

SCIENTIFIC AMERICAN

Building Monthly.

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THE TERRACE IN THE GARDEN.

THE ESTATE OF HENRY W. POOR, ESQ., TUXEDO, N. Y.—See page 25.
MR. T. HENRY RANDALL, ARCHITECT.

SCIENTIFIC AMERICAN BUILDING MONTHLY

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CONTENTS

MONTHLY COMMENT: The Disadvantages of a Quiet Life.—The Declining Birth Rate and the Declining Death Rate.—“Week End Cottages.”—An Austrian Portable House.....	24
ARCHITECTURAL IDEALS	24
NOTABLE AMERICAN HOUSES.—By BARR FERREE.—The House of Henry W. Poor, Esq., Tuxedo, N. Y.— <i>Illustrated</i>	25
“BIRCH NEST,” THE SUMMER HOME OF DOUGLASS SHERLEY, ESQ., AT BAR HARBOR, MAINE.— <i>Illustrated</i>	38
THE SUMMER HOME OF E. P. MERWIN, ESQ., AT WOODMONT, CONN.— <i>Illustrated</i>	38
RESIDENCE OF SAMUEL WOOLVERTON, ESQ., AT SCARSDALE, N. Y.— <i>Illustrated</i>	39
A COTTAGE AT NEWBURGH, N. Y.— <i>Illustrated</i>	39
SCULPTURE AT THE ST. LOUIS EXPOSITION. By the St. Louis Correspondent of the BUILDING MONTHLY.— <i>Illustrated</i>	39
A SCREENED VERANDA.— <i>Illustrated</i>	40
RESIDENCE OF THOMAS DOLIBER, ESQ., AT BROOKLINE, MASS.— <i>Illustrated</i>	40
THE GARDEN OF MOSES TAYLOR, ESQ., AT MOUNT KISCO, N. Y.— <i>Illustrated</i>	40
THE HOUSEHOLD: The Care of Polished Furniture.—A Pleasant Hall.—A Household Polish	42
RESIDENCE OF W. R. ROBESON, ESQ., AT SPRINGFIELD, MASS.— <i>Illustrated</i>	42
RESIDENCE OF W. W. ORR, ESQ., AT SCARSDALE, N. Y.— <i>Illustrated</i>	42
THE GARDEN: A Hundred Years of Dahlias.—Garden Cult	42
FIRE PROTECTION: How Baltimore was Saved.....	43
CLEANING STONEMASONRY AND PRESSED BRICK FRONTS.	43
GIVING VALUE TO WASTE MATERIAL.....	43
THE CRITIC: Ruskin and Architecture.....	43
THE NURSERY: The New Nursery.—A Model Nursery	44
VENTILATION: The New York State Law.—The Ventilation of Dwelling Houses.....	44
COOLING NOTES: A Practical Example.—A New Jersey Experiment	44
THE KITCHEN: Science in the Kitchen.—A Glazed Stoneware Food Closet.—A Mexican Kitchen.—Model Kitchens	45
NEW BUILDING PATENTS: Brick, Stone, and Tile.—Carpentry.—Construction.—Elevators.—Fireproofing and Fire Extinguishment.—Hardware.—Heating and Ventilation.—Miscellaneous.—Plumbing	45
PUBLISHERS' DEPARTMENT: Improved Woodworking Machinery (<i>Illustrated</i>).—Electrically Welded Fabric (<i>Illustrated</i>).—Hot Water Heater (<i>Illustrated</i>).—A Great Rubber Store.—Corner Posts and Transom Bars (<i>Illustrated</i>).—Pure Flake Graphite	45, 46

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

MONTHLY COMMENT.

THE difficulty of quiet living has seldom been more sadly illustrated than in the case of a gentleman in Kansas City. Desiring quiet more than a home, he purchased forty-two and a half feet of land a block and a half from his nearest neighbor and four miles from his place of business. By the time he had made three monthly payments he learned that some one had bought the two lots immediately adjoining his on the north, and another party three lots across the way where a street was to run at some time in the future. Four months later thirty families “owned homes” in the block; of these fourteen had pianos, ten phonographs, four cabinet organs and one a cornet. The seeker after quiet alone was without mechanical sound makers. It can readily be imagined that, as the shades of evening fell, the neighbors did their best to make the time pass agreeably, leaving their doors and windows open while engaged in this pleasing diversion. The reporter of the case states that the phonographs were the worst. The quiet man offered his house for sale, but found no buyers, and he went back to boarding. He gave his house rent free to a Chinese laundryman, sold his furniture, and purchased a second-hand steam calliope with the proceeds. He gave this, together with a self-instructor and three tons of coal, to his heathen tenant. His revenge was complete, ample, penetrating and superb.

MR. H. G. WELLS, whose speculations on future civilizations have given him a world-wide fame, rises up in protest against the very commonly received opinion that a low birth rate is an evidence of national decay. He very rightly points out that the Russians, the Hindus, the Egyptians and most negro people have a high birth rate, but that none of them seem in a fair way to subdue the world. Moreover, he sagely points out that in taking any one year or period of years as a

criterion it is quite possible to draw deductions which are completely different from those which would have been drawn had another set of years or another people or place been chosen. His main argument, however, is that a declining birth rate need excite no alarm as long as the death rate is also on the decline. The point is an interesting one, and well worth the attention of race philosophers.

AN English magazine has been holding a competition for designs for “Week-End Cottages.” The object of such a building is to afford a simple home, inexpensive in its first cost and in its maintenance, to which the busy man can run away from town and spend as much time as possible before and after Sunday. Two plans for the practical equipment of such houses were proposed, one including those which were entirely closed when not in use, the other those which provided space for a permanent caretaker or servant. Houses of this sort are used quite a good deal in France and in other places on the Continent, but have not yet come into anything like general use in America. The chief objection is, undoubtedly, that of taking care of them. If the house could be closed and left alone when not in use the cost of such summer dwellings would be very slight. It would doubtless be found safer to have a permanent caretaker, and this would increase the expense to such an extent as to take away a good deal of the charm of picnicking, which is the chief pleasure in such places on the Continent. Most people who hire permanent caretakers are able to afford a more pretentious type of dwelling than a cottage intended to be occupied only a few days a week.

A PORTABLE house exhibited in Vienna some time ago had a number of points of interest. It was a well designed, thoroughly equipped house, so built that the whole of it, furniture and all, could be moved in two modern furniture vans. The cost of the house itself was about \$2,000, and of the furniture, fittings, etc., about \$1,000. The total weight was 25,000 kilogrammes. The house had three bedrooms, sitting-room, dining-room, servants' room, and kitchen. The absence of a bathroom was accounted for by the suggestion that such a building would probably be erected by a lake or on the seashore. It is described as a very successful experiment, well worthy of development. Truly it will be a new order of things when one can move one's house around as one moves one's trunk or cherished articles of furniture.

ARCHITECTURAL IDEALS.

ARCHITECTURAL ideals represent something very different from ideal architecture. Ideal architecture is rare and unusual, almost unobtainable and actually seldom seen or known. It does not necessarily mean the impracticable, because human genius, in its finest architectural moments, has sometimes realized the ideal in architecture in buildings which have been erected and put to some use. The Taj Mahal in India is, perhaps, the first building which comes to mind as filling every possible requirement of ideal architecture, a building of such ethereal beauty, of such wonderful art, of such exquisite taste, and so marvelously envied as to stand supreme among the ideal structures of the world. Mr. Ruskin endeavored to teach that the front of San Marco in Venice approached the ideal in meeting every requirement of beauty, and perhaps he was right; he certainly convinced many people of the soundness of his views. Gothic architecture produced many structures of a beauty so pronounced and of an art so refined that they can well be classed as types of ideal architecture. The vault of Henry VII.'s Chapel in Westminster Abbey may be taken as a type of Gothic that is at once ideal in its beauty and practical in performing its structural service as a roof. Ideal architecture, therefore, has been obtained, not once, but many times, and in many forms. It may be expressed in other words as the highest type of architectural beauty.

Architectural ideals, on the other hand, are personal beliefs and predilections. They stand for personal appreciation of architecture. They rest on knowledge, and are furthered and increased by acquaintanceship with the best monuments of architecture. They are recognized and appreciated by those who, not content with accepting the dicta of others as to the merits of buildings, are themselves judges and admirers by reason of their own knowledge and volition.

One must know architecture in order to have a sound architectural judgment. Ideals in architecture are not obtained without culture. A broad mind, a keen understanding, a fine appreciation of what is right and good and true and beautiful in architecture is essential to the development of architectural ideals. They represent a standardization of opinion, a reduction of verdicts, a comprehension of purposes and efforts. One can not adhere to an architectural ideal without a profound personal conviction that it is right. It is knowledge sublimated and refined; it can be compared not so much to the raw material, as to the rare element

obtained after many chemical reductions, the element so rare that its recovery amounts to a discovery. It is the obtaining of a central fact from a scrutiny of many facts.

And the ideal once maintained, the standard once set up, the conviction once obtained, it must stand the test of criticism and survive every possible disaster. The true architectural ideal can not be lightly shaken or swiftly discarded. One may, indeed, outgrow it; one may, in time, come to disregard it; but it has never been a true ideal if the succeeding stage does not represent a higher opinion, a more exalted view, a nobler conception.

Ideals in architecture, as ideals in other products of the human mind, are often variable. The ideals of one will not be the ideals of another; and the ideals cherished at one period of study or enlightenment will not be the ideals that will come with profounder surveys of the architectural situation. But the architectural idealist, the man with architectural ideals, will always be looking onward and upward; if he glance back it will only be in amazement that at any time his discarded views should be his or have been his own. The motto of the architectural idealist is “Excelsior.”

Ideals are judgments refined and purified through study and criticism. They are not the mere thinking the ideals are right, but the sure and certain knowledge that they are. To like a thing and to like certain kinds of things is the first step in reaching an ideal judgment, if the liking has a sound basis. But to merely like, without knowing why, without being able to buttress one's judgments with reasons, is nothing at all but the expression of a personal inclination, of the critical value of expressing a preference for watermelons over strawberries.

Architectural ideals are essential to the progress of architecture; but it is almost as bad for one community to have too many different kinds of ideals as to have none at all. The history of architecture offers many beautiful forms to which one may attach ideal preferences. It is obvious that if a dozen or twenty such ideals are turned into practical expressions in any one community the results will produce such a variety of judgments, such an abundance of different examples, such a clashing of standards, that those who have no ideals whatever in architecture will have no visible outward form of guidance to their own opinions.

It is one of the highest functions of the architectural ideal that it helps toward standardizing opinion wherever it may have opportunity of flourishing. Neither architecture nor art is helped by the multiplication of styles any more than language is helped by the multiplicity of tongues. No doubt a dozen people could be supremely happy in living in houses of as many different styles; but the sum total of architectural progress in the vicinity of such constructions would be slight indeed. Even if well done, such buildings would only mean that certain forms and styles had been well studied and certain modern archaeological translations accomplished. Of progress as progress, of realization of ideals, of useful lessons taught by ideals, nothing at all would have been accomplished.

And that is one of the important duties of architecture; to serve as a stepping stone to further advances. The architects of the middle ages, the architects of the Renaissance, did not design in several styles, but in one; and the wonderful beauty of their labor is chiefly due to this essential fact. Much of modern architectural work has been haphazard and without point. If there have been ideals they have been varied ideals. Each few years has produced a new style and a different one than has been more or less in vogue because of the genius of the architect most closely identified with it, or because of the social prominence of the persons whose buildings have set the latest fashions.

The single merit of fashion in architecture has been that disordered fashions have passed quickly away and more reasonable work taken their place. It has been a negative merit which has been harmful because it was not positive. And this variableness has been wholly without ideals behind it. Changes have come, new modes have grown popular, not because the older mode has been found insufficient, but because of the craving for novelty, the search for the new. That newer styles have sometimes been found better than older ones has been of advantage so far as it goes; but in too many cases the change has been for change only, and not because ideals have bettered and advanced.

Architectural ideals should be sought, and when found valued supremely. They mean a better architecture. They stand for architectural appreciation. They represent architectural knowledge. They mean that the inward spirit of architecture is being sought and efforts made to express it. They can not be too high—for the sordid conditions of economic building and the inexperience of unidealized architects will make our buildings at the best fall far short of even moderate ideals. But let us by all means keep what we have, and not cease from striving for more and better ones.

NOTABLE AMERICAN HOUSES*

BY BARR FERREE.

THE ESTATE OF HENRY W. POOR, ESQ.,
TUXEDO, N. Y.

THE success of the beautiful private park controlled by the Tuxedo Park Association at Tuxedo, N. Y., has been too thoroughly established and is too well known to need rehearsal in detail in this issue. It sums up and contains every element of a most brilliant success. It is near enough to New York City to be reached without an undue expenditure of time—the actual time from Jersey City is about an hour; it is situated in a region of great natural beauty, on hills and in valleys of true mountain scenery, thickly wooded; its natural water has been expanded in an apparently completely natural manner into lakes of great beauty; it has been parked with superb roads; and, crowning distinction of all, it contains some of the finest country residences in America, houses, many of them, of distinguished beauty and very interesting individuality.

Every possible element contributes to the charm of this delightful place. If not very numerous served

But the fortunate folk who live in this delightful place are not suburbanites in any sense of the term. Their place of abode is not a suburb; although an hour from the metropolis is really very close at hand—but they live in a great park of their own, suitably shut off from the rest of the world by wise restrictions; a park so large that each house has every element of privacy, and yet the whole community has a bond of comradeship from living within common grounds that gives a sense of companionship and of easy access, while still retaining a distinct aspect of individuality and privacy.

The area covered by the Park is so large that houses of great size—as many of them are—have ample grounds of their own, and are so widely spaced and so admirably distributed that there is exactly that sense of nearness that the most inveterate country lover comes to crave in time, and yet no hint of crowding, hardly a suggestion of proximity. There is no spacing off of grounds with fences, there are no sharp lines of demarcation; even the stable question has been solved in a thoroughly happy manner by common stables for those who wish them, and a few private stables for

of Mr. Lorillard is actually on higher ground, but from the entrance of the Park, and from many points within it, the Poor house is the crown and summit of the whole. And very happily it fulfils this function. Its architect, Mr. T. Henry Randall, has chosen the Jacobean style as the basis for his design, and has produced a beautiful house, stately and dignified in its parts, and admirably adapted to its position on the summit of the hill. No tower or pyramidal effect was needed to give emphasis to such a situation, but the roof line is very happily broken by the curved gable ends, the tops of which stand out free against the sky.

The house is U-shaped in plan, the hollow containing the entrance front, being away from the bluff on which it is built. This front consists of a slightly extended center, with an open porch below, and two short wings, which create an open court. The house is built of dark red and black brick, with stone trimmings. There is a two-story stone porch on each end, but the most elaborate feature of the exterior is at the main entrance—a richly carved frontispiece of stone that very happily emphasizes the entrance and harmo-



THE HALL.—ESTATE OF HENRY W. POOR, ESQ., TUXEDO, N. Y.

by trains, the traffic arrangements are doubtless ample and sufficient for the residents. A station wagon service, controlled by the Association, is so ample and complete as to leave nothing to be desired either in convenience or in moderate charges. The difficult problem of transportation is, therefore, completely solved, and one of the most awkward questions in suburban development has been settled and arranged in the most complete manner. That this is one of the most difficult problems of suburban living every suburbanite is often unhappily aware; the arrangements at Tuxedo Park seem to be absolutely perfect.

* 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 BRESE, 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. SPRAGUE, BROOKLINE, MASS., March, 1904. "THE HOUSE OF E. J. BERWIND, ESQ., NEWPORT, R. I., April, 1904. "GREY CRAIG," THE ESTATE OF J. MITCHELL CLARK, ESQ., NEWPORT, R. I., May, 1904. "BLAIRSDEN," THE ESTATE OF C. LEDYARD BLAIR, ESQ., BERNARDSVILLE, N. J., June, 1904. "KILDYSART," THE COUNTRY SEAT OF DANIEL O'DAY, ESQ., DEAL BEACH, N. J., July, 1904.

those who prefer to keep this important feature of country life entirely within their own control.

And the houses! These are not suburban houses, nor even country houses of the ordinary type as interpreted by the average standard. Many of them are sumptuous mansions, built by our most brilliant architects, costly houses of stone and brick, designed in fine types of architecture, and having every element of splendid living. One wonders momentarily, in the rapid drive through the Park, at the vast expense of bringing all this exotic material into this wilderness; yet the results have amply justified the cost, for surely, in all the regions within easy access of New York, there is no place more delightful to live in, more highly developed as to roadways and grounds, more splendidly supplied with dwelling houses. It not only seems an ideal place of residence for men of wealth—and no others can afford to live within its charmed precincts—but it must be so.

The house of Mr. Poor is one of the most notable of the many notable houses at Tuxedo. It occupies a commanding position on the summit of Tower Hill, and dominates the whole of Tuxedo Park. The house

nizes with the general architectural scheme. The whole design is quite symmetrical, although the left wing contains an addition for the service rooms, and a kitchen court enclosed within a brick wall. These parts have, however, been so subordinated as not to interfere with the general harmony and symmetry of the design.

The garden front follows out the same general idea, but the three gables here are on a line instead of being, as on the entrance front, one of each wing and one in the center. The garden front has three slight extensions surmounted with gables, each containing bay windows in two stories. All the windows are in groups or pairs mullioned with stone frames. The side porches are fine, built of stone, with stone paneled piers; richly coffered ceilings add to the splendor of these porches. The one overlooking the lake seems built directly on the cliff; it commands a superb view.

The main doorway of the house opens directly in the hall, a gallery-like apartment which runs the full length of the house across the entrance front. Immediately in face is the drawing-room; to the right is a double arched entrance to the stairs, and then the library,

(Concluded on page 38.)

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THE MANTEL IN THE DINING-ROOM.



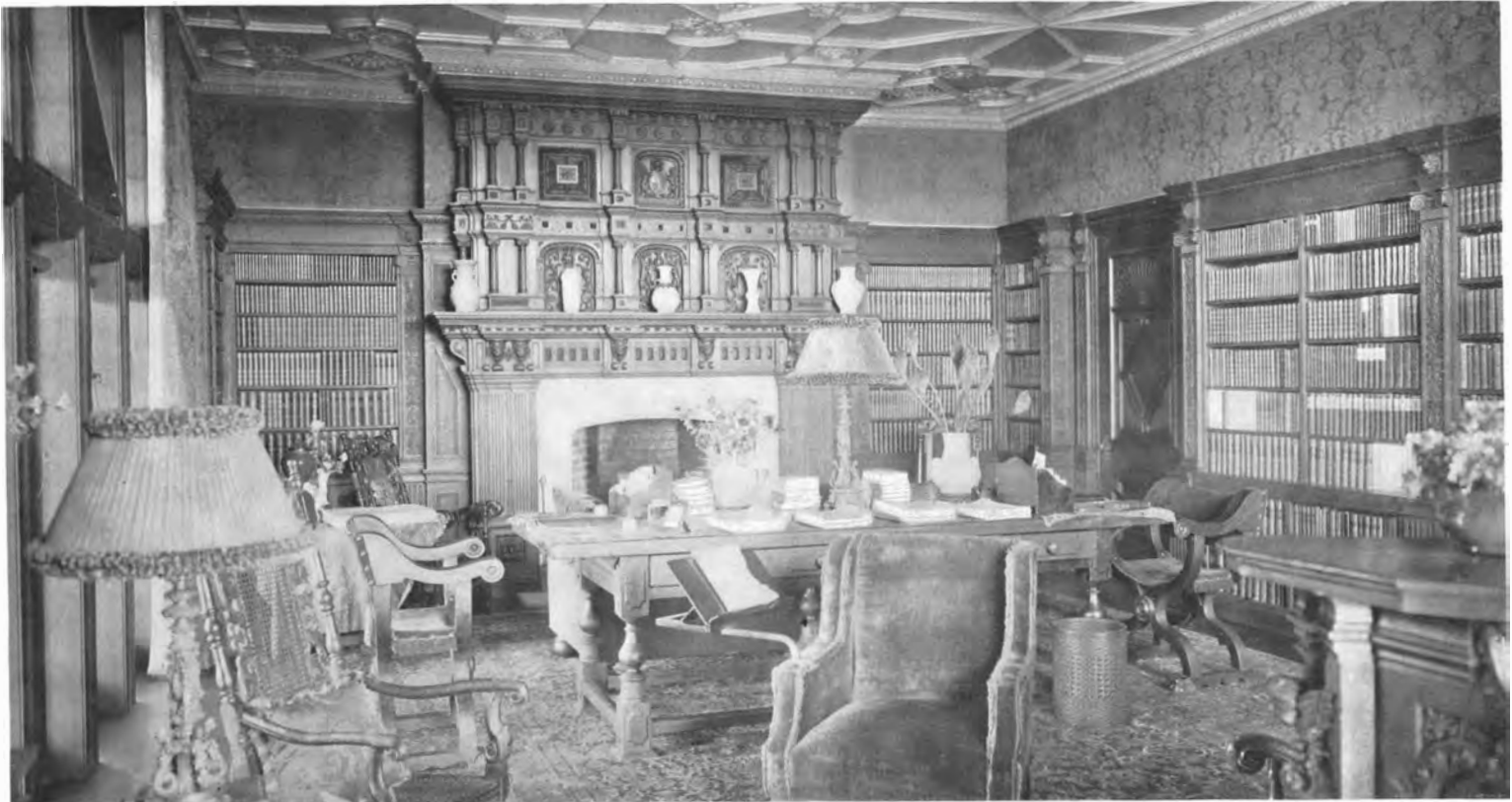
THE ENTRANCE.



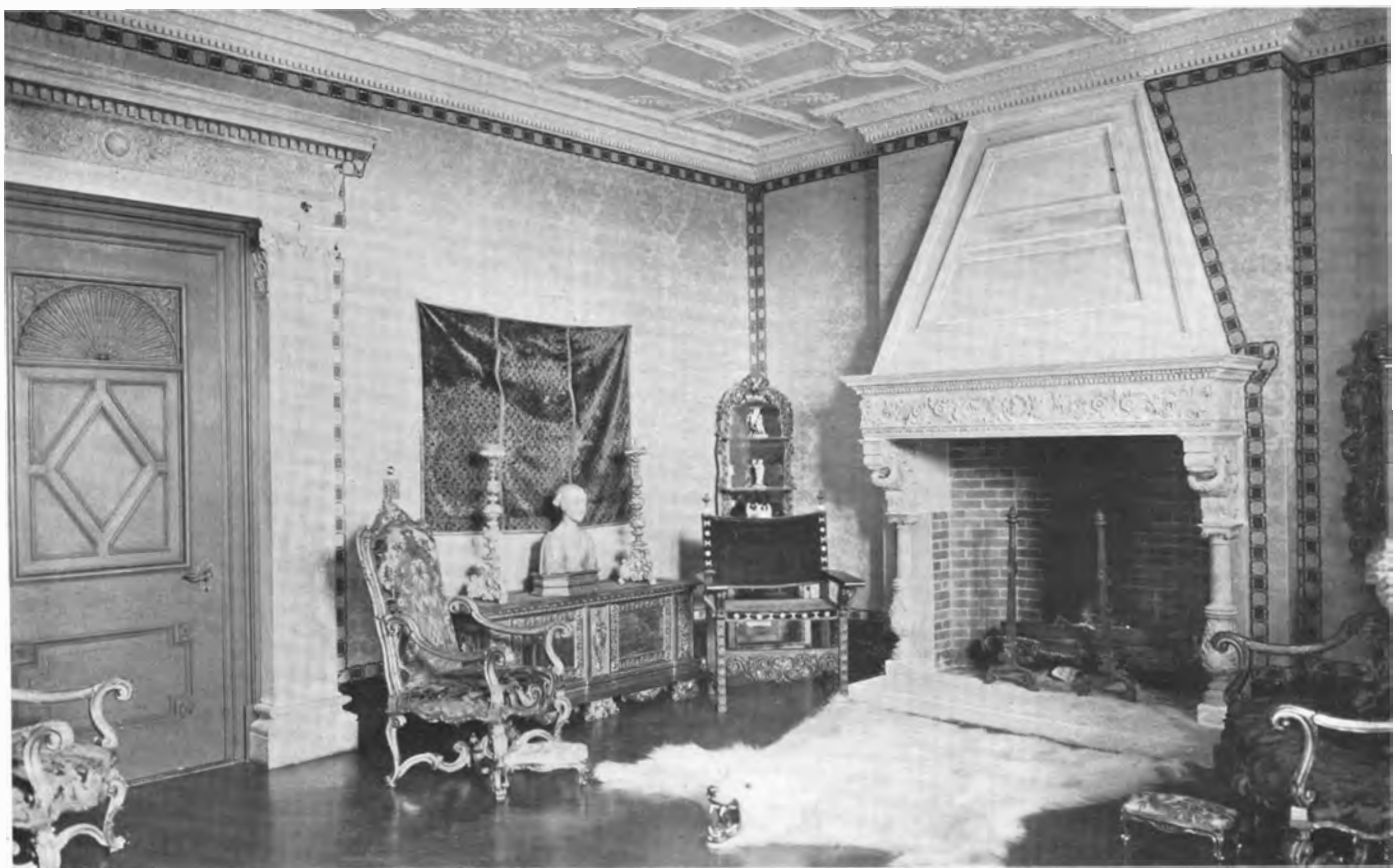
THE LOGGIA.

THE ESTATE OF HENRY W. POOR, ESQ., TUXEDO, N. Y.—See page 25.

MR. T. HENRY RANDALL, ARCHITECT.



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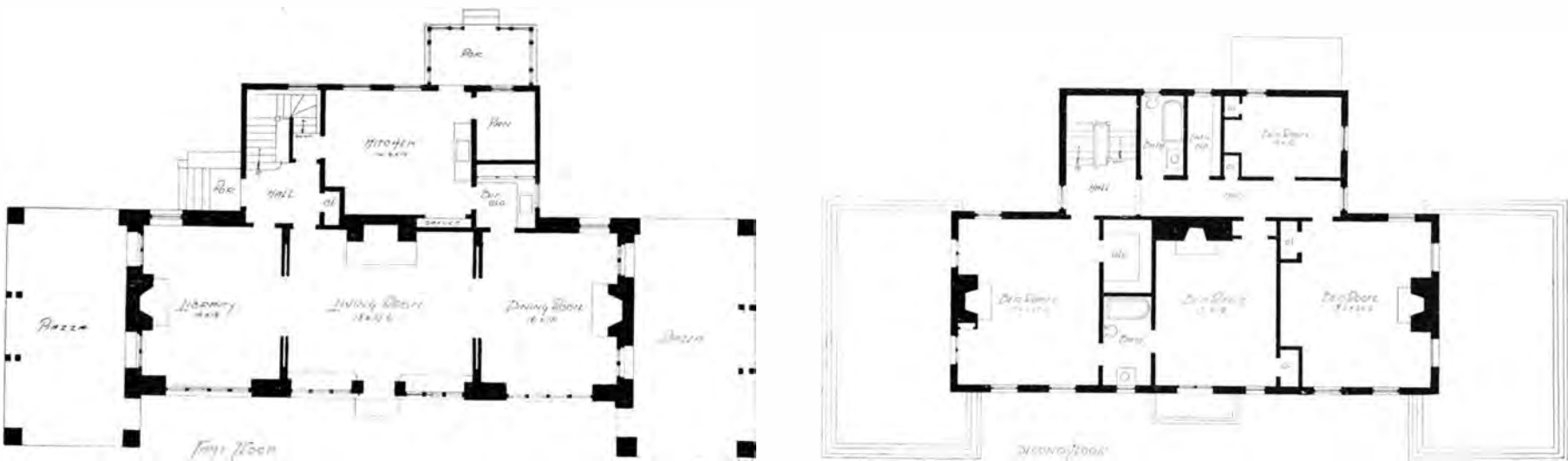
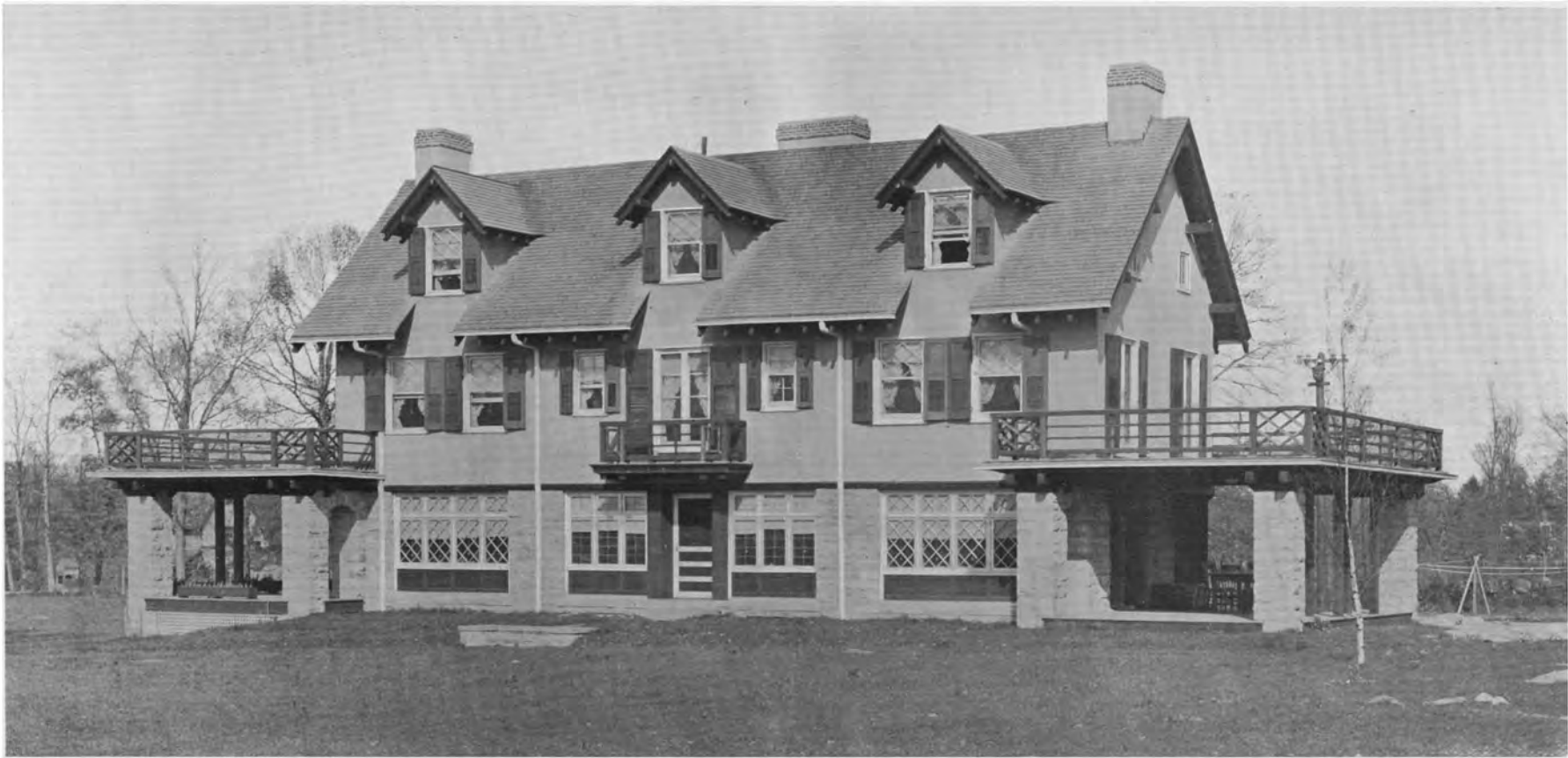
THE DRAWING-ROOM.



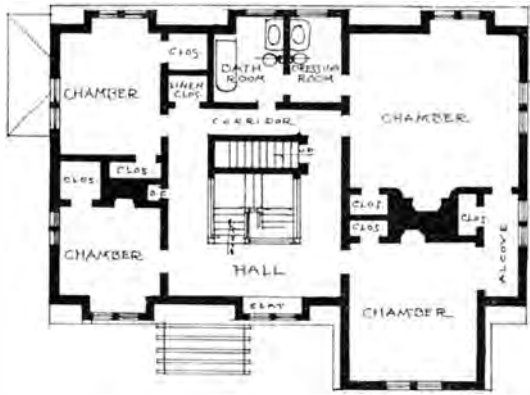
THE DEN.

THE ESTATE OF HENRY W POOR, ESQ., TUXEDO, N. Y.—See page 25.

MR. T. HENRY RANDALL, ARCHITECT.



RESIDENCE OF W. W. ORR, ESQ., AT SCARSDALE, N. Y.—See page 42.
MR. JAMES BRITE, ARCHITECT.



SECOND FLOOR PLAN.
SCALE 1/8" = 1'-0"



FIRST FLOOR PLAN
SCALE 3/8" = 1'-0"

RESIDENCE OF THOMAS DOLIBER, ESQ., AT BROOKLINE, MASS.—See page 40.
MR. J. LOVELL LITTLE, JR., ARCHITECT.



RESIDENCE OF W. R. ROBESON, ESQ., AT SPRINGFIELD, MASS.—See page 42.
MR. G. WOOD TAYLOR, ARCHITECT.



LIVING-ROOM.



DINING-ROOM.

RESIDENCE OF W. R. ROBESON, ESQ., AT SPRINGFIELD, MASS.—See page 42.

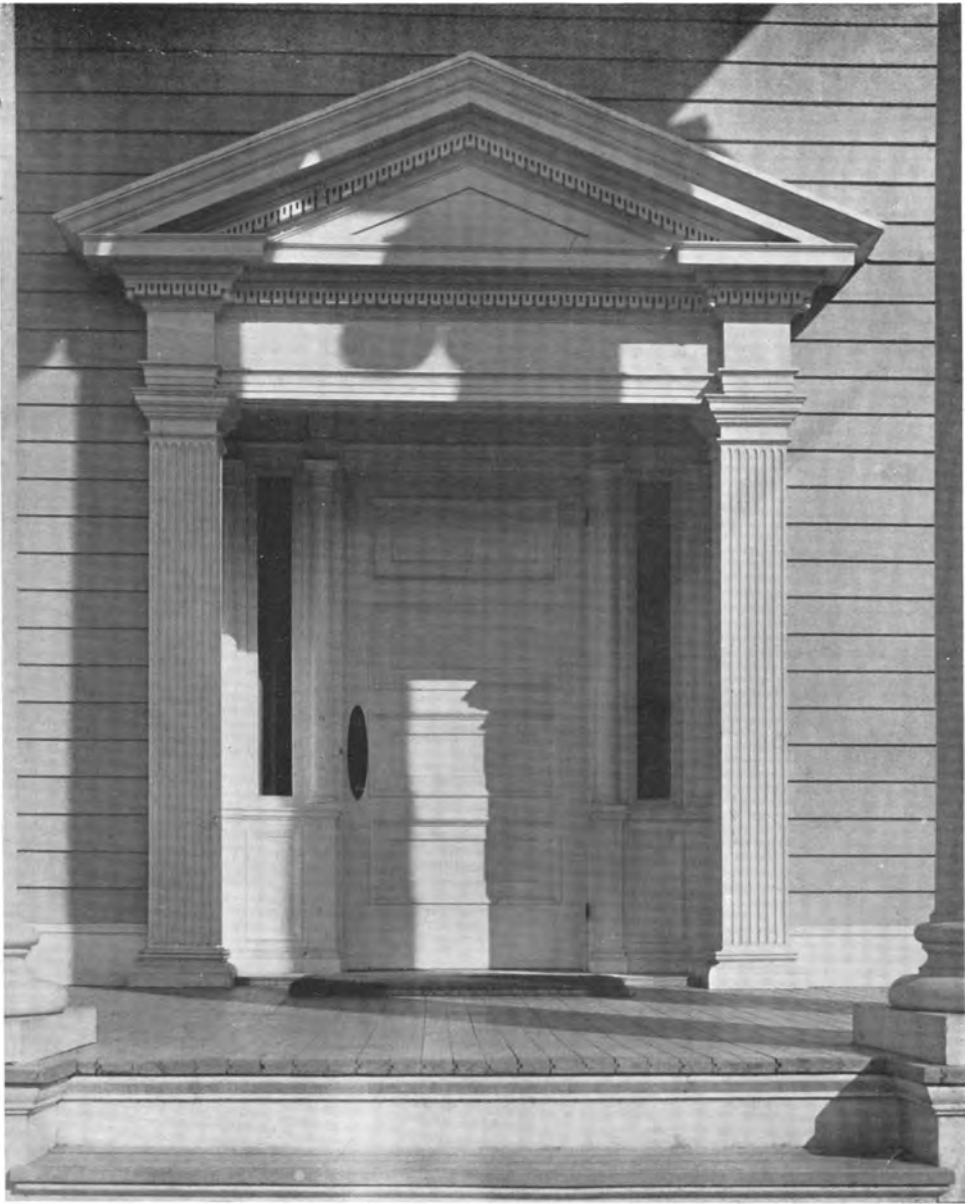
MR. G. WOOD TAYLOR, ARCHITECT.



• • • • SECOND STORY PLAN

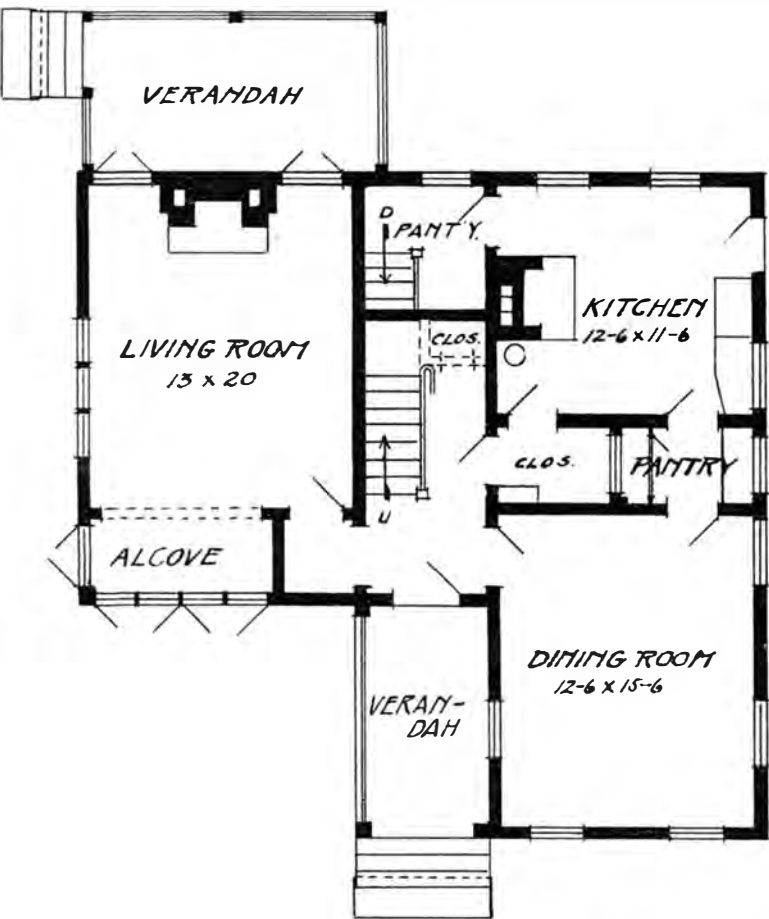


FIRST STORY PLAN

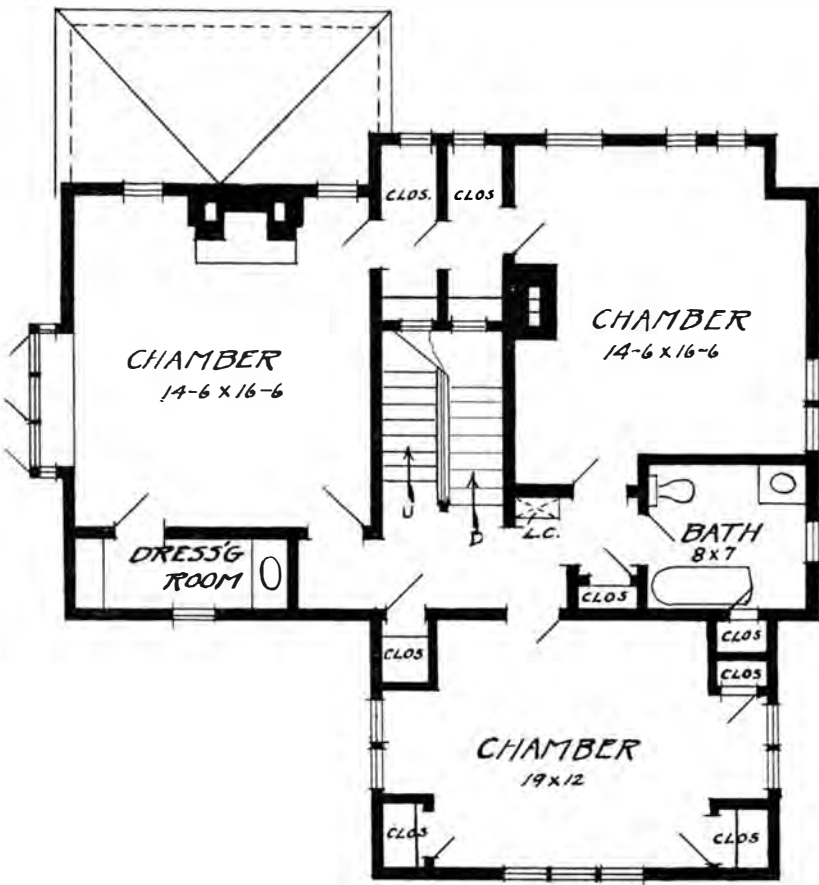


THE COLONIAL DOORWAY.

RESIDENCE OF SAMUEL WOOLVERTON, ESQ., AT SCARSDALE, N. Y.—See page 39.
MR. JOHN C. MOORE, ARCHITECT.

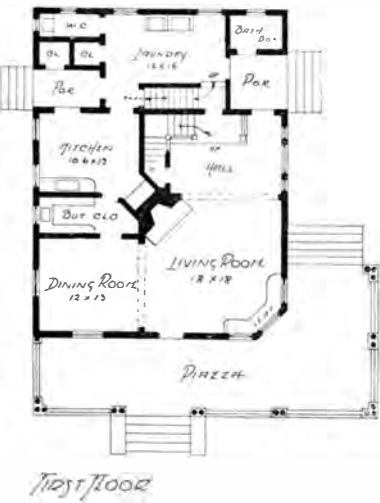


FIRST FLOOR



SECOND FLOOR

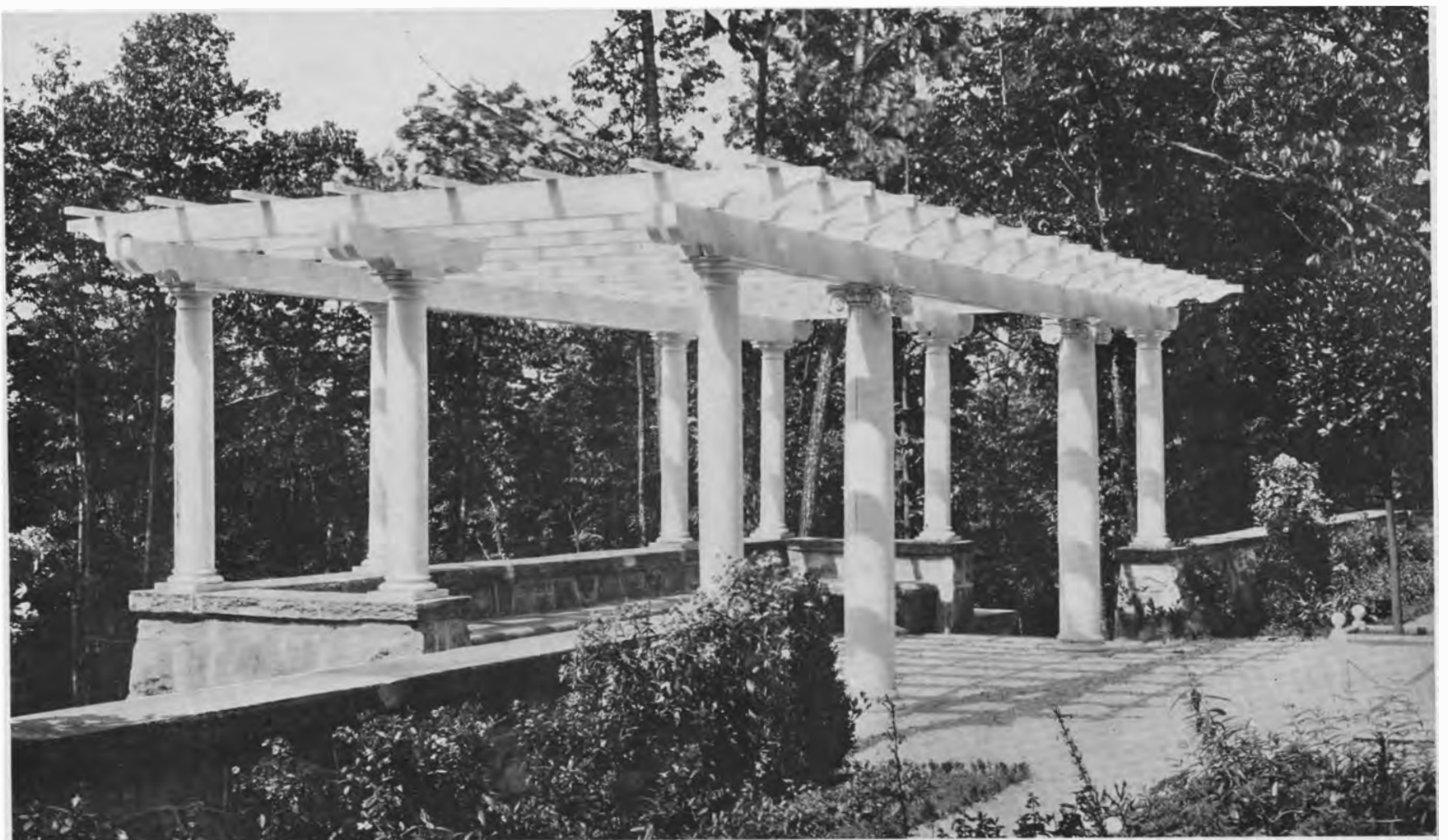
A COTTAGE AT NEWBURGH, N. Y.—See page 39.
MR. FREDERIC M. SNEED, ARCHITECT.



THE SUMMER HOME OF E. P. MERWIN, ESQ., AT WOODMONT, CONN.—See page 38.
MR. FRANK ELWOOD BROWN, ARCHITECT.



THE TERRACE.



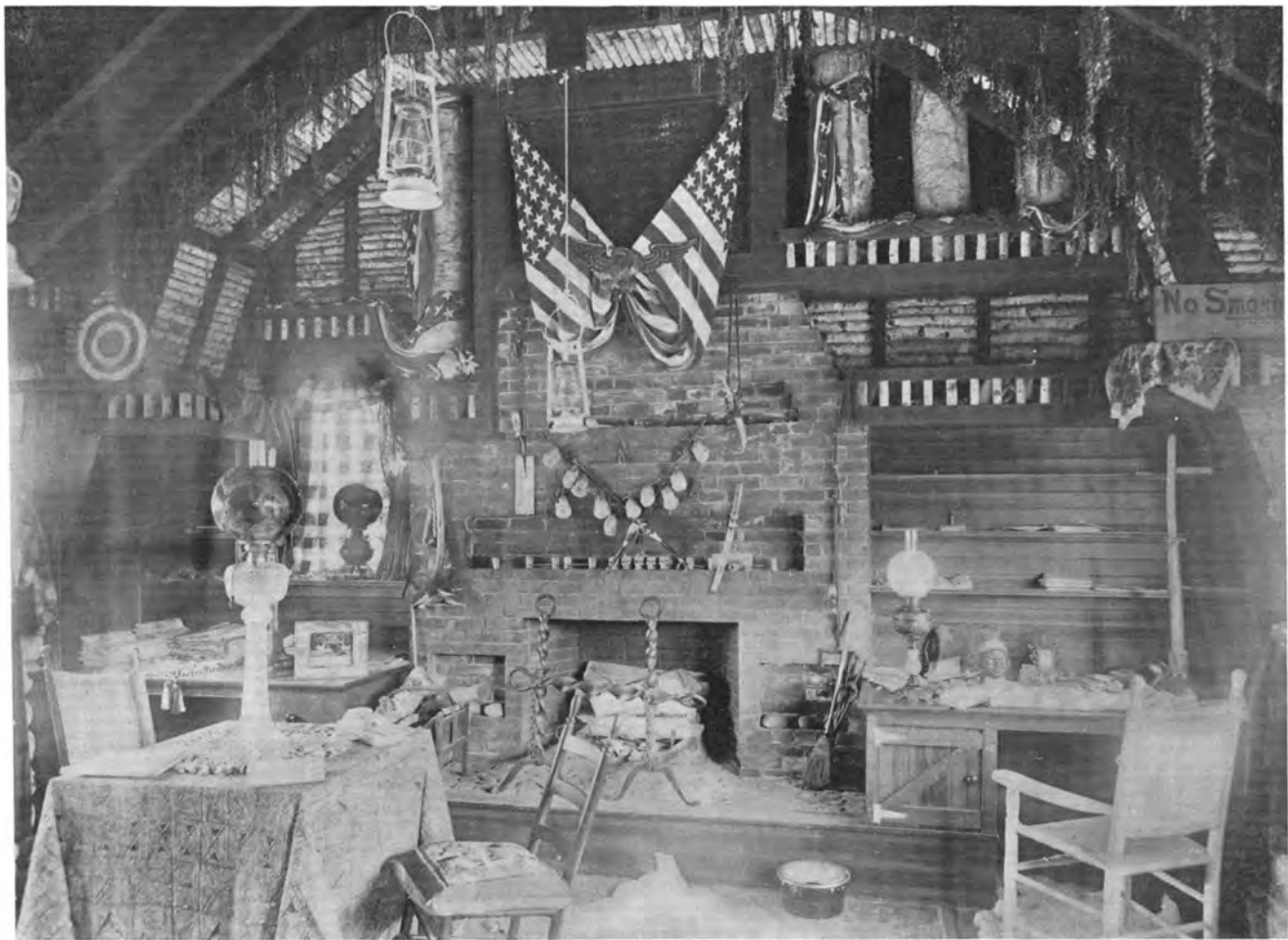
THE PERGOLA.



THE FORMAL GARDEN.

THE GARDEN OF MOSES TAYLOR, ESQ., AT MOUNT KISCO, N. Y.—See page 40.

MR. CHARLES W. LEAVITT, JR., ARCHITECT.



THE DEN.

“BIRCH NEST,” THE SUMMER HOME OF DOUGLASS SHERLEY, ESQ., AT BAR HARBOR, MAINE.—See page 38.
MR. DOUGLASS SHERLEY, ARCHITECT.



THE BREAKFAST-ROOM.



THE DEN.



THE INGLE-NOOK



THE DINING-ROOM.

“BIRCH NEST,” THE SUMMER HOME OF DOUGLASS SHERLEY, ESQ., AT BAR HARBOR, MAINE.—See page 38.
MR. DOUGLASS SHERLEY, ARCHITECT.

**THE ESTATE OF HENRY W. POOR, ESQ.,
TUXEDO, N. Y.**

(Concluded from page 25.)

which is entered from the end of the hall. To the left is a small reception-room, with the dining-room beyond and a passageway to the service rooms. All the main rooms on this floor, therefore, open directly on to the hall. It is an agreeable plan, for it puts all the rooms on the garden front, and leaves the entrance front free for the service and for communication.

A very charming hall it is, too. From floor to ceiling it is paneled in oak, with richly carved door-frames emphasizing the points of entrance. The ceiling, like all the ceilings on this floor, is plastered in geometric design. The floor is of hard wood, covered in the center with a rich green carpet. It is at once a hall and a gallery, admirably proportioned and treated throughout in a thoroughly architectural and dignified manner. Many handsome pieces of furniture are placed within it; high back chairs, handsome tables, a couple of fine old chests before the windows.

The drawing-room has walls covered with light gray silk of delicate texture. A fine old Italian door-frame, elaborately carved in stone, encloses the doorway. The chimney piece is also treasure-trove from Europe, and fills a goodly part of one side of the room. On one wall is a fine old piece of tapestry in a richly carved canopied frame. The room is not large; for this is a summer home, built for summer use only, for a life chiefly spent out of doors. There is no need for the spacious apartments sometimes characteristic of fine houses.

It is, therefore, quite natural that the library should be a larger room. It is lined throughout with books to

colored flower, seems all to be required. And very beautiful such simple results are here.

But Mr. Poor needed more than this. A splendid house on top of a hill is apt to be a bit isolated, and chiefly because hilltops are not the roomiest places in the world, their altitude seemingly making up for their slackness of area. This quite common characteristic of hilltops seems to have given Mr. Poor no cause for dismay; for he promptly argued that, if there were not room at the top, he would make room by building up his mountain until he had space sufficient and to spare. And that is exactly what he did; for the outer corner of his flower garden is supported by a high wall, not only giving him as much space as he desired on the summit, but giving him a corner of the globe that he has made his very own.

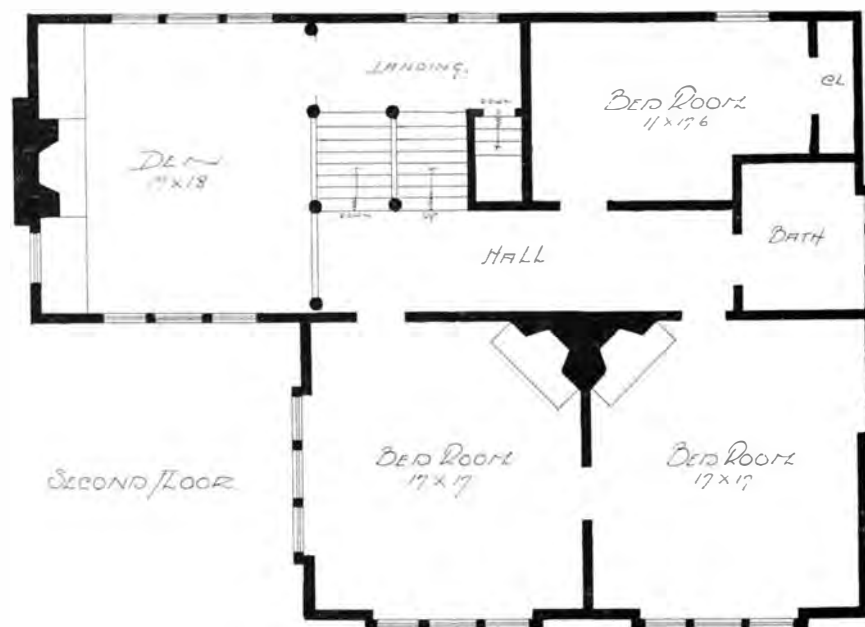
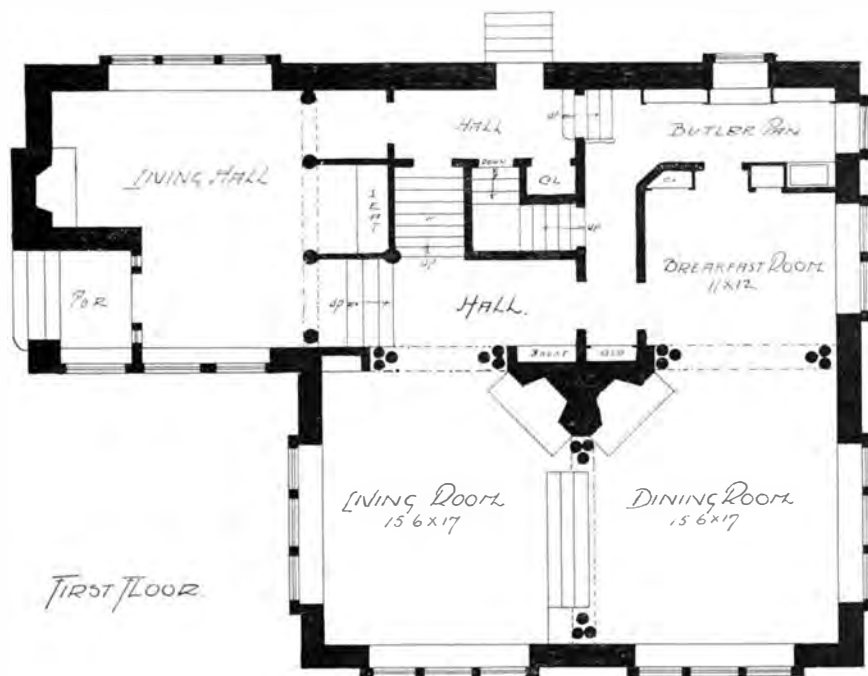
The flower garden is a lovely spot, arranged in terraces that gradually diminish in elevation, but still keeping well to the summit on which the house stands. It contains two fountains, both old and European—one with a bronze summit, the other wholly of stone. And of pots and well heads, of carved benches and ornaments, of bay trees and curious plants; of roses, dahlias and other plants of bloom and foliage, there is a plenty. It is a cleverly designed garden, too; for although the total area is not large as large gardens go, the apparent size is most considerable. A warm sunny place it is in the middle of the day; but a charming, lovely, open space in early morning and evening; with the eternal view beyond, this strange gentle quiet forest land, so marvelously peopled with modern palaces; so thoroughly subdued by American civilization; and yet still retaining the rare beauty of its natural state; this wonderful contrast of man and nature!

living-hall to the stair-hall, and from which the living-room is entered. This living-room is stained a yellowish color, with the windows at the left of the room glazed with green glass, shedding a soft and pleasant light over the entire apartment. There is a stone fireplace in the corner of the room which is built of large granite blocks, with the hearth laid with flat cobblestones laid in a cement mortar.

A short flight of steps from the living-room leads to the dining-room. It is stained a soft green color, and contains a large open fireplace with massive granite facings and a hearth of small cobblestones laid in cement mortar. The breakfast-room is separated from the dining-room by a cluster of birch logs for columns. This breakfast-room has a very attractive cabinet built in for china. The butler's pantry is fitted up with all the best modern conveniences. The kitchen, servants' hall, and all its necessary dependencies are placed in the basement under the breakfast and dining-rooms.

The den is the most attractive room in the building, and is placed over the living-hall. The walls are ceiled to the height of seven feet, and above which the studding and rafters are exposed to view. The space between the rafters and studs is filled in with birch sticks, cut and placed horizontally. The fireplace is built of rough brick, with the facings of brick carried up to the height of nine feet. The hearth, which is of flat cobblestones, is laid one foot above the floor level, and on either side of which are wooden desks built in.

Another short flight of steps leads to the chamber floor, which contains three bedrooms, one of which is stained an olive color, another yellow, and a third red. There is also a bathroom, which is fitted up complete in



THE FLOOR PLANS OF THE DOUGLASS SHERLEY HOUSE.

the tops of the door-frames. The mantel is modern, of wood, carved in panels. At one end is a large table; toward the other a rare old desk—scarcely shown in the illustration—with large carved figures. The dining-room, like the hall, is paneled throughout in wood; it contains a large carved stone mantel, of which an illustration is given. Just beyond it is the pantry, with a servants' dining-room beyond in the wing on this side; the corresponding wing on the library side of the house is filled with a suite of apartments, a sitting-room and bedrooms.

The archways enclosing the space within which are the stairs are richly carved, as are also the newel posts and handrail. The under-steps lead down to the Smoke Room. Whether one is addicted to the art to which this room is dedicated or not, one must feel its charm. The floor is of brick; the walls are of wood—unpaneled; the ceiling is beamed; the fireplace is encased within a gigantic stone framework that saw much use abroad before being finally set up here in this beautiful American home. And here in this room are gathered all sorts of trophies; the walls are thickly covered with prints and illustrations of hunting and horse life. A narrow shelf is crowded with jars, pots, steins, candlesticks, plates, knickknacks of all kinds in delightful profusion. There are deer heads and other relics of the chase, and whole strings of hornet nests—but no hornets—most suggestive of the strenuous outdoor life. It is a room of quiet simple charm; a room of the cultivated rural life; a room for a man to be happy in, and happy with his friends.

And thence to the garden. One has but to step out of the door to find one's self on one of the terraces. Tuxedo Park is itself one great garden, so beautiful are its lawns, so fine its roads, so clean its shrubbery; a hydrangea or two, or perhaps some other brightly

**"BIRCH NEST," THE SUMMER HOME OF DOUGLASS
SHERLEY, ESQ., AT BAR HARBOR, MAINE.**

A VERY novel and interesting house at Bar Harbor, Maine, is that built for Douglass Sherley, Esq., which is illustrated on pages 36 and 37, and the plans of which are shown above. It is built of rock-faced boulders for the first story and chimneys, and birch logs for the second and third stories. The boulders for the stonework have been carefully selected and have been placed in position with great care, so as to not show the mortar joints. The logs for the superstructure are of birch, and have been cut with the bark on, so as to present the rustic effect which the building now shows and to keep it in harmony with the stone work and the silvery gray shingled roof. The small lighted windows, the dormer windows, and the stone chimneys are all agreeable features. The main entrance to the estate is provided with gate posts formed of huge boulders, strapped together with iron bands, and ornamented with an anchor and chain which can be stretched across the opening to the entrance, the latter being provided with a cluster of farm lanterns.

The entrance porch is lighted by a nautical lantern, which is hung from an ornamental iron bracket, and the entrance door is formed of rough boards hung with large hinges of wrought iron, which are painted white, while the door is stained a soft brown color.

The interior is unique. The timber, which is rough hewn, is exposed, and the archways and openings between the various rooms in the first story are formed with a cluster of birch logs for columns. The living-hall is stained a soft greenish color, and contains an angle nook, the walls of which are of stone and exposed to view. The fireplace is built of Roman brick, while the hearth is formed of small cobblestones laid in cement mortar. A short flight of steps leads from the

every respect. The third floor contains ample storage space and the servant quarters. The house was designed and built under the direction of Mr. Sherley. Mr. Calvin H. Norris did the mason work and Mr. A. E. Lawrence the carpenter work.

**THE SUMMER HOME OF E. P. MERWIN, ESQ.,
AT WOODMONT, CONN.**

THE summer home which is illustrated on page 34 has been erected for E. P. Merwin, Esq., at Woodmont, Conn. The balustrade to the piazza is built of rock-faced stone laid up at random. The building is built on cedar posts with stone footings, and is enclosed with narrow beaded stuff painted a stone gray. The superstructure is covered on the exterior with clapboards for the first story and shingles for the second and third stories. These shingles and clapboards are painted a deep red, and the trimmings are painted an ivory white. The roof is covered with shingles and is stained a moss green. Dimensions: Front, 33 ft.; side, 43 ft.; exclusive of piazza. Height of ceilings: First story, 9 ft.; second, 8 ft. 6 in.

The interior throughout is ceiled up with narrow beaded stuff, the walls and all partitions being so enclosed, while the floor joints are dressed and exposed to view. The living-room is provided with a paneled seat, and an open fireplace built of cobblestone laid up in red mortar, with the facings of the same rising up and supporting a mantel shelf; the hearth is laid with brick. The dining-room and staircase hall are separated by an archway, the latter containing an ornamental staircase rising from a broad platform, which forms an access to the laundry. The butler's closet and kitchen are fitted up complete with all the modern conveniences. The extension contains ample closet space, bath-box for salt-water bathing, and laundry.

The second story contains a hall, four bedrooms, and a bathroom; there is also a servants' bedroom with private stairway over the laundry extension. The bathroom is furnished with porcelain fixtures and exposed plumbing. The attic furnishes ample storage room. The cellar is excavated under the extension and forms ample accommodation for fuel, storage, etc. Cost, \$3,000 complete. Mr. Frank Elwood Brown, architect. New Haven, Conn.

RESIDENCE OF SAMUEL WOOLVERTON, ESQ., AT SCARSDALE, N. Y.

THE illustrations shown on page 32 present the residence of Samuel Woolverton, Esq., at Scarsdale, N. Y. Many attempts have been made to adapt the distinctive Colonial architecture to the modern requirements without destroying the original characteristic of the predominating style of the Georgian period, and the house which is presented herewith is a very successful reproduction of that period. The underpinning is built of rock-faced local stone laid up at random. The superstructure is covered with matched sheathing, good building paper, and clapboards, one inch in thickness, and the whole painted yellow with white trimmings. The roof is covered with shingles and is left to weather finish. Dimensions: Front, 53 ft.; side, 32 ft., kitchen extension, 24 ft., exclusive of piazza. Height of ceilings: Cellar, 8 ft.; first story, 9 ft. 4 in.; second, 8 ft. 9 in.; third, 8 ft. 4 in. The entire interior, except the kitchen and its dependencies, is trimmed with white pine treated with a six-coat enamel finish, all of which is white, except the drawing-room, which is treated in green egg-shell gloss. The vestibule, a very attractive space with a rubber-tiled floor, leads to the wide central hall, the front part of which has a massive wooden cornice and pilaster effect. The staircase, in typical Colonial treatment, is open from the first to the third floor. Separated from the drawing-room is the library, which is the most attractive room in the house, and it has an open fireplace, built of red pressed brick, with the facings and a hearth of the same and a heavy wooden mantel-shelf. At either side of the rear window are extensive bookcases built in, with movable shelves and plate glass doors, and between these bookcases there is a paneled seat, over which there is a window beautifully adorned with leaded glass. The living-room has an open fireplace, with red pressed brick facings and hearth and a Colonial mantel, and a large paneled seat is built in at the side of this fireplace. The dining-room has a similar fireplace and an entrance to the piazza. The kitchen, butler's pantry, servants' hall, and entry are well arranged and are thoroughly appointed with all the best modern fittings.

The second story contains four bedrooms, two bathrooms, one dressing-room, besides two servant bedrooms and bathroom over the kitchen extension. The principal bedroom is very conveniently appointed, with an open fireplace, provided with a dainty Colonial mantel, mirror doors in closets, wardrobe, and a private bath. The third floor contains four bedrooms, a bathroom, and ample storage space. The cellar contains a laundry, cold storage room, a combination warm air and hot water heating apparatus and fuel bins. Mr. John C. Moore, architect, White Plains, New York.

A COTTAGE AT NEWBURGH N. Y.

On page 33 will be found an illustration of a cottage which has been erected for William J. Leghorn, Esq., at Newburgh, N. Y. The underpinning is built of local limestone laid up at random. The main building above the sill is constructed of frame entirely, and the exterior is covered with matched sheathing and then

shingles, except the east wing, which is finished with outside plastering and half-timber work. The shingles of the first story are stained a heavy green and the second story a dull red. The roof is also covered with shingles and stained black. The trimmings are painted white and the half-timber work is stained brown. Dimensions: Front, 34 ft.; side, 25 ft., exclusive of veranda. Height of ceilings: Cellar, 7 ft.; first story, 9 ft.; second, 8 ft. 6 in.; third, 8 ft.

The building was planned with a view of incorporating just those things essential for convenience and comfort without undue size and cost. The entrance is into a hall with paneled wainscoting and containing an ornamental staircase. The living-room has a low wooden wainscot and a false beamed ceiling. The woodwork in the room is stained a dull green, and the plaster walls and panels of the ceiling are of burnt sienna. An open fireplace, an alcove with high swinging windows, and a veranda reached by French windows are the principal characteristics of this room. The dining-room



THE FIREPLACE IN THE LIVING-HALL OF THE RESIDENCE OF W. W. ORR, ESQ.,
AT SCARSDALE, N. Y.—See page 42.

has a dado formed of molded ribs planted on the plaster and capped with a molding; the plaster panels between ribs are colored a very dark green, and the side walls above the dado and the ceiling are colored one shade of rich dark green, while the woodwork is of mahogany finish. The butler's pantry, kitchen and its dependencies are trimmed with North Carolina pine treated naturally, and are furnished with all the best modern conveniences.

The second story trim is stained and the walls tinted with water colors with harmonious effect. This floor contains three large bedrooms, fitted up with unusually large closets and a bathroom, the latter being furnished with porcelain fixtures and exposed nickelplated plumbing. The principal bedroom has a dressing-room with lavatory and an open fireplace. The third floor contains the servant quarters and storage space. The cellar contains a laundry, cold-storage room, the heating apparatus, and fuel room. The house is heated by a steam system, and all the radiators are tinted in harmony with the various rooms. Cost, \$4,932 complete. Mr. Frederic M. Sneed, architect, 56 Second Street, Newburgh, N. Y.

SCULPTURE AT THE ST. LOUIS EXPOSITION.

By the St. Louis Correspondent of the Building Monthly.

THE varied sculpture at the St. Louis Exposition may be divided broadly under the two heads of those subjects which have purely historic significance and those which are of a distinctly allegorical nature. The historical subjects, which have taken the shape of portrait statues, are grouped around the great Industrial Palaces, while the allegorical sculpture is to be found in the vicinity of structures such as the Festival Hall, Palace of Fine Arts, and the Cascades, whose purpose and motive are of a more ideal character.

On entering the exposition grounds the most prominent of the historical subjects is the heroic Statue of St. Louis, the Crusader and King of France, from whom the neighboring city takes its name. Flanking it are the Palace of Varied Industries to the right and the Palace of Manufactures to the left, and here we find statues commemorative of Louis Joliet and De Soto, representatives of the two nations connected

with the early history of the Louisiana Purchase. Farther up the court are two equestrian statues typifying the Indians from whom this land was won, one representing a Cherokee Chief, the other a Sioux Chief. Still descriptive of the extermination of the Indian, there is farther on a heroic group at the head of the stairway leading to the sunken garden, and then, in their proper historical sequence, follow statues commemorative of the many unrecorded adventurers who did the pioneer work of civilization in the land covered by the Louisiana Purchase. Prominent among these are four groups representing the Indian, the Cowboy and his Bronco, and similar themes.

Continuing up the main court, the approaches to the Cascades and the various causeways are flanked by portrait statues of noted historic characters. First of these is a statue of Panfilo Narvaez, a Spaniard, and the first European to exercise legitimate authority over any part of the American territory. Next is a statue of Père Marquette, that fine specimen of the Jesuit, kindly of heart and altogether self-denying, who acted as the spiritual father of the expedition that explored the great lakes, and opened up the regions now known as the States of Wisconsin and Michigan. Then we see the statue of Philip Renneault, the Frenchman who led the first expedition up the Mississippi. Then follow in their order excellent portrait statues of Père Laclède, of Sieur La Salle, Daniel Boone, William Clarke, and Meriwether Lewis; both of these last named identified with the important Lewis and Clarke

expedition to the Pacific Ocean in the years 1803-6.

Commemorative of the statesmen and soldiers who were identified with the Louisiana Purchase, there are statues of James Madison, James Monroe, Marbois, Robert Livingston, Andrew Jackson, Anthony Wayne, and of Bienville, founder of New Orleans.

Here also are statues which are excellent portraits of the two chief executives of the contracting countries in the Purchase Treaty, Thomas Jefferson and Napoleon, while mention should be made of the statuary of the Louisiana Purchase Monument, located within the center of the main court, with its group representing the signing of the treaty, in which are found very fine portraits of Livingston, Monroe, and Marbois.

Leaving the historical for the allegorical sculpture, the most splendid and ambitious group to be found in all the grounds is spread with a lavish hand, but with a very fine discrimination for its effect, over the rising ground which is crowned by Festival Hall. The most conspicuous work is the huge group at the head of the main cascade, which contains the three figures, Liberty, Justice, and Truth. Any one entering the main court can see from afar, silhouetted against the

horizon, the colossal statues which are framed by the long Colonnade of States. Nowhere in the world can be found a series of similar works of such size and dignity, and framed by such a noble architectural setting. They include distinctive and descriptive allegorical figures of the various States and Territories that have been formed from the Louisiana Purchase.

The distinguishing feature of these statues is their massive dignity. On the other hand, the decoration of the side cascades is distinguished by its grace and rich imagination. The central Festival Hall itself is also richly adorned with sculpture, and space alone forbids any detailed description. Above the large entrance gate of this Hall stands a group representing Apollo and the Muses, which is flanked by other groups representing The Dance and Music. Back of the Festival Hall, the Fine Arts building contains sculpture that was produced specially for the Fair in material that is fortunately more enduring than perishable staff and lathing, and there is much satisfaction in knowing that this building at least is to be permanent.

RESIDENCE OF THOMAS DOLIBER, ESQ., AT BROOKLINE, MASS.

THE residence of Thomas Doliber, Esq., at Brookline, Mass., is the subject of the illustration on page 29. It is rustic in design and built of stone and shingles; a special scheme of construction was necessary because of the site, which included an outcrop of ledge at each end of the house and a very rapid falling away of the ground at the rear, thereby presenting the opportunity for an open basement story. The lot, moreover, is situated on a corner of two streets; the kitchen end and rear are in full view from the more important street, while a steep hill rises toward the street on the front. It was found necessary, therefore, to build a compact house, rather low, in order that the rear view might not present too high a building, perched as it is on a high ledge. The most natural material to use for the main part of the house was field stone of the same kind as the ledges; there being plenty of old stone walls in the vicinity. The immense boulders for this stonework have been selected with care, retaining the moss on the

The second floor contains four bedrooms, large closets, well fitted linen closet, bathroom, and a dressing-room provided with a lavatory and closet. The bathroom is furnished with porcelain fixtures and exposed nickelplated plumbing. All the bedrooms are placed so as to have windows on two sides of the room. The servant rooms and ample storage space are provided on the third floor. The laundry, cold storage room, fuel bins, and heating apparatus are placed in the cellar. Mr. J. Lovell Little, Jr., architect, 8 Beacon Street, Boston, Mass.

THE GARDEN OF MOSES TAYLOR, ESQ., AT MOUNT KISCO, N. Y.

THREE views of the beautiful garden attached to the country home of Moses Taylor, Esq., at Mount Kisco, N. Y., are given on page 35. These photographs illustrate the formal garden, the terrace, and the pergola.

Designed by Mr. Charles W. Leavitt, Jr., landscape architect, 15 Cortlandt Street, New York, these grounds furnish not only an interesting example of the work of



A SCREENED VERANDA TO THE RESIDENCE OF EDWARD T. BROWN, ESQ., ATLANTA, GA.

The sculptural treatment of the Central Festival Hall and of the three cascades aims to exemplify the natural jubilation of this country over the extension of its sway from the Atlantic to the Pacific. At the head of each side cascade is a large group, one typifying the Atlantic and the other the Pacific, and each cascade is profusely enriched with allegorical sculpture symbolical of the two oceans.

It is impossible to attempt any detailed description of the various subjects delineated, and the illustrations shown on the following page must be left to tell the story themselves.

A SCREENED VERANDA.

VERY beautiful and attractive is the screened veranda of the residence of Edward T. Brown, Esq., at Atlanta, Ga., a photograph of which is reproduced above. The warm Southern climate gives a naturalness and vigor to the tropical plants with which it is adorned, and which give it its chief charm. It is pleasantly furnished, and forms an agreeable and delightful outdoor room. Mr. W. T. Downing, Equitable Building, Atlanta, Ga., was the architect.

same, and each was placed in position so as to avoid the appearance of the mortar joints so far as was possible. The second and third stories are covered with shingles and stained green, in harmony with the setting of the trees which surround the building. The exterior finish and trimmings are of cypress.

The interior is very simple in its treatment, and is trimmed with whitewood painted white. The hall is an attractive one, containing a quaint staircase of white paint treatment and a mahogany rail. To the left of the entrance is a den, with open fireplace, bookcases built in, etc. The living-room has an entrance to the porch, an open fireplace with tiled facings and hearth, and a mantel of Colonial style. Bookcases are built in on one side of the fireplace, and to the right of the room is an attractive paneled seat, over which there is a cluster of small latticed windows. The dining-room has also a door leading to the porch, and an open fireplace. The china closet is furnished with drawers, dressers, cupboards, bowl, etc., complete. The kitchen and its dependencies are fitted up complete with all the best modern conveniences, including range, store pantry, ice box, etc.

this fine artist in landscape, but constitute an interesting addition to the series of illustrations of notable American gardens which have long been a conspicuous feature of the BUILDING MONTHLY.

The formal garden is not large, but has been designed with fine taste, with a small pool and fountain in the center, and a pergola closing the vista and overlooking the valley below the house. The plan includes an interesting lay out of beds of flowers and shrubbery. It thus constitutes an excellent illustration of the fine effects in landscape gardening which can be accomplished within comparatively restricted areas. Mr. Taylor's garden, however, is quite ample for the house.

The terrace is very beautiful—an open space among the tree tops. The architect has wisely planned it on the simplest lines—a mere open space, whose size is enhanced by its situation and by the great trees which immediately surround it. The stately balustrade is properly broken and supported by pedestals and piers, and the single vases appropriately mark off the borders of the space toward the house. It is an excellent example of good results accomplished by direct means and in the most direct way.



Thomas Jefferson. By James E. Fraser.



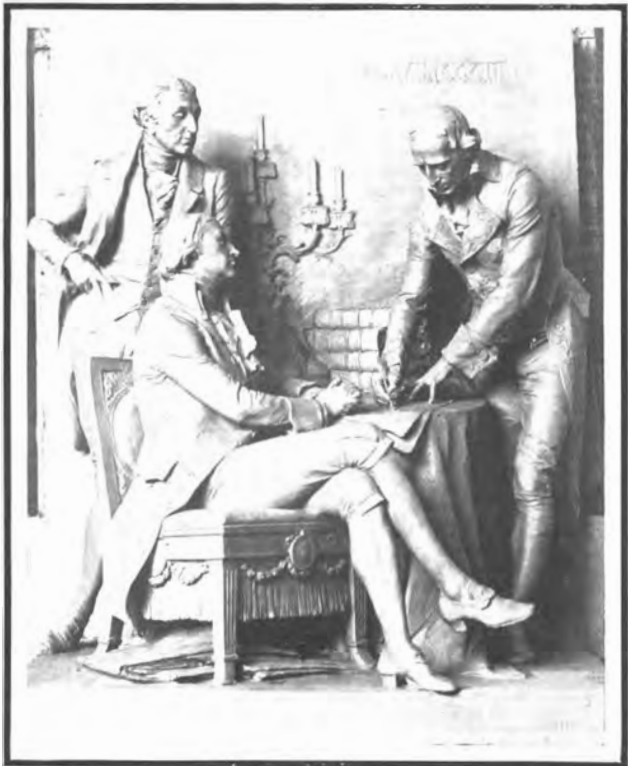
"Mining Industry." By Charles J. Mulligan.



'Victory.' By Evelyn B. Langman



Apotheosis of St. Louis on the Plaza of St. Louis.



"Signing the Treaty of Paris." By Karl Bitter.



Benjamin Franklin. By J. J. Boyle.



"Transportation by Rail." By Zolnay.



La Salle. By Gudebrod.



Napoleon. By J. Galéré.

SCULPTURE AT THE ST. LOUIS EXPOSITION.—See page 39.



The Household

THE CARE OF POLISHED FURNITURE.

THE care of furniture woods, points out a contemporary, is an interesting part of the intelligent house-keeper's duties. The daily light dusting must supplement the weekly rubbing if the "bloom," in this instance not desirable, is to be kept away. As a rule, the use of any restoratives is to be deprecated. Unless applied by a tireless arm and thoroughly rubbed in, and thereafter the piece of furniture kept in perfect polish by a daily rubbing, the oil is sure to form a crust sooner or later, which is gummy to the touch and not pleasing to the eye. New furniture should be kept as long as possible without the application of such restoratives. Furniture which has been finished with shellac or varnish, whether in glossy or dull finish, should never be cleansed with soap or water. Soap is made to cut oily substances, and in the performance of the service for which it is made eats the oil out of the waxed, oiled, or shellacked surface it touches, and destroys it. If an oil restorer seems, for any reason, to be necessary, raw linseed oil and turpentine in equal parts applied on a piece of cheese cloth will be found most often of service.

For carved portions which require daily attention, soft brushes such as are used for the cleansing of silver will be found to be the best agent. Brush the ornamented portions out thoroughly with a dry brush, and use a second for the real cleansing. This may be dipped in turpentine and used without fear of scratching the finish of the wood.

Where white spots appear on polished surfaces from the dropping of liquids or from heat, the immediate application of raw linseed oil will generally restore the color. The oil should be left on the affected spot for several hours, or over night. Alcohol will perform the service if applied at once to rosewood or highly finished mahogany. In each instance, when the color has returned, the spot should be repolished with a piece of cheese cloth moistened with turpentine.

A PLEASANT HALL.

BRIGHT, sunny green and ivory white, with a few gilt ornaments, is, says a daily paper, one of the happiest schemes for the decoration of the narrow hall and stairs of the average city house. It lays no claim to a stately effect, but has a delightfully fresh, sparkling impression that even on a dull winter day gives one a cheery welcome. In an uptown house the hall and vestibule have both been treated in green and white, with the result that they look about twice as spacious as they did before. The vestibule has a dado painted ivory white, each wall is formed into a single panel, the surroundings painted white like the dado, the fillings distempered a light moss green. In the center of each panel is a graceful girandole (for electric light), in white wood and glass, which makes a charming decoration by day; and at night, the light coming from the sides has the happy effect of making the hall look its widest.

There is a white dado in the hall and staircase, and above it is hung a white-striped paper with an Empire wreath design in bright green. All the doors and woodwork are painted ivory white, and the floor and stairs are carpeted full width with moss green velvet pile.

The furniture in this hall is as light and dainty as possible, but dignified in design. There are a little half-circle Sheraton table and two slender chairs, with reed seats. Over the table is a mirror in a gilt frame in severely simple Adam style. Round the mirror are small prints grouped effectively on the wall, and a delicate pink azalea or some other flowering plant gives a delightful touch of color on the table. At the foot of the stairs the feathery fronds of a large fern, in a gilt basket, come in happily as a soft, light finish.

A HOUSEHOLD POLISH.

THE question of polishes may be settled in fully as many ways. If equal parts of linseed oil, vinegar and alcohol are mixed well together, the result will be a very satisfactory sort of polish. This should be applied with one cloth, and another cloth used in giving the final rubbing. Very little of any furniture polish is enough, therefore be careful not to put on too much. Another simple polish is a mixture of turpentine and linseed oil in the proportion of one ounce of spirits of turpentine to three ounces of linseed oil. To keep the dining-room table in good, well-polished condition rub it once a week with a mixture of one ounce of spirits of turpentine and one ounce of olive oil, applying the polish with a piece of flannel cloth.

RESIDENCE OF W. R. ROBESON, ESQ., AT SPRINGFIELD, MASS.

THE half-timbered and stone house illustrated on pages 30 and 31 was erected for W. R. Robeson, Esq., at Springfield, Mass. The terrace wall, underpinning, first story and chimneys are built of ashlar gray stone, of a light, soft gray color, while the second and third stories are beamed, forming panels, which are filled in with rough plaster cast finished with a stucco effect. This stucco is tinted a deep yellow, harmonizing nicely with the beams, which are stained a soft brown color. The roof is covered with shingles, and stained a moss green. Dimensions: Front, 65 ft. 8 in.; side, 35 ft. 9 in., not including terrace. Height of ceilings: Cellar, 7 ft. 6 in.; first story, 10 ft.; second, 9 ft.; third, 8 ft.

The front porch, which is enclosed on three sides, forms a vestibule, and is provided with seats on either side of the front door. The hall, which is a central one, is trimmed with white pine and treated with white enamel. It has a wooden cornice, and a staircase with fluted columns and carved caps; these columns, risers, and balusters are of white enamel, while the rail is of mahogany. The staircase rises up to a broad landing, provided with leaded stained glass windows, beneath which stairs lead down to the toilet room, which is fitted up complete. The living-room is trimmed with quartered oak, and has a low paneled wainscoting, book-cases built in, a massive beamed ceiling, a bay window, and a nook with paneled seats, and an open fireplace, furnished with tiled facings and a hearth, and a mantel of oak with shelf supported on columns. The dining-room and den are trimmed with quartered oak. The former has a massive beamed ceiling, a china closet in corner, and a buffet in nook, which are built in with leaded glass doors. The fireplace is of handsome design, and is provided with facings and a hearth of unglazed tile, and a Dutch mantel with a massive shelf supported on pilasters with carved caps. The den, or smoking-room, is located off the dining-room and is treated in a similar manner; it has a bay window with a cluster of leaded glass windows, which effectively lights the apartments. The butler's pantry is trimmed with natural hard pine, and is provided with butler's bowl, drawers, dressers, and cupboards complete. An ice box, with outside entrance thereto, is also built in. The kitchen is trimmed with similar pine, and is fitted up complete.

The second floor is trimmed with whitewood treated with white enamel. It contains four bedrooms, provided with well fitted up closets, studio, linen closet, and a bathroom; the latter is wainscoted with white enameled tile, and the floor is paved with unglazed tile. It is furnished with porcelain fixtures and exposed nickelplated plumbing. The servants' rooms and storerooms are located on the third floor. A cemented cellar contains a laundry, steam heater, cold storage, and fuel bins. Cost \$15,000 complete. Mr. G. Wood Taylor, architect, 425 Main Street, Springfield, Mass.

RESIDENCE OF W. W. ORR, ESQ., AT SCARSDALE, N. Y.

THE residence illustrated on pages 28 and 39 was built for W. W. Orr, Esq., at Scarsdale, N. Y. The design is an interesting one from its many attractive features, including the two piazzas, which are happily placed at either end of the house, thus permitting plenty of sunlight into the living-room of the house. The columns and the first story are constructed of rock-faced granite laid up in a neat manner; the remainder of the building is covered with rough cast. The trimmings are stained a soft brown color and the sash are painted a cream white. The roof is covered with shingles and stained a dull green color. Dimensions: Front, 58 ft. 6 in.; side, 36 ft.; exclusive of piazzas. Height of ceilings: Cellar, 7 ft.; first story, 10 ft.; second, 9 ft.; third, 8 ft.

The entrance opens into the living-room, which takes in the center of the house, and is trimmed with chestnut finished in a soft brown color. It has a paneled wainscoting and a massive beamed ceiling. At either side of the entrance doorway there are paneled seats, over which there are clusters of small latticed windows. Opposite the entrance there is a large open fireplace, built of brick, with the facings extending to the ceiling, and a hearth of the same. A mantel shelf with a Dutch hood completes the fireplace. From this living-room the hall is reached, and it contains an ornamental staircase of chestnut, with turned newel posts, balusters, and rail. The library and dining-room, each on the opposite side of the house, are treated similarly to the living-room, and each has large open fireplace built of brick, with the facings and a hearth of the same, and mantel. The butler's pantry, kitchen, and its dependencies are furnished with all the conveniences.

The second floor contains an open hall, four bedrooms, linen closet, and two bathrooms, the latter furnished with porcelain fixtures and exposed nickelplated plumbing. The third floor contains the servant quarters and bath and trunk rooms. A cemented cellar contains a laundry, furnace, fuel rooms, cold storage. Mr. James Brite, architect, 111 Fifth Avenue, New York.



The Garden

A HUNDRED YEARS OF DAHLIAS.

EXACTLY one hundred years ago—on May 20, 1804, to be precise—the first dahlia seeds were received in London and the cultivation of this popular plant was begun in England. These seeds were sent to Mr. Buonianti, librarian at Kensington House, who grew the first plants for Lady Holland, says the Gardeners' Chronicle. Plants were raised and flowered the same year, the remainder of the seeds being sown under more favorable conditions in 1805, and seeds gathered from some of the plants. In 1806 Mr. Salisbury secured seeds of these, and, as it would appear, also Lee and Kennedy, of Hammersmith, who distributed plants in 1807. The great height of the plants exercised a deterrent effect on their cultivation, and after their novelty had worn off, they do not seem to have made much if any progression in popular esteem. Sabine relates how visitors to the Continent in 1814 were surprised to discover the beauties of the dahlia, with the result that tubers were imported thence the following winter, and a fresh impetus in consequence given to their cultivation; but he does not indicate that English sorts had been lost.

Another erroneous assumption regarding Continental varieties relates to the doubling of the flowers, which is said not to have occurred till 1814-15. Fortunately fairly full accounts of the first double flowers have been preserved. The first English-raised double appeared in Kensington Gardens in the year 1805, the color being "exceedingly pale." This and all the other seedlings were perpetuated. On the Continent there are records of double flowers even earlier, but the best account is of the dahlias of Count Letseir, the French Director of Gardens at St. Cloud, who in 1808 possessed three double varieties, in color respectively purple, rose, and buff. In the same year he had single varieties with striped and with shaded flowers. In Germany a Mr. Otto raised a double variety in 1809, the produce of a semi-double the previous year.

In "A Horticultural Tour," written to commemorate observations made on the Continent in 1817 by a committee of the Caledonian Horticultural Society, some fresh evidence of the evolution of the dahlia appears, and at the same time the continuity of the English strain is incidentally verified. This occurs in the description of a garden at Bruges, Belgium, where the dahlias are stated to have borne flowers "nearly double the size to which they usually attain in Scotland." The finest collection of dahlias they met with was in a Mr. Smetz's garden in Antwerp. These originated from plants imported from Paris in 1809, the first seen in Antwerp, and from these improved forms had resulted, so that at the time of their visit Mr. Donckelaar, the gardener, possessed "no fewer than twenty different sorts with double flowers and varying in color; besides these he has ten varieties with semi-double flowers." Mr. Donckelaar sold his twenty doubles at £4 3s. 4d. the set in young plants, or £8 6s. 8d. old roots; and his sales appear to have extended beyond Holland. From about the year 1827 a great impetus was given to their cultivation; but the flowers at this time, with the exception of single varieties, had little in common with the flower as we now know it. They were called globe-flowered, aster-flowered, and some with broad guard petals and quilled centers, anemone-flowered. Then came a flat-petaled section, which shortly gave place to the show dahlia, of which "Springfield Rival," which was sold for ten guineas, was the forerunner. The Metropolitan and other florist societies were founded solely to exhibit dahlias. By 1840 the excitement of dahlia culture had died away, but while it lasted it rivaled that in Holland over the tulip.

GARDEN CULT.

THERE is no doubt, says Harper's Bazar, that gardening is the fashion. Many women who do not care in the least for growing things are nevertheless discussing box borders and pergolas with conventional enthusiasm. But the woman who does really love flowers has also come into her own. The flower catalogues of to-day gather for her the treasures of old and new—the "bleeding heart" and Canterbury bells of her great-grandmother's garden and the latest Japanese primrose and iris; and the poorest soil and the bleakest exposure can not daunt the vigorous varieties that are cultivated for just such unpromising places.

PROGRESSIVE GARDENING is an apt term for gardens in which the progress of the seasons is chronicled by the progress of the plants. The end is beginning to appear, yet the later summer has its full of bloom, and the early autumn is a delight to the garden lover.

Fire Protection

HOW BALTIMORE WAS SAVED.

NOTWITHSTANDING that some time has elapsed since the great Baltimore fire, and that there have been several severe conflagrations since, expert reports continue to be published upon it. The subject is so large and so important that proper investigation requires considerable time.

One of the most exhaustive reports has been prepared by Mr. Alfred M. Quick, an engineer of Baltimore, and read at the convention of the American Water Works Association at its meeting in St. Louis.

In his paper Mr. Quick took up three points: 1. As to the adequacy of any water service to cope successfully with any such emergency. 2. As to the effectiveness of private fire service fixtures in protecting property. 3. As to the possibility of the waste from broken water pipes in buildings destroyed by fire temporarily crippling the water system.

Baltimore has two sources of supply, Jones' Falls and Gunpowder River, and a total available reservoir capacity of about 1,240,000,000 gallons. There are four service areas for distribution—the low, middle, high, and upper. In the low-service area, from tide-water up to elevation 50, are comprised most of the business and manufacturing districts. The middle-service area between elevations 50 and 100 comprises as many business as residential sections. The high-service area, between elevations 100 and 250, is entirely a residential section. Both high-service pumping stations are connected to the middle-service in dry seasons. The whole system is so arranged as to give a pressure of not less than forty pounds at any point, with the maximum domestic consumption drawing, and to allow at least 10,000 gallons a minute to be concentrated for fire service on any block in the congested portion of the city, without a serious reduction of pressure. In the burned district the distribution system was in fairly good shape. The extreme northwestern end of the district is in the middle-service area. The rest of the district is in the low-service area.

In the whole district are about 130 fire hydrants, including five with two steamer nozzles—making about fourteen to each mile of main street in the district. There are eleven hydrants within 200 feet of the Hurst building, a large, six-story, wholesale drygoods house at the southwest corner of Hopkins Place and German Street, where the fire started at 10.45 A. M. on Sunday, February 7; there are also twenty-two within 400 feet of the building. A smoke explosion in the Hurst establishment followed shortly after the arrival of the first piece of fire apparatus, and caused the flames to spread in all directions, even against the wind, which blew with considerable force.

Even with largely increased consumption, and with the outlet gates from the impounding reservoirs remaining as fixed to deliver only the ordinary domestic consumption, the storage reservoirs in the city, with twenty to twenty-five feet available depth, were drawn down only by from two to two and one-half feet; and that slight reduction of head could have been prevented by opening wider the gates at the impounding reservoir—a step which was not necessary. The water supply was, therefore, adequate to meet the extraordinary demands made upon it.

As to the fire department: Was there a sufficiency of apparatus? Several hours passed by before any outside help arrived, and practically the entire fire department of the city was on duty in the burned district or in putting out the numerous small fires started elsewhere by the sparks. As the hook and ladder and chemical companies took care of all fires in outlying districts, all of the fire engine companies were available for fighting the main fire. There were, therefore, about 280 men, including district chiefs, and all the fire engines—all fighting the main fire during the first few hours when it had a maximum front of not over three blocks. These engines, of course, were not all pumping continuously, as they had to shift about as the fire progressed; nor were they at all times supplying the same number of hose lines. It is estimated by the fire department that the average conditions amounted to about two continuous fire streams to each engine, which would make sixty-six fire streams in constant service. It would seem as if this force and service would have been sufficient, under ordinary conditions, to have brought under control a fire with no greater extent of front than this one had before the arrival of outside aid. In about three hours after the fire started the first outside fire company was in service, and from that time on other outside companies arrived and got into service very rapidly. As soon as the fire approached the wharves, the fireboat and the fire pump on the police

boat were also brought into service, with a total capacity of about 5,000 gallons a minute. It would seem, therefore, that a force of about 1,093 men, with fifty-seven fire engines and two fireboats, having a total capacity of very much over 50,000 gallons a minute, keeping in continuous service over 100 fire streams, would have been sufficient, under ordinary conditions, to have brought under control a fire, with a front of not over five blocks at its worst, before it could burn itself out at the water's edge. As to the efficiency of the firemen there could be no doubt.

Would the work of these men, with sufficient apparatus to cover the van and flanks of the fire line and to skirmish ahead of it, working intelligently and fearlessly, and yet failing to stop the fire before it died out, have been any more effective in stopping the flames, if in Baltimore there had been installed a high-pressure fire service system such as Philadelphia possesses, and completely covering the burned district? To the writer of the paper it seems that the greatest advantages for fire service that could have been claimed for it, as compared with what our ordinary water supply system offered, would be that more streams of a somewhat larger diameter and at a somewhat higher pressure would have been available for concentration at any one point; that these streams could have been more quickly brought into play; and that the same force of firemen could have covered a greater area or handled more streams at any one point.

As to the possibility of waste from broken water pipes in buildings destroyed by fire temporarily crippling the water service: There were about 1,400 separate buildings destroyed, nearly every one of which had one service connection, many had two and three, although quite a number of the small business places had service pipes of only one inch or less diameter. There were 523 whose connections were from one and one-half inch to six-inch—none were over six-inch. How many were broken, can not be ascertained, as hundreds still lie buried under the debris, and, in attempting to stop the leakage immediately after the fire, it was often impossible to get at the stops on the service pipes at the curbs on account of the debris, and, therefore, the mains had to be shut off in many of the streets. But hundreds of small service pipes and nearly all of the large service pipes were broken.

CLEANING STONEWORK AND PRESSED BRICK FRONTS

STONEWORK, says the Painters' Magazine, is best cleaned of smoke as well as mold by applying with a long handled fiber brush a strong solution of caustic soda or pearlash, which is permitted to remain about 15 minutes and is then thoroughly removed with one or more washes of clear water, for which purpose a hose and a stiff broom will do good service.

To clean finished marble, mix with enough water to make a creamy paste 5 pounds sal soda, 2½ pounds bolted whiting and 2½ parts powdered pumice. Apply this to the surface and rub with any suitable brush, then wash off with soap and water, and finally rinse.

Builders' acid, a mixture of muriatic acid and water in equal parts, is used to remove the spots of mortar on brickwork, and is also recommended for removing efflorescence on brick, but it is scarcely the proper means of renovating or removing discoloration from smoke or age. At any rate, the acid solution must be followed up by rinsing with clear water, or the bricks will darken to a great extent. A thorough scrubbing with soft soap and water, to which a little ammonia has been added, is the best cleanser for pressed brick. Final rinsing with clear water, of course, is necessary.

To make the brick look fresh and new, however, a wash of the following composition will be of service: One-half pound of good animal glue; soaked in water and then melted in water, say 8 gallons in all, to which add 1 ounce of bichromate of potash in solution and 10 pounds dark Venetian red and enough yellow ochre to give the desired effect. This is applied as thin as possible with a large wall brush.

GIVING VALUE TO WASTE MATERIAL.

A FEW years ago, says the Canadian Architect, brick-makers in Toronto threw away as useless a considerable quantity of what are known as "clinker bricks," i. e., bricks uneven in color and shape and exhibiting protuberances on their surfaces. These peculiarities are due to the bricks being placed in the arch of the kiln where they are exposed to the greatest heat. An architect in looking one day at a pile of these refuse bricks thought he saw possibilities in them, and forthwith bought sufficient of them to build himself a house. The appearance of the house was pleasing and in contrast to the ordinary run of work. Other architects then saw a value in the clinker brick and began to use them. The demand so increased that the brickmakers themselves came to see the value of what they had been accustomed to regard as a waste product, and the price was advanced, until now "clinkers" bring two dollars per thousand more than standard first quality.

The Critic

RUSKIN AND ARCHITECTURE.

LAST month, in the Monthly Comment, some reference was made to the influence of John Ruskin on art. In this connection the following extracts from a recent lecture on "Ruskin and Architecture," by Prof. S. H. Capper, of Victoria University, Manchester, may be of interest.

Ruskin's attitude toward architecture, he said, was a special one, and his interest for architects and influence upon them was partly the goading of somewhat fierce antagonism, partly the more genial stimulus of sympathy and insight. He approached architecture not from the professional side nor from the historical side, but from the esthetic, the philosophical, and above all from the moral side. In the first place, architecture for him was reached through the sister arts of painting and sculpture. This was, in essence, a fairly common attitude; for most men the ornamental features of a building were its "art," but Ruskin assumed this as a reasoned position deliberately, and everywhere pushed it to its extreme logical conclusions.

In the second place, Ruskin's attitude to architecture was that of social reformer as well as art crusader. The "Stones of Venice" was written to show how the rise and fall of the Venetian builder's art depended on the moral or immoral temper of the state. There was an absolute right and wrong in art, and what was wrong in art was as wrong as a moral delinquency. Thirdly, Ruskin was preeminently the prophet-priest of nature. Nature was right, and the only right. To such a teacher, profoundly convinced of his gospel, yet crying as one in the wilderness, the mocking rejoinder of the Bohemian painter that "nature is very rarely right" artistically, and his graceless talk of "very foolish sunsets," must have seemed not merely unregenerate but blasphemous.

Ruskin's teaching, enforced under a literary form that was singularly masterly, could not but strongly influence contemporary architecture. On the whole, that influence, if somewhat narrowing in tendency, had been good; his constant appeal to the highest tribunal could not fail in itself to be stimulating, even to those who dissented from the judgment rendered. And Ruskin must always stand for a strongly persuasive influence toward "in everything doing our best." Taking the Pisan-Romanesque architecture as by Ruskin's dictum "amongst the noblest buildings in the world," the lecturer examined Pisa Cathedral from the architect's point of view and in the light of Ruskin's criticisms, illustrating the building and criticizing the criticisms, so as to understand the strength and weakness of Ruskin's position.

The doctrine that "architecture is ornament" was, considered from the architect's point of view, necessarily antagonistic; to an architect it was obviously false to define architecture as (in Ruskin's words) "merely the art of designing sculpture for a particular place and placing it there on the best principles of building"; and Ruskin himself admitted the architect's view in defining "dominion" as an intellectual power of architecture depending "for its dignity upon arrangement and government received from human mind." The obvious fallacies, also, due to the strenuous nature-cult of Ruskin's mind; the strained and equivocal analogies; above all, the perpetual reference of the pointed arch to leaf-forms, and the like, were touched upon and illustrated, while the extraordinary beauty of Ruskin's poetic sympathy with Nature in all her moods was fully recognized.

Ruskin's moral earnestness and high social ideals, however stimulating and ennobling in themselves when reserved for their proper place, became a source of weakness when urged irrelevantly in art, as when the right use of iron in construction was seriously discussed in the light of a phrase in the Book of Jeremiah. But the moral earnestness was at bottom the source of much of Ruskin's best influence, and one could not but be endlessly grateful for the eloquent sympathetic insight with which he urged so constantly the ennoblement of the handicraftsman and art-toiler.

THE fault of the English school of art hitherto has been the too great attention to color, the too little attention to form. Owing to this it has gained somewhat in the powers of attraction, but lost in those of expression. Painting with the English has as yet taken the lead, while sculpture has been comparatively subordinate, and as a natural consequence the former has never risen to its highest powers, for whenever sculpture holds its proper rank it tends to elevate its sister art.

The Nursery

THE NEW NURSERY.

THE mother who has a nursery to refurnish and can suit her tastes without consulting her purse too closely has a delightful task before her in these days, says a New York contemporary. This is the children's century, and nothing for their health or comfort, convenience or amusement, is forgotten by inventors and designers. The small boy and girl no longer have to risk breaking their necks by climbing up on top of the chiffonier to reach a coveted treasure placed there carelessly by nurse. The chiffonier is low and squat and easy to reach now. The tables are not just the height to bump one's head against now. They are low, solid tables, easy to put things on. All the furniture has grown short and broad for nursery purposes, and it has not lost a whit of its good looks in the process.

Furniture, designed expressly for children's use, means an astonishing improvement in the nursery in point of neatness—a pleasant, kindergarten way of inculcating love of order and regularity. Again, thanks to the readiness with which the little articles are handled, the small persons are able to help themselves more frequently, and consequently require less attention from mamma or nurse.

The beds in every case are single. Each child has his own, in accordance with the advice of authorities, who insist upon this regulation as necessary to good health and proper growth. The furniture is simply made and solid. Although plain, it is built along the artistic lines of the mission furniture in general. With the tiny washstand comes a pitcher and bowl set, decorated in amusing animal designs and calculated to delight any normal youngster of either sex.

The clothes tree, another article of the outfit, has fascinations enough of its own (in the way of various hooks, etc.) to induce the small boy or girl to hang up garments as a play, not a task. By the time the zest of the play has worn off neatness in this matter will have become a habit. The small bureau can be shared by two children, thanks to the generous supply of drawers. These are spacious enough to close away the different pieces of nursery wardrobe, and reachable for a tot of three or four years.

Some mothers who are fitting out nurseries in this way employ some one of the new wall papers, which come in designs especially adapted to children's rooms. Mother Goose people run riot over the four walls in an enchanting manner. Or the fairy tales are represented—the Sleeping Beauty, Red Riding Hood, and many other personages of those exciting times. Other mothers prefer to paper the room in the solid colors which combine so well with mission furniture and to supply the literary interest with good pictures, neatly framed, upon the walls.

A MODEL NURSERY.

A MODEL nursery has the furniture of the nursery made of prairie grass, because it is most readily cleaned. The crib is a dainty creation, the crown-like canopy being hung with white point d'esprit lace over pink. There is a bassinette, white dresser, tiny rocker, toilet chair with a pneumatic cushion, nurse's sewing chair, with pockets for work and utensils in the arms, mother's rocker, high chair, writing desk and hospital table of white iron with heavy glass top. This table is desirable because it is not only readily cleaned, but it can be made antiseptic. On the table there is a little ice box for baby's exclusive use, and an ice cream freezer in which not more than two plates of the dainty can be frozen. The freezer can also be used for keeping articles of diet at a low temperature.

The nursing bottle is of a hygienic sort, the safety pins are nickelplated, with protected springs, and washes, toilet powders, witch hazel for the inevitable bumps, various foods and cooking utensils have all been remembered. A baby jumper that can readily be converted into a reclining chair stands at one end of the room, and near it are a sand tray and kindergarten outfit of practical games and toys. There are also a physical culture equipment for older children and books for childish taste.

The feeding utensils are all of silver—a tray easily fitted to chair or table, a mug, porringer, plate, curved handled baby spoon and the pusher. Four thermometers guard the temperature of the room, detect drafts about the floor and indicate the heat of the bath and milk. Cupboards draped with pretty curtains at each end of the room are intended for playthings.

The wall has a covering of burlap, which can be made germ proof by frequent paintings.

Ventilation

THE NEW YORK STATE LAW.

A LAW enacted by the last State legislature on the ventilation of public buildings, especially school houses, is the first general law on this important subject to be passed by any State. It took effect July 1. It provides that no school house shall hereafter be erected in any city of the third class or in any incorporated village or school district of this State, and no addition to a school building in any such place shall hereafter be erected, the cost of which shall exceed \$500, until the plans and specifications for the same shall have been submitted to the Commissioner of Education and his approval indorsed thereon. Such plans and specifications shall show in detail the ventilation, heating, and lighting of such buildings. Such Commissioner of Education shall not approve any plans for the erection of any school building or addition thereto unless the same shall provide at least fifteen square feet of floor space and 200 cubic feet of air space for each pupil to be accommodated in each study or recitation room therein, and no such plans shall be approved by him unless provision is made therein assuring at least 30 cubic feet of pure air every minute per pupil, and the facilities for exhausting the foul or vitiated air there shall be positive and independent of atmospheric changes. No tax voted by a district meeting or other competent authority in any such city, village or school district exceeding the sum of \$500 shall be levied by the trustees until the Commissioner of Education shall certify that the plans and specifications for the same comply with the provisions of this act. All school houses for which plans and detailed statements shall be filed and approved, as required by this act, shall have all halls, doors, stairways, seats, passageways and aisles, and all lighting and heating appliances and apparatus, arranged to facilitate egress in case of fire or accident, and to afford the requisite and proper accommodations for public protection in such cases. All exit doors shall open outwardly, and shall, if double doors be used, fasten with movable bolts operated simultaneously by one handle from the inner face of the door. No staircase shall be constructed with wider steps in lieu of a platform, but shall be constructed with straight runs, changes in directions being made by platforms. No doors shall open immediately upon a flight of stairs, but a landing at least the width of the door shall be provided between such stairs and such doorway.

THE VENTILATION OF DWELLING HOUSES.

IDEAL house-ventilation is defined by an English writer as being: 1. That none of the air within the house may be allowed to be respired or used more than once—never a second time or over again; that, having been once used, it shall be abstracted, and thrown back into the outer air, and be replaced with fresh direct from outside. 2. That fresh air shall be supplied in sufficient quantity to fully replace the air abstracted. 3. That this abstraction and supply shall be effected in such a manner that the occupants of the room will not feel the current or movement; that is, so as not to be felt as a draft. 4. That the temperature of the incoming air shall be so under control that it may be raised in cold weather and lowered in hot weather to any degree desired. 5. That the inlets and outlets shall be easily adjustable, by slides or valves. 6. That the provisions shall be such that the air may be allowed to pass through the house or rooms in quite a rush, or may be altogether arrested at will. And 7. That the whole house shall be included in the scheme, the lobbies as well as the rooms.

Such is ideal house-ventilation. Unfortunately, its provision is not free from complication, and it involves some expense—more of both, in fact, than most people care to incur. It is therefore seldom attempted, no other provision being made than for opening the windows; and it is erroneously supposed that on opening the windows at the top and bottom the air will come in at the bottom and go out at the top; but it will, under ordinary circumstances, come in at both, the two forming only one divided inlet. The inside air being less cold, and therefore less heavy, is pushed out of the room up the chimney, and into the lobby by the colder, and therefore heavier, air coming in through the window openings: and, unfortunately, that coming in through the upper openings tends to fall on to the heads of the occupants, and that coming in through the lower to pass to their feet. The consequence is that during use of rooms the windows are usually closed, and there is no ventilation at all, so that the rooms become hot and stuffy.

Cooling Notes

A PRACTICAL EXAMPLE.

A SYSTEM of cooling apparatus, especially designed for use in restaurants, work-rooms, hospitals, and apartments, maintaining a temperature of 70 degrees, although the outside temperature may be 85 or 90, has recently been put to practical test in Boston.

The essential feature of the system, which is described in the Metal Worker, is known as the regenerator, which consists of a series of cylinders enveloping each other, that may be suspended from the ceiling, supported on brackets or by means of a pedestal. These cylinders are made in different diameters and with corresponding difference in cooling capacity, the 12-inch regenerator having a capacity for cooling about 800 cubic feet of air per minute, while the 18-inch regenerator has a capacity for cooling 2,500 cubic feet of air per minute. In construction the regenerator consists of an outer cylinder inclosing a nest of other cylinders open at the top to allow a free entrance of the heated air near the ceiling of the room in which it is placed. There are spaces between the different cylinders through which the air can readily pass. At the base is a specially designed fan of high efficiency operated by the cold water which circulates through the cylinders. In operation the cold water is discharged on the open cylinders at the top, coating each side of the cylinder as it descends, and by the rotation of the fan the air in the building to be cooled is drawn in from the top of the room between the cylinders, passing down until it reaches the bottom, where it is separated from the water and discharged into the room at about the same temperature as the cold water to do its work of cooling. In this cooling process the excessive humidity which the hot air contains is absorbed by the cold water and the vitiated humid atmosphere is reduced in its temperature, while the dust and other impurities of every description are absorbed.

The air, regenerated by its passage through the apparatus, is discharged at a velocity that gives the regenerator a capacity for cooling about 20 degrees 800 cubic feet of air per minute. A building that is properly insulated to prevent the loss of heat in the winter, or overheating in the summer, will, to a large extent, govern the amount of ice required in the cooling tanks to effect a satisfactory reduction in temperature. It is economy to use double windows, and, where they are exposed to the sun, have them shaded with awnings. The amount of ice used in the work is also affected by the number of occupants of the factory or customers of the store. It has been demonstrated by a practical test of the regenerator, in a four days' trial, that it was possible to reduce and maintain a temperature of from 68½ to 70 degrees with the front door wide open when the outdoor temperature was 95 degrees, the only effect being that a greater consumption of ice was required than if the doors had been kept closed.

The average cost of operation for the four days in question was \$3.56 a day for ice and power, with ice at \$3 a ton.

A NEW JERSEY EXPERIMENT.

A CORRESPONDENT of a technical paper describes some experiments on a large scale conducted during last summer in cooling a store in Paterson, N. J. An apparatus of extreme compactness, consisting of one or more segments, each of which represents an actual cooling (radiating) surface of 275 square feet with but 6 cubic feet of space-displacement, cools the air driven therethrough by a blower, before delivering it to the locality to be cooled; where cold spring water is at disposal, this will be sufficient to assure satisfactory results.

Any premises provided with such a cooling plant may with advantage be heated in winter by the very same means, i. e., the same apparatus and the same ducts, adding only a simple hot water heater and omitting the use of a fan. Such a system of heating would then coincide in principle with the well known hot air furnace heating, however, without the latter's drawbacks of possibly overheating the air or deteriorating it in consequence of a leak in the furnace, since it is the hot water that heats the air.

By means of the mentioned special apparatus and its accessories a fan and the hot water heater, a system of combined cooling, heating, and ventilating is established which, wherever the best of hygienic conditions are cared for or demanded, is unequalled, supplying an interior continuously with pure, dust and odor-free air of a temperature that insures perfect comfort both in winter and during the hot summer months.



The Kitchen

SCIENCE IN THE KITCHEN.

A HANDY kitchen thermometer is now among the supplies for the use of cooks of scientific mind and for novices as well, says the New York Sun. With the thermometer's aid the time exact for slipping a cake into the oven can be told. The precise moment can be determined when the eggs should be intrusted to the water, and one can ascertain whether or not the heat is too great for the pot roast or the delicate stew. Women who are cooks and mistresses combined praise the kitchen thermometer as saving them from mistakes and embarrassment. A kitchen microscope is also among the new devices. In the washing of salads, of spinach and other vegetables, of grapes and various other fruits, and in deciding as to the state of meats and what process of cooking they had best be subjected to, the microscope does good service. Especially does the housekeeper who is a pure food advocate prize its aid.

The household indicator is another convenience. It is a tally board that acts as a messenger between the cook and the grocer's boy. On the indicator is listed the entire category of supplies needed in kitchen matters, from matches, salt, soap, to eggs, butter, bacon and flour. There are smooth little pegs to be fitted to the small holes opposite each item on the list. If the cook when preparing a meal finds that the salt is low, she runs to the indicator and sticks a peg to indicate the quantity of salt to be ordered. She also sets a peg opposite each item as the various needs crop up in a day's work. Work over, she just puts the indicator on the table where the boy can see it when he comes, and is free from any more bother in the matter. Flat dwellers put the handy indicator outside the door and then are free to go to walk or shop, knowing that the supplies will be forthcoming.

A GLAZED STONEWARE FOOD CLOSET.

A GLAZED stoneware food closet or locker has recently been introduced in England for artisans' dwellings, but appears available for houses of any cost. The door, of wood, aluminum or enamel, is provided with a perforated zinc panel which, together with a hole in the outer wall covered by a grid, secures all the necessary ventilation. Strips on the inside of the closet support a suitable shelf of enameled metal or hard wood.

A MEXICAN KITCHEN.

THE first thing that attracts the eye of the foreigner on entering the Mexican kitchen, says the Housekeeper, is the brasero. This is a substitute for our ranges and cookstoves, a huge affair that extends across one side of the room. Sometimes, especially in the kitchens of the hotels, there are as many as four braseros, one traversing the length of each wall, and, as the kitchen is usually square they are of equal length.

The brasero looks like an ordinary work bench made of adobe brick, with several openings in the top which are provided with grates to hold the charcoal used in cooking. Primitive dampers are fashioned by openings along the front, which afford a good draft, for they are so constructed that they lead up to the fire. The shelves and sides of the brasero fairly groan with their load of cooking utensils of various forms, the work of the native Indians. Some of these an American housewife would consider mere ornaments, as she could ascribe for them no possible use, but the Mexican cook requires more utensils than her American sister, and every vessel has its use. And what a vast amount of dish-washing this necessitates!

All the baking is done in covered pans, and, of course, the Mexican cook, even were she familiar with the process, could not succeed with flaky, light American biscuits, for the brasero is always too hot or too cold. Every kitchen, except in the homes of the very poor, is provided with a sink and a big draining board. Many of the quaint pieces of pottery reposing upon the pantry shelf and regarded as cheap articles of use only, would be hailed with delight as a priceless ornament by the American housewife. Sometimes the poor pawn these beautiful articles, which come to occupy honored places on the mantels and sideboards of aristocratic American homes.

MODEL KITCHENS.

THE model kitchen has become a well recognized feature of the department store. All sorts of new kitchen helps are gathered here. That the attendants are not always fully informed as to the uses of the various utensils is a matter of regret, but perhaps that will be bettered in time.



New Building Patents

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

BRICK, STONE, AND TILE.

BUILDING BLOCK. W. Porten, St. Paul, Minn. June 7. 762,193
BUILDING BLOCK. W. Porten, St. Paul, Minn. June 7. 762,251
TILING FOR FLOORS. J. H. Munro, New York, N. Y. June 14. 762,428
BUILDING WALL AND BLOCKS FOR FORMING SAME. W. Whitmore, Colon, Mich. June 28. 763,945

CARPENTRY.

WINDOW FRAME AND SASH. G. Wahlstrom, Des Moines, Iowa. June 7. 761,733
CASEMENT STAY FOR WINDOWS. C. J. Fooks, Ealing, England. June 14. 762,296
WINDOW SASH CASING. H. Borgmann, Washington, D. C. June 14. 762,464
WINDOW FRAME. N. E. Parish, Cleveland, Ohio. June 14. 762,651
WINDOW. O. Frotscher, Philadelphia, Pa. June 21. 762,896
WINDOW FRAME. H. T. Whitenack, Witt, Ill. June 21. 763,234
WINDOW STRIP. H. D. Aupke, Sharpsburg, Pa. June 21. 763,240
WINDOW FRAME. H. L. Hoyer, Butte, Mont. June 21. 763,287
HORIZONTALLY PIVOTED WINDOW. H. E. Essig, Canton, Ohio. June 28. 763,471
WINDOW SASH. A. C. Goddard, Woodcliff, N. J. June 28. 763,747

CONSTRUCTION.

CHIMNEY. J. Lorenz, Chicago, Ill. June 7. 761,894
METALLIC ROOFING. J. Williams, Eckerty, Ind. June 7. 762,220
REINFORCED CONCRETE CONSTRUCTION. H. Kampmann, Baltimore, Md. June 14. 762,479
REINFORCED TERRA COTTA PARTITION. P. H. Bevier, New York, N. Y. June 14. 762,678
MANTEL. F. A. Broadbent, Baltimore, Md. June 14. 36,983
SEAM FOR METALLIC ROOFING. F. J. Pioch, Provo City, Utah. June 21. 762,939
MEANS FOR FLASHING FIRE WALLS. W. R. Rose, Washington, D. C. June 21. 762,945
TWO STORY TENEMENT. N. R. Grimm, Washington, D. C. June 21. 763,279
WINDOW CONSTRUCTION. B. J. Hausfeld, Cincinnati, Ohio. June 28. 763,484
WINDOW CONSTRUCTION. E. H. Lunken. Cincinnati, Ohio. June 28. 763,496
PANEL FOR METAL CEILINGS. F. G. Caldwell, Wheeling, W. Va. June 28. 763,852

ELEVATORS.

PNEUMATIC ELEVATOR. G. F. Steedman, St. Louis, Mo. June 7. 761,790
ELEVATOR SAFETY DEVICE. F. Kocab, Allegheny, Pa. June 7. 762,240
SAFETY DEVICE FOR ELEVATORS. U. S. Alz, Baltimore, Md. June 14. 762,267
SAFETY APPLIANCES FOR ELEVATORS. A. Froussard, St. Louis, Mo. June 14. 762,398
SAFETY DEVICE FOR ELEVATORS. P. Benning, Columbus, Ohio. June 14. 762,612
DRIVING GEARING FOR ELEVATORS. E. M. Fraser, Yonkers, N. Y. June 14. 762,698
ELEVATOR SAFETY DEVICE. P. Bremer, Coulter, Pa. June 31. 763,144

FIREPROOFING AND FIRE EXTINGUISHMENT.

FIREPROOF CONSTRUCTION. G. Downman, Atlanta, Ga. June 14. 762,472
FIREPROOF FLOOR AND CEILING CONSTRUCTION. T. O'Shea, Chicago, Ill. June 14. 762,552
FIRE SHUTTER. P. Ebner, Columbus, Ohio. June 28. 763,381
FIREPROOF CEILING. H. Schmidt, Hanover, Germany. June 28. 763,513
FIREPROOF FLOOR AND CEILING CONSTRUCTION. Oliver & Oliver, New York, N. Y. June 28. 763,690

HARDWARE.

LOCK. J. Lyon, Dayton, Ohio. June 7. 761,843
LOCK. H. Hartman, Allegheny, Pa. July 7. 762,051
FASTENERS FOR WINDOWS OR THE LIKE. J. A. Belk, Feilding, N. Z. June 14. 762,376
SASH LOCK. J. H. Moskow, San Francisco, Cal. June 14. 762,595
WINDOW LOCK. W. E. Conner, Braddock, Pa. June 14. 762,616
WINDOW LOCK. J. T. Myers, Culmerville, Pa. June 14. 762,648
SASH LOCK. T. S. Alford, Denver, Col. June 14. 762,856
HINGE. B. F. Burtis, Gravesend Beach, N. Y. June 21. 763,256
SASH CORD GUIDE. W. R. Fox, Grand Rapids, Mich. June 28. 763,474
SASH PULLEY. J. Duffy, Grand Rapids, Mich. June 28. 763,546
SASH LOCK. C. Johnson, Chicago, Ill. June 28. 763,610
SASH FASTENER. M. L. Gordon, Los Angeles, Cal. June 28. 763,879

HEATING AND VENTILATING.

VENTILATOR. S. H. Jacobson, New York, N. Y. June 7. 761,680
VENTILATING WALL CONSTRUCTION. J. W. Redfern, Owen Sound, Can. June 7. 761,711
MEANS FOR HEATING AND VENTILATING BUILDINGS. J. Friedlander, Grand Forks, N. D. June 7. 761,953
WINDOW VENTILATOR. G. S. Myrick, Philadelphia, Pa. June 21. 763,106
RADIATOR. J. W. Brown, Latrobe, Pa. June 28. 763,591
HEATING APPARATUS. J. Collis, Des Moines, Iowa. June 28. 763,724

MISCELLANEOUS.

SCAFFOLD. C. Foster, Douglaston, N. Y. June 21. 763,274
METHOD OF ERECTING SCAFFOLDS. C. Foster, Douglaston, N. Y. June 21. 763,275

PLUMBING.

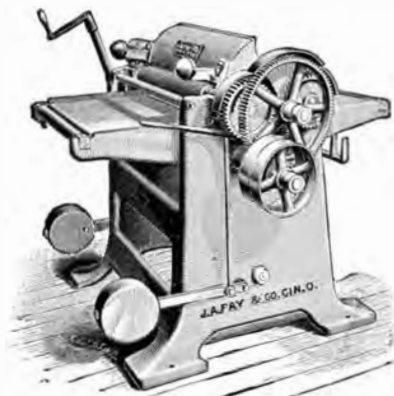
WATER CLOSET TANK MECHANISM. J. M. Burr, Norwalk, Conn. June 7. 761,758
FLUSH OUTFIT FOR CLOSETS. T. F. Crary, Middletown, Ohio. June 7. 761,762
PUMP WATER CLOSET. L. M. Hooper, Rutherford, N. J. June 7. 762,059
FLUSH TANK. Henn & Henn, Hamilton, Ohio. June 14. 762,405
COMBINATION TOILET APPARATUS. H. S. Hale, Philadelphia, Pa. June 21. 763,178
WATER CLOSET. Bender & Schlotter, New Rochelle, N. Y. June 21. 763,246
WATER CLOSET. L. M. Hooper, Rutherford, N. J. June 28. 763,561



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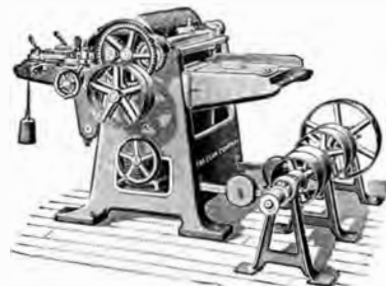
IMPROVED WOOD WORKING MACHINERY.

KNOWING that our readers are always glad to see new machines brought out from time to time by enterprising manufacturers of wood working machinery, we are pleased to show one that seems to have the necessary advantages to insure its doing good and



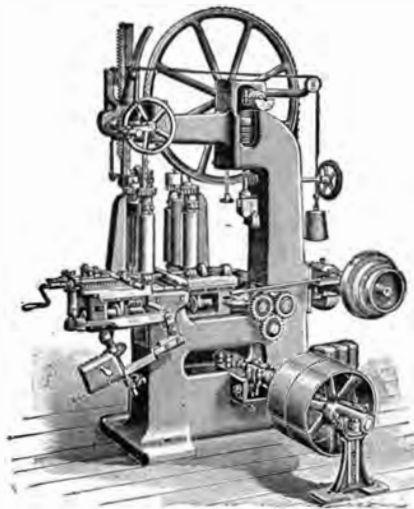
No. 2. SURFACE PLANER.

reliable work. The following points are embodied in its construction: The planer is especially designed for general work in nearly every line of small wood working shops that do planing, and it will, with very little power, surface in a superior way all kinds of soft or hard woods. It is made in size to plane to twenty-four inches wide and from one-sixteenth to six inches thick. Pressure bars are fitted on each side of the cylinder for planing thin and short stuff, and also for producing a fine surface on the material. The frame is solid, insuring great strength and solidity, and the crucible steel cylinder has lips to break the chips. The bed is raised and lowered by a crank and rod convenient to the operator, and is connected by gears to raising



No. 2. PLANER, MATCHER, AND MOLDER.

screws for different thicknesses of work. The bed is hung between gibs in the frame, thus accurately taking up all wear. The cutter head and feed rolls hang in the frame, preserving the same relative position with the bed plate—which is a great improvement over old methods of making independent adjustments. The feeding rolls are large, strongly geared, and the first pair heavily weighted. The long bed has friction rolls, and all parts are thoroughly braced, planed, and bolted. The next illustration shows a medium-priced planer, matcher, and molder, especially designed for doing light planing, matching, and molding in small factories, shops, and mills that do that sort of work, and who thus have good use for such a tool. It planes up



No. 11. BAND RE-SAW.

to twenty-four and one-quarter inches wide, one-eighth to six inches thick, and tongues and grooves flooring, ceiling, etc., to twelve inches wide, or less, and is also particularly well suited for beading, working drop or

patent siding, partition stuff, carpenter's moldings, casing, baseboards, etc.

The feed has four steel rolls and is particularly well geared, insuring a good, strong feed, which can be instantly started and stopped, while the feed roll is held down by weights to give different pressures. A pressure bar on each side of the knife prevents any tearing, and enables the machine to do fine, smooth planing.

The matcher head moves up and down with the bed, thus saving much time and labor in making separate adjustments. Taken altogether, this machine has many devices for making quick and accurate adjustments, and producing the work to advantage in quality and large amount, and it will no doubt meet with favor wherever used. The next engraving shows a band re-sawing machine, which is new in design and built on new principles. It was patented February 7, 1900, and March 10, 1903, and is meeting with favor wherever in use, and for a machine of medium capacity, intended for general re-sawing, it is easily one of the best yet built. Some of its most salient points are worth careful consideration. The upper wheel is mounted on a heavy column, reducing all tendency to vibration and insuring fast speed. The improved tension on the blade is very sensitive and reliable, and is uniform on all occasions. The lower wheel is solid, thus lessening circulation of dust, increasing momentum, and preventing the upper wheel from overrunning it. The upper wheel has a lateral adjustment to keep the saw on its proper path without stopping the machine. The feed is variable and built on an entirely original principle, and rolls will open to receive stock twenty-four inches wide and eight inches thick, and are self-centering; the inside rolls can be locked in position, and the outside ones instantly moved to or from the saw by lever, and are gaged by an accurate quadrant. The rolls can be tilted twelve degrees and clamped for angle work. The makers of these improved machines, J. A. Fay & Egan Co., Nos. 209-229 West Front Street, Cincinnati, Ohio, will be pleased to furnish any readers with details and engravings showing them in detail. They will also send free to those interested their new catalogue of wood working machinery.

ELECTRICALLY WELDED FABRIC.

In the wide-reaching empire of our building industries, fireproofing has been studied from as many points and treated with as great a range of materials as any department in architecture. The result is that any mark of incompleteness relating to the method or substance employed in the safeguarding of structures, is bound to be productive of earnest research and much improvement. Progress has come from stricter insight into needs of protection, stimulated by the greater cost of material used and increased wealth to be cared for in modern construction. The advance made in the past few years by the use of concrete, reinforced with steel, has been so rapid, so many of the greatest building operations have been carried to completion in which this class of fireproofing, as erected by several companies, has played such a prominent part, that at the present time a similar system, after being tested in the most scientific manner, and found not wanting in fire-resisting qualities and load-carrying capacity, is readily admitted to the specifications of the most eminent architects and engineers. The advantage of concrete construction of stone or cinder concrete reinforced with one or other form of steel embedded in the concrete, is no longer questioned. The system we refer to belongs to The Clinton Wire Cloth Company, and its success rests on the fact that the electrically welded fabric establishes a continuous bond in the concrete and creates an unusually monolithic construction. Clinton welded fabric, made from six to ten gage drawn steel wire, galvanized or plain, can be laid in lengths up to three hundred feet, thereby forming a continuous bond for that distance. Heavier gage wire can be laid in lengths up to sixty feet, and where connected can be locked or hooked to the next sheet where a building requires more than one sheet in length. The method is in sharp contrast with a system where lapped ends of steel fabric are necessary every few feet. By reason of the continuous bond, no entire collapse of any arch erected with electrically welded fabric can occur unless the weight imposed on the arch is sufficient to strain and break all the wires. For roofs of great length this feature is ideal, as no better roof can be erected than by using the concrete slab knit together for great lengths with a steel fabric. Attention is invited of engineers to the ease and accuracy with which the

heavier grades of the fabric can be used in the erection of wide span arches of from ten to fifteen feet; also for the floors of bridges, construction of tunnels, culverts, shafts, sewers, retaining walls, footings, coal and ash pockets, etc. A serious objection, where expensive decorations are used in fireproof buildings, arises from the discoloring of walls and ceilings in some constructions. This never occurs where plastering is done on wire lath for ceilings and hollow or solid partitions and wall furrings. The illustration presented herewith shows the establishment of a continuous bond. In its handsome pictorial and technical catalogue the company makes very plain the different classes of construction and the methods of executing the same. Partitions, hollow partitions, iron furring, and metal lathing, column guards, bridge walls, exterior walls, horizontal sections through walls, air ducts, sidewalks, floors, truss roofs, lath and plaster, solid filled partitions, etc., are all specifically written up and illustrated in this latest edition. The company has offices in Clinton, Boston, Chicago, San Francisco, and in New York at No. 150 Nassau Street; Albert Oliver, Eastern Representative. The mills are located in Clinton, Mass.

HOT WATER HEATER.

The permanent claims of efficiency in various directions in relation to the heating of buildings are so well established by the Humber heater throughout the country that it needs but a fair introduction abroad to make it a valuable addition to our export trade. To the steam fitter or user here it hardly needs one. The Humber



SECTIONAL VIEW OF THE HUMBER HEATER.

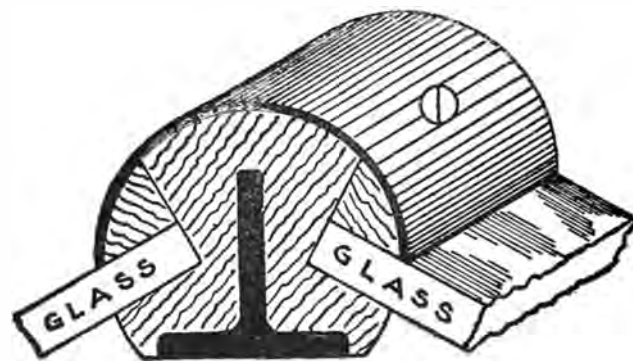
is a horizontal sectional boiler, and a sectional view is shown herewith. The waterways leading from one section to another are at the rear of the heater, and are built up with it. All the joints and packing are entirely beyond the fire line, which prevents any action of the fire upon the packing. This design of water connection necessitates only one joint for each section, which lessens the number of joints, thereby decreasing the possibility of a leak. Clean-out doors are placed at proper places, enabling the operator to clean every section with no trouble or annoyance, by means of special brushes which are furnished with each heater. The draft damper in ash-pit door being a lift door, is so arranged that it may be operated by an automatic regulator when desired. The construction of the sections alternates, and the smoke flues are so arranged that the gases, in passing from the firepot to the smoke outlet, must come in contact with every inch of heating surface. Grate bars may be removed or replaced without tearing down the heater. Humber heaters are the only ones having this improvement. This boiler is made for both hard and soft coal. The hard coal sections consist of a large single smoke flue in the center, and the next section has a number of small ones, alternating until the top is reached. For soft coal the same section with a center flue is used for the first section, while the alternate sections have several large flues, oval shaped and beveled, arranged to increase the draft and preventing liability of clogging with soot. The grate and flue surfaces are well proportioned. The "Humber Hot Water Heater" is manufactured by The J. H. McLain Company, Canton, Ohio.

A GREAT RUBBER STORE.

The well known manufacturers of vulcanized rubber, The New York Belting and Packing Company, Ltd., have removed to the new store at Nos. 91-93 Chambers Street, New York, N. Y. Judging by the way it is fitted up, and the advantageous spacing allowed by the immense area of its basement and five stories, the positive rank of this establishment, among unsurpassed emporiums for the stocking and selling of goods, will be unchallenged. The floors are fifty by two hundred feet, and extend through the whole block, the north end comprising Nos. 73-75 Reade Street. The company, in arranging its new offices and show rooms, has specially fitted up a room, equipping it with corresponding facilities, telephone service, etc., for the convenience of friends who wish to make their headquarters at this centrally located building.

CORNER POSTS AND TRANSOM BARS.

An improved system of setting glass, that of using the Coulson patent corner post and bar, is being extensively introduced by architects and builders. They, as well as the plate glass insurance companies, advocate the general use of the patents for the purpose of securing better effects in designing fronts with lighter divisions of glass, and for lessening the waste of breakage and the expense and loss of time in resetting this material. The posts and bars combine for store fronts the special advantages of minimum obstruction to light, greatest strength for holding large windows safely, and

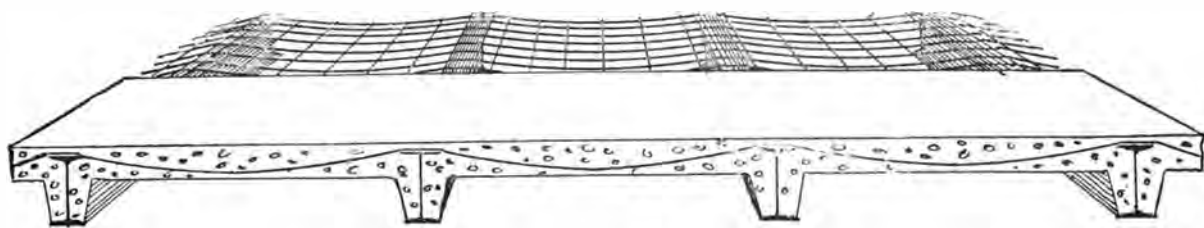


CORNER POST.

least danger and trouble in replacing large plates. The full size sectional view shown in the accompanying rough illustration is made of a narrow, light piece of soft wood, into a groove in the back of which the angle of a steel T-bar is sunk, and firmly fastened by lag screws. The several pieces of glass being set and firmly secured by wooden stops, the advantage of an all-wood bearing for the heavy plates is secured by the rigidity of the T-bar added. The face of the posts and bars, together with the wood stops, which altogether make up the outside, may be covered with polished brass, sheet aluminum, oxidized, nickelplate, or copper sheathing, screwed to the wood after the glass is set, and when finished, presents the neat and light appearance of a single metal or wood strip between the several plates of the window. In case of accident, the saving in cost and trouble is apparent. The base of the T being on the inside of the window, the glass must always be set and removed from the front or outside of the building, and a large plate can easily be taken out and the new one placed in position without removing or disturbing an elaborately trimmed window, or risking the marring of fixtures. The ease, safety, and economy of resetting windows where the post and bar are used will commend them to the storekeeper, the owner, and the insurance companies. The sole owners and manufacturers of the corner post, transom bar, division bar, and quarter rounds, are J. W. Coulson & Company, Nos. 96-98 North Third Street, Columbus, Ohio. With this firm plate glass and painting are a specialty.

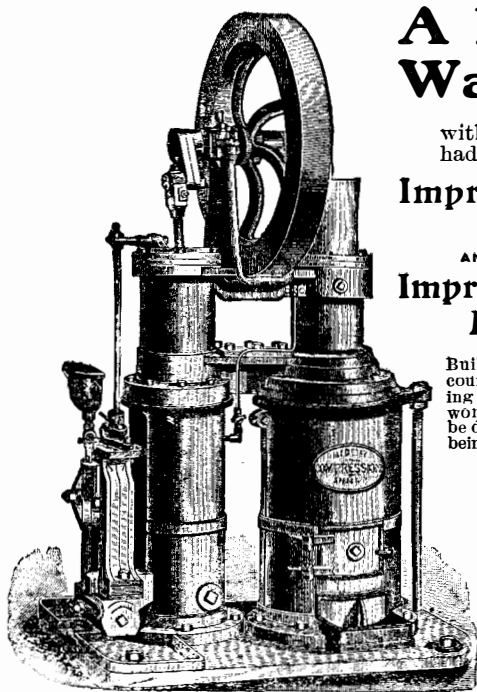
PURE FLAKE GRAPHITE.

Poor graphite is worse than none. Gritty graphite will cut shafts like bits of emery. The famous smooth, pure flake graphite, suitable for use as a lubricant, is found in the Dixon Mines at Ticonderoga. Pure flake graphite enters into a suitably proportioned lubricant as prepared by the Joseph Dixon Crucible Company, Jersey City, N. J. For coating gaskets coarse flake graphite fulfils every requirement of tightness, freedom from rusting, and ease of separation at any time, and without injury to parts. Graphite forms the basis of a perfect lubricant for commutators, lengthens the life of wire rope, and preserves it from abrasion; prevents wear on gears of every size and character, and serves an invaluable purpose in every machine shop. It offers especial economies to textile manufacturers by greatly reducing oil consumption and lessening the losses due to oil stains on fabrics. A very large number of the best known piston-rod packings are coated or thickly impregnated with coarse flake graphite. Pure flake graphite has been employed with success in lubricating electric knife switches and the cylinders of electric car-controllers. It has a high conductivity, and does not collect dust. Manila transmission rope is usually wound about a core formed of a smaller single rope. This core is nearly always coated thoroughly with graphite to afford the internal lubrication that is so necessary to good wearing qualities. All screw joints coated with graphite can be made up absolutely tight, will not rust, and will always come apart readily when desired. For pipe threads, bolts, flanges, studs, and screws, a thick mixture of flake graphite and oil may be used, although the company prepares a "Graphite Pipe Joint Compound" that is especially recommended for this purpose. It is much more economical and far better than red or white lead. Secure a fine catalogue by request to the New York office, No. 68 Reade Street.



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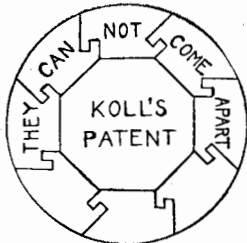
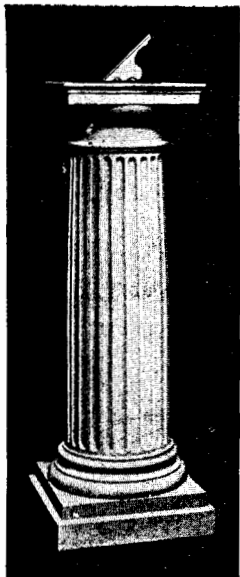
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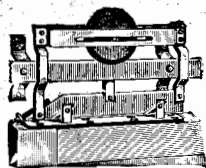
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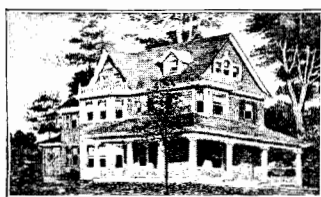


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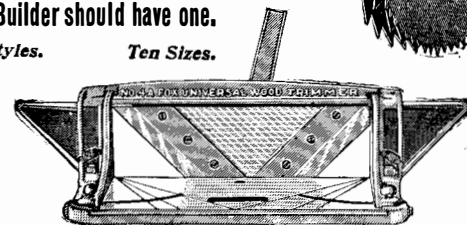
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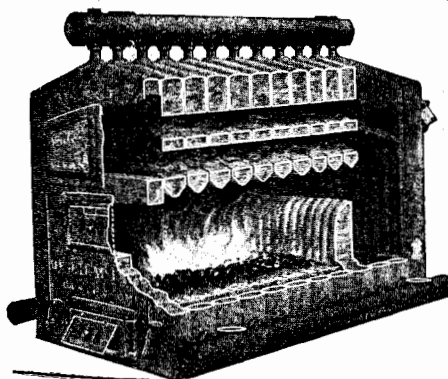
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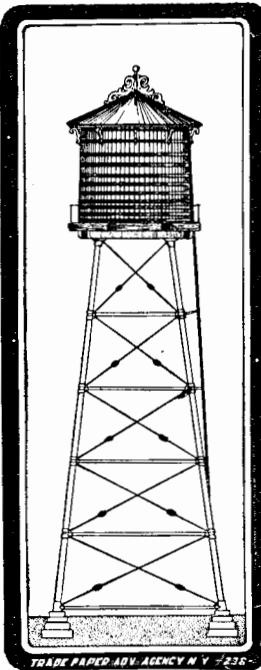
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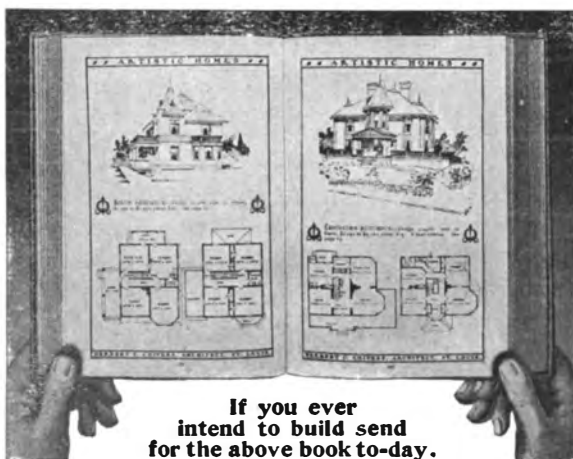
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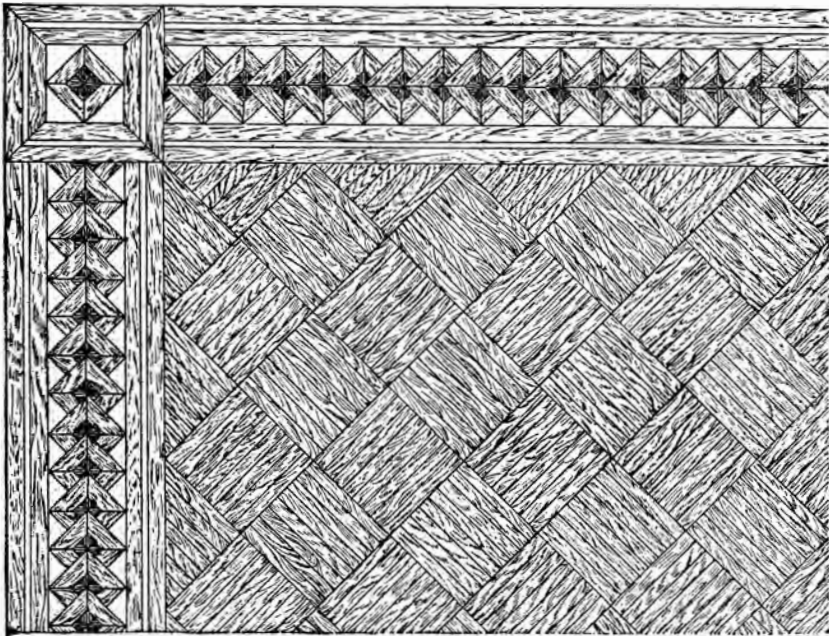


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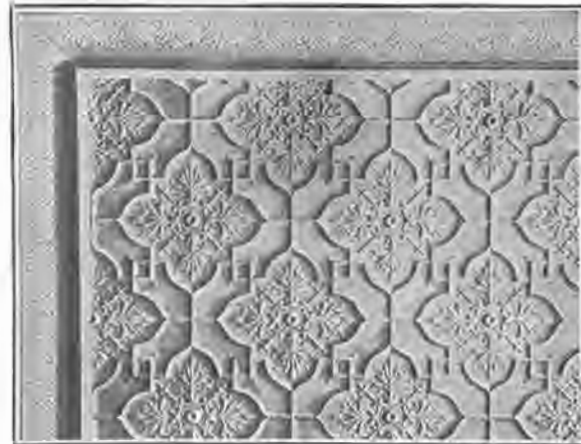
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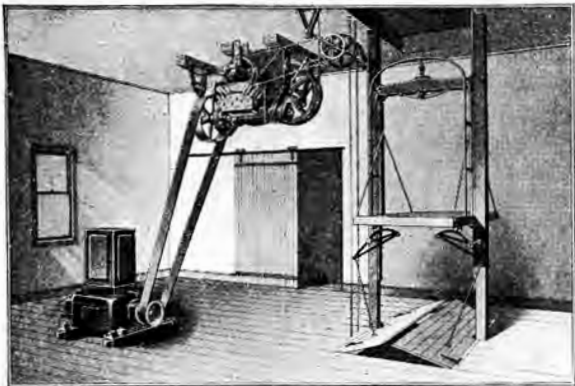
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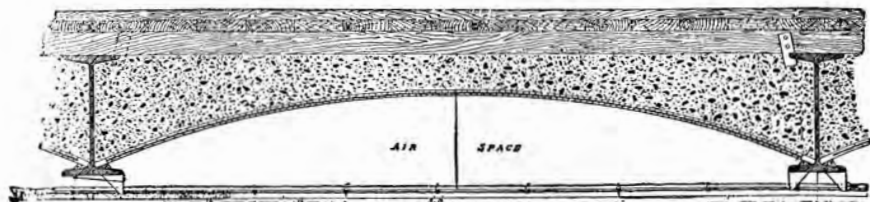
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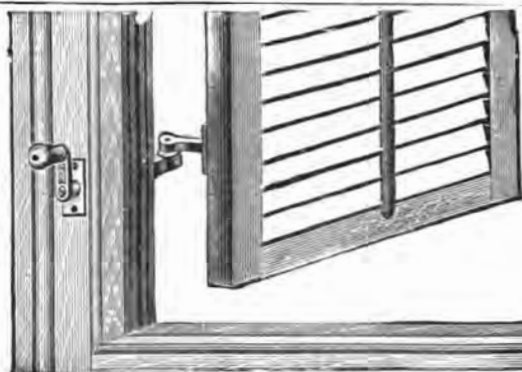
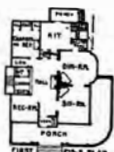
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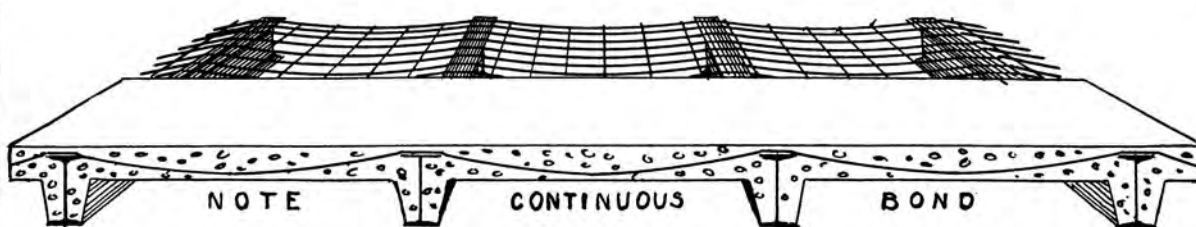
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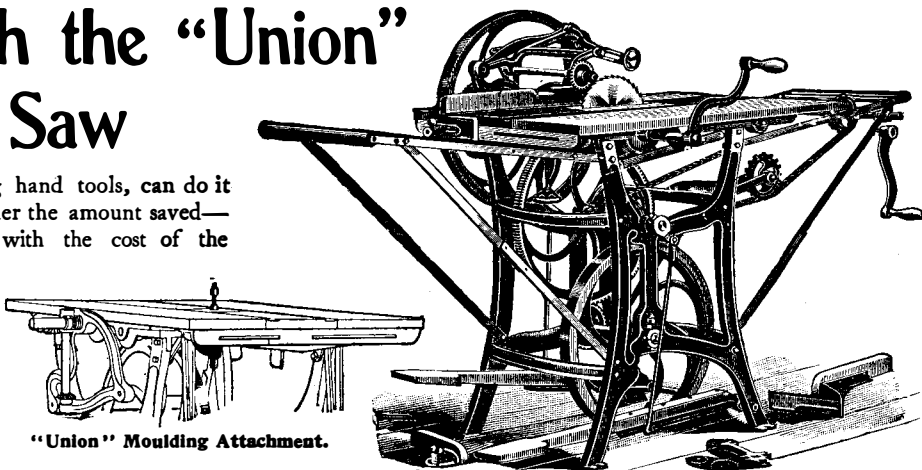
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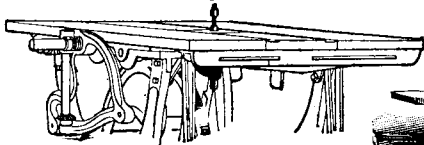
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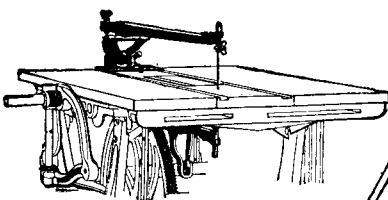
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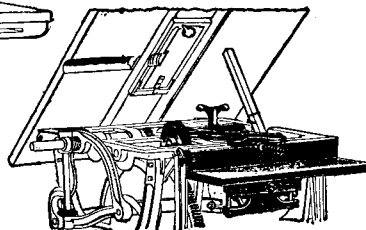
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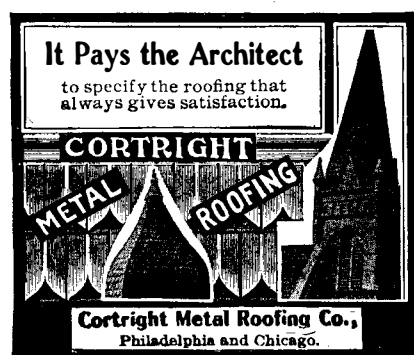
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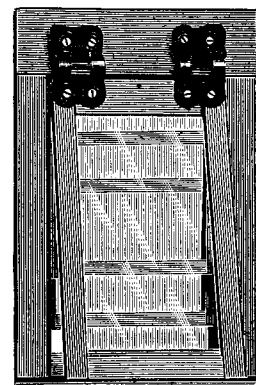
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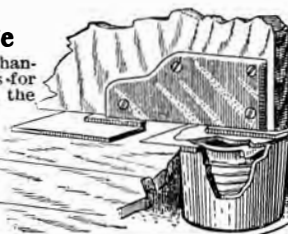


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American Sheet and Tin Plate Co.....	vii		
Andrews Heating Co.....	cover iv		
		L.	
		Lane, John.....	ix
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		P.	
		Philadelphia Typewriter Exchange.....	ii
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		St. Botolph Research Bureau.....	cover iii
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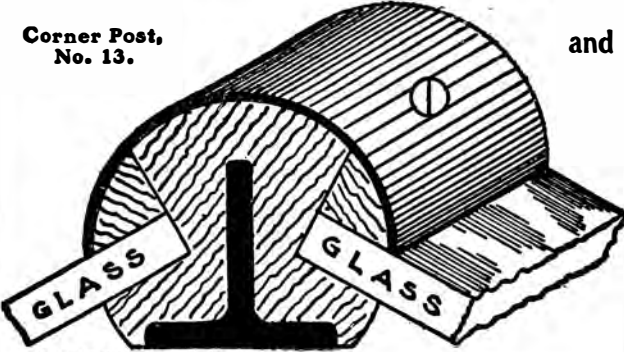
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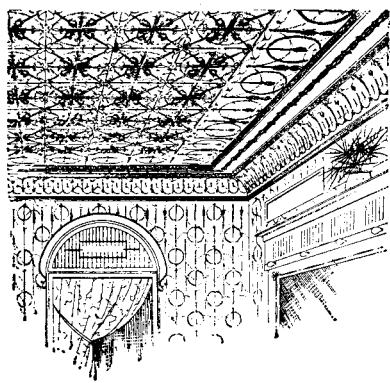
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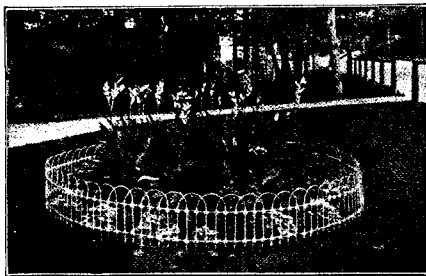
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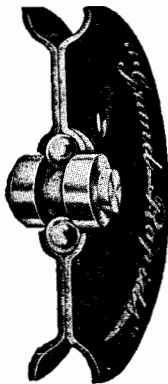
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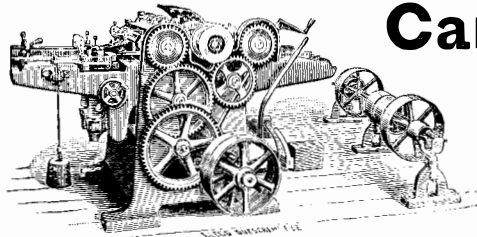
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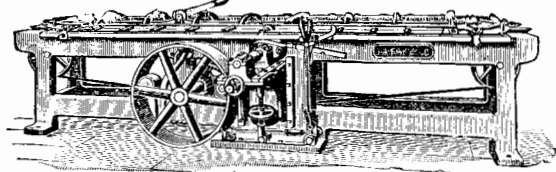
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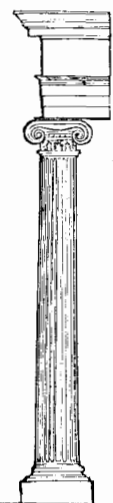
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