to a large glazed door, which opens immediately above the side steps, as well as forms the corridor by which the drawing-room is reached. The superb tapestries which are hung in these wing corridors, as they may be called, are of quite unusual richness and beauty.

I have dealt at some length on the planning of this hall, for the scheme is quite a new one and it is worked out in an exceedingly clever manner. It was occasioned, no doubt, by the fact that the ground immediately on the inner side of the house was higher than that on the entrance side. The glass doors of the hall open, in fact, directly upon the formal garden, which is enclosed within the two inner wings. But the great merit of this hall is its complete privacy and its splendid effect, and the monumental character, which is completely surprising. No one knows, on entering the house, what one is to see; one invariably approaches the interior of so fine a house as this one gives outward evidence of being with pleasurable anticipations, but one is certainly not prepared for the very great charm of this very surprising hall. The hall has, in many recent houses, received an importance it never had in buildings of an old type. But many of the great modern halls are entered directly from the main doorway, or else separated from it only by a modest vestibule. In most cases they give the keynote



THE HALL—THE HOUSE OF HERMAN B. DURYEA, ESQ., OLD WESTBURY, N. Y.

on either side, are curtain walls, curved and straight, of brick, enclosing large stuccoed panels. These enclose, on the left, a kitchen yard, and, on the right, a yard for carriages, by which the visitor may ascend to the main hall by a flight of steps placed under an archway within the wall line of the house.

The house is built directly on a hill slope, so that, while the main front of the building is three stories high, the inner part, which includes the chief ornamental rooms, is but two stories high, the hill being cut away so as to give greater height to the entrance front, and make room for the service yard, which is thus brought a number of feet below the formal garden, with which the inner side of the house is enclosed.

These differences in level have had a very predominating influence on the plan of the house, in which the halls and corridors take a leading part. In a general

house, the point to which everything radiates, and by which the plan is dominated. It is a splendid and surprising room, oval in form, two stories in height; lighted by windows in the central wall and by others from above, which throw a flood of brilliant sunshine across a balcony that runs entirely around it. The whole of the lower floor is in pink Caen stone; the upper floor is also Caen stone, while the upper arches, which complete the inner circle of the upper windows, afford glimpses of Caen stone columns still higher up, which support the ceiling of the upper corridor. It is a brilliant conception carried out in a brilliant way. The architectural parts are beautifully refined, and, while entirely adequate, are carefully subordinated and subdued. The main arches of the lower hall are elliptical in form—the arches over the corridor entrances, over the great central window, over the stairs in the center—with smaller round arches over the doorways in the corners. The large arches are without mouldings, the small ones slightly moulded. The walls are rusticated, the arches being upheld on pilasters. Pilasters appear again in the upper floor to support the plaster ceiling. The floor is of red brick, and bay trees give a pleasant color note to the quiet pink of the walls.

The hall is cut, on either side, by a corridor that runs at right angles through the house. Its walls are pink tinted, its floor of red brick, and yet, while its area forms a part of the main hall space, it is architecturally quite distinct from it. To the left it is a closed passage, connecting with the dining-room on one side and with the kitchen or service rooms on the

of the whole interior, an insight that is had by the very first glance. This, no doubt, is very excellent in its way, but it largely destroys the value of the hall as a private room. In Mr. Duryea's house this privacy is obtained through the cleverest planning and the unusual position of the house, and thoroughly interesting and novel is the result.

Mention has already been made of the drawing-room and dining-room, which are the two chief apartments of the house, and which are situated on the same level as the oval hall. Each completely fills a wing on its own, which is applied at right angles to the main building at either extremity of the house. The drawing-room is on the left, a splendidly sized room, paneled in pearl. Great panels of red Italian damask, curtains of the same brilliant color, and Adam furniture from Battle Abbey, England, in red and gold, give the dominant color. The fireplace is of yellow marble, with a paneled overmantel with pilasters on either side; in the center is a rare old English mirror in a rich frame. The room contains a number of fine paintings. The lights are beautiful girandoles, some of striking design and originality. At the end is a large outdoor room, which is continuous with the house wall and covered by the same roof. It has a bricked floor and a beamed ceiling, and its arches look out upon the beautiful formal garden.

The dining-room, which occupies the space corresponding to the drawing-room on the left of the oval hall, is paneled throughout in Italian walnut, with

(Concluded on page 106.)

\* 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. L. 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 F. SPRUE, 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. "KILDYSART," 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. "THE COUNTRY SEAT OF STANFORD WHITE, ESQ., ST. JAMES, L. I., N. Y., September, 1904. "DREAMWOLD," THE ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS., October, 1904.

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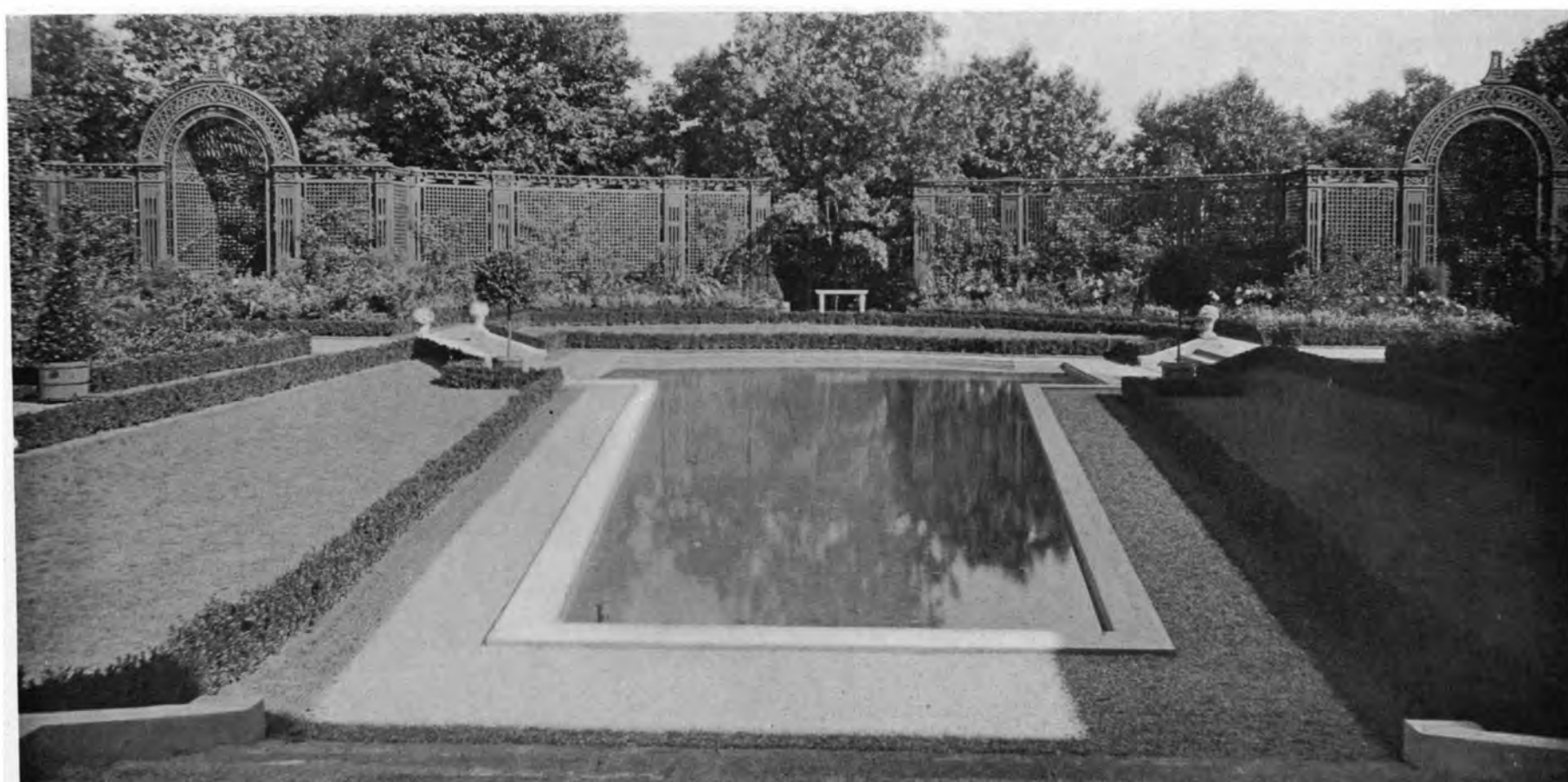




THE TERRACE.



THE HOUSE.



THE LAKE IN THE SUNKEN GARDEN.

THE HOUSE OF HERMAN B. DURYEA, ESQ., OLD WESTBURY, N. Y.—See page 93.  
MESSRS. CARRÈRE & HASTINGS, ARCHITECTS.



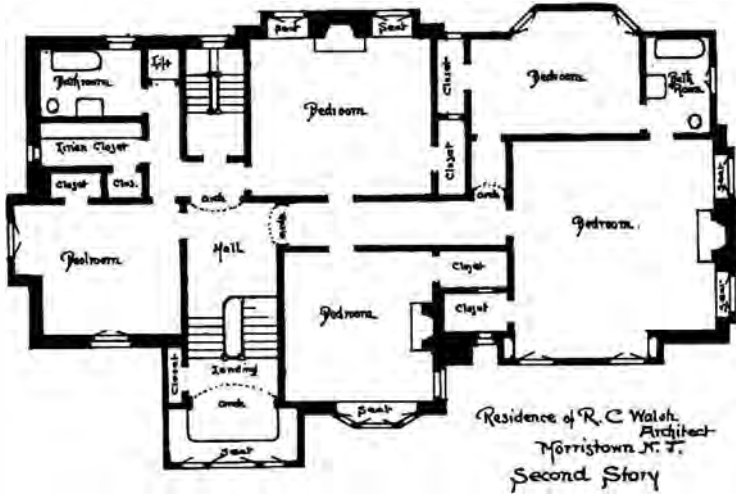
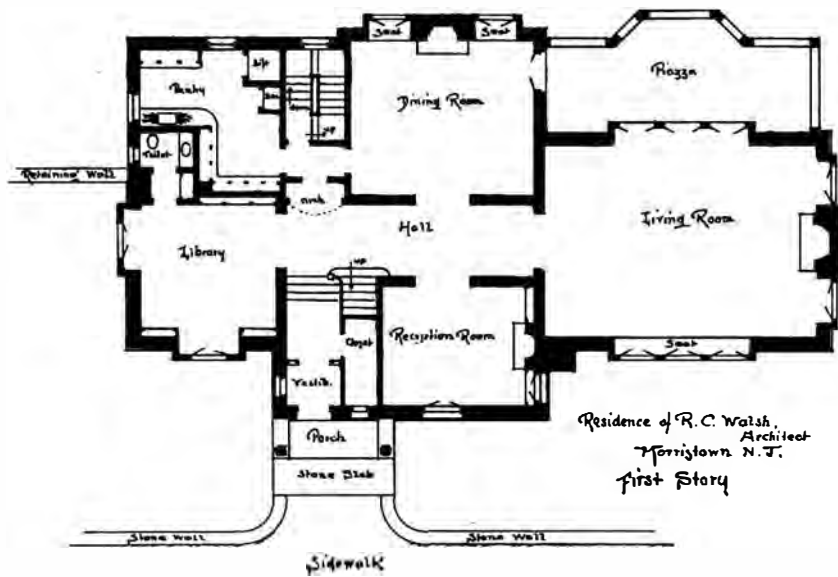
MRS. DURYEA'S BEDROOM.



THE DINING-ROOM.

THE HOUSE OF HERMAN B. DURYEA, ESQ., OLD WESTBURY, N. Y.—See page 93.  
MESSRS. CARRERE & HASTINGS, ARCHITECTS.





RESIDENCE OF ROBERT C. WALSH, ESQ., MORRISTOWN, N. J.—See page 106.  
MR. ROBERT C. WALSH, ARCHITECT.



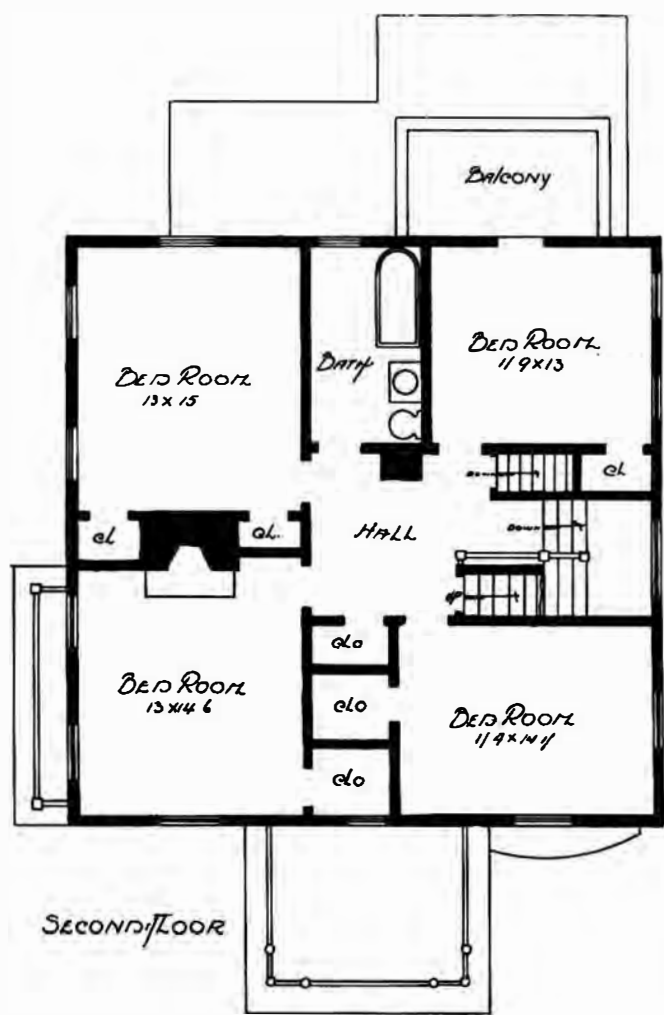
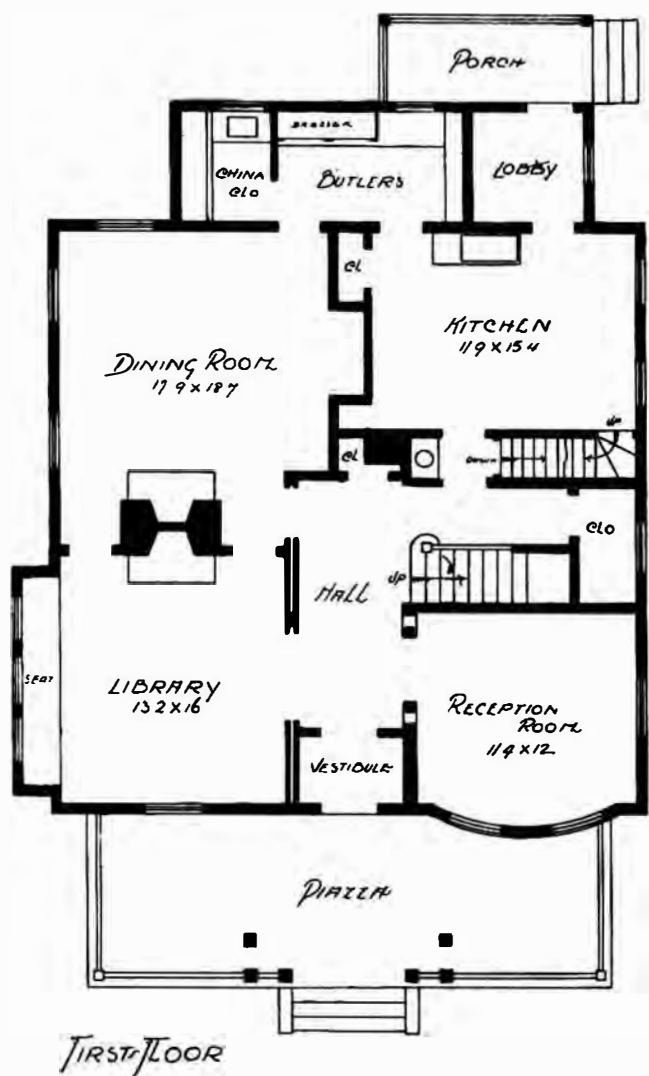
THE LIVING-ROOM.



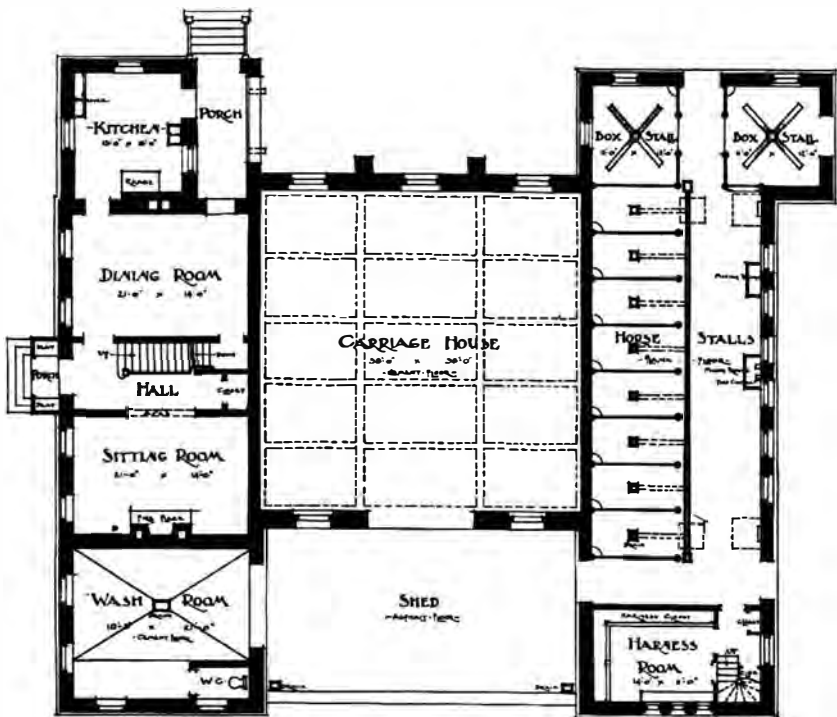
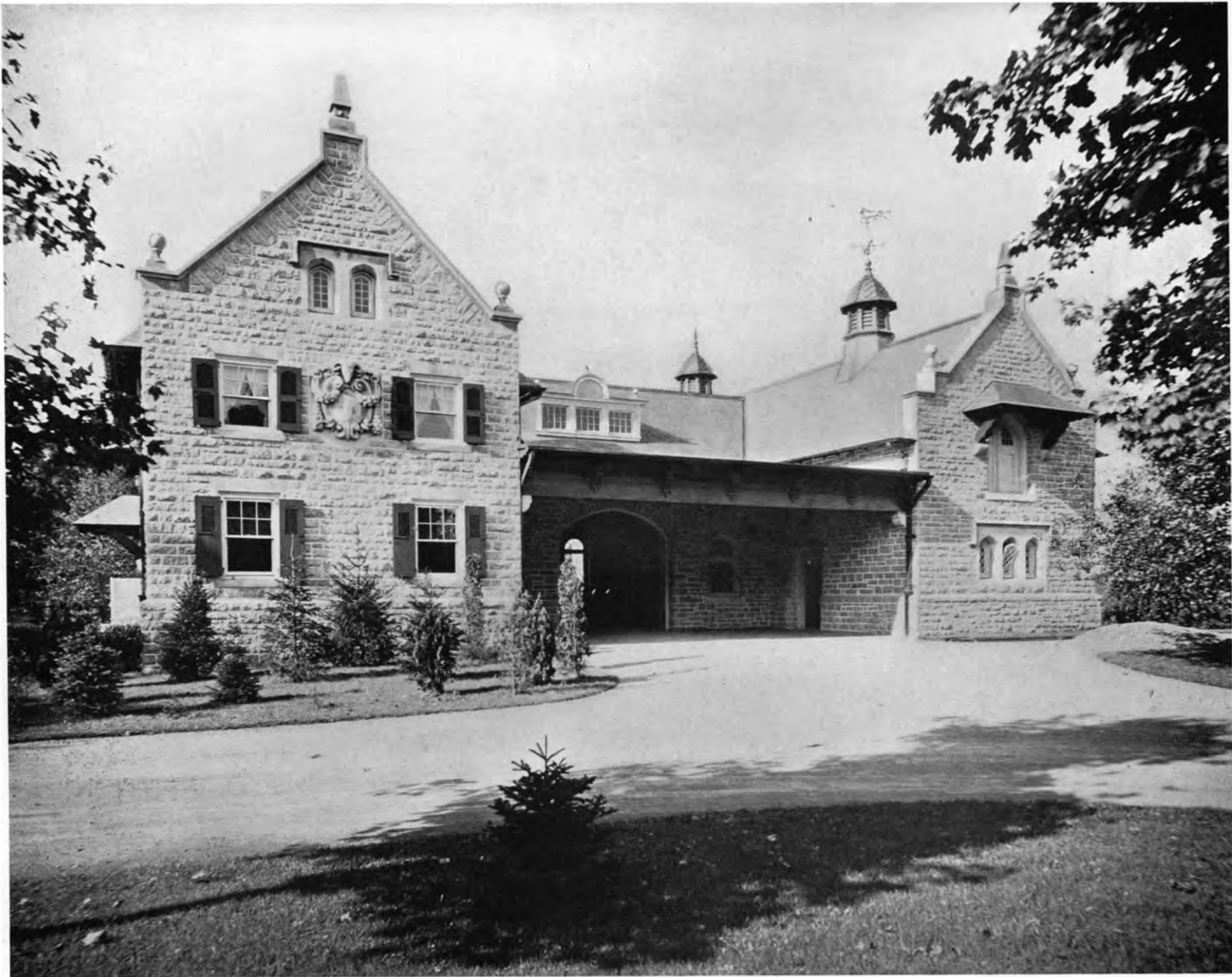
THE DINING-ROOM.

RESIDENCE OF ROBERT C. WALSH, ESQ., MORRISTOWN, N. J.—See page 106.  
MR. ROBERT C. WALSH, ARCHITECT.

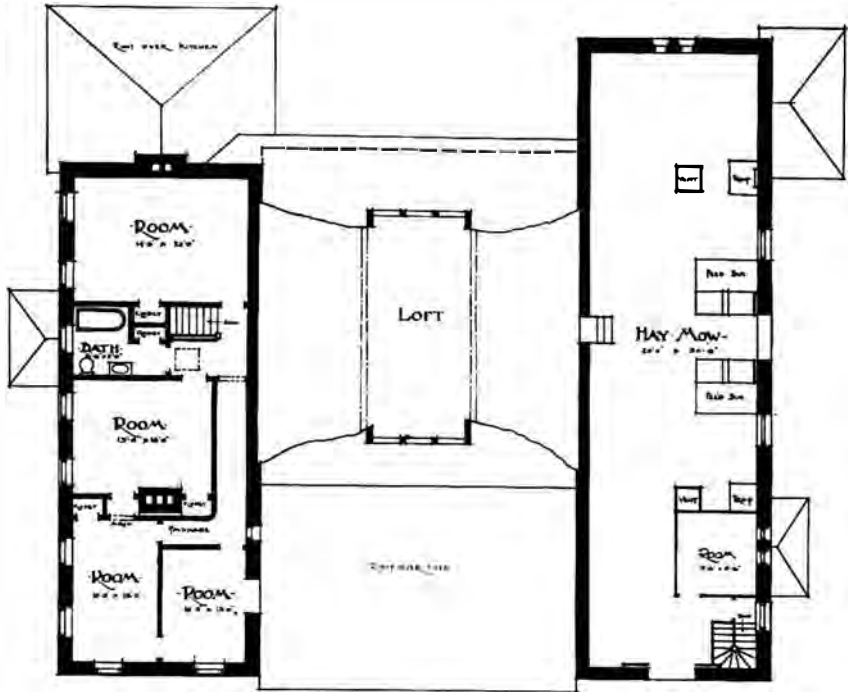




A COLONIAL COTTAGE AT SPRINGFIELD, MASS.—See page 106.  
MR. WILLIAM H. DEXTER, BUILDER.



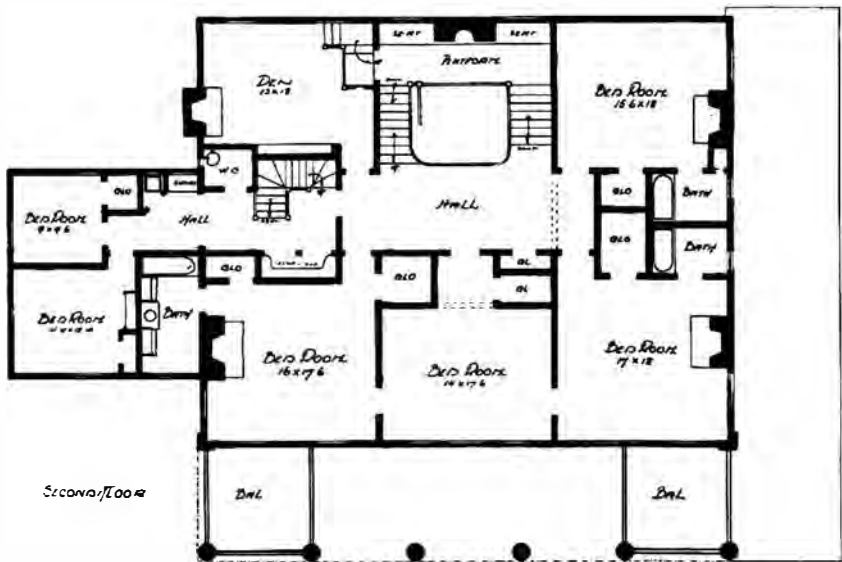
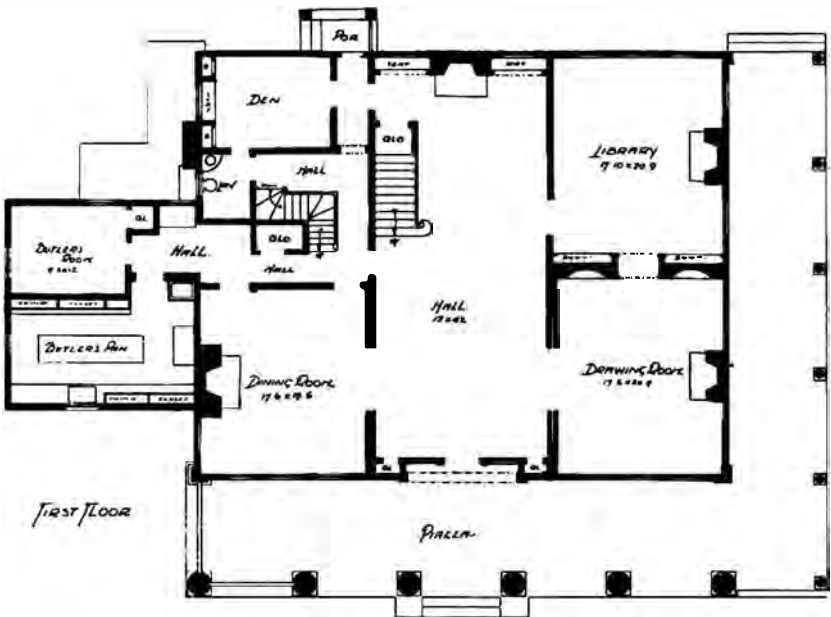
- FIRST FLOOR PLAN -



- SECOND FLOOR PLAN -

A GATE LODGE AND STABLE AT ROSEMONT, PA.—See page 108.  
MESSRS. DUHRING, OAKIE & ZEIGLER, ARCHITECTS.





THE COUNTRY HOUSE OF GEORGE McCULLOUGH MILLER, ESQ., MORRISTOWN, N. J.—See page 108.  
MR. CHARLES ALLING GIFFORD, ARCHITECT.



THE DRAWING-ROOM.



THE PORCH.



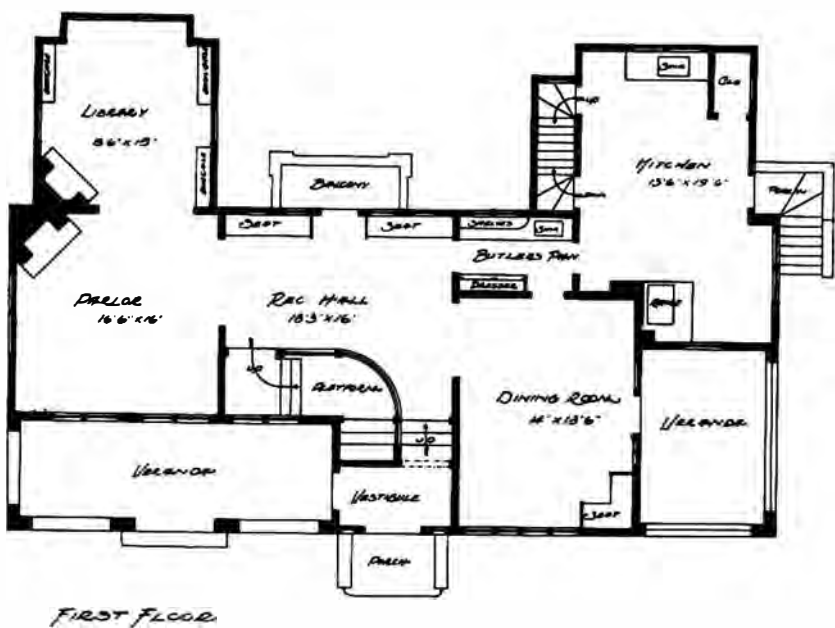
VIEW OF HOUSE.



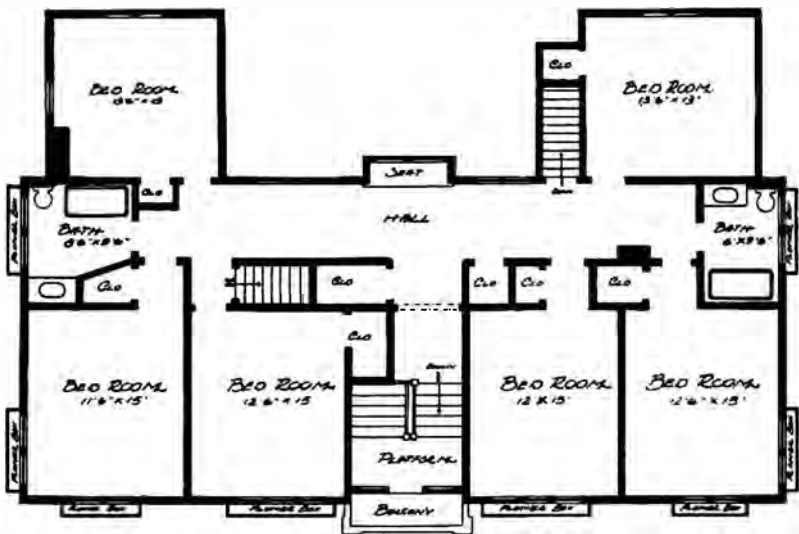
THE HALL.

THE COUNTRY HOUSE OF GEORGE McCULLOUGH MILLER, ESQ., MORRISTOWN, N. J.—See page 108.  
MR. CHARLES ALLING GIFFORD, ARCHITECT.





FIRST FLOOR



SECOND FLOOR

RESIDENCE OF ALBERT B. DAVIES, ESQ., NEATHERWOOD, N. J.—See page 107.  
MESSRS. OAKLEY & SON, ARCHITECTS.



A SOLARIUM TO THE RESIDENCE OF GENERAL HARRISON GRAY OTIS, ATLANTA, GA.  
MR. JOHN KREMPLE, ARCHITECT.



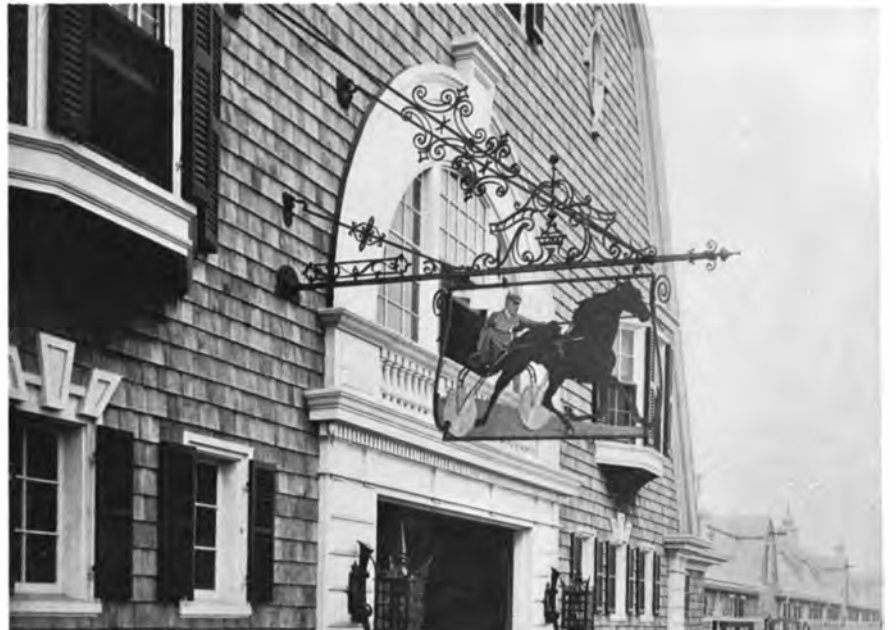
A SUN ROOM TO THE RESIDENCE OF FRANKLIN PAYSON, PORTLAND, ME.  
MR. JOHN CALVIN STEVENS, ARCHITECT.

SUN PARLORS—See page 108.





PRIVATE STABLE.



RACING STABLE.



BROOD MARE STABLE.



FOALING STABLE.



HOSPITAL STABLE.



FARM STABLE.

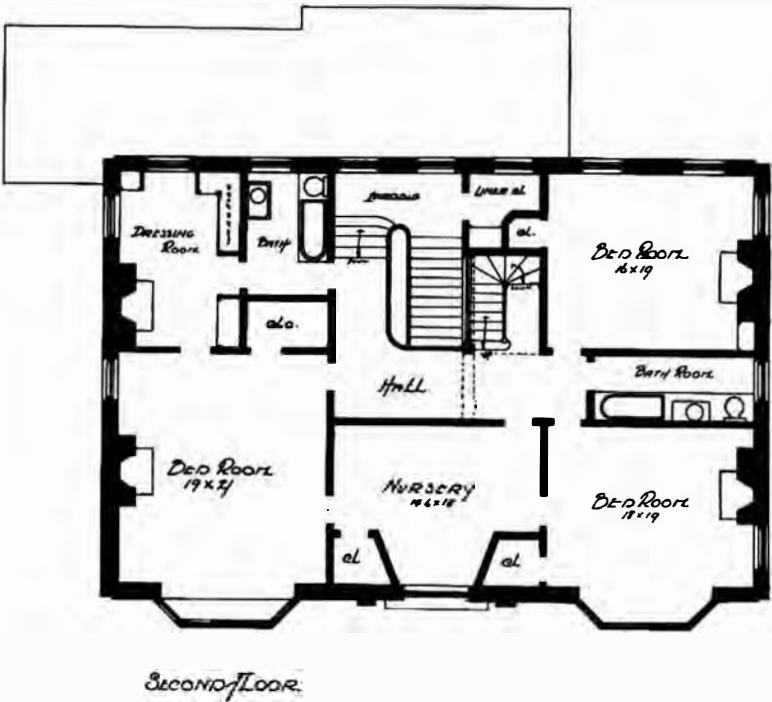
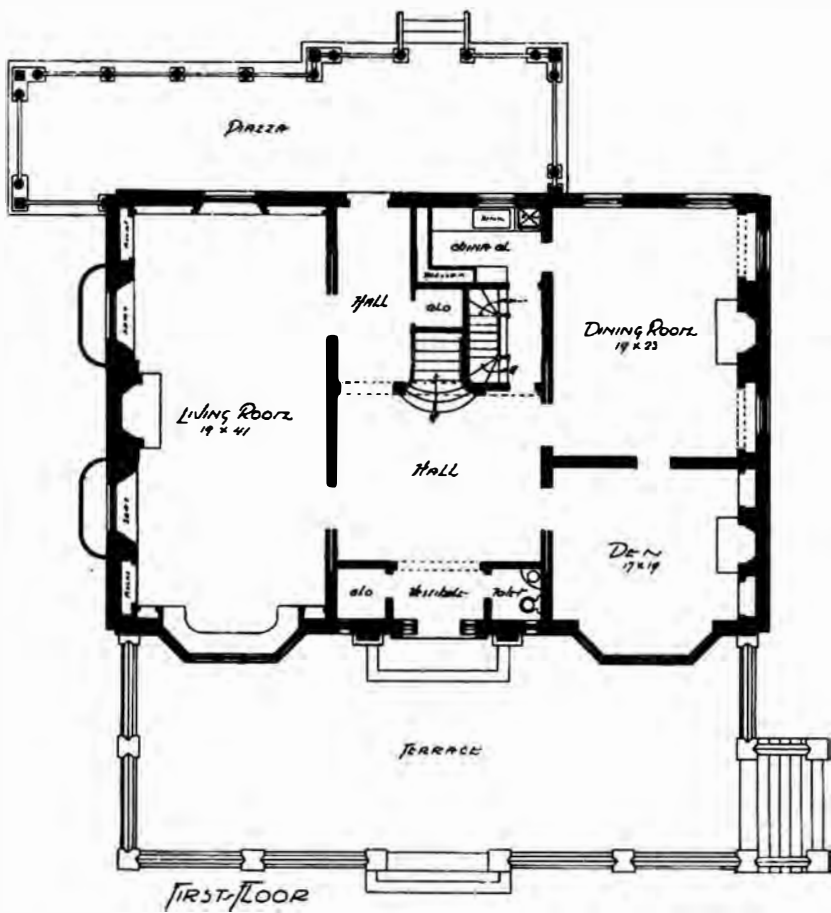


COW STABLE.



BANTAM HOUSE.

A GROUP OF SIGNBOARDS AT "DREAMWOLD," ESTATE OF THOS. W. LAWSON, ESQ., EGYPT, MASS.—See page 107,



A RESIDENCE AT CHESTNUT HALL, MASS.—See page 107.  
MESSRS. WINSLOW & BIGELOW, ARCHITECTS.



**THE HOUSE OF HERMAN B. DURYEA, ESQ., OLD WESTBURY, N. Y.**

(Concluded from page 93.)

pilasters at the windows, all very beautiful in color. The ceiling is elliptical and perfectly plain. The lights are girandoles. There is no mantel, but an English stone fireplace. Above it hangs a portrait of Mrs. Duryea, by John W. Alexander. Directly opposite is a wonderful tapestry. In the corner is a series of shelves crowded with cups and sporting trophies won by Mr. Duryea. An open air room, identical with that on the end of the drawing-room, opens from the dining-room.

The plan of the house is spacious in a very literal sense of the word. The two chief rooms, the drawing-room and the dining-room, are large, and their positions at the extremity of the corridor cutting the oval hall puts them at some distance from each other. The oval hall, for its part, provides space for two corner rooms irregular in shape, which are used as sitting-rooms. One is especially set apart for the use of Mr. Duryea. It has dark green walls, on which are many old colored prints, photographs of yachts, and other sporting mementos. The mantel is of green marble, and the furniture of the same color. The other room is paneled in two shades of gray. The curtains are red with embroidered borders. The mantel is an old carved one, with an old mirror over it.

in the woods, which have been cleared away somewhat in its immediate vicinity.

From the formal garden the exterior of the house is seen in its more ornamental aspects. If the entrance front is somewhat severe in its general treatment, the design of the inner front has a much lighter and more joyous manner. The windows of the two wings and of the center have each a paneled relief above it. In the center is a curved pediment over Roman Ionic columns. Above a balustrade appears the outer wall of the upper portion of the oval hall, itself oval in form, with a paneled cornice and decorated panels on either side of the central window. All the roofs are shingled and lowly pointed. It is a brilliant exterior from the garden, the exterior of a building quite palatial in scale and palatial in expression. Every single feature, the decorated walls, the delightful end porches, the novel trellises, the water garden in the center, the blooming plants and vines, all help in creating an ensemble of very great charm and interest.

NOTE.—The illustrations of the Duryea estate have been taken from "American Estates and Gardens," Munn & Co., publishers.

**A COLONIAL COTTAGE AT SPRINGFIELD, MASS.**

THE Colonial house which is shown on page 98 was built for Mrs. N. S. Day, at Springfield, Mass. The

plated plumbing. The third floor contains the servant quarters and ample storage room. A cellar, cemented, contains a furnace, fuel rooms, and storage space. Cost \$6,000 complete.

The house was built by William H. Dexter, of Springfield, Mass.

**RESIDENCE OF ROBERT C. WALSH, ESQ., MORRISTOWN, N. J.**

THE house of Robert C. Walsh, Esq., at Morristown, N. J., is illustrated on pages 96 and 97. It was built on a side hill lot, having a fall of about ten feet, and on account of the prominence of the site, as well as its exposure, a special scheme of construction was found necessary in order to insure physical comfort and a pleasing architectural sky-line. The rear of the house being much lower than the front, and it being the breezy quarter in summer and the sunny quarter in winter, it was decided to place the kitchen, laundry, etc., in the basement, in order not to obstruct the upper rooms. The basement ceiling is ten feet high, and the floor wall is out of the ground all along the rear, so that the outlook, air, and sunshine are the same on this story as on the upper ones. In addition to the kitchen and laundry, the basement contains the cellar larder, store closet, toilet, and conservatory, the latter being placed under the first story piazza.



MR. DURYEA'S DEN—HOUSE OF HERMAN B. DURYEA, ESQ., OLD WESTBURY, N. Y.

A flight of marble steps leads from the center of the oval hall to the upper corridor, which is largely opened into it. Here are Mr. and Mrs. Duryea's rooms, the latter a large, beautiful room, with a boudoir adjoining it in the corner of the house. All these apartments are delightfully furnished, each with its own scheme of harmonious decorations and its own special color. More stairs lead to the upper third story, the corridor here forming a picture gallery. The rooms are entirely set apart for guests, and are arranged en suite with bathrooms. Each is furnished in chintz, very beautiful in color, and very charmingly varied.

The space immediately without the house at the back forms the formal garden. In the center, between the drawing-room and the dining-room, is a long pool, with a fountain at one end. At the farthest extremity this garden is enclosed with high trellises of wood, painted green, with a high niche of the same material directly opposite the two ends of the wings. Brilliant beds of flowers surround the house and enclose the trellises. The arches of the end porches are similarly trellised, with extensions on the side walls, already, although the house is very new, covered with flowering vines. Then, from either side, extend two broad grassed walks, bounded with privet hedges, beyond which are solemn rows of cypress. These are beautiful stretches of green grass, reaching off on the one side to the trees, and on the other to a roadway. Behind the bounding trellises is a thick wood which spreads away in all directions, the whole house, both front and back, being set

underpinning is built of red brick laid in red mortar. The exterior above this underpinning is covered with narrow clapboards on the exterior, and is painted a deep Colonial yellow with white trimmings. The roof is covered with shingles, and is stained a deep red color. Dimensions: Front, 34 ft.; side, 41 ft., exclusive of piazza. Height of ceilings: Cellar, 7 ft.; first story, 9 ft.; second, 8 ft. 6 in.; third, 8 ft.

The entrance is through a vestibule into the hall, which is trimmed with white wood and treated with white enamel. It contains an ornamental staircase with white balusters and newel posts and a mahogany rail. The reception-room is treated in a similar manner, and it is separated by an archway supported on posts, with paneled bases. The library is finished in mahogany, and is provided with a bay window with a paneled seat, and an open fireplace furnished with a tiled hearth and facings and a mantel. The dining-room is finished with quartered oak, and it has a fireplace with tiled facings and hearth. The butler's pantry has a separate china closet, with bowl, dresser, and cupboard, and it has also drawers, dresser, etc. The kitchen is trimmed with white wood finished naturally, and it is provided with a sink, pot closet, rear stairway, and a large entry, which is ample enough to admit ice box.

The second story is trimmed with white wood, treated with ivory white paint. It contains four bedrooms, five closets, linen closet, and a bathroom, the latter furnished with porcelain fixtures and exposed nickel-

The exterior was built with a view of having a minimum cost of maintenance, the walk being of common rough brick and half timber work. The exterior woodwork is of cypress, left to weather finish, and the panels between timbers are plastered with lime and cement mortar in proportion to make it tough and durable. The roof is covered with shingles. The exterior metal work is of copper. The exterior trim is not painted, nor will ever require paint, for it improves with age, instead of deteriorating as painted work does.

The first and second floor plans are given in the illustration. It will be noted that the closets are large, and are all well lighted and ventilated wherever possible. The vestibule has a tiled floor, and is reached from the level of the street. Upon entering, a short flight of stairs leads to the level of the hall. The interior throughout is trimmed with white wood treated with old ivory white paint.

The hall has a paneled wainscoting and a wooden cornice, and it contains an ornamental staircase of painted balusters and a mahogany rail. The reception-room is treated in an attractive manner, and has an open fireplace furnished with marble facings and hearth, and a mantel of Colonial character. The library is furnished with bookcases built in, and a bay window seat. The living-room is a very handsome apartment, and has a low paneled wainscoting, a beamed ceiling, with pilaster effect, and an open fireplace with facings and a hearth of tile and a quaint

Colonial mantel. An overmantel, formed by the pilasters, has a painting placed in the panel. The window seat, with the cluster of windows over the same, forms one side of the room, while at the opposite side of the room are French windows, opening out on to the piazza, which is enclosed with screens in summer and glass in winter.

The dining-room has a paneled wainscoting and a wooden cornice, and the wall space is covered with a crimson and white design of a large and artistic figure. The fireplace has tiled facings and hearth and mantel, with seats on either side. The rear hall is conveniently located, and the butler's pantry, of large dimensions, is well fitted with drawers, dressers, and cupboards, bowl, dumbwaiter, and a lift from the basement to the third floor.

The main staircase has a broad landing, containing a nook, with a paneled seat extending around the same, over which is a cluster of small windows. This floor contains five bedrooms, linen closet, and two bathrooms, the latter furnished with porcelain fixtures and exposed nickelplated plumbing. Three of the bedrooms have fireplaces, two of which have paneled seats on either side. The third floor contains the servant quarters and bath, and ample storage space, besides a studio.

Mr. Robert C. Walsh, architect, Morristown, N. J.

Flemish style, and has a paneled wainscoting, ceiling beams, and a corner seat. The kitchen is reached from the hall and also from the dining-room. It is fitted up with white porcelain sink, portable French range, gas range, pantry, etc. The woodwork is finished natural.

The second floor contains a long, roomy hall, six bedrooms, and two bathrooms; the latter are furnished with porcelain fixtures and exposed nickelplated plumbing. There are two medicine cabinets built in over the lavatory, with a plate glass mirror in the same. The third floor contains the servants' rooms and ample storage space. The woodwork in halls, bathrooms, kitchen, and pantry is of cypress, and the remainder of the house is trimmed with white wood. The side walls in the kitchen and bathroom are made to represent tile, and are treated with white paint and enamel. The first and second story floors are doubled, the top flooring being of hard wood. The hardware is of old copper finish. The house is wired for electric lights and is piped for gas.

Messrs. Oakley & Son, architects, Elizabeth, N. J.

#### STABLE SIGNS AT "DREAMWOLD," THE ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS.

ONE of the most interesting features of Mr. Thomas W. Lawson's great estate at Egypt, Mass., shown on page 104, is the varied and beautiful wrought iron signs

#### A RESIDENCE AT CHESTNUT HILL, MASS.

THE residence which is illustrated on page 105 was built for Mr. Thomas H. Wales, Jr., at Chestnut Hill, Mass. It is designed in old Dutch Colonial style, and is constructed throughout of red brick laid in white mortar. Important features are the terrace at the front, with its massive balustrade, and the imposing entrance way, with its stately pilasters on either side. The trimmings are painted white. The roof is covered with shingles and left to weather finish. The terrace is provided with a floor paved with twelve inch Dutch tile. Dimensions: Front, 60 ft.; side, 45 ft., not including the terrace and piazza. Height of ceilings: Cellar, 8 ft. 6 in.; first story, 11 ft.; second, 9 ft.; third, 8 ft. 6 in.

The plan is that of a Colonial house, having a central hall with rooms on either side. The vestibule has a coat closet on one side and a toilet room on the other. The hall is treated with white enamel paint, and its staircase, with Colonial columns extending to the ceiling, is the principal feature. These columns, and the balusters and risers, are treated with white enamel. The treads are of oak, and the rail is of mahogany. There are also a paneled wainscoting and a massive wood cornice.

The living-room is treated with white enamel, and is provided with bookcases built in, a bay window with



THE HALL—THE RESIDENCE OF THOMAS H. WALES, JR., ESQ., CHESTNUT HILL, MASS.

#### RESIDENCE OF ALBERT B. DAVIES, ESQ., NEATHERWOOD, N. J.

THE residence illustrated on page 102 was built for Albert B. Davies, Esq., at Neatherwood, N. J. It has a brick foundation with stone footings, and the superstructure, of wood, is covered on the framework with sheathing boards. Iron lath are placed on the first story, and this story and cellar wall are coated with rough stucco. The second story and gables are covered with shingles and stained a reddish brown, while the trimmings are painted an ivory white. The roof is also covered with shingles and is stained natural. The veranda in the front of parlor has concrete floor and concrete copings around the same. The front door porch is of concrete, and the entrance is made to a vestibule which is level with the front stoop. There are steps which lead from the vestibule to the reception-hall. This hall, 16 x 18, opens from the rear of the same to a balcony, and at either side of the door is a paneled seat, over which are placed narrow windows of English type. This hall is finished in Flemish style, and contains a staircase, which extends up over the main hall entrance door, and opening from the stair landing is a door leading to a front balcony.

The parlor is treated with white enamel, and has a tiled fireplace with a cabinet mantel. The windows are in the design of the old English style glazed with clear glass. The library is finished in the Flemish style, and has bookcases built in and an open fireplace built of brick. The dining-room is also treated in the

attached to the stables and other outbuildings. These signs are each of a distinctive design, and consists of a bracket to which is attached a swinging sign ornamented with figures of horses with or without men or other animals, indicative, in each case, of the particular use of the building to which it is attached. Thus the private stable exhibits a driver mounted in a high cart driving two horses in tandem; the racing stable exhibits a man driving a fast trotter; the farm stable exhibits a huge work horse; the hospital stable exhibits a horse with an attendant veterinarian; the brood mare and foaling stables exhibit mares with their young. A crowing rooster naturally forms the sign of the bantam house, and the cow bespeaks the cow stable. A very considerable interest attaches to these signs, not only by reason of the extremely clever way in which the contents of the buildings are indicated, but also because of the very interesting design of the iron work to which they are attached.

Detailed account of Mr. Lawson's property appeared in the BUILDING MONTHLY for October in the series on "Notable American Houses."

THE site is an important element in the designing of a house. It can never be neglected nor ignored. The successful house is successful largely because its design is especially fitted for one site and for no other. This is an important factor in house design which is often forgotten.

paneled seat, and an open fireplace furnished with marble facings and hearth and a Colonial mantel. The library is trimmed with black walnut. There is an open fireplace of Roman brick, with facings and a hearth of the same, and a mantel of excellent design. On either side of the fireplace bookcases are built in. The room has a wood dado and cornice. The dining-room, a very large, spacious room, is trimmed with oak. The ceiling is beamed, and a paneled wainscoting is provided, extending around the room. The fireplace is built of Indiana limestone, and has a hearth of Dutch tile, a mantel-shelf, and overmantel. The butler's pantry is trimmed with pine and finished natural. It contains a sink, drawers, dressers, dumbwaiter, and a stairway to the cellar and also to the third floor.

The second floor contains the owner's room, nursery, two guest rooms, two bathrooms, dressing-room, and large closets. The owner's dressing-room contains an open fireplace and wardrobes built in. The bathrooms are paved and wainscoted with enameled tile, and are fitted with porcelain fixtures and exposed nickelplated plumbing. The third floor contains one guest room, three servants' rooms, and bathroom, cedar closet, and a trunk room. The cellar, or basement, contains the kitchen, pantries, storerooms, cold storage, furnace, and coal rooms. The space is well utilized and admirably arranged, and the fittings are of the most modern description.

Messrs. Winslow & Bigelow, architects, No. 3 Hamilton Place, Boston, Mass.



### THE COUNTRY HOUSE OF GEORGE McCULLOUGH MILLER, ESQ., MORRISTOWN, N. J.

THE country seat of George McCullough Miller, Esq., at Morristown, N. J., which is illustrated on pages 100 and 101, is a house of noble character, and is planned and designed in a pure Colonial style of the Georgian period. The building is constructed of wood, and the entire exterior is covered with clapboards, and is painted pure white, including the Ionic columns, which are two stories in height. The hall, eighteen feet in width, runs directly through the house; at its end is a Colonial staircase, rising up to a broad platform, which forms a balcony; a short flight of steps rises up to the second floor from this platform. Underneath this landing is an open fireplace, built with tiled facings and hearth, and a mantel of Colonial style furnished with columns, etc. The hall is trimmed with white pine, painted white enamel. It has very handsome door casings and a paneled wainscoting.

The drawing-room is treated in a similar manner as the hall, and has an open fireplace with Mexican onyx facings and hearth, and a mantel of Colonial style. On either side of the doorway leading into the library there are niches built in and furnished with shelves for bric-à-brac, etc. The library is also trimmed with white pine treated with white enamel. There are paneled wainscotings, bookcases, and an open fireplace built in. The den is conveniently placed, with an outside entrance, and is fitted with a paneled seat with closets on either side.

The dining-room is trimmed with mahogany. It has a paneled wainscoting, beamed ceiling, and an open fireplace. The butler's pantry, of unusual dimensions, is well equipped with all the best modern conveniences. The butler's room is on this floor and is entered from the service hall. The second floor is treated with white paint, and contains a den, four bedrooms, linen closet, and three bathrooms, besides two servants' rooms in the extension. Three of the bedrooms and the den have open fireplaces. The bathrooms are furnished with porcelain fixtures and exposed nickelplated plumbing. There are several rooms, besides ample storage space, on the third floor. The cellar, or basement, contains a kitchen, servants' hall, bathroom, store pantry, butler's pantry, laundry, cold storage room, furnace and fuel rooms.

Mr. Charles Alling Gifford, architect, 18 East Seventeenth Street, New York.

### A GATE LODGE AND STABLE AT ROSEMONT, PA.

THE photographs and plans shown on page 99 present a combination gate lodge and stable at Rosemont, Pa. The building, as designed, presents an admirable exterior effect, and an interior arrangement that is complete in all of its many details. The building is constructed of Port Deposit granite, quarry face, and is laid up in broken range, with very wide pointing. The cut stone trimmings are of Indiana limestone. There is some good carving on the medallion in the front gable, and the heavy oak beam over the entrance to the front shed is ornamented in a similar manner.

Great care has been taken to insure a very well lighted and ventilated stable. Advantage has been taken of all the available space in order to accommodate as many horses and carriages as possible in the least amount of space. The carriage house, which occupies the center of the plan, separating the stable from the living quarters of the building, is lined from the floor to the ceiling with Eastern hydraulic press bricks; a wainscoting is formed by using dark Pompeian brick, with lighter bricks above. The floor is cemented. The ceiling is beamed with chestnut, and is finished to a dull gloss. There is no woodwork or plaster to be damaged by the moving of carriages. There is a separate room for carriage washing to the left of the shed as one enters the carriage house. The stable is trimmed with yellow pine and is stained and varnished. The floor is laid with a three-inch plank, and it has a one and five-eighth inch maple floor on top, and all carefully drained to the gutters. Special attention has been given to the drainage system of the en-

tire building. In the stable proper, an iron gutter with perforated cover runs behind the stalls, with a branch half way up into each stall. Each box stall has a separate drain. The harness room is conveniently located, and is furnished with all the best modern conveniences.

The living quarters of the building, which form the main entrance to the estate, contain all the improvements of a first class house. This part of the building is trimmed with white pine, and is treated with ivory white paint. The first floor contains a sitting-room, a central hall, dining-room, and a kitchen, while the second floor contains four bedrooms, closets, and a bathroom. The part of the building over the stable contains ample storage space for hay, etc.

Messrs. Duhring, Oakie & Zeigler, architects, Philadelphia, Pa.

### SUN PARLORS.

THE addition of a sun parlor to a house has become a frequent feature of modern building. It is, of course,



ESTATE OF THOMAS GRINNELL, ESQ., NEW BEDFORD, MASS.



ESTATE OF MRS. EDWARD C. JONES, NEW BEDFORD, MASS.

### OLD-TIME GARDENS.—See page 92.

in most cases, simply a porch enclosed with glass; sometimes a structure on the roof serves for this purpose and is equally available. Illustrations on page 103 show two sun parlors of different types. One is from the house of Franklin Payson, Esq., at Portland, Me., of which Mr. John Calvin Stevens, of the same city, was the architect. The other room is built on the roof of General Harrison Gray Otis's house at Atlanta, Ga., of which Mr. John Krempel, of the same city, was the architect. The latter room serves the double purpose of a solarium and a conservatory.

### NATHANIEL HAWTHORNE ON ARCHITECTURE.

It is in his note books that Hawthorne is best seen as a critic of architecture. And yet it is hardly fair to call his notes "criticism." They were jotted down at the moment for himself alone, and were meant simply to assist in keeping alive an impression. Hawthorne in his journals is in undress, and, as his son has reminded us, is entertaining, and not asserting, opinions and ideas. The New England novels and stories may be almost left out of account in an inquiry concerning

Nathaniel Hawthorne and architecture. They were all written before Hawthorne had seen any real architecture at all. And the romance "Transformation," written with the fullness of a residence in Rome, is concerned more with painting and sculpture than with architecture. The note books, however, are full of passages of great interest describing Hawthorne's impressions of well-known buildings both in England and Italy. The value of his criticism is that the writer comes to his subject with a perfectly fresh mind and, above all, with a mind full of a pure love of the beautiful, and with a controlling sense of artistry in his nature. This supreme sense of artistry is manifest in the literary craftsmanship of his American tales, but till his visit to Europe it had never been brought face to face with the creations of the painter, the sculptor, and the architect. "The House of the Seven Gables," it is true, presents us with a strong picture of a New England dwelling—a seventeenth-century timber-framed house—but the colors, though strong, are not distinct. The house, although it gives its name to the book, is not its central figure, as the cathedral of Paris is in Victor Hugo's great novel. It is but the setting of the story, and the impression left of it is rather a vague one. Though Hawthorne gives many details concerning the building, you can not reconstruct it from his pages. This was no doubt because, to use his own words, "I never had any particular house in my mind when I wrote the story. It was just a fancy of my own."

But it is in "The House of the Seven Gables" that he puts into the mouth of one of his characters these curious words: "We shall live to see the day, I trust, when no man shall build his house for posterity. Why should he? He might just as reasonably order a durable suit of clothes—leather, or gutta-percha, or whatever else lasts longest—so that his great-grandchildren should have the benefit of them and cut precisely the same figure in the world that he himself does. If each generation were allowed and expected to build its own houses, that single change, comparatively unimportant in itself, would imply almost every reform which society is now suffering for. I doubt whether even our public edifices—our capitol, state houses, city halls and churches—ought to be built of such permanent materials as stone or brick. It were better that they should crumble to ruin once in twenty years, or thereabouts, as a hint to the people to examine into and reform the institutions which they symbolize." This idea, of how we are crushed down by the dead-weight of the past, is a constantly recurring one with Hawthorne, and finds expression over and over again in his journals. The British Museum is a nightmare to him on this account, but in other moods he sees a more cheerful side to the picture, and even rejoices over such links with the past as our Gothic cathedrals afford.

We must not literally take it as Hawthorne's own thought that each generation should build its own houses, but one of his preferences for Gothic architecture lies, perhaps, in the fact that he found the medieval ruins of England apparently far older and more decaying than the classic ruins of Italy. "The Italian climate," he says in "Transformation," "robs age of its reverence and makes it look newer than it is. Not the Coliseum, nor the tombs of the Appian Way, nor the oldest pillar in the Forum, nor any other Roman ruin, be it as dilapidated as it may, ever give the impress of venerable antiquity which we gather, along with the ivy, from the gray walls of an English abbey and castle. And yet every brick or stone which we pick up among the former had fallen ages before the foundation of the latter was begun. This is owing to the kindness with which Nature takes an English ruin to her heart. She strives to make it part of herself, gradually obliterating the handiwork of man, and supplanting it with her own mosses and training verdure, till she has won the whole structure back. But in Italy, whenever man has once hewn a stone, Nature forthwith relinquishes her right to it, and never lays her finger on it again. Age after age finds it bare and naked, in the barren sunshine, and leaves it so."

That it was not altogether a matter of climate that Hawthorne had in his mind we may deduce from an entry in his journal about this time, in which he says, "Everything of Gothic origin has a faculty of conveying the idea of age; whereas classic forms seem to have nothing to do with time, and so lose the kind of impressiveness that arises from suggestions of decay and the past." This marks a great change from the speaker in the Seven Gables. And a little later, still in full sympathy with the past, he says, "Roman ruins do not impress me with their antiquity. They belong to quite another system of society and epoch of time, and in view of them we forget all that has intervened betwixt them and us, so that we look across a gulf to the Roman ages, and do not realize how wide the gulf is."

After some months of residence in Italy, with much time given to pictures and sculpture and architecture, he writes, "I am partly sensible that some unwritten rules of taste are making their way into my mind; that all this Greek beauty has done something towards refining me, though I am still, however, a very sturdy Goth." And later he writes, "There is something, I do not know what, but it is in the region of the heart rather than in the intellect, that Italian architecture, of whatever age or style, never seems to reach."

Two of Hawthorne's criticisms of Italian buildings of different age and style may be given here. The first is of Giotto's campanile at Florence. "It is like a toy of ivory," he says, "which some ingenious and pious monk might have spent his lifetime in adorning with scriptural designs and figures of saints; and when it was finished, seeing it so beautiful, he prayed that it might be miraculously magnified from the size of one foot to that of three hundred. This idea somewhat satisfies me, as conveying an impression how gigantesque the campanile is in the mass and height, and how minute and varied in its detail. In the gem room of the Uffizi you may see fifty designs elaborated on a small scale, that have just as much merit as the design of the campanile. If it were only five inches long it might be a case for some article of the toilet; being two hundred feet high, its prettiness develops into grandeur as well as beauty."

St. Peter's he declares to be very ineffective "like all the other architectural works of Michel Angelo." "He has made of it as little as could possibly be made of such a vast pile of material. He balances everything in such a way that it seems but half of itself. It is woeful to think how the vast capaciousness within St. Peter's is thrown away, and made to seem smaller than it is by every possible device as if on purpose."

Although during the time he was in England, Hawthorne lived mostly in Liverpool and its neighborhood, he was in the habit of taking long excursions, and by this means saw a great deal of the country. He has put on record his impressions of some dozen English cathedrals, including Lincoln, Lichfield, York, and Salisbury. These four seem to have impressed him the most. But he is always conscious of his want of real understanding of architecture (he speaks of "the audacity of my ignorance"), is in despair at his attempts to describe what he has seen, and feels that "it is wicked to look at these solemn old churches in a hurry." Nevertheless his impressions are full of a very real interest, and his criticisms show acumen and knowledge, even if it is not real understanding.

At his first sight of York Minster he is not greatly impressed "because it is rectangular in its general outline and in its towers, and seems to lack the complexity and mysterious plan which perplexes and wonderstrikes me in most cathedrals." But a year later he unreservedly gives his allegiance to York. "York Cathedral is the most wonderful work that ever came from the hands of man. Indeed, it seems like 'a house not made with hands' but rather to have come down from above, bringing an awful majesty and sweetness with it; and it is so light and aspiring, with all its vast columns and pointed arches, that one would hardly wonder if it should ascend back to heaven again by its mere spirituality."

He compares Lincoln with York. "Its (Lincoln's) exterior is certainly far more beautiful than that of York Minster; and its finer effect is due, I think, to the many peaks in which the structure ascends, and to the pinnacles which, as it were, repeat and reecho them into the sky. York Cathedral is comparatively square and angular in its general effect; but in this at Lincoln there is a continual mystery of variety, so that at every glance you are aware of a change and a disclosure of something new, yet working an harmonious development of what you have heretofore seen."

Lincoln, indeed, "took possession" of him, and would not let him be at rest. The west front was miraculously grand and full of spiritual beauty. "It does not impress the beholder as an inanimate object, but as something that has a vast, quiet, long-enduring life of its own—a creation which man did not build, though in some way or other it is connected with him and kindred to human nature." Then, conscious that this is not criticism, he exclaims, "In short, I fall

straightway to talking nonsense when I try to express my inner sense of this and other cathedrals."

His general impression of English cathedrals he sums up in these words, "Cathedrals are almost the only things (if even those) that have quite filled out my ideal here in this old world; and cathedrals often make me miserable from my inadequacy to take them wholly in; and, above all, I despise myself when I sit down to describe them."

A modern church closely imitating the medieval architecture and arrangements draws from him this criticism, "I think the time must soon come when this sort of thing will be held in utmost scorn, until the lapse of time shall give it a claim to respect. But, methinks, we had better strike out any kind of architecture so it be our own, however wretched, than thus tread back upon the past." It was because he was such a sturdy Goth that Nathaniel Hawthorne took no pleasure in the Gothic Revival.

Of modern half-timber houses he writes, "Such houses, like all imitations of bygone styles, have an air of affectation; they do not seem to be built in earnest—they are no better than playthings, or overgrown baby-houses, in which nobody should be expected to encounter the serious realities of either birth or death. Besides, originating nothing, we leave no fashions for another age to copy when we ourselves shall have grown antique."

It may be said of Hawthorne, as of Ruskin, that his attitude to architecture was that of the moralist. He approached it from the esthetic and philosophical side, not from the historical or professional. He, however, never posed as a teacher, or even as a critic, in matters of art, and it may, therefore, be urged that to speak of his "attitude" to architecture is an exaggeration. Into all Hawthorne's appreciation and criticism the heart entered as well as the intellect. But the heart never entirely took the place of the intellect; it only corrected its judgment. "It seems to me," wrote Hawthorne, "that a work of art is entitled to credit for all that it makes us feel in our best moments, and we must judge of its merits by the impression it then makes, and not by the coldness and insensibility of our less genial moods." Between St. Paul's and Westminster Abbey there was to him "in their relations to the human heart" as much difference as between a snow-bank and a chimney corner.—F. H. Cheetham, in the Builders' Journal.



#### LOCAL MATERIALS.

GENUINE old English cottages and houses invariably add a charm and beauty to the landscape, as the old builders, by force of circumstances, were compelled to use the local materials, and what is native to the neighborhood fits in most appropriately with the scenery. The very simplicity of the builders of the seventeenth and eighteenth centuries saved them from flagrant mistakes. They made direct for comfort and convenience without troubling overmuch about ornament, and where these are there can be little real ugliness. Their work was the result of evolution growing out of the wants which the builders had to satisfy, and of the natural material at their command. I think sufficient stress can not be laid upon the fact that it was the being compelled to use only the materials to hand that made old work so restful, and that modern building suffers through our not being sufficiently self-reliant in the use of the materials of the districts we are building in. It is the present day taste for cheap ornamentation and pretentiousness, and the importation of strange features, that spoil so many houses, the bringing of the jarring notes of town life into the peace and simplicity of the country. There are very few country districts in England that do not contain even to-day much excellent local material, either stone or brick, chalk or flint, and if, before deciding the materials of our house, a careful search were made and inquiries instituted about them, one's work would not only be better, but much more appropriate to its surroundings.

There is no need, because a railroad line will bring bricks and slates within a mile or two of your new house, to use those materials. As architects, we should try to foster and encourage all local industries and trades, for it is better to build with the same materials that have been used for centuries than with those out of harmony with the district. Years ago, and to some extent even to-day, one could tell by glancing at the buildings not only what were the local materials, but almost in what part of England you were in. Each district was stamped with its special

characteristics, not of style and date, but of material. The admirable way which the Kent and Surrey builders used the tiles for roofs and wall hanging always excites our admiration; in Norfolk, where we get brick and flint buildings with pantile roofs, the latter interspersed with diapers and patterns of glazed tiles; in Berkshire and the brick districts of the Thames valley how characteristic are the simple yet dignified houses with the red walls and white windows; then the stone districts of Gloucestershire and the Midlands, the timber buildings of Cheshire and Lancashire, all speak eloquently in their own particular vernacular a language not to be mistaken or confused with the work of any other part of the country. To-day all this delightful tradition seems to be abandoned, and we use all sorts of materials, regardless of their appropriateness, in every part of the country—green Westmoreland slates in Kent, red tile hanging in the heart of stone districts, and stone houses in the center of brick ones. Consequently, like everything else, there is a spirit of unrestfulness pervading much of the country house architecture, and it does not seem to fit its surroundings, and looks uncomfortable and out of place.

Many will say this is altogether an absurd view to take—to limit the materials of a building to those obtainable in the vicinity—but I feel that, in face of the fact that such beautiful work has been done in the past with these same materials there is no sound reason, except that of mere novelty, for the introduction of foreign ones, and to break entirely with the traditional use of the local materials seems quite unnecessary. I do not, of course, mean that we should copy and reproduce the local styles of architecture, for that is merely an archeological forgery—but we should design our new buildings in as modern a spirit as we wish, but using the materials at our command, the very fact that in so doing we shall be more or less governed by the same conditions and limitations as the old builders will give our work to-day a certain continuity of design and feeling in harmony with the old. Before commencing to build in a new district, it is always advisable as well to study the old methods of building in the neighborhood, and to learn all you can from local builders and workmen. Much valuable knowledge will be obtained in this way, for it is surprising what shrewd and practical men some of these old country builders are, and what useful lessons in construction and the proper use of local material can be gained from them.

Architects, as a rule, do not sufficiently study the materials they are working in, and forget that details and moldings that look well in one material do not do so in another. In the treatment of the exterior of a country house, material has a great deal to do with the general effect, and if this is not studied properly, however well the house may be grouped and balanced, the final result will be disappointing. It is out of place to get a variety of materials in one house, such as brick and tile hanging, half timber work, rough cast and stone, as we should remember that in the country the texture and color of the walls play a far more important part than a number of features in different materials. It is the introduction of so many and various styles that makes many country houses to-day so unrestful and out of place. They should not be treated externally with nearly so much minutiae of detail as houses in town, where narrow frontages compel us to concentrate our detail and form, so as to attract attention. In the country a breadth of treatment is absolutely essential to the repose and dignity of the whole composition, and this can never be obtained if the wall surface is broken up with ornament and unnecessary detail. If we analyze the reason why so many old houses are so pleasing in appearance, I think you will find that it is because the builders have more or less confined themselves to the use of one material, and that this has been treated in a simple and rational way, and the detail generally kept as quiet as possible. It is the introduction of "features" that spoils the effect of many modern houses.—E. Guy Dawber, before the Liverpool Architectural Society.

#### PEWTER.

PEWTER has the merit of never looking common or cheap, while always looking homely and usable (says an exchange). Hence it fits admirably with the present taste for genuine primitive furnishings. For the bungalow or country house, where silver appointments might seem pretentious, the well-modeled pewter articles just fill the need.

The best pewter takes a high polish and lasts for generations. Being costlier than the nicked or lacquered wares, it is much better liked by householders who value unusual possessions.

Quaint pewter boxes for dressing-table trinkets, incense holders, and rose jars of ancient Chinese and Japanese make are among late importations. Some of these are hammered out in designs similar to those seen in ivory carvings.



## The Household

### WEDDING COFFERS.

THE very agreeable suggestion is made that wedding coffers may "come in" again. It has been a couple of hundred years or more since they went out, and they would, therefore, be so very novel to the present generation as to be entirely new. The coffers, of course, formed part of the wedding outfit of every bride, and often were genuine works of art, those of rich and noble brides being exceedingly costly and very beautiful. Even now they are still regarded with a species of veneration in Holland, the Dutch women being especially jealous of them and rarely selling them even if in actual want. The indefatigable collector, however, is not disturbed by sentimental opposition such as this, and hence many of the great museums have acquired numerous examples of them, and individual collectors have also obtained splendid specimens. The art value of these coffers is often very great, and a revival in their use would offer interesting opportunities to the wood carvers and painters of the present day.

### THE SMALL FAMILY AND THE HOME.

PHILOSOPHICAL observers continue to bewail the fate of the small family and its efforts to provide itself with a home, at once pleasant and happy, interesting and agreeable. Here is Mrs. Loomis rising up at a recent conference on home economics to protest that "the small family can no longer compete with large establishments, because the larger household offers club life among employees instead of isolation in the midst of a family; the work of a specialist instead of a jack-of-all-trades; and independent existence instead of the life of a slave." This is very sad, and it would be sadder if it were completely true. Home life does, to a considerable extent, depend on the servant problem, and that has never yet been solved to the satisfaction of all concerned, and perhaps never will be, the tendencies of things and life being what they are. But the real difficulty is not in the size of the family, but in the extent of the income. Families of two, served by a retinue of servants, are not unknown in America, and rich bachelors, housed in the same sumptuous manner, are heard of from time to time.

### THE EQUIPMENT OF SICK-ROOMS.

THE furnishing and arrangement of sick-rooms are valuable aids to recovery. A room on the sunny side of the house is to be preferred, and it should have two windows at least and an open fireplace. The top floor is often found the best. In cases of contagious diseases the room should be completely isolated from the rest of the house. The bed should be placed so the patient can look out of the window and in the lightest part of the room. It should stand entirely free, except at the head, so the nurse can approach it from either side. Metal beds are found to be the most desirable. Use as little furniture as possible, and all of it should be of a sort readily cleansed. A couch for the nurse is often essential. Rugs are to be preferred to carpets, as they can be more readily cleaned. Carpets, however, need not be removed, but should be covered with sheets, and changed or disinfected by sprinkling as often as needed. Hangings should be removed. The desired temperature will vary with the disease, but in all cases must be kept even.

### A WEDGWOOD DINING-ROOM.

A DAILY paper describes a dining-room built up around a genuine Wedgwood sugar bowl and cream pitcher. The owner was lucky enough to possess these treasures, and the very happy idea occurred to her to utilize them as the leading element in the furnishings of her dining-room. It is all in Wedgwood green and white. The woodwork is white, that pure white of the cameo designs on the Wedgwood ware. The walls are covered with book linen in that deep sage green of the Wedgwood. There is a white plate rail all around the room, and the colors in the different bits of china on that are the only contrast to the general green and white of the scheme. There is a green and white cotton rug on the floor and white muslin curtains at the windows. The dining table and chairs are all in white enamel, the chairs upholstered in green denim to match the walls. They were ordinary cheap chairs, home enameled. The table ferns were in a Wedgwood dish, and the table china was pure white. It was a fine idea, carried out in a very beautiful but quite simple manner, and enormously successful.

## The Garden

### FRUIT TREES FOR THE ROAD.

THE planting of fruit trees for the shading of roadways is a suggestion that has been brought forward more than once. On the face of it the idea has quite a good deal to be commended in it. Nothing more beautiful could be imagined for the spring, and nothing more delightful for the small boy could be thought of for the fall. Thus a very large part of our population would have something to be thankful for and something to rejoice in. It is true the interests of those who take delight in blossoming trees and those who enjoy taking forbidden fruits are somewhat wide apart; this, however, would seem but the more firmly to establish the wisdom of the suggestion. As a matter of fact, however, the small boy is himself quite a sufficient reason against such planting near the cities and villages. The mimic man simply can not be taught to know that fruit which does not grow on his father's grounds does not belong to him. Farmers and others certainly would not feel encouraged to plant fruit trees unless they had a reasonable expectancy of gaining for themselves the larger part of the crop.

### A VERBENA REVIVAL.

THE verbena, both as a bedding plant and one grown for exhibition purposes, has long ceased to be a favorite both with gardeners and with the public. It is, however, a useful, brilliant plant, and some years ago some special efforts were made to develop it which, for a time, were enormously successful. As early as 1855 an English florist produced some remarkable plants, with flowers of great size and beauty. Somewhat later another gardener produced some plants with large and finely rounded "pips" borne on bold, symmetrical trusses. These plants were grown under glass and for exhibition purposes only, and never came into bedding use. Still another experimenter brought the verbena to a high degree of development as a bedding plant. In making new efforts to improve the verbena the grower should seek to produce rounded flat "pips" well displayed on bold trusses. The profusion of bloom which characterizes this plant can only be secured by careful selection.

### THE WINTER GARDEN.

THERE is hardly a limit to the plants, especially bulbs, which may be grown in the winter season. The hyacinths are, of course, the favorite, but the narcissi is almost equally popular. The anemones are not in such general use, but are very similar to the narcissi. They should be planted early, one bulb being allowed to each four-inch pot. An inch or more of broken crockery, charcoal, or pebbles should be placed in the bottom of each for drainage. A soil composed of rich garden loam and old, well rotted manure in equal parts, with a trowelful or two of soot and ashes to a dozen pots, insures brilliancy of flower and foliage. The extreme point of a hyacinth or narcissus bulb may be allowed to appear on the surface of the earth, but anemones should be covered about an inch. Each pot should be plainly marked with date and contents, watered moderately, and kept in a dark place, but care should be taken that rats and mice do not nibble these succulent seeds during the hibernating period.

In something like six weeks these may be removed to a sunny window, with an even temperature of about 70 degrees. Water freely, so that the saucer is never dry. This is especially important with anemones, as even a temporary failure in the supply of moisture is almost sure to blast the buds. A window garden should have plenty of fresh air, but be shielded from drafts, as these often prove fatal to flower stalks. A portable screen that can stand between the garden of bulbs and any sudden inroad of air is a valuable possession. Removal to a north or east window will greatly prolong the blossoming time of most bulbous plants. As anemones, however, send up a succession of flower buds, they do best in continuous sunshine.

If a more rapidly grown plant be desired, nothing better than the Chinese sacred lily can be found. These require but two or three weeks' time after planting and less care than any other class of bulbs. Place as many as can stand in the bottom of a bowl or glass dish. As the necessary nourishment is contained in the bulb, and the water only serves to set it free, there is no danger of crowding. Cover these with pebbles about half way up, and then cover the whole with water. Chinese lilies do not require a high temperature, much finer results being secured in something like 56 degrees, and no harm being done in instances where a thin coating of ice has formed over the water.

## New Books

### MODERN COTTAGE ARCHITECTURE.

MODERN COTTAGE ARCHITECTURE. Illustrated from works of well-known architects. Edited by Maurice B. Adams, F.R.I.B.A. London: B. T. Batsford. New York: John Lane, 1904. 30 pp., 50 plates. Price \$4.50 net.

The building of small houses, of the class popularly known as cottages, continues to attract general attention, notwithstanding the greater interest manifested in larger dwellings. Mr. Adams's book is of English origin, and the examples shown are exclusively English; but his collection of drawings is a very varied one, his designs are well chosen, and, as illustrations of the work of the best known contemporary English architects, have a real and distinct value. The plates have been made direct from the drawings, and include perspectives, elevations, and plans.

The introductory essay prefixed to the book presents an interesting analysis of the problems concerned in cottage design. The author discusses such practical questions as the economic conditions, the economical aspect of artistic buildings, methods of appropriate building, use of local materials, site, sanitary arrangements and fittings, water supply, arrangement and aspect of buildings, windows, roominess, parlor plans, staircases, doors, bedrooms, heights of rooms, ventilation, fittings, baths, outside shelters, use of materials, and other topics, including a consideration of the "week-end" cottages which have recently become popular. The text, in addition, includes comments on the subjects illustrated, and a very complete descriptive list.

The book is a serviceable one, full of interesting suggestion, and very comprehensively illustrated. The illustrations include houses of varying cost, some of the cottages being quite simple and low in price, while others are of more elaborate design. It is a useful book, dealing with an important subject.

### A HANDBOOK FOR THE ARCHITECT.

THE ARCHITECT'S AND BUILDER'S POCKET-BOOK. A handbook for architects, structural engineers, builders, and draughtsmen. By Frank E. Kidder, C.E., Ph.D. 14th edition. xix + 1656 pp. New York: John Wiley & Sons, 1904. Price \$5.

Dr. Kidder's Pocketbook has been so long before the public that at this late day hardly more than a hearty welcome for the newest edition is needed. First published nearly twenty years ago, it has steadily made its way in professional favor, until, with its fourteenth edition in the present year, the author is enabled to make the agreeable announcement that 20,000 copies in all have been issued. This undoubtedly speaks more eloquently of the success and value of the book than any words of critical comment or praise.

The present edition, however, is very much more than a reissue of earlier printings, but is a complete rewriting, which has very much extended the scope of the original book, and introduces many features not to be found in the earlier issues. The author's point of view in the present revision has been to make a reference book which should contain some information on every subject, except design, likely to come before an architect, structural engineer, draughtsman, or master builder, including data for estimating approximate cost, to thoroughly cover the subject of architectural engineering so far as practicable in a handbook, and to present all information in as simple and convenient a form as possible as would be consistent with accuracy. Where it has been impossible, for lack of space, to go extensively into any subject, references to other books have been given. No effort has, in fact, been spared to make the book convenient and valuable. It is a book so abounding in information, so well arranged, so admirably selected as to contents, as to be at once welcomed with universal satisfaction. It is helpful in a thousand ways, and thoroughly convenient and useful.

The result is a stout volume of nearly 1,700 pages, printed on thin paper, and illustrated with more than 1,000 engravings. The volume is, of course, much too large for a pocketbook; but, as the author rightly intimates, the convenience of having all this material in one book quite offsets any awkwardness of bulk. The pages are small in size, the illustrations likewise much reduced, but the presswork is admirable, and leaves nothing to be desired. The contents of the book very completely fulfil the promises of the title page. Its value is enhanced with a capital index.



## SMOKY CHIMNEYS.

THE chief cause of smoky chimneys is the lack of air supply at the base. A cubic foot of fresh air must be provided for every cubic foot of smoke that passes up the chimney. In an airtight building time is often the architect's ally; for every minute settlement and every infinitesimal shrinkage provides an additional air inlet. But buildings specially constructed should have special ventilation. Even then some flues will smoke, because tenants persist in closing up the inlets. Warmed fresh air is almost unprocurable; of all the warm-air stoves in the market I do not think that one can produce twenty-five per cent. of the air which it consumes, and most of them dry the air too much and warm it in an inaccessible chamber. Anything in the nature of a plenum system is costly to maintain, and even more costly to install. Architects, therefore, can only supply fresh air from the outside, and trust that the tenants will use the inlets. But tenants, more often than not, consider fresh air a draft and ventilators an unnecessary fad. Air inlets are least objectionable when near the ceiling, as that position allows the fresh air partially to lose its chill before reaching the occupants of the room; high inlets are also useful as outlets, when the fire is not lighted. The best form seems to me to be a "hit-and-miss" grating at the side of a chimney breast into a flue that finishes just above the roof, with cast iron gratings on opposite sides. I have several times seen air inlets brought close to the grate—in one case the air was led into a copper curb perforated at intervals; the arrangement was ingenious, but in practice was not a success, as the air whistled out and blew the ashes about the room. Inlets direct through the wall, on the old Sherringham principle, are generally inconvenient, unless the room has two outside walls; otherwise the best lighted and most valuable space becomes the most drafty. Fanlights and ventilators through internal walls are more likely to be used. A flue, no matter how carefully constructed, does not have a fair chance unless an adequate air supply is introduced through the ceiling, floor, outside or inside wall.

Given an air supply, the next consideration is the flue. The majority of architects and builders feel certain that a 14 inch by 9 inch flue is much too large; and the proportion is stupid. The opening at the junction of the grate and the flue is seldom 36 square inches, and often much less. Chimney-pots vary in area from 40 to 60 square inches. Therefore, why so many by-laws insist on over 120 square inches for the flue is incomprehensible. A 9 inch by 9 inch flue can be more thoroughly cleaned, and works well enough in districts where the by-laws permit. A 9 inch flue-liner has an area of about 60 square inches, and a 10 inch flue-liner of 78 square inches; my experience seems to show that they whisk the air away much more quickly than a parged 14 inch by 9 inch flue, in spite of its greater area. Liners fail to hold soot, which is continually falling down into the fire; and with no fire they make a down-draft smell very strongly of soot. The absence of corners seems to invite a down-draft, or else the smoothness tends to make the upward action in some flues so strong that they pull from others. Parging is a non-conductor, but has little value, and is seldom permanent.

Chimney-pots have this in common: the more efficient, the uglier; but the reverse is not as true, as potmakers would have us believe. Pots with the ordinary zigzag rim cause an up-draft much as the V in the body of a kite forces it up. Louvres, trumpet-mouths, spirals, and many other horrors force up the smoke when the wind blows; but even an Archimedean revolving cowl or a lobster-back is useless in still weather. Trumpet-mouthed blowers, or drain-pipes with the socket outward, built into a stack at an angle of 45 degrees, a few feet below the pot, will sometimes cure a flue that is only troublesome when the wind is in one particular quarter. The value of at least two bends is always insisted on in specifications, but in practice the bends are often scamped, and are difficult to provide in the attics, especially when the fireplace comes between other flues. The reason for the undoubted advantage of bends is not obvious. The contraction which is usual in making them may have something to do with it; they may act slightly as baffle-plates, and, of course, the top bend catches the rain and helps to keep the lower part of the flue dry; probably under various atmospheric conditions all these reasons may have some truth in them. The height of the chimney stack is of the greatest importance; but again the reason is not obvious. When the wind blows at right angles to the ridge, the velocity must be greater nearer the ridge, and probably steadier.

When the wind is not at right angles to the ridge, I can not see how it can affect the flue. If the straightness of the flues in the chimney-stack above the roof helps the force of the smoke, it is curious that bends should be useful below. There can be no appreciable difference in temperature or atmospheric pressure at the top of two flues, one of which is five feet higher than the other; yet we know that five feet extra height to a stack may work wonders. That it is advisable to keep a flue warm is more obvious, for as soon as the smoke approximates in temperature to the atmosphere its tendency to rise is lost. All outside stacks should have 9 inches of brickwork between the flues and the weather. Single flues should be avoided, and above the roof it is better to have 9 inches of brickwork on the most exposed side and end, even if there is only 4½ inches round the rest of the chimney.

The plan of a stack and the direction of the wind seem to have no connection. A chimney much exposed to a west wind is just as likely to be satisfactory with its axis north and south as east and west. It is better to have the middle pots in a long stack raised a little above those at the ends, but the flue at the leeward end is just as likely to draw well as that at the windward.—Hastwell Grayson, before the Liverpool Architectural Society.



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.

MOAIC. W. Mainzer, London, England. September 13 769,704  
PLASTIC COMPOSITION FOR COVERING FLOORS. H. Linnekogel, Feuerbach, Germany. September 13 770,082  
BUILDING BLOCK. G. Geraerds, New York, N. Y. September 6 769,539  
SLATING. J. H. Munro, Newark, N. J. September 6 769,664

## CARPENTRY.

GRILLE WORK. C. W. Smith, Norwalk, Ohio. September 13 769,719  
WEATHER STRIP. W. Peace, Hamilton, Canada. September 6 769,626  
WEATHER STRIP. W. Steger, Marietta, Ohio. September 20 770,330  
WEATHER STRIP. C. M. Rhodes, Steubenville, Ohio. September 20 770,444

## CONSTRUCTION.

COMPOSITE STRUCTURE. H. A. Crane, Jersey City, N. J. September 13 769,941  
BASE FOR PILLARS. C. E. Zimmermann, Syracuse, N. Y. September 13 769,976  
SHEET METAL LINING FOR WALLS OR CEILINGS. Ball and Wernet, Canton, Ohio. September 6 769,245  
WALL AND FLOOR BRACE. J. A. Ettler, Beaumont, Texas. September 6 769,339  
LAYING ROOFS. J. H. Munro, Newark, N. J. September 6 769,624  
COLUMN FOR METAL WORK. T. L. Sewell, Wilmington, Del. September 6 769,641  
WALL FOR BUILDINGS. F. E. Kidder, Denver, Col. September 6 769,655, 769,656  
ROOF COVERING. J. H. Munro, Newark, N. J. September 6 769,663  
WALL STRUCTURE. G. B. Waite, New York, N. Y. September 20 770,616  
EXTENSIBLE CENTERING SUPPORT. G. B. Waite, New York, N. Y. September 20 770,617, 770,618  
CONCRETE AND IRON STRUCTURE. C. Redlich, Vienna, Austria. September 27 770,983  
WINDOW. O. M. Edwards, Syracuse, N. Y. September 27 771,133  
SPACE ECONOMIZING HOUSE CONSTRUCTION. W. C. James, Cucamonga, Cal. September 27 771,153, 771,154  
FIREPROOFING AND FIRE EXTINGUISHMENT.  
FIREPROOF DROP CURTAIN. J. H. Channon, Chicago. Ill. September 13 769,788  
WINDOW CONSTRUCTION. E. H. Lunken, Cincinnati, Ohio. September 13 769,803  
FIREPROOF SHUTTER. Beckmann and Bohle, St. Louis. Mo. September 13 770,042  
INTERIORLY-VENTILATED FIREPROOF WALL. L. D. Ewing, Akron, Ohio. September 6 769,257  
FIREPROOF METAL WINDOW FRAME AND SASH. W. B. Gervais, Chicago, Ill. September 20 770,571  
FIREPROOF SHUTTER. S. B. Sexton, Jr., Baltimore, Md. September 27 770,827

## HARDWARE.

LOCK. B. Phelps, Seattle, Wash. September 13 769,767  
HINGE. W. Lovette, Marine Harbor, N. Y. September 20 769,768, 769,769  
DOOR OR WINDOW LOCK. W. F. Martin, New York, N. Y. September 20 770,595, 770,597

## HEATING AND VENTILATION.

WINDOW VENTILATOR. D. Schafer, Sacramento, Cal. September 6 769,570  
FLOOR REGISTER. J. T. B. Slater, Cleveland, Ohio. September 20 770,326  
VENTILATING APPARATUS. W. C. Wheelstone, Savannah, Ga. September 27 770,947

## MISCELLANEOUS.

SCAFFOLD SUPPORT. W. J. Murray, New York, N. Y. September 6 769,395

## PLUMBING.

SIPHON CLOSET. B. O. Tilden, New York, N. Y. September 13 770,027  
WATER CLOSET. H. C. Waldmann, Kokomo, Ind. September 6 769,520  
VALVE. J. Lally, Waltham, Mass. September 27 770,811  
WATER CLOSET BOWL. Helfrich and Kingsbury, Evansville, Ind. September 27 771,068  
WATER CLOSET BOWL. R. Schmalmack, Evansville, Ind. September 27 771,098  
TUB. J. A. Caldwell, Rochester, N. Y. September 27 771,124

## TOOLS.

PLANE. E. A. Schade, New Britain, Conn. September 6 769,408  
ROOF FRAMING TOOL. J. W. Morrison, Colorado Springs, Col. September 27 770,770  
SELF-OILING PLANE. J. Weyland, Los Angeles, Cal. September 27 770,881



## RUBEROID ROOFING.

THE United States Government has placed an order for 864,000 square feet of ruberoid roofing, which is manufactured solely by the Standard Paint Company, No. 100 William Street, New York. The last order by the government for this material was for 1,500,000 square feet, and another previous order was for 1,000,000 square feet. These orders, together with several smaller requisitions, aggregate about 3,500,000 square feet of ruberoid roofing which has been ordered by the United States Government for the Philippines during the last two years. The significant feature of this late order is that the specifications were for asbestos. Upon further consideration, however, the government decided that, in view of the fact that ruberoid roofing had met every climatic and mechanical condition on the government buildings in the Philippines, it would be most advisable to use that instead of changing to untried materials. It is understood that the roofing just purchased is for use at the government possessions in the Philippines. Ruberoid roofing was selected a few years ago by the government because of its peculiar suitability to hot and variable climates, its convenience of application, and its low cost of maintenance. It will not melt from extreme heat, and will not rot from constant dampness and exposure, and is highly fire-resisting. Furthermore, it does not require constant attention to keep it in repair. Ruberoid roofing has become a staple article, is used on the finest structures, and is moderate enough in price for use on cheap buildings. Since it can be applied by any handy man, it is extremely useful in isolated places, where an experienced roofer can not be engaged.

## COMBINATION INDEX.

THE index described in this article is for use in indexing ledgers, letter books, commercial reports, and records of all kinds. Names are indexed by the first two and three letters of the surname, giving from four hundred to four thousand divisions of the alphabet, printed in notches or thumb holes cut in the edges of the leaves. The index opens instantly at any combination by the use of one hand, is specially adapted to the use of bookkeepers, and is no vowel index. It is called the "Burr Index," and is arranged with a projecting alphabet printed in gold letters on Russia leather folded over sheet steel. These letters are printed on both sides, projecting one-half an inch from the edges of the leaves, even with the book covers. When the book is open, the alphabet is seen at a glance, from either side, at any letter from A to Z, together with the combination of each letter. It can be used with either hand for any length of time without turning the covers of the book. The thumb holes are cut in the edges of the leaves, in which appear combinations of all names in use, and are so arranged when the index is opened at any letter, that the combinations of each letter appear in full, and do not conflict with those of any other letter. The combinations are also printed in the body of the book to locate the entry of the names. The location of any name may be found without any experimental turning of the leaves. For example, to find the name Swan, it is only necessary to turn to S, when the combination SW is seen at once, and only one turn of the hand is required to find the page. The same plan is used throughout the index. It is made by the Burr Index Company, No. 336 Asylum Street, Hartford, Conn., which firm also makes the Burr's "Record Index," the "Time-saving Trial Balance Sheet," and "Index Scrap Book." The "Record Index" is for the use of banks, insurance companies, assessors, State, county, town, and city clerks, for indexing deeds, wills, births, marriages, deaths, tax lists, court records, etc., and they have a capacity from 1,000 to 2,000,000 or more names. The company also furnishes card indexes subdivided by the Burr system.

## METAL FENCES AND FENCE POSTS.

THE anchor fence post, as it stands to-day, is the product of over ten years' practical experience. Since 1893 it has undergone some slight changes, but the essential feature—the ground anchorage of the posts—is the same as then. Briefly described, it is a "drive post," through whose base two braces or blades are driven diagonally into the ground, and when so placed interlock with the base, bracing it on both sides of the fence. The fences mentioned in this article have been chosen for notice for one rea-



son, because, as far as we know, they are the only examples of the kind that use galvanized posts. The policy of the manufacturers has been not to produce the cheapest fences that can be turned out, but rather those that will be durable and will keep in line true after erection. With a view to carrying out this idea, the makers decided some years ago to galvanize the post bar of all line posts, that is, the post proper, exclusive of the blade anchorage. As this anchorage is entirely embedded in the ground, and is thus protected from the action of the weather, galvanic treatment of this part of the post is unnecessary; so also with the end and corner posts, as they are made of a very heavy section of steel. This important improvement makes the fences practically indestructible, and has been made without any increase in cost to buyers. The manufacturers of these steel fence posts and iron fences also make wrought iron railings and entrance gates, back stops for tennis courts, poultry runs, tree guards, pipe, hurdle, netting, lawn, field, and pasture, special fence, etc. It will be a help to those interested in new styles of fence to procure catalogue No. 25, issued by the manufacturers, the Anchor Post Company, No. 15 Cortlandt Street, New York, N. Y. All the specifications and illustrations are complete and clear, and associated with the particular fence, post, or gate system are real pictures of the localities they surround. Suggestions in reference to enclosing dog kennels, deer parks, sheep folds, poultry runs, tennis grounds, hunting boxes, cemeteries, orchards, hedges, gardens, race courses, etc., are bound to be appreciated by the seeker after information. One good feature of the scope of work laid down by the company, so as to give exclusiveness to the ownership of a design, is the non-repetition of special features. Each gate, for instance, is a distinct and individual accomplishment. The beautiful and imposing entrance gate at Woodlawn Cemetery, Woodlawn, from designs by Charles W. Leavitt, Jr., consequently can only be seen at that place. The firm makes a specialty of designing and constructing ornamental ironwork of all kinds for country property. It has built many miles of iron railing, and is familiar with details of invention and construction, and having lately put up a new factory, equipped with the best modern machinery, it is able to execute any service in the near future. Iron railings can be set either on a stone wall having a substantial coping, on stone blocks, or on cast iron foundations set in the ground. The use of iron foundations is recommended, as they are better in many cases than stone work.

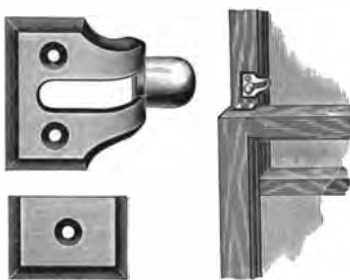
#### CYCLE MOTORS.

THE 1904 Barker motor is for all practical purposes a perfect machine. It requires little care in operation, runs a favorable length of time without attention, and can be repaired in case of accident with unsurpassed ease. It is a two cycle motor, and has less parts than the four cycle type. It has no gears, cams, or valves to wear or burn out, can be made very light for a given horse power, and it reduces vibration over one-half, as it receives two impulses to one for the four cycle. C. L. Barker, Norwalk, Conn., has recently established a new shop, with modern improved machinery and tools of the most approved types. With these advantages, dies, jigs, and gages for all the various parts of the machine are made so much better and so much more accurately than formerly, reaching on the most approved lines results that insure hard service. The French developed the four cycle motor, but owing to mistakes in design, they failed in experiments with the two cycle, which American skill and ingenuity have brought to a degree of efficiency surprising to the foreigner. Recent experiments made in France with an American type of two cycle and a French four cycle motor brought out the fact that for a given bore and stroke the former develops twice the power of the latter; and the fuel consumption, power considered, about the same in either type. Ideas introduced with the Barker motor are now being copied by many gas engine manufacturers. It was the first of its class built with the upper crank case, cylinder and head all in one piece, and with a self-contained and detachable sparking mechanism. The motor is built for business, and while it does not have as many angles, pipes, and fittings as others, it lacks none of their desirable features. Every bolt, nut, and screw can be easily and quickly reached, and the piston and connecting rod can be adjusted, removed, or replaced without disturbing the crank shaft, fly wheel, base, or head. A fine feature is the improved form of bronze journal used in connection with the patented base which keeps a continual flow of oil on the main bearings, and insures a uniform feed to the connecting rod and piston, and also prevents leakage of oil beyond the edges of the crank shaft bearings. No attention is required beyond the filling of the oil reservoir once during a day's run. Oiling begins automatically when the engine is started, and ceases when it is shut down. The motor can be run at as high speeds as other

makes, either two or four cycle, having the same cylinder dimensions. In appearance and power the apparatus is of the best type. The design is free from a lot of unsightly bolts and connections, and the proportions and general outlines are such as to destroy a monotonous effect. Bore, stroke, and speed are not all that figure in determining the power. Good proportions and well designed parts and igniting contrivance, as well as right mixture of air and gas, figure largely in the results attained. The celebrated "Barker valve," the "Barker leveler or bubble buster," the "sparking dynamo," the "battery switch," and the "spark coil" are made by this manufacturer. Installing motors is also a part of the business, and in connection with the machine shop is a modern woodworking plant equipped with the best machinery for the building of hulls up to thirty-five feet in length. Motor boats complete are built on orders mostly, but frequently there are on hand standard and fast models.

#### WINDOW VENTILATING LOCK.

THE H. B. Ives Co., New Haven, Conn., John H. Graham & Co., No. 113 Chambers Street, New York, selling agents, are placing upon the market the Ives window ventilating lock, as shown in the accompanying illustration. It is a simple device that requires neither mortising nor the boring of holes to apply, it being fastened by screws in the ordinary way. Being a permanent fixture, it affords extra security, in addition to the usual sash fastener, and also safety for ventilating rooms. It is a sure



VENTILATING LOCK.

safeguard, quickly applied and operated, insuring sure protection against intruders; children are kept in and burglars are kept out; and, therefore, it should be used on all windows in flats as well as sleeping apartments. That this old established firm manufactures this and other specialties for windows is a sufficient guarantee of the utility of the article mentioned. A miniature forty page catalogue of window hardware specialties will be mailed free upon application to all readers of the SCIENTIFIC AMERICAN BUILDING MONTHLY.

#### CEMENT BLOCK MACHINES.

THE wide range of blocks made by cement machines, of the "Hercules" stamp, includes keystones, octagons, circular stones, squares, etc., up to twenty-four inches wide and sixty long, and gives an exact reproduction of any style of rockface, plain, decorated surface, or any combination to suit the fancy of the builder. The apparatus for their production is made by the Century Cement Block Machine Company, and it can be considered a complete plant in itself. It is adjustable and makes an unsurpassed variety of sizes and styles of stone; in fact, duplicates such stone as a complete stoneyard furnishes. It makes, in addition to hollow and solid blocks of numerous sizes, water tables, window sills, door sills, coping, curbing, etc. The officers of the company have been for many years prominent operators of yards and quarries, and also among the first to engage in the manufacture of artificial stone. Knowing the large demand for a machine that would produce such stone as is required for different purposes of the building trade, led them to place upon the market a simple apparatus that can be manipulated by unskilled labor and within reach of an ordinary capital to engage in the business. The "Hercules" cement stone machine works on a principle which is entirely different from any other. Instead of the face of the block appearing on the side when in operation, it rests on the bottom; thereby tamping directly upon the face, getting every impression of the design and enabling the use of better material for the front of the block and coarser for the back. For instance, if desiring to turn out an exceptionally fine rockfaced block, the face can be made one part sand and one cement, one-half inch thick; then place the coarser composition back of it, thus saving considerable material and getting a better reproduction of the design. There is plenty of room to tamp in this construction, allowing the use of crushed stone and coarse gravel, thus saving much cement and gaining in strength of block. It tamps on the face of the block, and gets a harder and more compact surface, and by using a thin facing, two and one, the block is more impervious to moisture. The "Hercules" is so constructed that one can use either a wood or iron pallet, and a specially designed wood pallet is furnished with the device. By using wood pallets, blocks can be removed from the machine to be cured without any danger of cracking. Blocks 8 x 12 x 24 have been made by two

laborers in less than five minutes—a result possible only where there are no cogs, levers and other intricate mechanisms. Blocks can be laid in less time than bricks, and the same area of laying takes eighty per cent. less of mortar. A strong feature of the "Hercules" is that it can use coarser crushed stone and refuse from mines in the composition. Various colors of the most expensive stones can be produced by adding to the concrete inexpensive pigments. The claim that a ten-inch hollow block wall is equal in strength to a sixteen-inch brick wall may be realized as made on good ground when noting the great strides this method of construction is making in this country. Like the cement sidewalk, the block is invading every section and hamlet of the United States. Factories are appearing or have been established in vigorous operation, that are traceable from Maine to California. At the present and probably continuous high ruling prices on lumber, stone, and brick, the advantages of erection with artificial material are evident and supreme. The substantial value of the structures made of these blocks has gained the confidence of the building interests of the present, and to this may be added the security of feeling that the future exigencies of this interest are reasonably minimized by availability of cheap material for their easy production. Illustrations of this machine, methods of operating, and groups of blocks made by it, may be had by sending for the catalogue to the address, No. 20 Canal Street, Rochester, N. Y.

#### STABLE VENTILATION AND DRAINAGE.

THE ideal stable, remarks the Evening Post, should have the horses facing north, to obtain even temperature; it should not be too large, so as to keep the animal heat under control, and not have the stable temperature either materially raised or lowered when half a dozen animals are either taken out or brought in. The ventilation should be perfect and as strong as possible up to the iniquitous "draft" point. Let the ceiling be as high as convenient, and if the wise builder has left an inch or so open all around the upper edge, where the stablemen can not stop it up, all the better. No matter where the ventilation comes from, get it, and here comes in the weak link—the uncontrollable desire of the stablemen to keep the place too hot.

Drainage is another essential. It is idle to discuss drainage methods and facilities; their efficacy all depends on the man. One of the great troubles of the stable architect and of the amateur owner is that they will persist in planning the drainage as if to be operated by the most efficient set of men in the world, instead of passably inefficient. Given sloping stalls and gutter, what can be better than the world-old central open cistern which holds the accumulation of say twenty-four hours, and overflows when full, compelling attention? This, with free flushing of gutters, either direct from the faucet or by premeditated automatic direction of all horse toilette and wagon or carriage washing and sluicing, should be sufficient for all practical purposes.

Dry, wholesome flooring under foot is an absolute necessity. Brick floors once were tabooed as unsanitary, likely to let a horse slip, liable to sweat, to chip and cut a horse, etc., but most of these defects have disappeared. The new vitrified brick does not chip or fray; it insures perfect drainage, does not hold moisture, and consequently does not sweat, and being roughed and remaining so, is better footing than anything else but ground. In many places properly arranged slats, capable of proper care, cleansing, sun baths, etc., are satisfactory; in others, beds of gravel topped with eighteen inches of earth, which can thus be constantly changed, are in use, but as usual dependent on the grade of help employed.

#### GAS COOKERS VS. KITCHEN RANGES.

It may be taken that a gas cooking stove using gas at 75 cents per 3,000 cubic feet and a kitchen range with coal at \$4.00 per ton are about on a par as to cost. It is, however, very different with gas fires. With these the price of gas should be fully twenty per cent. less than in the case of cookers, otherwise the cost is much too high to allow of their general adoption. The sale of gas for the purpose of heat and power was never cultivated, but was rather held back by the majority of our gas authorities until competition began to face them in the shape of the electric light. The wedding together of the two businesses, that of "lighting" and that of "heating and power," was simply a "marriage of convenience," and though some gas authorities claim that the price of gas should be the same to all consumers, I am not at one with them in this contention, and consider that, like all marriages of convenience, this one (light and fuel) will come to an end, unless more favor is shown to the fuel. Though the gas sold in each case is exactly similar, the cost of that which is sold for heat and power is certainly considerably less than that which is used for lighting.—Building News.

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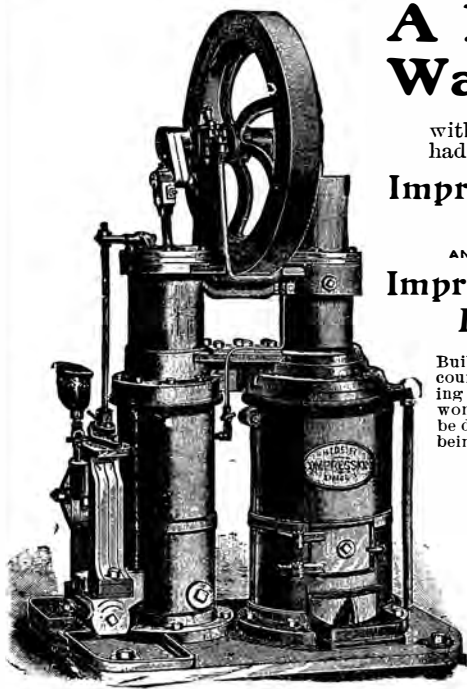
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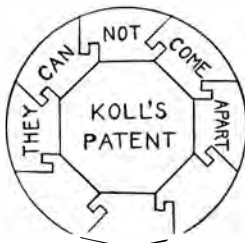
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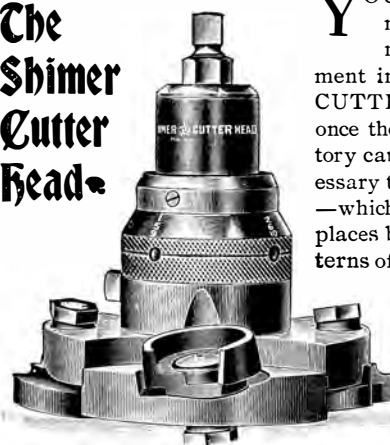


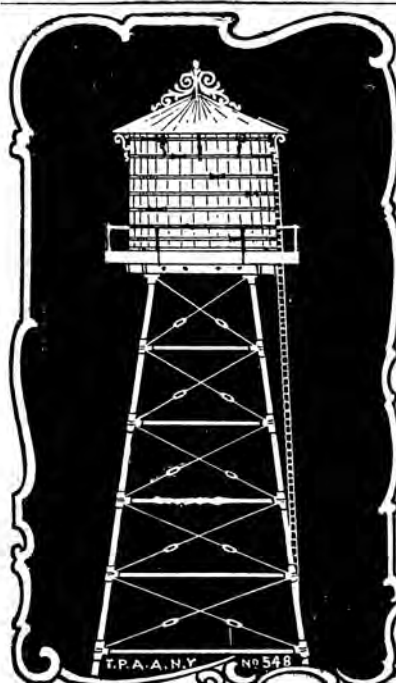
FIG. 202

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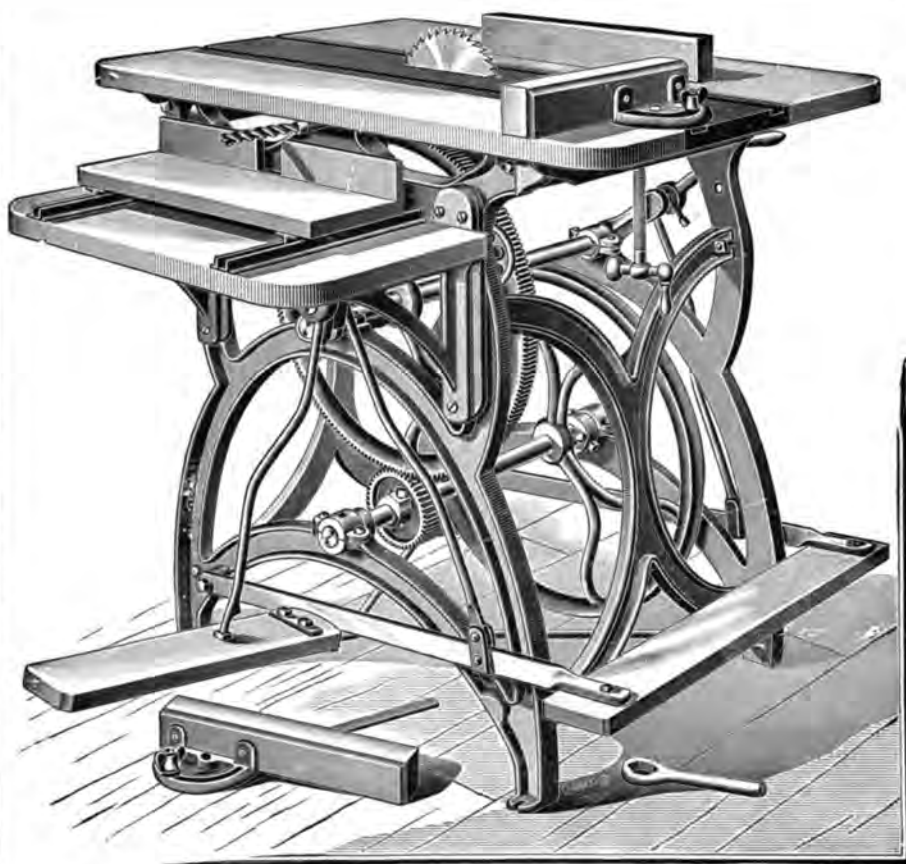
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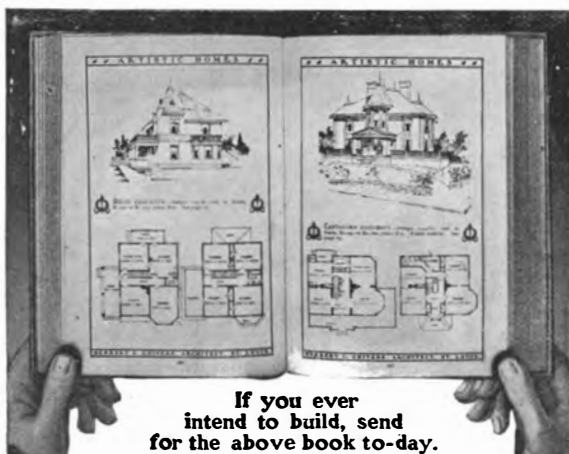
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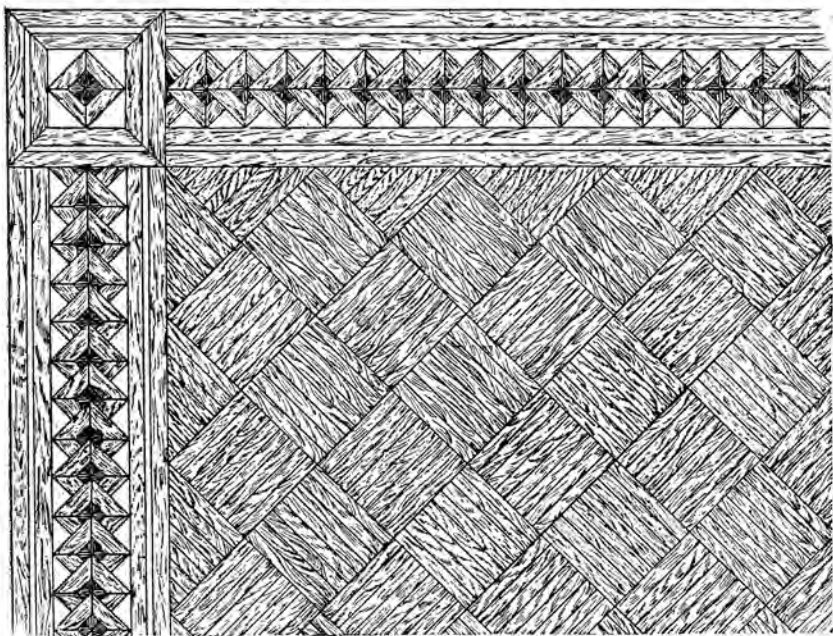


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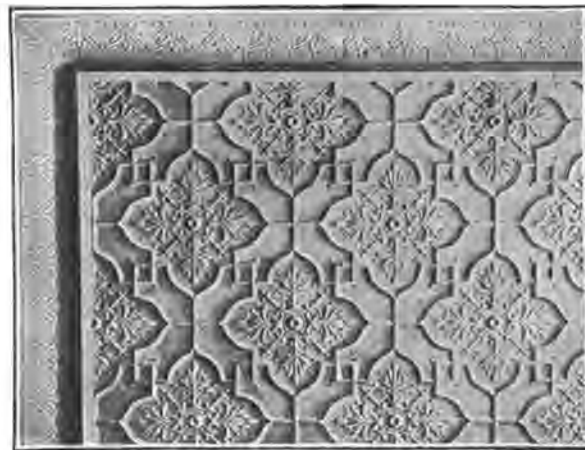
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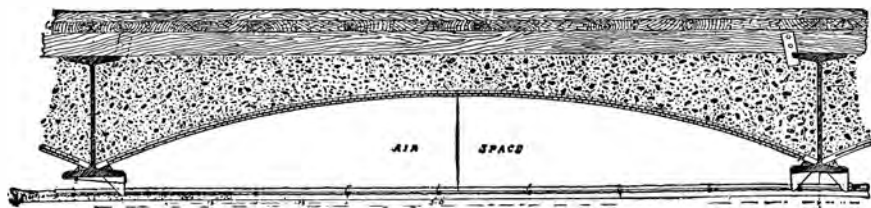
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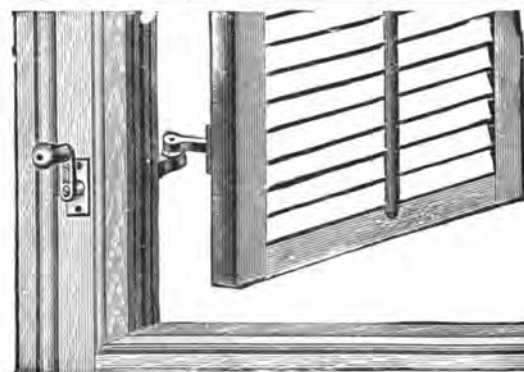
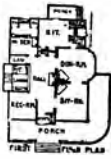
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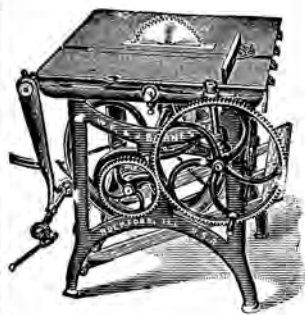
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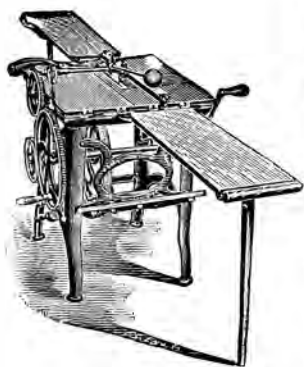
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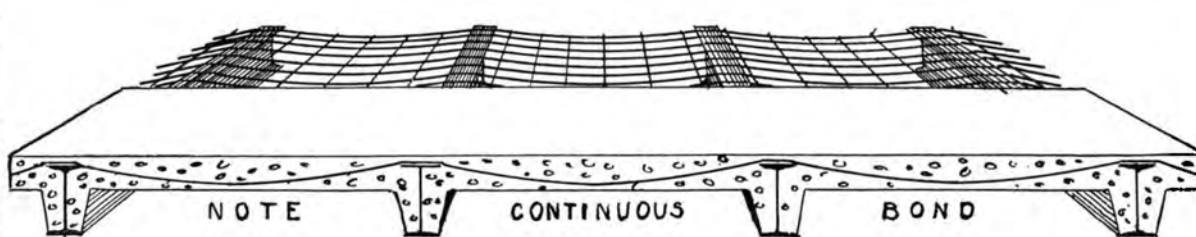


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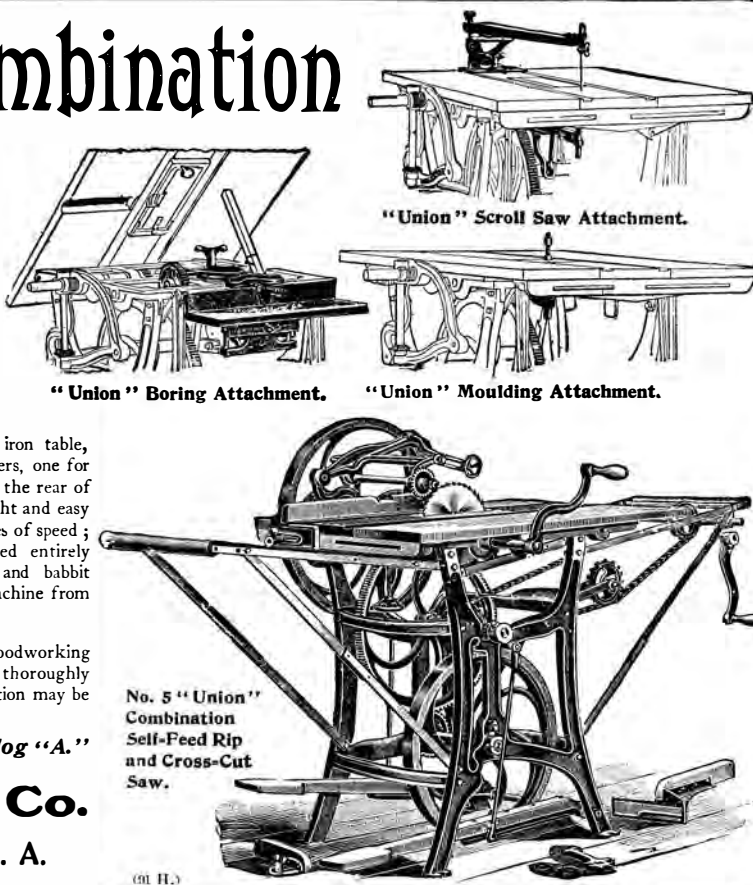
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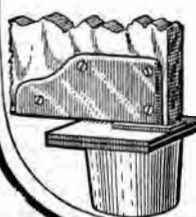
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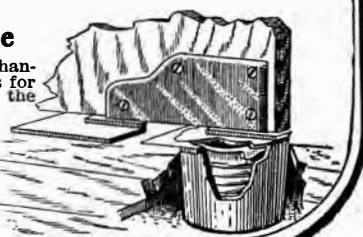


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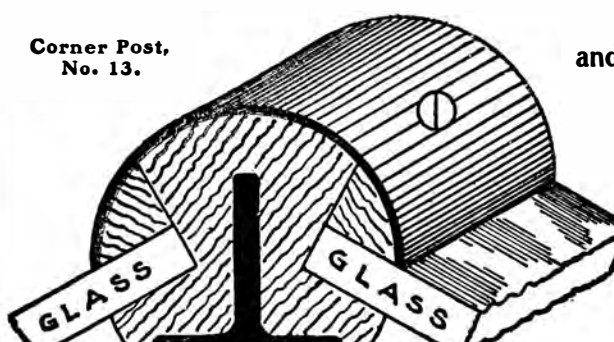
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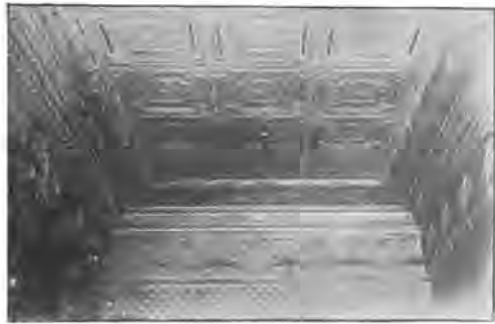
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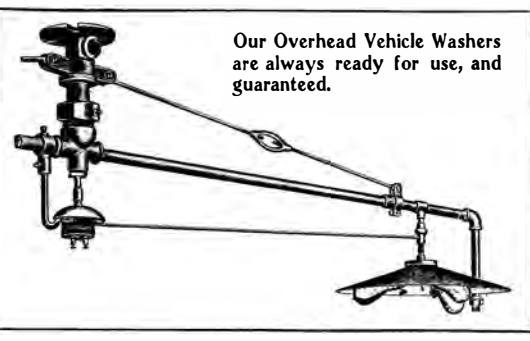
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