

# SCIENTIFIC AMERICAN

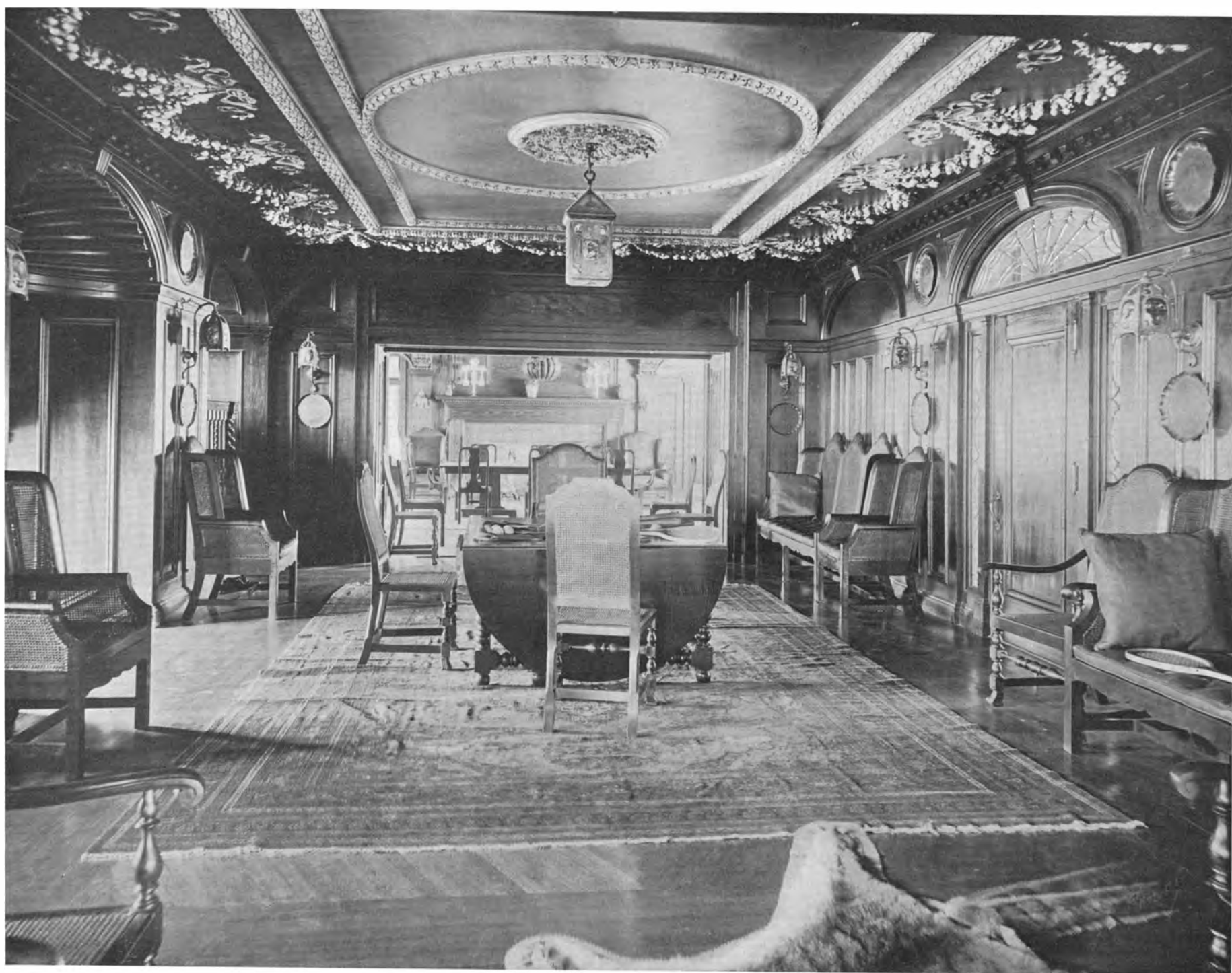
## Building Monthly.

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THE HALL IN "DREAMWOLD"—ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS.—See page 71.  
MESSRS. COOLIDGE & CARLSON, ARCHITECTS.

# SCIENTIFIC AMERICAN BUILDING MONTHLY

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

## MONTHLY COMMENT.

SOONER or later, and certainly later, since there is no sign of any positive movement as yet visible, an effort will be made to protect and preserve the buildings in America which have historic or artistic interest. Our old buildings are disappearing yearly at a rate that is positively alarming, and the time can not be far distant when there will be nothing left. Even so conspicuous a structure, and one so entirely worthy of preservation, as the City Hall of New York is subjected to fresh restorations and improvements with each succeeding administration. Fortunately, most of the changes made in this building of late years have been within it, and the very beautiful exterior has remained practically untouched. Yet there is danger with each successive internal change, and the friends of good old architecture in America may well feel alarmed at the continual betterments with which this fine building is being constantly improved.

BUT there is another class of buildings, quite as interesting in their way, and which are actually disappearing daily, to which little attention is being paid. These are the old houses. This kind of building has been so thoroughly eradicated from Manhattan Island that New York to-day has but a single Colonial mansion, the Jumel Mansion, now very happily owned by the city, and, therefore, assured for indefinite preservation. It was described and illustrated in the BUILDING MONTHLY for July, 1903. Philadelphia has preserved a number of its old mansions in buildings still standing in Fairmount Park, and quite a number of excellent old houses have been saved from encroachments in various parts of the country. But it is the small old house without especial historic interest, and yet of real value as an illustration of early American life and manners, which is being so rapidly swept away. Not a few of these dwellings are still occupied by the descendants of the original owners, and who, strangely enough, have little real interest in their preservation. A good old house of any sort is well worthy of preservation as an historical memento, whether definitely associated with historic interests or with a famous personality or not. It is quite likely that the value of our losses in such matters will only be completely realized when there is nothing left to be preserved.

AN interesting feature of the Louisiana Purchase Exposition at St. Louis is the reproduction by various States of buildings of historic importance within their own territory, or which illustrate, in a more or less practical manner, local modes of life and manners. The most important of these is unquestionably the Louisiana State Building, a reproduction of the famous Cabildo of New Orleans, in the Supreme Court room of which the treaty of transfer was ratified. It has been reproduced as it was in 1803, and in addition to the structure itself Jackson Square, on which it stands, has been reproduced before it. Georgia is represented by a reproduction of “Sutherland,” the home of General John B. Gordon at Kirkwood, a suburb of Atlanta. Virginia reproduces “Monticello,” the famous home of Thomas Jefferson. Tennessee reproduces the “Hermitage,” the historic home of Andrew Jackson. Mississippi gives “Beauvoir,” the mansion presented to Jefferson Davis by Mrs. S. A. Dorsey. Other States have contributed buildings which are intended to be typical of their origin. Texas has utilized the star in the plan of her State building; Maryland shows a costly Colonial manor; Kentucky has a spacious “New Kentucky Home”; Mexico, Indian Territory and Arizona have buildings typical of these distant regions. California presents a replica of the famous old mission of La Rabida at Santa Barbara. The display, as a whole, forms a most interesting summary of the growth of domestic architecture in America.

ONE of the most interesting experiments yet made in America in civic betterment will shortly be undertaken in the town of Milton, Mass. Mrs. Mary A. Cunningham recently left a bequest of over \$600,000 to the town in question, the distribution of the money being vested in a trust with wide discretionary powers. Mrs. Cunningham's will directs that the principal and interest of the trust fund be used for some charitable object or objects which will improve and beautify the town, or which will improve the libraries and schools, or promote the teaching in the schools of sewing and other industrial arts, or which will promote the health of the townspeople by means of parks, playgrounds or hospitals, or by making provision for the townspeople in hospitals or other places. Milton has just dedicated a fine library building. It has annually spent large sums in making its schools the best possible, and it is well supplied with playgrounds. It is an interesting point that the selectmen of the town will not have the distribution of the money, the will of Mrs. Cunningham directing that the expenditure be made by her trustees.

## FRENCH ARCHITECTURE IN AMERICA.

FOR a number of years past American architecture had drawn its most important influence from France. The movement has long since become so extended that inquiries into its origin and future are no longer of even academic value. It is a movement that, if it has not come to stay, has at least reached such extension that its limits are hard to discern and well nigh impossible to discover.

It owes its origin to the schools. No one ventures into the field of architectural work to-day without a more or less extended training in an architectural school. Exceptions there are to this, of course, but they are not many, and school training is now part of the regular equipment of the modern architect. Arrived at the architectural school, the young student finds the French system, so far as it can be adapted to American requirements, in full swing. The professor in charge has drunk long at the well of French ideas. He will have as his most important assistant a real Frenchman, whose knowledge of English may not even permit him to express himself colloquially in the language in which he must teach. The studies and problems of work are given out in French terms, and a sojourn in Paris is held up as the highest reward of scholastic acquirement, and as an absolute essential for all others who may not win the traveling scholarship, without which no American architectural school is fully equipped.

It is hardly necessary to say that an abode in Paris is not likely to lessen the young student's regard for things French in architecture and in art. Paris is a city of enormous attractiveness. The achievements in modern architecture that the student has heard about in America he now views with his own eyes. The classic halls of the Ecole des Beaux Arts are his. The atelier of a famous master is his. He brims over with enthusiasm and comes back with a polyglot language, in which French words instead of the good old Anglo-Saxon give a picturesque aspect to his talk. He now becomes the real thing, and even though his sojourn in Paris may have been of the briefest, he is at once eligible to admission to the Society of Beaux Arts Architects, New York. A glorious commission for some stupendous monument is all that he needs to complete his fame and fortune.

When such experiences are repeated for a number of successive years, and by an increasingly numerous body of enthusiastic young men, it is obvious that the extension of the French motifs among American architects must be very great. Our architects seldom return to Paris for renewed study—they are either too busy filling rich commissions or too poor to spare the necessary funds—but the youthful enthusiasm remains, and receives fresh impetus from each fresh reimportation of Frenchified Americans.

Some results have been obtained from this method that are not without value. Our architectural ideas and modes of expression have become more uniform. Architects no longer attempt every style under the sun, but are satisfied to translate their French ideas into American buildings. This is clearly to the good, for it means the concentration of effort along certain well established and clearly defined lines. Another important practical effect is that it is much easier to design in the academic styles than in any other. Classic architecture, as interpreted by the modern Paris-trained architect, is very easy to do. The subject has been thoroughly studied. Text books abound in which all the necessary data can be obtained by the simple process of copying. This helps amazingly in the production of works of architecture of a strong family likeness. This is very clearly to the bad; for architecture is not an “easy” art, and any movement which tends to make it so is retrograde and unsatisfactory. Moreover, the ease with which academic designs can be produced gives a vogue to the work of incompetent men, since, if no special effort is needed to design, very commonplace designers can produce tolerable results with materials that can be handled by rule of thumb.

So the Frenchization of American architecture proceeds merrily apace. For France, French architecture is, of course, the very form and style of architecture that should be used. It follows instantly that, for America, a French building is quite as exotic as one of Tangier or Mandalay. Yet the French buildings in America are not wholly French buildings. They are not even so much as that. They are French in idea, but American in expression and feeling. The adaptation is not complete.

Is it harmful? This is a serious question. It is harmful, because it is a forced movement. It is kept alive not of its own merit, but because of the personal inclinations of its practitioners. The French system of architectural study, it has been asserted over and over again, is a system of principles. Grant that this is so, the fact that those who have studied this system are, in the very large majority of cases, unable to design in any other style than the academic, goes without contradiction. Academic training tends to formalism; it stifles originality, it promotes mediocrity. If its general average of results is fair, it is because the mediocre man is more numerous than the real genius, and the mediocre works, through the sheer force of number, overwhelm the occasional note of individuality that the man of real strength and power may put forth.

French architecture is also out of place in America because it originated and flourished under conditions wholly different from the very exacting conditions which attend the practice of architecture in the United States. Our most typical building is unquestionably the high building—the “sky-scraper,” as one French writer once put it. Nothing like this was seen before, and the admirers of the French styles hope that nothing like it will ever be seen again. Yet the high building appears to be essential to the requirements of modern American business; it has certainly given our architects their most profitable commissions, and it has vastly increased certain real estate values. Moreover, it is thoroughly useful and necessary to our business methods; alas! it is seldom beautiful.

It is on this typical, exacting, thoroughly American problem that French architecture fails and academic training is at a loss. Otherwise it is impossible to explain the grotesque failures our architects have made in attempting a solution of the high building problem. It is no solution at all to maintain that the problem is unsolvable, and should not exist. The fact is that it does exist, and our chief architectural model should be mobile enough to permit of intelligible and beautiful expression.

In the dwelling house the problem is somewhat different. Our most devout worshippers at the shrine of modern architectural France entirely fail in reproducing French ideas in the country dwelling, and it is most fortunate that this is so. Yet the French materials, the classic columns, the classic cornice, the classic feeling, is apparent on every country hilltop and by every waterside. The American architect knows now no other language than French. He does not realize the impropriety of reproducing historic French palaces in democratic America. He becomes as original as he dares, and in so far as his country houses depart from French ideas they are successful. Once more there is negative progress and negative satisfaction in results.



## NOTABLE AMERICAN HOUSES\*

BY BARR FERREE.

## "DREAMWOLD"—ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS.

THE transformation of a rocky New England hillside into the busy, active, and elaborate farm of "Dreamwold" is one of the most remarkable monuments to the tireless energies of Mr. Lawson. The raising and training of horses, dogs, cows, chickens, and ducks are here carried on on a most elaborate scale, and with a building equipment that makes this fine place not only of special interest in itself, but one of the most interesting estates in the country. So varied are the buildings, so complete the equipment, that, were a natural cataclysm to wipe out the remaining coast of Massachusetts, the quiet yet busy life of "Dreamwold" could still be pursued without feeling the severance of external connections.

"Dreamwold" commences at the railroad station, which is just without the main entrance. Some salient features immediately present themselves: the fences and posts of wood, painted white, and over-run with brilliantly blooming roses; the buildings with gambrel roofs, walls of gray shingles, white trimmings and green blinds give a characteristic note to the whole estate; features, by the way, determined by Mr. Lawson, whose own interest in his property has made it thoroughly personal and whose suggestions were ably carried out by his architects, Messrs. Coolidge & Carlson, of Boston.

The scale on which the farm has been planned is of great size and freedom, and with the deliberate intention of having a separate building for each separate purpose and use. The practical advantages of such liberality are, of course, very obvious, but it is seldom that such a scheme has been carried out in so liberal a manner, or, it is but truth to add done so well as here.

The buildings begin at the very entrance, for just within the gates are the lodge and the post office, the latter structure highly suggestive of the extent of the property and the great business carried on within it. The entrance roadway runs straight past a series of stables, each having a particular use, and each well spaced from each other. The private or carriage horse stable comes first; it is a long building with two unequal wings; the longer, for the horses, contains forty stalls; the carriage house is shorter; the passage between the two is for circulation and entrance, with rooms for the men above.

That the scale of "Dreamwold" may truly be styled sumptuous is apparent from the next building, the Riding Academy, a structure as large as Madison Square Garden, in New York, the great, spreading gambrel roof quite suggesting the mammoth trusses with

which it is spanned. It is brilliantly lighted by the great semicircular windows in the ends and by dormer windows in the roof, a building to which quiet and well deserved dignity is given by the careful treatment of the entrance front, and the very happy manner in which the vast window is given architectural form.

Large as the Riding Academy is, it is immediately surpassed in size by the Racing Stable, which is the next building, a structure eight hundred and sixty feet long. The stalls are arranged along one side of two immense wings, so that the horses all stand facing the south. The central building has, on the second floor, recreation rooms for the grooms and trainers, library, dining-room, kitchen, refrigerator, and bathrooms. Dormitories fill the third floor, the men being lodged in alcoves, closed by curtains and with seven foot partitions open above to the ceiling.

Important as these three buildings are, they constitute but a portion of the separate and special stables

conditions most favorable for the special horses for which they are provided.

Besides these buildings devoted to the horses, the estate contains a polo field of nine acres, a training track and a racing track. The blacksmith shop contains a double forge and has space for shoeing eight horses, as well as equipment for doing all the forging of the farm.

Beyond the buildings and fields devoted to the horses come the poultry houses. These, in their way, are quite as varied as the buildings for the horses. Like them also they are at once practical buildings of rigid utility and architects' buildings of distinctively architectural interest. The henery has twelve divisions, with scratching pens on the south and roosting and nesting rooms on the north; the long runs are enclosed with galvanized wire. Many special devices have been introduced for the proper care of the fowls. The keeper's rooms, heating apparatus and store rooms for grain are at one end.

The bantams have a separate house of their own, just high enough for the average man to walk through easily. It has a head house for feed and six separate divisions, with runs enclosed with wire and covered with movable wire screens. The pigeons, also, have their separate house, a low circular tower-like building of graceful form. Its yard is covered with wire netting. Within is an enclosed and covered passage which enables it to be inspected without entering the pigeon room. In the center is a stack for nests; the upper part is used for breeding purposes. A group of houses is provided for ducks.

The cow barn is another notable building. It is planned like a great U, with a large open rectangular courtyard. It is arranged so that the cows when standing in their stalls face the north. Food is thrown into the mangers from a cart driven through the passageway before the stalls. The cows are placed two in a stall, with separate mangers and a central water trough, which has an automatic cock and tank which keeps the water at a set level. Two stalls at the end are provided for bulls, which stand in the same line as the cows. One wing is set aside for the yearling stock, the other contains runs for calves.

The kennels are two hundred and twenty-five feet long and contain accommodation for large and small dogs. The head house has washroom, kitchen, storerooms, and refrigerator; in the second story are the men's rooms and space for the youngest puppies. The yards are

enclosed with wire and contain shelters. Kennels of different sizes are provided for various sized dogs.

Of the other buildings connected with the service of the estate mention need only be made of the sewage disposal plant, which is very complete and effective, the windmill and the water-tower. The windmill is of the type common in Holland, with a revolving roof; it is used for grinding corn and cutting up ensilage. The water-tower is quite unique, and has been developed into a graceful observation tower, containing a superb chime of bells. Its construction entailed some difficulties, since the outer shell must be kept free from the water tank. The solution was found in building the outer covering as a separate structure around the inner tank. A fire house is fully equipped with apparatus for extinguishing fires.

The mere enumeration of the buildings on the estate would in itself make clear the fact that a very large number of men were employed on it. Most



CONSERVATORY IN "DREAMWOLD"—ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS.

built on this great estate. There are three stables for brood mares, a hospital and a foaling stable, all like the larger stables, rectangular in plan. The stallion stable is semicircular in plan. The stable for the farm horses is again of the rectangular type, and contains a carpenter shop and some of the farm wagons; the balance of the latter are housed in a separate shed one hundred and fifty feet long.

The real points of interest in these stables, however, is neither in their number nor in their variety, but in their equipment and furnishing. The widest experience and the utmost possible care have been employed in their fittings. The floors throughout are of wood, which, while subject to frequent renewals, has been deemed best for all purposes. Great care has been taken in drainage and ventilation. The fittings of the stalls, the construction and treatment of their wood and iron work, the devices for feeding and the care and delivery of the feed are in accord with the latest devices and the most advanced ideas, and display, at every point, the utmost regard for the special

\* Previous articles in this series: "BILTMORE," THE ESTATE OF GEORGE W. VANDERBILT, ESQ., Biltmore, N. C., February, 1903. "THE GARDEN AT 'GEORGIAN COURT,'" THE HOUSE OF GEORGE J. GOULD, ESQ., Lakewood, N. J., August, 1903. "HARBOR HILL," THE ESTATE OF CLARENCE H. MACKAY, ESQ., Roslyn, N. Y., September, 1903. "THE ORCHARD," THE COUNTRY SEAT OF JAMES LAWRENCE BREESE, ESQ., Southampton, N. Y., November, 1903. "THE RESIDENCE OF W. L. STOW, ESQ., Roslyn, N. Y., December, 1904. "WHITE HALL," THE HOUSE OF HENRY M. FLAGLER, ESQ., Palm Beach, Fla., January, 1904. "FAULKNER FARMS," THE ESTATE OF MRS. CHARLES F. 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. "THE ESTATE OF HENRY W. POOR, ESQ., Tuxedo, N. Y., August, 1904. "THE COUNTRY SEAT OF STANFORD WHITE, ESQ., St. James, L. I., N. Y., September, 1904.

Continued on page 86.)

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THE LIVING-ROOM.



THE ENTRANCE DOORWAY.



THE TERRACE



THE DINING-ROOM.

"DREAMWOLD"—ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS.—See page 71.  
MESSRS. COOLIDGE & CARLSON, ARCHITECTS.



THE MANAGER'S HOUSE.



THE GATE LODGE.



THE POST OFFICE.



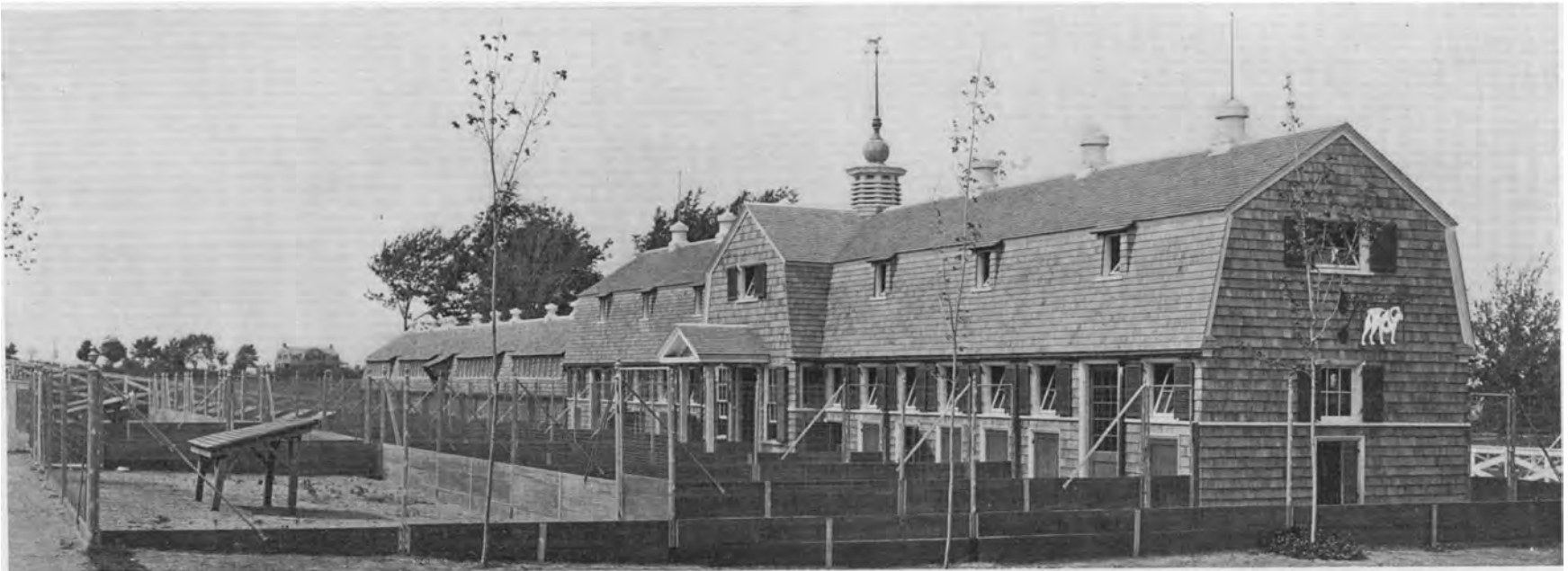
A COTTAGE.

“DREAMWOLD”—ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS.—See page 71.  
MESSRS. COOLIDGE & CARLSON, ARCHITECTS.





THE RIDING ACADEMY.



THE KENNELS.

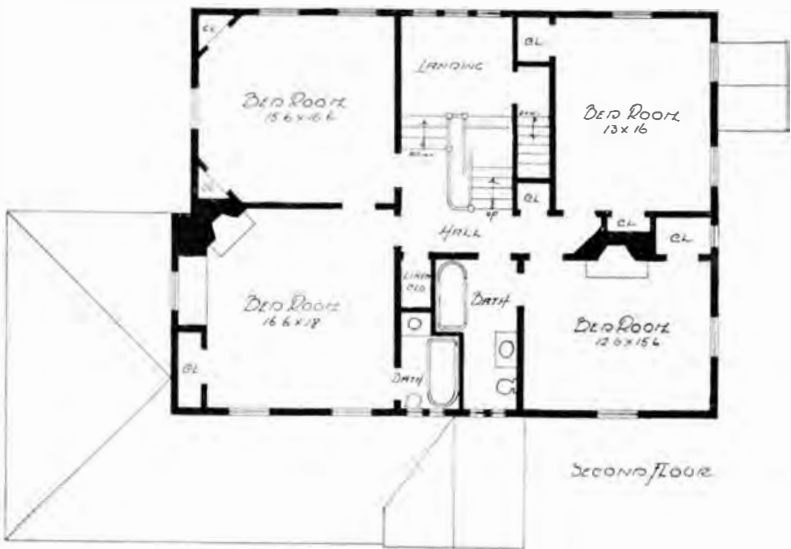
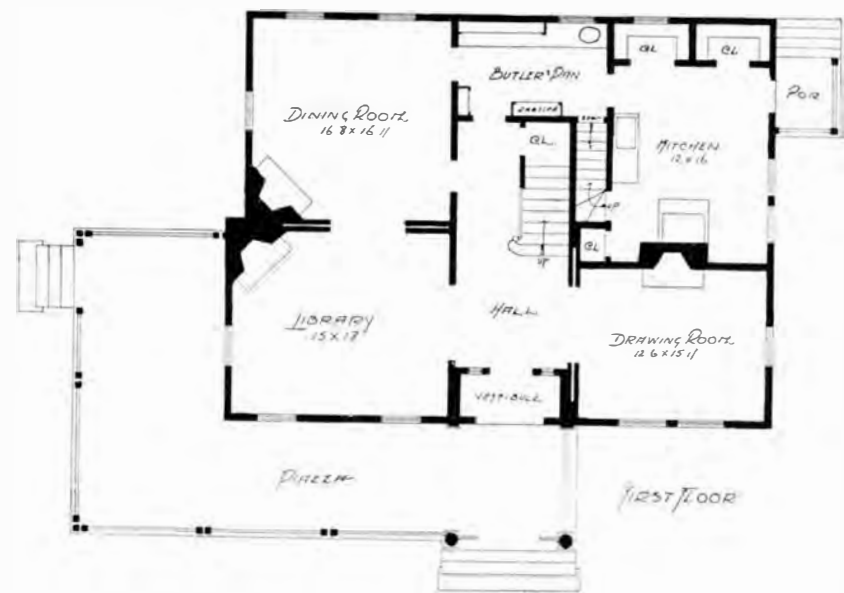


THE INTERIOR OF THE CARRIAGE-HORSE STABLE.



THE RACING STABLE.

"DREAMWOLD"—ESTATE OF THOMAS W. LAWSON, ESQ., EGYPT, MASS.—See page 71.  
MESSRS. COOLIDGE & CARLSON, ARCHITECTS.



A HOUSE AT PLAINFIELD, N. J.—See page 86.  
MR. JOHN P. BENSON, ARCHITECT.





RESIDENCE OF WALTER CLOTHIER, ESQ., WYNNEWOOD, PA.—See page 86.  
MESSRS. BAILEY & TRUSCOTT, ARCHITECTS.



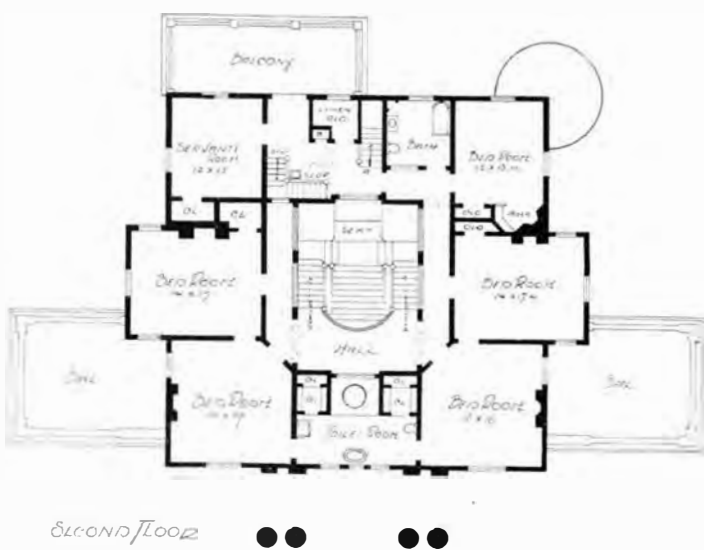
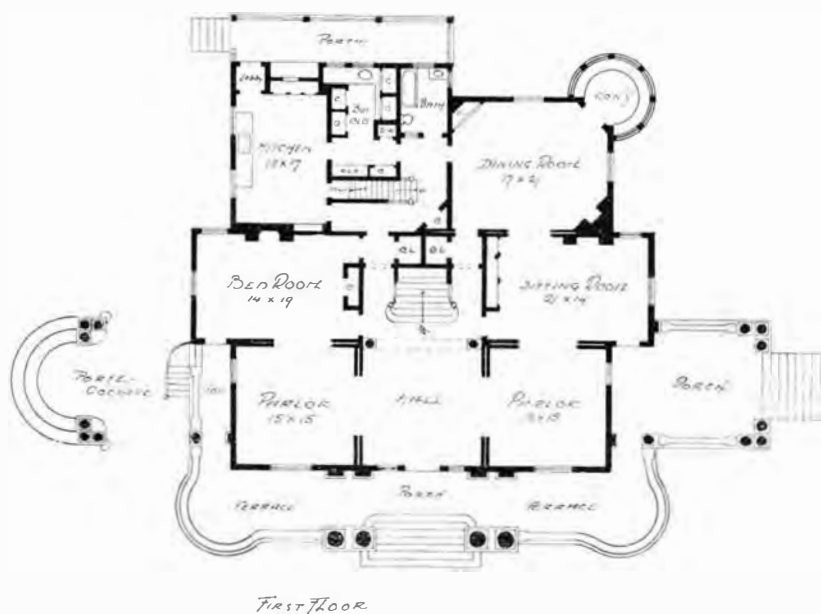
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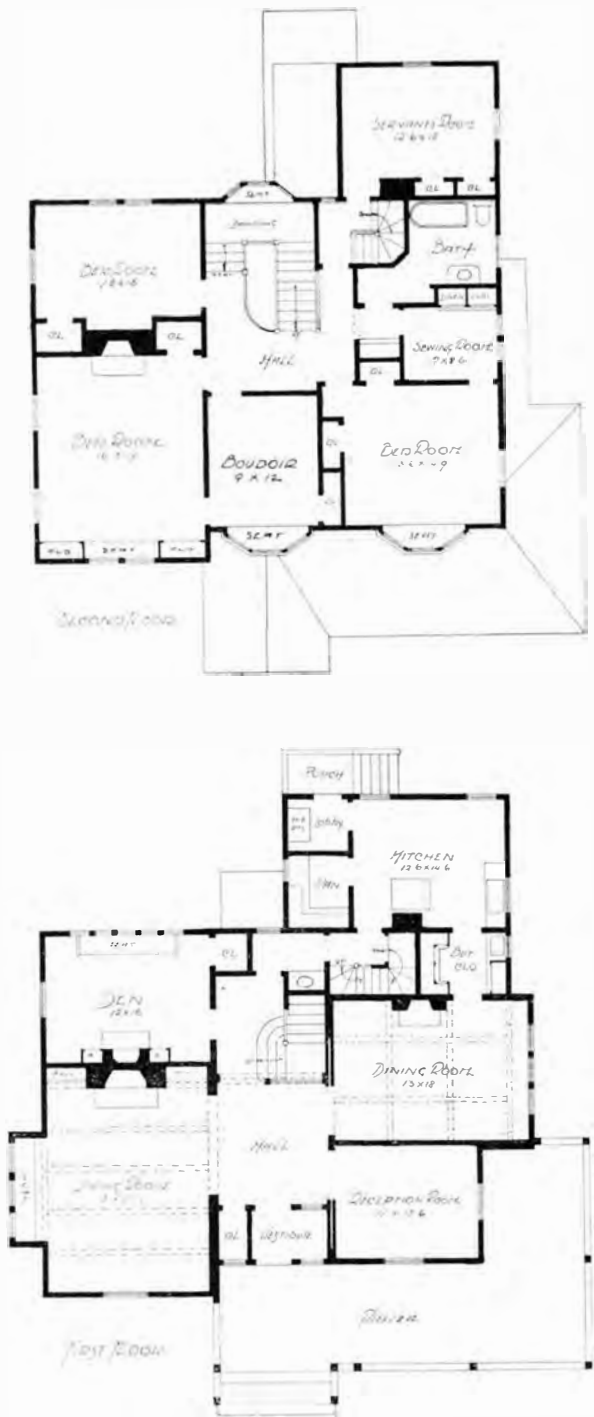
THE DINING-ROOM

RESIDENCE OF WALTER CLOTHIER, ESQ., WYNNEWOOD, PA.—See page 86.  
MESSRS. BAILEY & TRUSCOTT, ARCHITECTS.



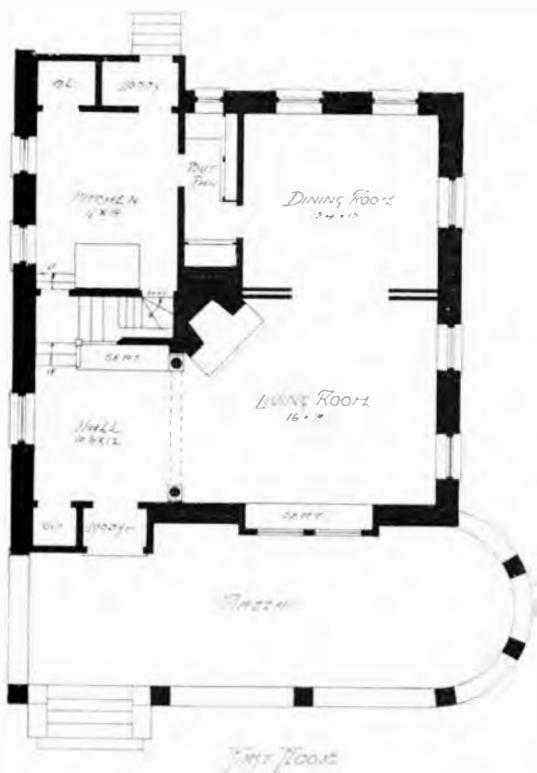


RESIDENCE OF E. W. WARFIELD, ESQ., CLAYTON, MO.—See page 86.  
MR. HERBERT C. CHIVERS, ARCHITECT.



A HOUSE AT WINCHESTER, MASS.—See page 88.  
MR. THOMAS W. JAMES, ARCHITECT.





THE HALL.

A DWELLING AT MOUNT VERNON, N. Y.—See page 87.  
MR. HERBERT LUCAS, ARCHITECT.



ON THE ESTATE OF JAMES L. BREESE, ESQ., SOUTHAMPTON, N. Y.



ON THE ESTATE OF CLARENCE H. MACKAY, ESQ., ROSLYN, N. Y.



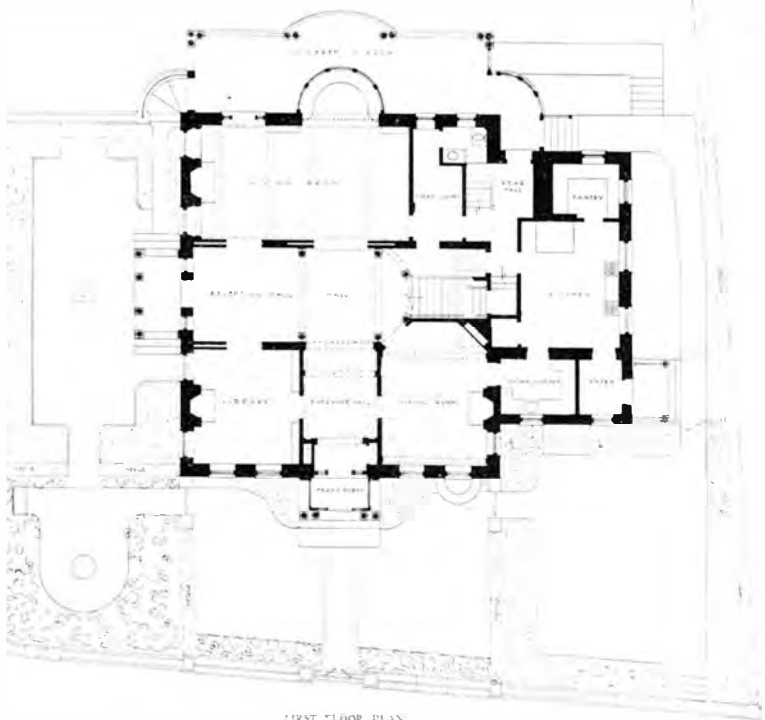
A FOUNTAIN IN ROCHELLE PARK, NEW ROCHELLE, N. Y.

A GROUP OF FOUNTAINS.—See page 87.





SECOND FLOOR PLAN



FIRST FLOOR PLAN



RESIDENCE OF J. BREAUCHARD, ESQ., PARK HILL, N. Y.—See page 87.  
MESSRS. WARREN, SMITH & BISCOE, ARCHITECTS.



THE HALL.



THE STAIRCASE.

RESIDENCE OF J. BREAUCHARD, ESQ., PARK HILL, N. Y.—See page 87.  
MESSRS. WARREN, SMITH & BISCOE, ARCHITECTS.



### L'ART NOUVEAU IN THE GERMAN EXHIBIT AT ST. LOUIS WORLD'S FAIR.

IF we except the stately and very beautiful reproduction of the Castle of Charlottenburg, which forms the home of the German Imperial Commission at the St. Louis Fair, unquestionably the finest section of the splendid German display is that of the Arts and Crafts, which finds a home in the Varied Industries Building. Of this exhibit the most comprehensive feature is the Grand Court of Honor and the garden into which it leads, with the wonderful succession of artistic interiors that are grouped in orderly succession around these two. The Hall of Honor and the surrounding rooms are a study in L'Art Nouveau, and we venture to say that any one who makes a careful study of the whole exhibit will find himself in a position to form an individual judgment as to the merits of this much-discussed style. As every one knows, the great defect which is charged up against the New Art is that it does violence to the fundamental principles of structural and decorative work. In the present German exhibit, however, the artists, it is claimed, have taken due notice of this criticism, and the whole exhibit has been planned with a view to harmonizing accepted principles of construction with the best feature of the New Art. The masters who designed the various rooms claim to have carefully preserved in their forms and decorative treatment much that is best in architectural and decorative tradition, while at the same time they have retained the elements of the New Art which give it, in the eyes of its admirers, its peculiar charm. In all candor it must be admitted that the claim is made good, for the principles of the arch, the colonnade, and the open-rafter roof are united and harmonized, while the scheme of decoration, which is dainty but never trivial, diversified in coloring, but never vulgar, serves to give a distinctive atmosphere to this remarkable exhibit that will leave a lasting impression on every one who has made it the subject of serious study.

There is one fact underlying the designs of each of the separate rooms to which special attention should be called, and this is that each room was designed in its entirety, even in the minutest detail, by one man. It is considered in Germany that the best results can be obtained only in this way; so, instead of an architect designing the room; a decorator, the paper; a cabinet-maker, the furniture; an upholsterer, the carpets and hangings, with the loss of harmony which must result, all these elements are carefully thought

The other interior is that of a directors' meeting room, and it represents one of the most successful interiors of the whole group, the simplicity and severity of the furniture and of the interior trimming of the room being simple and dignified, and well suited for the purpose to which it is to be put.

#### THE OWNERSHIP OF ARCHITECTS' PLANS.

AN important test case, "Gibbon vs. Pease," raising afresh the architect's right to retain plans, which was supposed to have been settled against the profession in a celebrated suit nearly four and thirty years ago, will be opened shortly in England in a new action. It is brought by a building owner for whom some property at Paddington was converted into flats, against the architect for the return to him of all plans, specifications, papers, and minutes, including all copies of such general particulars relating to the work. The building owner also demands of the defendant architect the "return of all estimates, tenders, contracts, bills of quantities, and copies of letters to and from the client relating to the plans, specifications, or contracts." The architect, who was employed at the usual 5 per cent. commission on the amount of the accepted tender, deems it his duty, in the interests of the profession, to refuse to deliver up the plans, the whole of the contract having been completed and the fees paid. In an earlier case the plans were prepared for a vicarage, but were never carried out. Well known architects were called to prove the custom of the profession to return the plans whether the works were executed or abandoned; and, on the other hand, other architects deposed that when the works were completed it was the practice of architects to retain the plans; but when the building was not constructed, the plans were offered to the client as a matter of right. The Lord Chief Baron withdrew the question of custom from the jury, and the Court unanimously gave judgment against the architect's claim. One or two other cases have come up since from time to time, but without any important rulings or judgments.



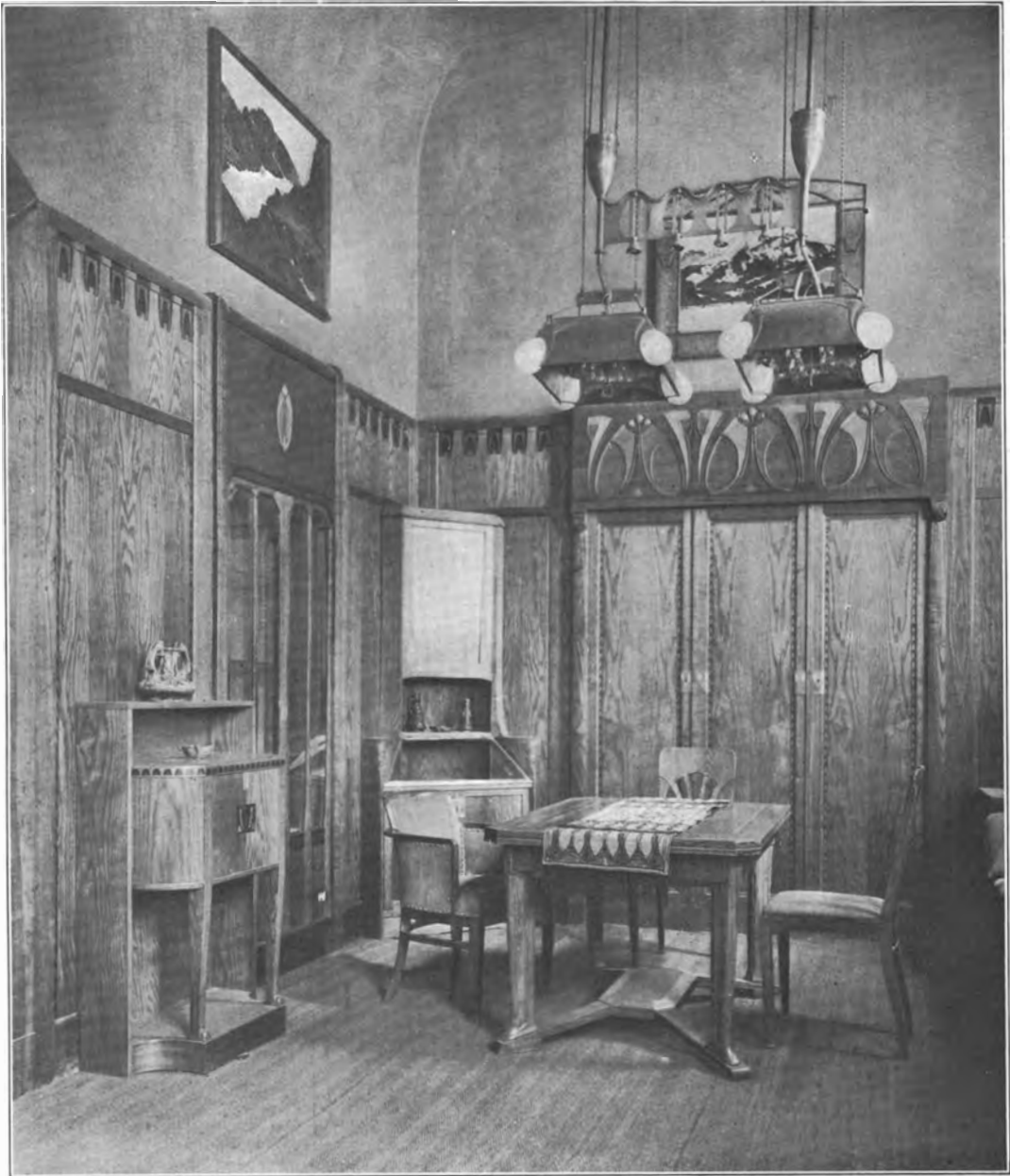
DINING-ROOM.

out by one man. Hence, instant impression made upon the visitor is one of perfect harmony of proportion, form, color, and general design. We present illustrations of two interiors on page 85. That of the study of a sitting-room by Professor Muller would indicate that he is in sympathy with the school which has the preference for plant forms rather than for combinations of pure line. The wood paneling has been treated chemically, with the result that the surface has a delicate gray tint, which is extremely pleasing.

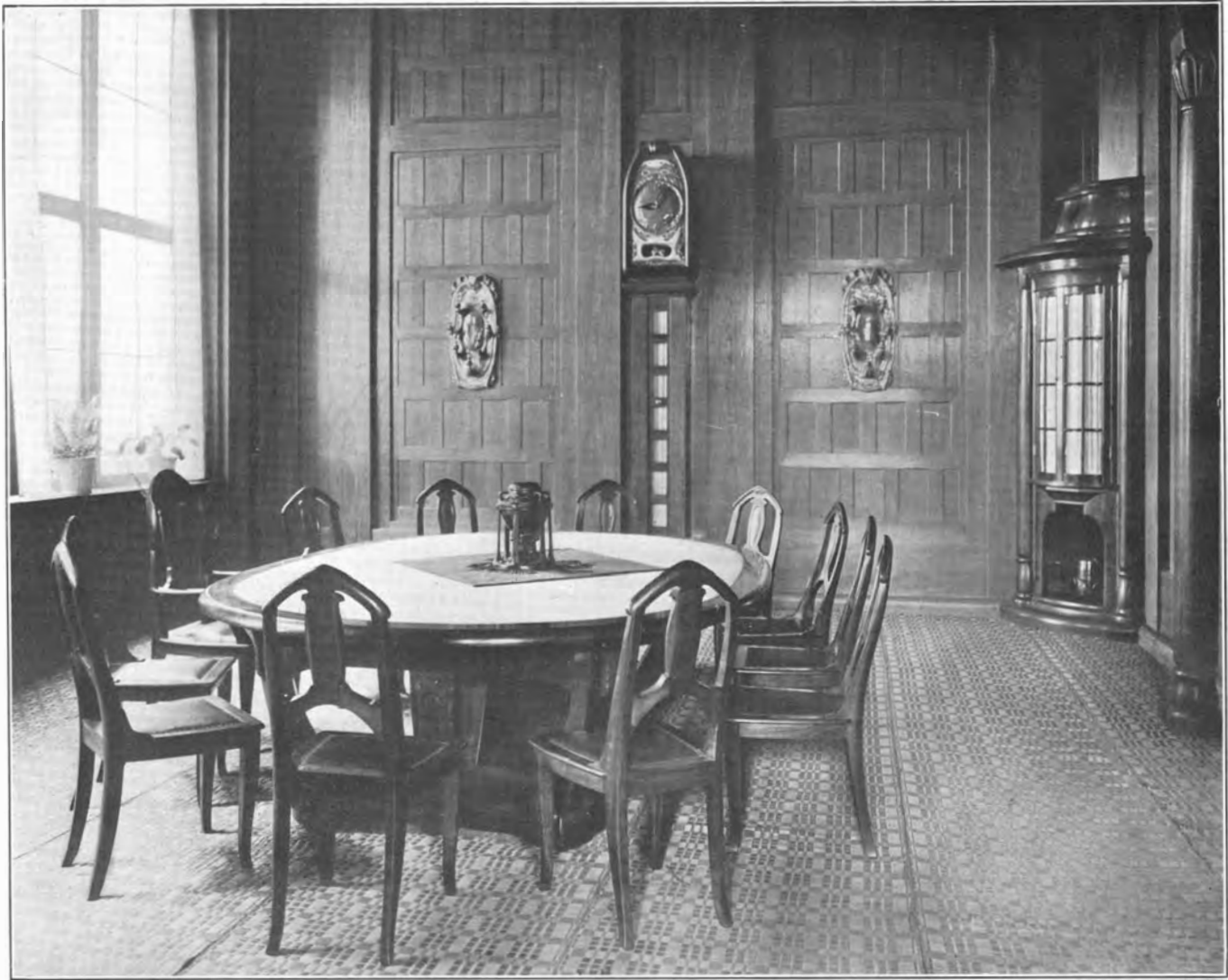


LIVING-ROOM.

RESIDENCE OF J. BREAUCHARD, ESQ., PARK HILL, N. Y.—See page 87.  
MESSRS. WARREN, SMITH & BISCOE, ARCHITECTS.



STUDY OF AN INTERIOR—GERMAN EXHIBIT, PALACE OF VARIED INDUSTRIES, ST. LOUIS.



DESIGN FOR A DIRECTORS' ROOM—PALACE OF VARIED INDUSTRIES, ST. LOUIS.

L'ART NOUVEAU AT THE GERMAN EXHIBIT AT ST. LOUIS WORLD'S FAIR.—See page 84.



**"DREAMWOLD"—ESTATE OF THOMAS W. LAWSON, ESQ.,  
EGYPT, MASS.**

(Continued from page 71.)

of the men connected with the special buildings are housed in them. Any farm laborers are housed in the farm houses, and the managers of the different departments have their own cottages. All of these residential houses are charming structures, carefully planned and built, and thoroughly complete in every respect.

The chief residential interest of "Dreamwold," however, naturally centers in Mr. Lawson's own farm house, called "Dreamwold Hall." This is a thoroughly comfortable house, amply adapted to the personal needs of the owner, spacious enough for the accommodation of a large number of guests, and finished and furnished in a thoroughly characteristic manner. It is built in three parts, the central or family building, the guest wing and the service wing, both of which are connected with the main house by enclosed passages.

There is a quiet sobriety in the design of this house which is very happy. As in all the other buildings of the estate, the gambrel roof is the dominant feature of the exterior. A generous gable emphasizes the main entrance, which is beneath a porch supported by Ionic columns. A single triple window on each side of the porch completes the treatment of the lower story of this front. Above is a three-light window in the gable end, with a semicircular pediment over the central opening, and two outer smaller windows. The roof contains two dormers on each side. The design of the other front is quite different. Instead of a single central gable, there are two, one at each end. A large bay window projects from the first story of one of these gables, and each contains a smaller bay window in the upper story. There are no dormers in the roof; but instead of a sloping roof between the gables, the wall is built vertically, and contains a series of rectangular windows. This front is enclosed within a shingled terrace, a roofless porch, decorated with flower boxes, brilliantly ablaze with flowers, and bay trees. The wings vary somewhat in their external treatment, and have no gables on their fronts. They are, however, well harmonized with the central building and subordinate to it.

The layout of the plan is quite simple. The family house has but three rooms on the ground floor: a hall in the center; to the left is the living-room; to the right the dining-room. The passage beyond the living-room forms a conservatory and connects with the guest wing, which contains the library and the billiard-room on the ground floor, with the guest rooms above. The right wing is given up to the kitchen and service, with sleeping quarters for the servants in the upper story.

The wide portal opens a generous welcome to the guest. A short flight of steps leads to the spacious hall. It is walled throughout in curly birch, in panels stained a greenish black, a rich, deep color that is unusually handsome. The ceiling, which is white, slightly green tinged, is decorated with festoons of farm fruits: corn, pears, apples. A lantern depends from the center of the ceiling, and on the side walls are many specially designed side brackets. The floor is of hardwood, covered with a richly colored rug.

Like the hall, the living-room has paneled walls, a warm gray in color. A painted frieze is carried along the top, the motifs of which are heads of domestic animals and festoons. The ceiling is beamed and tinted. The wood mantel embraces a bricked and tiled fireplace, the latter decorated with grapes and vine leaves in color, with rabbits sporting in the foliage. A wrought iron crane and andirons of special design complete the furnishings of this important feature. The mantel shelf gives room to many elephants, the collecting of which is one of Mr. Lawson's specialties. Elephants of all kinds and sizes, of porcelain and ivory, of wood and metal. They throng the house at every possible place, and constitute a special feature of this interesting interior, as well as form a collection of very great variety and interest. In one corner of the room is a large organ, with the pipes sunk below the floor and resounding through an ornamental lattice above the keyboard.

The conservatory opens directly from the living-room, and is a broad passage lighted by large elliptical windows on either side. The white vaulted ceiling is painted with green trellises and grapevines. The walls and floor are tiled, the prevailing color being green. It leads to the guest wing, on the ground floor of which are the library and billiard-room. The dull black in which the library is finished forms a fitting setting to the large collection of brilliantly bound books with which it is furnished. The vertical divisions between the shelves are surfaced with carved panels, in which gnomes and other mimic figures pass through various stages of life and activity—strange, curious stories, fascinatingly told. The frieze of many painted panels, chiefly illustrative of bookish themes, was designed by Russell G. Crook, the broad tiles over the fireplace having oxen drawing a cart. The billiard-room has walls of canvas painted with fields of corn,

and a beamed ceiling. The prevailing color is a gray brown.

The dining-room, which is on the opposite side of the hall from the living-room, is very large and handsome. A large semicircular bay window fills most of one end, and overlooks the terrace at the back of the house. It is finished in oak, of a soft brown, sandal-wood color, a tint obtained by soaking the wood in acid for several weeks. The heavily beamed ceiling is deeply ribbed, the beams being supported on carved capitals or consoles. The walls, which are wholly lined with wood, contain painted panels, and many built in glass cabinets for the splendid cut glass of which Mr. Lawson has a notable collection. The elliptical panels in the frieze are filled with boldly colored farm scenes. The central light is a pumpkin, hung up on its own stalk in metal and rich glass, glowing brilliantly when illuminated. Pumpkins also, on a dark blue background, form the decorative feature of the mantel.

Several very marked features distinguish this house. It is thoroughly modern—a fact quite sufficiently notable in this day of houses furnished with old things from every possible source to be specially mentioned. All of the furniture has been made expressly for the house, but in good, comfortable, modern designs, in very happy keeping with the modernity of the whole estate. The decorative features, the carvings, the tiles, the painted decorations, all reflect and illuminate the farm life which is at once the delight and the origin of "Dreamwold." On the whole this has been done with very proper restraint and in a very effective manner. Novel decorations have been provided which are applied exactly where they are needed, and which give a note of freshness and originality to the whole house.

A very marked feature has been the attention given to the metal work. This is all of a very high grade and of very striking original interest. Mr. Lawson's taste in this respect is amply illustrated within the house in the lighting fixtures and the metal of the chimneys; but long before one has reached the house the fact that this is a place of a true iron lover has been shown by the signs attached to the various stables and other buildings. These are all specially designed, and very charmingly designed, the leading motif of each being the animal, and the kind of animal, for which the structure to which it is attached is intended. The lights on the grounds are of the same distinctive character, many iron lanterns for the electric lights being fastened to cedar trunks, now well overgrown with vines.

"Dreamwold" being a stock farm, it is the farming side of country life that is its chief characteristic. The stables and sheds, the training track and polo grounds form the chief point of interest. Unlike many country places, it has no great flower garden as the chief outer point of interest. Mr. Lawson, however, is keenly alive to the value of flowers. His miles of fences, covered in large part with crimson ramblers, is an early indication to the visitor of his love for flowers. And not far from the house is a vast garden of perennials, growing freely and somewhat wildly, not a cultivated garden in the modern sense, but a garden of brilliant bloom, growing and blooming as nature herself directs, a lovely note of color in the quiet nature-life of the Massachusetts coast.

**RESIDENCE OF WALTER CLOTHIER, ESQ.,  
WYNNEWOOD, PA.**

THE residence which is illustrated on pages 76 and 77 was recently completed for Walter Clothier, Esq., at Wynnewood, Pa. It is treated in the English style of stone and half-timber. The underpinning and first story are constructed of local quarried stone with rock-faces and laid with wide mortar joints. The second story is beamed with chestnut in the form of half-timber work, and the spaces between are filled in with stucco work. The beams are stained a soft brown color. The roof is covered with shingles and left to weather finish. Dimensions: Front, 72 ft.; side, 60 ft., exclusive of piazza. Height of ceilings: Cellar, 7 ft.; first story, 10 ft.; second, 9 ft.; third, 8 ft.

The hall, which is central, is trimmed with oak, and has a wainscoting of battens finished with a heavy molded cap, and the ceiling is heavily beamed. The fireplace is furnished with 2 x 3 tiled brick head facings and hearth, and a mantel shelf resting on massive corbel brackets. The staircase is an ornamental one with its broad landings and treads.

The library is trimmed with cherry, and has a wainscoting and bookcases built in. The ceiling has a wooden cornice. The fireplace has a tiled hearth and facings and a mantel. The billiard-room also has a trim of cherry and an open fireplace furnished in a similar manner. The walls of this room have a wainscoting and a beamed ceiling.

The dining-room is trimmed with cherry finished with a mahogany treatment. It has a paneled wainscoting and a beamed ceiling. It also contains a buffet built in, and an open fireplace furnished with a tiled

hearth and facings and a mantel. The kitchen, pantry, and laundry are trimmed with chestnut, and each is fitted up with the best modern conveniences. The toilet is conveniently located and is fitted up complete.

The second story is trimmed with white pine, and is treated with white enamel. It contains four bedrooms and two bathrooms, besides two servant bedrooms and bath over the kitchen extension. The third floor contains four bedrooms and bath, and also a trunk room. A cemented cellar contains the heating apparatus, fuel rooms, cold storage, etc.

Messrs. Bailey & Truscott, architects, 421 Chestnut Street, Philadelphia, Pa.

**RESIDENCE OF E. W. WARFIELD, ESQ.,  
CLAYTON, MO.**

THE E. W. Warfield residence, at Clayton, Mo., shown on page 78, is of modern Colonial style. The cut stone work around porch is of Carthage stone with bush-hammered surface. The porch floors are all of tile and the roof of light green slate, with copper gutters and flashings. The basement is partitioned off and contains a wine cellar, laundry, laundry drier-room, houseman's-room, vegetable-room, and servants bathroom.

The main hall and stairs is of oak, with heavily paneled ceiling. The windows at rear of the hall and at the second story hall present paintings burnt into the glass. At the sides of the second story hall there are three paneled arches. The stairs are highly ornamented with wood carvings. The walls of the two parlors are covered with brocaded silk and the ceilings are heavily ornamented and tipped in gold, with flying cupids painted in the circular central panels. The back parlor has an oval panel in ceiling, with painting entitled "Morning and Night." The library is wainscoted in panels of Spanish leather, with a painted processional in the frieze and gold ceiling. The dining-room has a similar ceiling with high wainscoting and Dutch water scene in the frieze, painted in rich sienna on gold-faced burlap, giving a fine, highly-lighted monotone. The woodwork in this room is of very dark oak, and the mantel facing is of gold-glass mosaic. The ceiling to conservatory is also of gold on burlap, glazed with Japanese lacquer. The facing around flower-trough is of gold-glass mosaic and the floor of tile.

The front chambers are finished in mahogany, with painted ceilings. The dressing-room between is lined with opalite white tile, with solid porcelain fixtures. The burglar alarm is also in this room and is arranged to light up all porches when an alarm is given.

The third floor is one immense ballroom, with painted glass ceilings, with lights above the glass.

Herbert C. Chivers, architect, St. Louis, Mo.

**A HOUSE AT PLAINFIELD, N. J.**

THE quaint and interesting little house shown on page 75 was erected for John P. Benson, Esq., at Plainfield, N. J. The piazza, the trellis about the front entrance porch, and the small lighted windows are noticeable. The underpinning is built of brick laid in red mortar. The superstructure, of wood, is covered with shingles stained a soft brown color, and the trimmings are painted white. The roof is also covered with shingles and is finished natural.

The hall, a central one, is entered through a vestibule, and is trimmed with whitewood painted white. It has a staircase of Colonial style. To the right of entrance is the drawing-room. It is trimmed with whitewood, treated with ivory white, and has an open fireplace built of brick, with tile facings and hearth and a mantel. The library and dining-room are also trimmed with whitewood and are finished in a dark soft brown color. They have open fireplaces, built of brick, with the facings and hearth of the same, and mantel. The butler's pantry and kitchen and its dependencies are fitted up with all the best modern conveniences.

The second story is trimmed also with whitewood. Two of the bedrooms are finished natural and the remainder are painted. This floor contains four bedrooms, with ample closets, linen closet, and a bathroom, the latter treated with white enamel and furnished with porcelain fixtures and exposed nickelplated plumbing.

There are two servant bedrooms and bath and a trunk room on the third floor. A cemented cellar contains a laundry, heating apparatus, and fuel rooms.

Mr. John P. Benson, architect, Windsor Arcade, Fifth Avenue and Forty-seventh Street, New York.

THE three years (1901-1903) have been years of falling wages in England, but the amount of the fall in 1903, measured in weekly loss of wages, was comparatively slight, being considerably less than in either of the two preceding years, though spread over a larger number of trades; 896,598 workpeople were affected by changes in wages in 1903, as compared with 890,356 in 1902 and 932,126 in 1901.

## The Household

### A NEW COOPERATIVE SCHEME.

THE newest suggestion for cooperative housekeeping hails from Bergen, N. J., where on a single block are to be erected one hundred eight-room houses, with electric lights, steam heat, hot water supply and a central pavilion in which will be a large dining-room run by a caterer, a smoking-room and a roof garden with weekly music. The houses are to be two stories in height, the first floor to contain a parlor, a library in the front, a large reception-hall, and a dining-room and kitchen in the rear, while on the second floor will be four sleeping-rooms and a tiled bathroom. At the back of the house, or the center of the block, will be a three-story pavilion of steel and glass, the basement of which will contain boilers for steam heating and dynamos for lighting. The first floor will have a large dining-room with kitchen, the second floor a large reception hall, smoking-room for gentlemen and a ladies' room, while the third floor will contain offices for the association which will own the property, and the roof will be turned into a garden, with music weekly.

It is claimed that all this can be furnished at moderate cost to each family, not exceeding \$35 per month, including rent, interest, sinking fund and all other expenses. While the houses are building a small sum will be paid by each stockholder for the creation of a sinking fund.

### ELECTRICITY IN THE HOUSEHOLD.

As electricity is being so widely used in industrial operations and experimental electrical cooking and heating apparatus are being freely exhibited, it is not strange, points out the Metal Worker, that many engaged in household work should look to this agent for a similar relief to that enjoyed in other fields. Some of the foremost electrical engineers have devoted no small amount of time and research along the lines of implements for doing household work, so far as the heating is concerned, with electricity. Unfortunately, as yet, the use of electricity is governed entirely by the cost, and for many of the uses to which it could be put with advantage to the housekeeper, it is out of the question, owing to the great expense involved in its employment. As electric radiators are used for heating cars, it would seem that where the electric wires run into a building to supply light it would be but a small matter to use electric radiators, with all the attending convenience, for heating; but the all important factor of dollars and cents still constrains the average householder and building owner to rely upon the old methods of heating. The daily papers frequently discuss methods of heating water for bath and other purposes by means of electricity, showing how the wires from the ordinary lighting globe have only to be connected with some special apparatus to insure a current that can be turned on until the water has reached the desired temperature. In this last point, however, lies the whole trouble. To heat any considerable amount of water by electricity requires more time than to accomplish the same amount from the gas jet or by other methods that are not only more familiar, but more satisfactory, as they are quicker, to say nothing of being infinitely cheaper. One of the latest ventures on the part of electrical manufacturers is the production of a baking oven, designed for use where electricity is available, as in large hotels, restaurants, etc. The principal advantage claimed for this device is that the oven can be maintained at any temperature desired, steadily, without fluctuation and continuously. Here again, however, the all important feature of cost must be taken into consideration. Doubtless, in many of the hotels and restaurants where the patrons are willing to pay forty cents for a chocolate eclair which can be purchased in a light lunch buffet for five cents, the electrical oven may be used. It is probable, however, that, so to speak, the chef, in the average kitchen, will continue to "stew in his own grease," with the charcoal, coke, or coal fire to do his cooking and baking, at least until the cost of electricity and the keeping of the apparatus in order, to say nothing of its first cost, comes down to the level of the cost of coal and coal burning apparatus. That there is a cleanliness and convenience attending the use of electrical heating and cooking apparatus is one of the strong inducements for the public to utilize them, and for the electrical engineers to continue their endeavors to surmount the all important barrier of dollars and cents; and, in view of the advance made in other fields in recent years, none but a confirmed skeptic would feel confident that the convenience and pleasure to be secured from the use of electrical household apparatus are still a long way off.

### RESIDENCE OF J. BREAUCHARD, ESQ., PARK HILL, N. Y.

THE large Georgian, or Colonial, house which is illustrated on pages 82, 83, and 84, was recently erected for J. Breauchard, Esq., at Park Hill, N. Y. It is built of red brick, with a light gray brick for the trimmings and dark bottle-green shutters at the second and third stories. The porches at the front, the one opening into the garden, and the piazza at the rear are well arranged, and bear a good relation to the interior plan. The whole is surmounted with a copper roof, pierced with many dormer windows of attractive proportions.

The arrangement of the interior rooms is well shown on the plans. Upon entering the front vestibule a vista is obtained through the entire hall, passing in through the opening into the living-room and on to the nook which opens out on to the rear porch. The hall is handsomely treated in white enamel, and it has a fluted pilaster effect with Ionic caps, above which there is a massive frieze for the cornice. The staircase is recessed into a circular form with fluted Ionic columns, which form the newel posts. The treads are of oak, and the rail is of mahogany. Opposite the staircase is the reception hall, treated in a similar manner as the hall, and with an entrance on to the porch. The walls in this reception hall and the hall itself are covered with old rose silk.

To the right of the entrance is the dining-room, which is trimmed with mahogany. It has a china closet built in, with leaded glass doors, and an open fireplace built of brick, with the facings and hearth of the same, and a mantel handsomely carved. To the left of the entrance is the den, which is finished in golden brown oak. There is a paneled wainscoting five feet in height, bookcases built in, and a fireplace, with red brick facings and hearth, and a mantel.

The living-room, of large dimensions, is trimmed with oak finished in golden brown. The ceiling is heavily beamed, and the wall is provided with a low paneled wainscoting. Between the wainscot and the wooden cornice the wall is covered with blue burlap. The fireplace has tiled facings and hearth, and a carved mantel with a paneled overmantel. The rear hall and stairway, the coat room and toilet room are conveniently located. The china closet is fitted with bowl, drawers, dressers, and cupboard complete. This china closet and the kitchen and its dependencies are treated with white enamel, and are furnished with all the best modern conveniences.

The second floor is trimmed with pine and treated with white enamel. It contains a large open hall, four bedrooms, sewing-room, linen closet, and two bathrooms, the latter furnished with porcelain fixtures and exposed nickelplated plumbing. The rear hall forms a private way to the third story, which is provided with a billiard-room, two guest rooms, trunk room, and the servant rooms and bath. The cellar, cemented, contains the laundry, heating apparatus, fuel rooms, cold storage, etc.

Messrs. Warren, Smith & Biscoe, architects, 120 Boylston Street, Boston, Mass.

### A DWELLING AT MOUNT VERNON, N. Y.

THE modern dwelling illustrated on page 80 was completed for Edwin J. Lucas, Esq., at Mount Vernon, N. Y. The underpinning and the first story are built of rough rubble field stone. The second story, of wood, is covered on the exterior framework with matched sheathing and then cedar shingles, which are left to weather finish. The roof is also covered with shingles. Dimensions: Front, 34 ft. 6 in.; side, 38 ft. 6 in., exclusive of piazza. Height of ceilings: Cellar, 7 ft.; first story, 9 ft.; second, 8 ft. 6 in.; third, 8 ft.

The hall and living-rooms are trimmed with white pine treated with ivory white enamel. These two rooms are separated by an archway, supported on fluted Ionic columns. The stairway has oak treads, painted risers, posts and balusters, and a mahogany rail. The ceiling is beamed, and there is a paneled wainscoting, and also a seat at the side of the staircase.

The living-room has a high paneled wainscoting the same as the hall, and the walls above this wainscoting are covered with crimson burlap. The ceiling is beamed, the bay window has a paneled seat, and the large open fireplace is built of rubble field stone with a hearth of brick, and a shelf of stone, rough hewn. The dining-room is trimmed with chestnut, and is finished with a soft brown color. The butler's pantry and kitchen are well fitted up with the best modern conveniences, and the lobby is large enough to admit an ice box.

The second story is treated with white enamel trim and mahogany doors. It contains an open hall, four bedrooms, and a bath, the latter being tiled and furnished with porcelain fixtures. The servant quarters and trunk room are placed on the third floor. The cemented cellar contains a laundry, furnace, and fuel rooms.

Mr. Herbert Lucas, architect, 1133 Broadway, New York.

## The Garden

### A WORD ON FOUNTAINS.

FOUNTAINS are among the most costly and sumptuous of garden ornaments. They presuppose and demand an environment of considerable extent. Moreover they require a surrounding so planned and arranged that the fountain itself occupies a natural place, adding to the beauty of the whole scheme.

Falling water is among the most beautiful of natural phenomena. In a literal sense a fountain is a device to introduce falling water into a garden. In itself obviously artificial and unnatural, it needs an artistic medium through which it may be introduced, and the sculptured fountain is called into being. Thus the most difficult of the arts—sculpture—and the simplest of natural phenomena—falling water—are combined to produce this very beautiful garden ornament.

The beauty of the fountain from the garden point of view consists in its fitness. A large fountain, environed in ample space, as the fountain on the Mackay estate, at Roslyn, Long Island, N. Y., illustrated on page 81, is a work of striking beauty. In this particular instance all the elements help in producing a very beautiful effect. The fountain stands on a lawn of vast spaciousness that slopes away from one side of the house. The area of this space is truly regal, so great, in fact, that there is a very real sense of distance. The fountain is happily placed at exactly the right distance from the house; near enough to be quite visible, far enough away to give value to the great stretch of green on which it is placed. The statues beyond, on the borders of the lawn, are likewise admirably placed, and add immensely to the effect of distance. And, then, as a crowning element in the successful disposition of these various objects, are the heavy masses of trees, enclosing and bounding the lawn, truly besieging it with their rich green foliage, and yet in no sense overshadowing it. In itself elaborate and interesting as a work of art, it is the situation and surroundings of this fountain which constitute its chief charm. It is a very interesting and beautiful illustration of the right use of a large fountain.

Not less successful is the very modest fountain that stands in the fine estate of James L. Breese at Southampton, Long Island, N. Y., illustrated on the same page. It offers every possible contrast to the Mackay fountain, but is not the less beautiful, nor is it of less value as an illustration of the proper use of fountains. It is an exquisite little vase, with a moderate jet of water that falls gently over it. It is a fountain that, at first thought, might seem available for almost every locality, and might, perhaps, need no special environment. Yet a glance at the photograph shows at once that the environment helps it and distinguishes it as nothing else could. The paved path is broken by the circle in which it stands—a lovely pool admirably proportioned and bordered with foliage. The brilliant blooms of the flower borders, the shrubs, the trees, which seem of exactly the right height, all help in producing a beautiful ensemble.

Quite as interesting, but illustrative of a different treatment, is the fountain in Rochelle Park, New Rochelle, N. Y., likewise shown on the same page. The situation is wholly new, for it stands on a graveled path that swells into a circle on the border of a lawn. The lower pool is here a flower bed, crowded with brilliant color, and the surrounding path is bordered with beautiful shrubs. The fountain forms a charming episode in the landscape, and is very happily placed.

These three examples, therefore, are fine illustrations of the value of fountains in suitable environments. They show the fountain at its best. They show that the fountain must suit the garden, and the garden must suit the fountain. Taken as a whole, these photographs constitute an interesting and highly suggestive study in landscape architecture and in garden design.

### HOT-BEDS.

By the use of hot-beds and frames many species of biennials, says a practical gardener, may be converted into annuals, with advantage to the grower. Among the more important of these are the East Lothian and other stocks. To be successful, the hot-bed should be made up quite early in the year, and so constructed as to afford a gentle heat over a long period of time. With this end in view, it is advisable to use about two-thirds of stable-litter, the whole mass of materials being thoroughly mixed and trodden down firmly to a depth of about 30 inches, even deeper. Though the soil need not be prepared and put on the bed as yet, it is advisable to put the frames and lights on the beds as a protection from snow and rain.





### NEW YORK FIREPROOF HOUSES.

THE construction of steel and stone office and public buildings, which are practically fireproof, says Mr. G. E. Walsh, in the Architects' and Builders' Magazine, has inaugurated a new era in city building methods, and has gradually created a sentiment that all city structures should be made fireproof.

It is only recently that architects have been called upon to consider fireproof houses built for single families. It has always been supposed that a single family occupying a private house was safe from all the dangers which threatened those living in hotels and apartment houses. But in the past few years most disastrous losses of life and property in some of our handsomest New York residences have caused a feeling of insecurity that is rapidly creating a demand for new kinds of houses. Fireproof residences for single families have been built in New York recently which are considered as safe as any of the steel and stone office structures that tower so far above ordinary buildings down town. The cost of these houses is a factor that figures in their construction in no small way.

The more pretentious and costly a home in a city may be, the greater apparently is the danger from fire, for within such houses costly relics of art and science are packed, furnishing inflammable material that proves dangerous in an emergency. In constructing private dwellings in the past, little attention has been paid to fire escapes, and consequently the crowded tenements in some respects were safer because of the safeguards required by the building and police departments. To-day, however, the private dwelling is receiving the attention that it deserves in this respect, and it may be that within the next decade the new homes put up will all be comparatively safe from dangerous fires.

The various automatic fire-warning devices which have been invented are only approximate solutions to the problem. If they do not work instantly when needed they are of little use, and many of them get out of order very easily. They are good adjuncts to the modern fire department, but they will not of themselves insure the safety of the occupants. The only way to do that is to construct fireproof homes, as we have built fireproof hotels, apartment houses, and office structures.

The modern type of fireproof homes which has appeared in New York in the past two years is expensive because of the material and slow method of construction. Old methods of building have been discarded, and the builder brings into use the materials and methods employed in putting up an office structure. The first two or three lower tiers of beams are of iron instead of wood, and the walls are filled with fireproof material. The floor which separates the cellar from the first story of the house is also constructed of fireproof blocks, which in some cases are extended up to the second floor. These iron beams and fireproof floors and partitions of the cellar and first story or two make conflagrations from below almost impossible. The cellar and kitchen are the source of most fires, and by shutting them off from the rest of the house the danger of fire is greatly lessened. In some of the early experiments with fireproof materials, the metal lath was used in the walls, and it was supposed that this would be sufficient to prevent disastrous fires. But they have given way now to the more substantial walls with iron beams and fireproof packing materials.

Some of the new type of fireproof houses have the fireproof material running up only to the second floor, and above that the wooden floor beams and wooden stud partitions are used, as in the old style. But many of the newer ones are built fireproof throughout, with all beams of iron and filled in solid with fireproof material. In this fireproof packing of the walls all the electric light wires, steam pipes and flues are encased, making it impossible for any fire to start from any one of them. Where houses are old, fires are frequently started in the walls by electric wires, flues, or steam pipes, which overheat the air enclosed in the walls, and combustion starts easily. By making the material occupy all the ordinary air space there is little room for combustion to start, and absolutely no inflammable material to burn if a spark could ignite in the walls.

The stairway and hall have always proved natural chimneys up which fires in the basement of a private residence would burn, and fanned by the draft drawing up the stairway a small fire would leap quickly from one floor to another, practically enveloping the whole house in flames before the inmates could be aroused. As a special safeguard against any such acci-

dent, the modern fireproof home is in some cases provided with a fireproof interior enclosed staircase. This is a novel feature that has proved somewhat popular in expensive houses, especially where electric elevators are also installed for common family use. The staircase in such houses is generally placed as near the middle of the building as possible, and it extends the full length of the house from cellar to roof. The staircase is built entirely of metal and has no wood or inflammable material surrounding it. The steps themselves are usually of slate or marble. The enclosure is built entirely of fireproof material, and it is both waterproof and smokeproof. On each landing there is a fireproof door, which swings on automatically-closing hinges, and this is always kept closed night and day except when a person is passing through. The staircase has an entrance through the cellar to the street and also straight up to the roof. It might also serve as a burglar-proof staircase, for any one entering the house on the lower floor would have difficulty in reaching the floor above if the doors were locked.

The fireproof staircase is invariably provided with an electric elevator, for while the construction of such buildings will induce people to sleep on the third and fourth floors, additional provision for going up and down so many flights of stairs is demanded. Consequently the electric elevator has become an important part of the new type of city home. These elevators have become popular features of all the four-story houses, and they will soon be almost as generally used as the elevators in hotels and office buildings. They require no man to operate them other than the passenger ascending or descending. By pressing a button the elevator goes up or down, the doors closing and opening automatically when the button is pressed and released. The modern electric elevator in private city homes combined with fireproof methods of construction have added greatly to the living space. It is not uncommon now to have some of these houses five and six stories in height. The top floor is usually given over to the servants' rooms while the next floor is used for the nursery and general playground for the children.

The fireproof homes further increase the floor and living space because of the difference in the thickness of the walls. The fireproof walls are much thinner than the walls of wood and brick, and it is estimated that from 10 to 20 per cent. more space is obtained in the new buildings in this way. This consideration alone is important in a city where land sells so high as in New York, and the gain obtained in this way adds greatly to the selling value of the house. Owners, as well as architects and builders, are emphasizing this point. Nearly all the partitions, though much thinner than the wooden ones, are practically soundproof, and noises seldom penetrate from one to another.

### A HOUSE AT WINCHESTER, MASS.

THE house illustrated on page 79 was erected for Captain P. A. Nickerson, at Winchester, Mass. To build the house in harmony with the characteristics of its surroundings, it has been designed with a strong "English" feeling, as is shown by the half-timbered work used in connection with the shingle work of the exterior. The underpinning is built of rock-faced stone laid up at random. The shingle work of the superstructure is stained and finished in a rich silvery gray color, while the trimmings are finished in a soft brown color, the beams in the gables particularly harmonizing with the yellow-tinted plaster in the panels. The roofs are of a moss green color.

The interior arrangement presents a plan showing a central hall, which is trimmed with cypress treated in the Flemish style, and it has a paneled wainscoting and ceiling beams. The entrance is through a vestibule, with coat closet at the side. The staircase is an ornamental one with newels and balusters of Gothic style.

The reception-room, to the right of the entrance, is trimmed with whitewood treated with white enamel paint. The living-room is trimmed with cypress, and is finished in the Flemish style. It has a paneled wainscoting and ceiling beams. The fireplace has tiled facings and hearth and a mantel. The den is treated in a similar manner, and has a small open fireplace built of brick and a broad window seat. The dining-room is trimmed with mahogany, and it is furnished with ceiling beams and a paneled wainscoting. The butler's pantry is fitted with drawers, dressers, closets, bowl, etc. The kitchen is furnished with all the best modern conveniences, and it has a large store-pantry, range, sink, and an entry large enough to admit ice box.

The second floor is treated with ivory white paint, and contains four bedrooms, sewing-room, bathroom, and servants' bedroom, besides ample closet room. The third floor contains three bedrooms and a trunk room. The cellar, cemented, contains a laundry, heating apparatus, fuel rooms, etc.

Mr. Thomas W. James, architect, 27 School Street, Boston, Mass.



### DOMESTIC FIRES AND SMOKE.

BRONCHITIS and consumption, points out Mr. T. G. Marsh, in a paper read before the Society of Architects, are rife in our densely populated towns, and though the artisans are better paid and can afford to be better clad and to obtain better food than the agricultural laborers, yet their stamina is poor in comparison with that of their country brethren, due to the polluted air that they are compelled to breathe. There are not wanting signs that the efforts of our reformers are having effect in the abatement of smoke, but these improvements are almost entirely confined to the smoke from fuel used for industrial purposes; our domestic fire-grate remains the greatest sinner against pure air—this can be easily understood. Sanitary reformers have been able to prove to manufacturers that the abolition of smoke from their works would give them such an economy as would amply repay for the outlay of capital necessary for bringing about this result. On the other hand, any economy of fuel in our homes would be so widespread, and the individual amount so small, that householders have not considered the subject worthy of attention, and have continued a policy of retaliation, each assisting in poisoning his neighbor.

It is only to municipal authorities, architects, and engineers, therefore, that we can look for those efforts which will eventually rid us of the smoke nuisance, and it is only by continual ventilation of the subject that the desire for heat without the accompaniment of smoke can be stimulated. The daily canopy of smoke overshadowing London was estimated some years ago by Professor C. Roberts, F.R.S., at fifty tons of solid carbon, and two hundred and fifty tons of carbonic oxide gases, acids, and hydrocarbons. The late Dr. Angus Smith stated that each million tons of coal used should provide an amount of manure sufficient to increase the produce of our land in foodstuffs £533,000. The extra production estimated upon our present coal consumption would be over £95,000,000 sterling annually. Fully forty per cent. of the heat from our domestic fire-grates is positively wasted; we are, however, on the eve of an inevitable revolution in methods of obtaining power and heat, and the signs have spread farther than many of us think.

### THE DOMESTIC CONSUMER AND GAS COOKERS.

GREAT improvements having been made by all other fuel consumers, we will now turn to the domestic consumer. I am not prepared to say that in this case the amount of smoke sent out has not been decreased, but certainly it has not decreased to the same extent as in the other sections. We find that there are 1,330,000 gas cookers in use in the United Kingdom, and these more especially during the summer months have considerably decreased the coal bill. Gas-cooking stoves are almost invariably fixed in the houses without any connection to the chimney, and there is no means of freeing the house from the odor of the cooking viands. A simple arrangement for the carrying off of these odors to the chimney breast or other suitable position would, I am sure, be considered as a great boon, and seeing that one-fifth of the whole of the gas consumers of England are now users of gas-cooking stoves, I think the matter well worth attention, and would impress upon architects generally the great necessity for providing special flues for gas-cooking arrangements.

### THE FAILURE OF THE OPEN GRATE.

As regards the heating of our houses, we have in England almost exclusively the old-fashioned open fire-grates, cheerful in appearance and wasting a large percentage of the fuel. Various attempts have been made to improve these fires, but they have almost without exception been failures, for the reason that in a domestic house the servant, unlike the stoker in a mill, has no care in her methods of handling the fuel. It is thrown on the fire with little or no judgment, with the result that we have vast volumes of smoke, and until there is adopted an efficient domestic fire fed by gaseous fuel, we shall continue to have our recurring fogs and our more or less smoky atmosphere. I am of opinion that the principal reason why gaseous fuel has not been adopted more generally for heating purposes is that the price has been considered prohibitive, in many cases the various savings attendant upon its adoption not having been fully taken into account; I believe that gas should be sold at a very considerable reduction in price for purposes other than lighting.



Plumbing

THE PROTECTION OF SUMMER-HOUSE PLUMBING.

It is not good policy to provide summer houses with steam or hot water heating apparatus, but where such installations occur the heating boiler (water or steam) should receive first attention. Great care and judgment must be exercised in draining and drying out such heating apparatus, because, if the boiler has been put together with gaskets, it may be a toss up as to whether to run the chance of splitting the bottom of the boiler through the freezing of the small quantity of water which remains below the drain cock—which is almost sure to be a trifle above the lowest water pockets—or to risk destroying the gaskets by heating up the dry boiler.

If the main stop which controls the supply to the barn, stables, or other additional buildings, the fixtures in the highest building of the group should be drained first, to insure against an undesired inflow of water to a partially drained system at a lower level. If the system is supplied from a tank placed on a tower, or in a tank room in any of the buildings, the tank must be drained first of all, and no stop valve need be turned off anywhere on the premises. At all low points in the system out of doors the drain cocks should be opened, and, if possible, the plugs of the drain cocks should be loosened and partly raised out of the socket, so that there will be no chance of any water being held in small pockets in the brass, there to freeze and expand the cock.

The highest fixtures in a building should be emptied first. The hot and cold faucets of a fixture in the basement, such as a laundry tub, should be opened and all other faucets kept closed. If, now, the faucets are opened and the water closet tank discharged on the top floor, the entire supply line from the top floor to the basement will be siphoned out with sufficient force to empty small pockets which may exist.

To make this the more certain an air pump—such as is used to test gas piping—should now be applied to each faucet in succession, all others remaining closed. It will be necessary to tie up the lever of the ball cock in the water closet tank, as there will be no water in the tank to keep the valve closed. When air passes through the piping freely there need be no fear of there being sufficient water in the pipes to cause bursting. These faucets should be closed, and the same procedure followed at each fixture or group of fixtures, until the supply lines are clear.

Where stop cocks occur in horizontal lines of piping or in pockets or low points in the supply piping, the nuts should be loosened from the plugs and the plugs loosened from the socket, enabling any moisture which may drip down at this time, or later, to escape.

The range boiler may, meanwhile, be draining, so that by the time all the supply lines are cleared the water front is ready to receive attention. If there is any doubt about the lower tapping of the water front being at the bottom of the casting, the side connection to the boiler should be disconnected and air pumped through rapidly, forcing the water to spill out of the bottom connection.

The supply lines being clear of water the water closet tanks should be sponged dry, and the traps of the various fixtures emptied. There is little difficulty in emptying the traps under wash basins and sinks, as the traps in nearly all cases have plug screws in the bottom.

The bath trap is a little harder to get at, being under the floor, but almost invariably in a direct line below the overflow connection or standing waste. By removing the stand pipe from the standing waste, or the overflow pipe, if the tub fittings happen to be of the connected waste and overflow type, a small rubber tube may be inserted down to the water in the trap. Suction at the upper end of the tube may be applied in several ways.

It is important that every vestige of moisture be removed from the water closet bowls, whether they be washouts, washdown siphons, pneumatic siphons, or siphon jets.

The cheapest, and, all things considered, perhaps the best fluid to place in the traps to prevent the entrance of sewer gas to the house, is common kerosene oil. This liquid is noncorrosive, will not freeze, evaporates very slowly, and if recovered may be used over and over again. Great care must be used, however, to insure the perfect freedom of the oil from water, as a small amount of water settling to the bottom of the jet hole of a siphon jet bowl will be sufficient to split off the bottom of the jet tube, rendering the bowl worthless.—M. L. Kaiser, in the Metal Worker.



Heating Talk

RADIATORS.

THE radiator question is one of the most serious matters in relation to this subject that heating engineers and architects have to face at present, points out a recent expert. Some of the designs are not attractive, and hardly suitable to the architecture of this country; but beyond the fact of their unsightly appearance, their defective heating qualities have to be considered. It is a fact that a radiator most suitable for hot-water work is often quite unsuitable for steam work, and vice versa; but my opinion is that many of the radiators now being sold in the market are too highly rated, and their ratings should be either reduced or withdrawn altogether. There are several points, such as ratings of boilers, radiators, etc., which engineers have hitherto taken for granted, and by so doing they have often laid themselves open to censure, though probably through no fault of their own, but owing rather to a want of knowledge on the subject. While you may obtain a catalogue giving all particulars which the makers wish to state, this is not all that is required by any means; for some radiators actually will not heat within 50 per cent. of their rated capacity. Some of the radiators on the market have been so disappointing that I have felt constrained to make a radiator myself, both for direct and indirect heating, so as to insure its heating capacity being ample. The great mistake in apportioning the heating surface of radiators is made by the surface being measured for a commercial basis and not for a heating basis.

THE HEATING OF DWELLINGS.

In discussing the heating of dwellings the same authority says:

Whether the dwellings be for the rich or the poor, I am a believer in warming and ventilating them. The general adoption of systems suited to different classes of houses would not only afford greater comfort, but would greatly reduce the common susceptibility to disease. Our climate being of such a variable nature, demands some artificial heat, and it is a pleasure to me to know, not from my own business alone, but from the experience of others engaged in similar work, that the warming and ventilating of small houses is on the increase. It may be asked how the continued extension of this movement can be effected? In reply, I would urge architects who are designing houses and other building to go carefully into the question, first with their clients, and secondly with an engineer of good repute and experience, and have a scheme prepared—if one is to be adopted—while the building is on paper, thus saving much work and anxiety afterward, and oftentimes much expense. For small residences I advise a simple boiler, but of sufficient size, with good radiators that will furnish the necessary warmth; the whole installation to be simple in design, so that it is economical from a maintenance point of view, and, at the same time, easy of manipulation for a manservant or a maidservant, or the occupier of the house itself. The extract ventilation may be the fireplaces in the rooms themselves, or, as I have done in a few cases, in connection with the kitchen chimney.

FIREPLACES.

Few know the number of fires caused by defects in and about the fireplace in modern building work, said a speaker at a recent fire protection congress. Personally, he was disposed to think that most of the causes are brought about by careless workmanship, and a few, perhaps, by the use of methods which were quite adequate in former times, before the invention of what are now called slow-combustion stoves, close ranges, boilers, and the like. He placed first in point of danger the practice of building half-brick trimmer arches to carry hearths in wooden floors, the arches having the centering left in and forming an open space under the brickwork. The underside of this space is lathed with wood laths and plastered in the same plane, as a rule, as the rest of the ceiling. This form of hearth should give place, in my opinion, to a concrete or other self-supporting hearth, the full depth of the floor joists, having a flat soffit on which the plaster could be applied direct. Next he should like to advocate the use of fireclay linings to all flues, a common practice in many districts, but not in use as a rule in London, where flues are generally improperly bonded and badly built with brickwork only 4½ inches thick, in which bad mortar forms a considerable component part, and which after a time drops out, leaving the joints open.



New Building Patents

BRICK, STONE, AND TILE.

TILE. W. E. Rivers, Oldbridge, N. J. August 2.....	766,526
COMPOSITION FOR BRICKS FOR BUILDING PURPOSES. H. M. Hanmore, Los Angeles, Cal. August 9.....	767,054
COMPOSITION FOR WALL PLASTER AND BUILDING BLOCKS. A. W. Perkins, Rutland, Vt. August 16.....	767,434
BUILDING BLOCK. J. A. Noble, Fostoria, Ohio. August 16.....	767,494
BUILDING BLOCK. E. Tisch, Grand Rapids, Mich. August 30.....	769,120

CARPENTRY.

WINDOW FRAME AND SASH. F. A. Winslow, Chicago, Ill. August 9.....	766,860
WINDOW. J. N. Scherner, Chicago, Ill. August 9.....	767,172
FLOORING. G. H. Kimball, Detroit, Mich. August 9.....	767,288
DOOR SILL. P. G. Webber, Stoneham, Mass. August 16.....	767,615
ROOFING OR SIDING. F. W. Terpening, St. Louis, Mo. August 16.....	767,723
WEATHER STRIP FOR DOORS. T. D. Snow, Devereau, Mass. August 16.....	767,771
APPARATUS FOR REPAIRING SHINGLED ROOFS. L. S. Boulter, Boston, Mass. August 16.....	768,009
STAIRWAY. J. Kuhlhanek, Prague, Austria-Hungary. August 30.....	768,759
WOOD FLOORING. J. J. C. Hasbrouck, New York, N. Y. August 30.....	768,852
SASH FRAME AND SASH. J. G. Rosenboom, Columbus, Ind. August 30.....	768,865
WINDOW. O. M. Edwards, Syracuse, N. Y. August 30.....	768,935

CONSTRUCTION.

BUILDING CONSTRUCTION. T. O'Shea, Chicago, Ill. August 2.....	766,280
CHIMNEY CAP CONSTRUCTION. J. W. Belcher, Chicopee Falls, Mass. August 2.....	766,487
FLOOR AND CEILING SUPPORT. E. W. Fenn, New York, N. Y. August 2.....	766,609
LINING FOR WALLS. L. Patterson, Warren, Pa. August 2.....	766,726
CONCRETE OR LIKE GIRDERS. F. Puhlmann, Schoneberg-Berlin, Germany. August 9.....	766,899
CONSTRUCTION OF BUILDINGS. J. O. Fisher, Mexico, Ind. August 9.....	766,943
WALL CONSTRUCTION. J. A. Ferguson, Denver, Col. August 16.....	767,398
WALL CONSTRUCTION. F. E. Kidder, Denver, Col. August 16.....	767,413
BUILDING CONSTRUCTION. J. T. Ryther, Lynn, Mass. August 23.....	767,079
CONCRETE FLOOR CONSTRUCTION. F. J. Lyons, St. Louis, Mo. August 23.....	768,233
SADDLE ROOF. C. Loehle, Zurich, Switzerland. August 23.....	768,335
APPARATUS FOR ERECTING BUILDINGS BY MOLDING ARTIFICIAL STONE. J. J. Dewey, Highland Park, Tenn. August 23.....	768,429
STRUCTURAL BEAM OR ARCH. T. P. Finlay, New York, N. Y. August 30.....	768,594

ELEVATORS.

SAFETY DEVICE FOR ELEVATORS. E. Mosonyi, St. Louis, Mo. August 30.....	768,814
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FIREPROOFING AND FIRE EXTINGUISHMENT.

FIRE RESISTING DOOR OR BLIND. H. E. Vance, Columbus, Ohio. August 9.....	767,024
FIREPROOF FLOOR OR CEILING. J. Kahn, Detroit, Mich. August 23.....	768,285

HARDWARE.

WINDOW SASH FASTENER. J. G. Reilly, So. Melbourne, Australia. August 2.....	766,198
SASH LOCK. J. M. Butcher, St. Louis, Mo. August 2.....	766,322
SASH FASTENER. L. Schley, New York, N. Y. August 2.....	766,395
LOCK. F. M. Thompson, Danbury, Conn. August 2.....	766,472
SASH FASTENER. W. Goodcell, San Bernardino, Cal. August 2.....	766,689
WINDOW LATCH. O. C. Call, Springfield, Mass. August 9.....	767,136
SASH LOCK. F. J. Lowery, Fort Fairfield, Maine. August 9.....	767,370
SASH LOCK. A. J. Ashley, Kansas City, Mo. August 16.....	767,677
SASH FASTENER. H. C. Hettinger, Chicago, Ill. August 23.....	768,177
SASH LOCK. W. C. Brinkerhoff, Chicago, Ill. August 30.....	768,730
WINDOW CONTROLLER AND LOCK. G. McDowell, New York, N. Y. August 30.....	769,007
COMBINED SASH LIFT AND FASTENER. W. N. Packer, Shelby, Ohio. August 30.....	769,011

HEATING AND VENTILATION.

WINDOW VENTILATING LOCK. H. B. Ives, New Haven, Conn. August 2.....	766,357
RADIATOR. A. G. Bayles, New York, N. Y. August 30.....	768,785
STEAM RADIATOR. G. W. Johnson, Geneva, N. Y. August 30.....	768,856
VENTILATING SASH LOCK. W. N. Packer, Shelby, Ohio. August 30.....	769,012

MISCELLANEOUS.

METAL WEATHER STRIP. H. E. Kenny, Detroit, Mich. August 9.....	767,286
PAINT COMPOUND OR MIXTURE. W. N. Blakeman, Jr., New York, N. Y. August 16.....	767,682
SCAFFOLDING BRACKET. J. M. Sackman, Carrollton, Ill. August 16.....	767,768
PRISMATIC WINDOW. G. K. Cummings, Center Rutland, Vt. August 16.....	767,799
EMBOSSED WALL PAPER AND PROCESS OF MAKING SAME. A. Leisel, Peekskill, N. Y. August 23.....	768,055
METAL LATH. S. Davidson, Buffalo, N. Y. August 30.....	768,932
METAL LATH. J. F. Malone, Buffalo, N. Y. August 30.....	768,947

PLUMBING.

WASTE PIPE TRAP. T. Linke, New York, N. Y. August 16.....	767,904
FLUSHING APPARATUS. J. Denton, Paterson, N. J. August 23.....	768,215
CLOSET STRUCTURE. W. W. Griffiths, Philadelphia, Pa. August 30.....	768,601
FLUSHING TANK FOR WATER CLOSETS. C. H. Phillips, Maplewood, Mass. August 30.....	768,688
CLOSET FLUSHING DEVICE. J. M. Justen, Toledo, Ohio. August 30.....	768,752
COMBINED LAVATORY, WATER CLOSET, AND CABINET. J. B. Legg, St. Louis, Mo. August 30.....	768,878
WATER CLOSET. F. C. Zacharie, New Orleans, La. August 30.....	768,890

TOOLS.

PLANE. J. A. Traut, New Britain, Conn. August 2.....	766,473
PLANE. A. W. Campbell, Glastonbury, England. August 2.....	766,491
PLUMB AND LEVEL. C. J. Dewaine, Bath, N. Y. August 16.....	767,392
COMBINED SQUARE, BEVEL, LEVELING, AND PLUMBING INSTRUMENT. J. W. Fletcher, Chicago, Ill. August 30.....	768,740





#### TINNERS' AND ROOFERS' SUPPLIES.

ARCHITECTS are frequently planning their new buildings, wherever possible, on the open style of gutter. It is free to expand and shrink, and no stems or cross-bars stop the flow of leaves or rubbish. Hangers give the trough a strong, paneled appearance, while its position, projecting beyond the eaves, constitutes an imposing line to an important part of a structure. A gutter of this kind will last for years. It is made by the Berger Bros. Company, which owns one of the largest plants of tanners' and roofers' supplies in the world. This firm manufactures tin andterne plates, eaves, gutters and pipes, gutter and pipe hangers, pipe hooks and fasteners, steel roofing and siding, galvanized and copper cornice work, malleable and gray iron castings and trimmings, at the factory, Nos. 3114-3120 North Seventeenth Street, Philadelphia. One of its popular roofing implements is shown in the accompanying en-



STANDING-SEAM ROOF IRON.

graving, and the device is designed to dispense with snow rails or gutters formed on the roof, to prevent snow sliding. This standing-seam roof iron is made of the best malleable iron, and clamps fast to the roof by clinching the lugs through the standing seam of metal roofs. A similar one is made for slate, and is riveted on 3-16 x 1 1/4 inch iron plates, fourteen inches long, to go nine inches under the slate. A tool of much scope and power is the Buffalo snips, straight jawed and adapted to cutting out holes, irregular shapes, scrolls, etc. The inner faces of the jaws are shaped in such a manner that the material can pass freely when the operator is cutting curves and irregular shapes. When cutting in the other direction the lower jaw will allow the material to pass. The tool is forged out of the solid bar, with steel-laid jaws properly tempered. Some of the supplies that make up the extensive stock of this company comprise roll, V crimp, and corrugated roofing, genuine Russia and American planished iron, B. B. galvanized and black iron, sheet zinc, sheet copper, metal lath, rivets, bolts, solder, registers, ventilators, elbows, handles, valves, plungers, etc. Finials and crestings form a very important part of the goods in stock at the recently erected warehouse adjoining the office and store No. 237 Arch Street, Philadelphia. There is probably no material or implement needed in roofers' supplies that can not be procured from this establishment. There are also hundreds of articles and many compounds in stock that are intended for various other uses and purposes, many of which are of the highest practical value. Asbestos furnace cement, dry iron-ore paint, iron clad milk cans, fire pots, grooving machines, ferrosteel lattice, and mechanics' vises are a few of the long list carried by this firm.

#### ROOFING TIN.

A VERY practical plan has been adopted by the American Tin Plate Company, of Pittsburg, Pa., namely, to get specifications of old, experienced tin roofers and distribute them among architects and others, whose duty it is to see that building work is done well and properly. Housebuilders who prefer a tin roof to any other and can be assured that the right kind of material will be put on in the right manner, will appreciate this measure. The specifications given in this article were written by Mr. John McIlroy, senior partner of I. D. McIlroy & Sons, of No. 114 Smithfield Street, Pittsburg. The views of a man of large practice in this branch of work were secured because it has been observed that whenever an extra good job of tin roofing was required in the above city, the firm just mentioned, which is by no means a cheap roofer, would generally be called on to do the work, and also for the reason that a complaint against a tin roof of its laying was something very rare. The firm was established in 1858, and Mr. John McIlroy received his training as a metal worker from his father nearly forty-five years ago, and has been in the business ever since, and, therefore, his experience is of special value. Particular attention might be given to his instructions regarding painting, for the early decay of tin roofs has been caused more by inferior paint than by any climatic or atmospheric conditions, or the ingredients of the roofing material. The specifications are: Flat seam roof.—Use tin of good quality; see that the tin is square; notch corners 1 inch; turn 1/2 inch edge; use 7 nails or cleats to the sheet; hammer smooth with mallet; flux with resin, using plenty resin; solder with

hot soldering copper, soldering on top of seam, and soak the solder well into seam; use on IC tin 5 pounds of 1/2 x 1/2 solder, on IX tin 6 to 7 pounds per square. See that the resin is well cleaned off after the roof is finished, then give the roof one coat of paint made of pure English Venetian red or pure oxide of iron and pure boiled linseed oil and a little turpentine; in thirty to ninety days a second coat of the same paint, or good graphite, using in each case only linseed oil for a thinner; in one year a third coat; after that you will be required to paint only once in every three or four years. We take no stock in painting under side of flat seam roof. If the sheeting boards are not tongued and grooved, there should first be put on a layer of dry felt paper to exclude the air from cracks and joints and to prevent nail heads from coming in contact with tin roof. If the sheeting boards are old and dry, 20 in. x 28 in. plates are preferable; if the sheeting boards are wet and green, 14 in. x 20 in. plates are preferable. 20 in. x 28 in. sheets will give you an average measurement on roofs of 385 feet per case, 112 sheets 20 in. x 28 in. Average measurement on roof 14 x 20, 112 sheets, 187 feet to box. Standing seam roof.—Have the tin square; notch corners for seams a little to ease the bending of the several layers; allow 1/2 inch for cross-seams; solder well; put tin in straight rolls 20 inches wide; use 1 1/4 and 1 1/2 inch tongues for side or standing seams; cleat every 12 inch, 2 nails to cleat; be sure to have your seam perfect; never put a standing seam roof on where you have less than 1 1/2 inch fall to the foot; paint the same as flat seam roof. In standing seam roofs always put a layer of dry felt paper on roof before laying tin. It will exclude the air from seams and will prevent nail heads in sheeting from coming in contact with the tin. You will have an average of 352 feet per box of 112 sheets, 20 in. x 28 in. tin. If the above directions are followed you will have no trouble, provided a good quality of tin is used. We can show roofs now which have been exposed thirty-five to forty-five years and are still intact.

#### VIEWS OF A SOUTHERN MANUFACTURER.

MR. E. R. MILLER, secretary of the W. E. Caldwell Company, of Louisville, Ky., was recently asked his views as to the present condition and future prospects of business in his line, which is the manufacture of tanks and towers for numerous purposes, including fire protection, water works for smaller municipalities, for country homes, florists, and nurserymen; also tanks and tubs for distillers, brewers, tanners, laundrymen, and the like. As the business of the W. E. Caldwell Company extends all over the country and deals with so many lines of industry, it was thought that Mr. Miller would be able to give a very good idea of actual conditions. He said: "Like everybody else, we saw the present lull in business coming. We made up our minds, however, that if by any effort on our part we could prevent a curtailment of our business, that effort would not be spared. While it is probable that the aggregate business in our line has not been so prosperous during the last six or eight months, our own has increased somewhat, and right along, our new orders have been a little more numerous than those of last year, which was the most prosperous that we had had in a quarter of a century. To begin with, we made a much more thorough distribution of our 1904 catalogue than we had ever done with any earlier issue. We directed and shipped out in all over four carloads. We also made a much more thorough exercise of our follow-up system used in connection with our advertising in the trade papers, and, of course, we kept our salesmen going. The result has been very gratifying. We feel that we have had more than our share of business, although naturally very little of it has been in connection with the building of new plants. One aspect of the general reaching after economy has been decidedly beneficial to us. Many manufacturers have found, upon inquiry, that they could reduce the cost of their insurance by using an independent water supply in connection with their sprinkler systems, and these have come to us for their tank and tower outfits, the first cost of which they saved in a short time through the premium economy. As to the distribution of our business, it has naturally been especially good in the South, which has not yet felt the pinch of economic curtailment. Still, we are very much gratified that in all sections we have at least held our own."

#### AMUSEMENT OUTFITS.

ANY kind of apparatus, found, for instance, at a great resort like Coney Island, that turns, gyrates, runs, slides, or in any way works by artificial aid to amuse the public, is made to a very large amount in North Tonawanda, N. Y. Tent, platform, organ, boiler, engine, chariots, horses, etc., that go to make up the complete "merry-go-round" may be procured from the manufacturers of this kind of outfit, the Herschell-Spillman Company, of that place. The firm is understood to be the pioneer operator and maker of the popular merry-go-round, and for many years prominent in the production of paraphernalia on the order of

striking machines, picture centers, carved centers, ocean waves, Ferris wheels, and miniature railroads. The company's improved two-horse gallery is what is known as the twenty-four horse machine. It is nearly forty feet in diameter, and comfortably seats ninety-six adults. The chariots are four in number. The horses are mounted on rockers of a new style, which do away with the use of bolts. They are actuated by eccentrics on the track wheels, which give the pleasing and life-like galloping movement. The regularly furnished musical apparatus is the No. 18 Military Band Organ fitted with two barrels, each one containing eight modern popular selections of music. It is supplied with trumpets, piccolos, and flageolets. The galleries are furnished with a negro or Chinese image, as preferred, neatly clothed, and turning the organ. The construction is such that he automatically but naturally turns his head and bows when the round is in motion. Mirrors, decorations, brass work, panels, etc., are made at the factory. The tents used are eight ounce army duck tents of the best quality, fifty feet in diameter, and are hung from the center pole, and supported on the outside edge by sidewalk poles secured by stakes, rather similar to a circus tent. The boilers and engines made at the works of this firm, and used to drive the machinery when on the road, are of the portable type. The boilers are thirty inches in diameter and fifty-four inches high. The engines are about twelve horse power. The address, Nos. 162-198 Sweeney Street, North Tonawanda, New York.

#### THE WHITE HOUSE STABLES.

THE present White House stables, says a writer in *Rider and Driver*, was erected during the administration of General Grant, who kept more horses than any other President save Lincoln, and the building has been in use continuously ever since. Of the fifteen horses in the stables, eight belong to the Roosevelt family and the remainder to the Government. The impression which prevails to some extent to the effect that the Government provides the Presidential equipages is an erroneous one. The horses and carriages owned by the Government, which are quartered at the White House stables, are seldom used by the President or any member of his family, being presumably reserved exclusively for the use of the secretaries and messengers at the White House. This idea is even carried out to the extent of dividing the White House stables into two distinct sections. One is occupied by the horses and carriages owned by the Government, while the other is reserved for the equines and vehicles which are the private property of the Chief Magistrate. Similarly, the President must defray from his private purse the expenses of the keep of his horses, whereas the Government purchases feed for the other animals.

Prominent among the horses in the White House stables are the President's hunters. Bleistein, Mr. Roosevelt's favorite, is a large, strong-limbed, full-chested, light bay, with a white star on his forehead and two white hind feet. The other hunter, Renown, is a dark brown Canadian horse, five years old, and very large and strong, measuring about seventeen hands high. Both animals are excellent jumpers, Bleistein having a record of 6 feet 5 inches, while Renown's record is 6 feet 8 inches.

Of the vehicles in the White House stables the most imposing is the ceremonial or state carriage, a leather front landau. It is trimmed in selected dull blue goat-skin, with dinkey seat and head lining covered with the finest quality of blue cloth. Boot and body are painted black, with rich, dark blue door and body panels, the gear a shade lighter of blue, striped with black. The interior fittings include speaking tube, combination card case and tablet, mirror, etc.

The Presidential brougham likewise has boot and body painted black and trimmings of dull blue and goatskin. It is provided with pockets for books and magazines, memorandum bound in ivory and silver, umbrella holder and drip, watch, parcel rack, mirror, cut-glass vinaigrette, signal bell, arm and foot rests.

A third carriage is a surrey trimmed in tan, and finally, there is the "Oyster Bay wagon," an old-fashioned vehicle resembling a T-cart, which has been in use by the Roosevelts—father and son—for forty-five years, but is still used frequently by the President, both at Washington and Oyster Bay.

The harness-room at the White House stables contains two sets of brass-mounted and two of silver-mounted harness, the bridles ornamented with the Roosevelt monogram and cockades. On trees in the coachroom are the numerous saddles, including those which the President used during his ranching days in the West. The saddle which Mr. Roosevelt uses most frequently at present is unique in many respects. It was made to the order of General Wood, who is said to own the only similar one in the country. The monogram, which ornaments the bridles and carriages and appears on the saddle blankets and the blankets which the horses wear in their stalls, is a simple one, formed by the letters "T. R."

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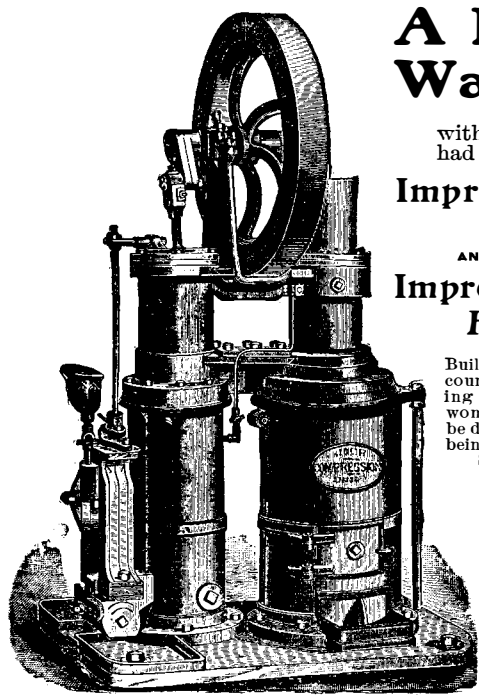
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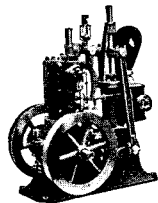
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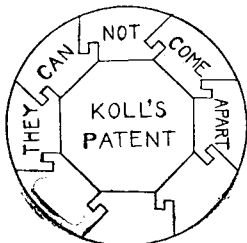
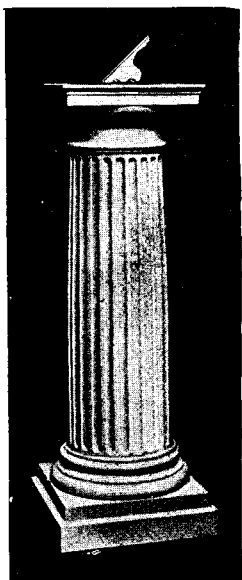
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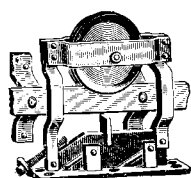
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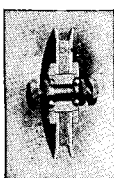
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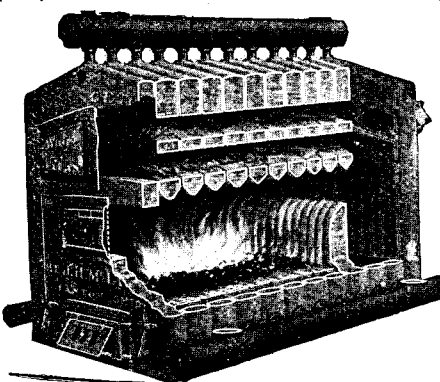
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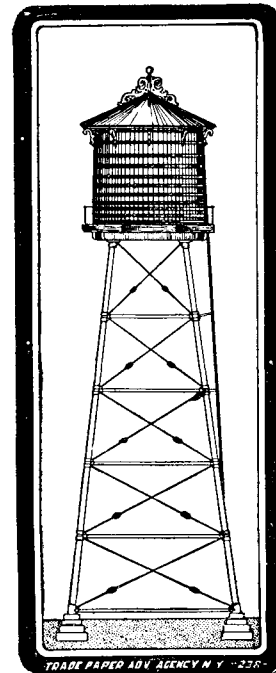
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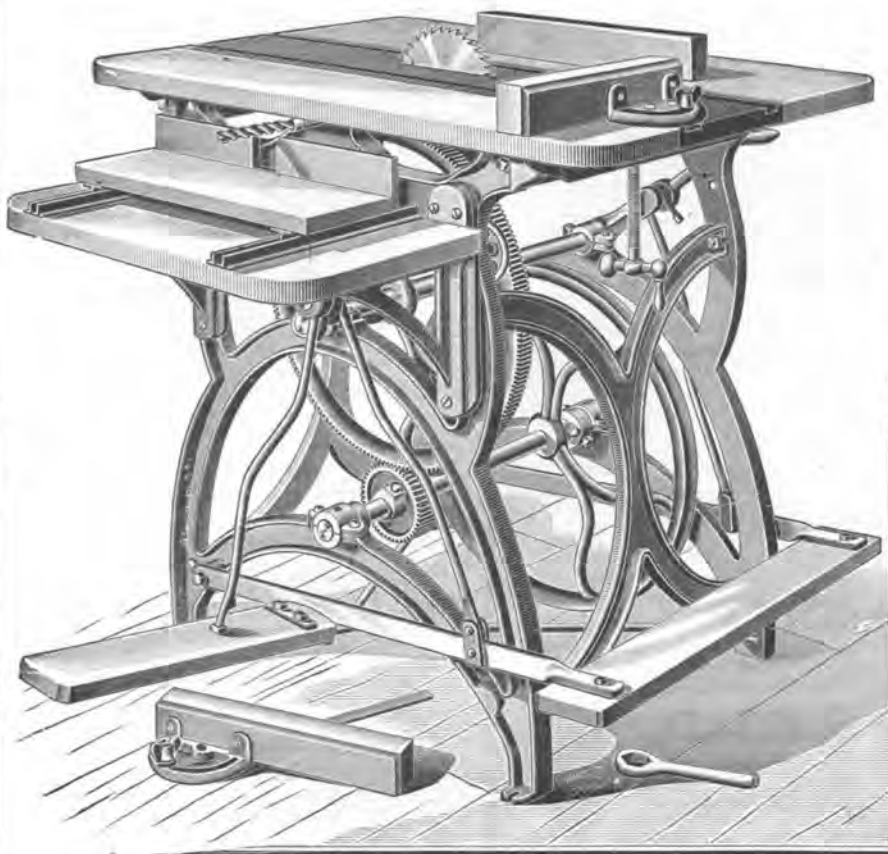


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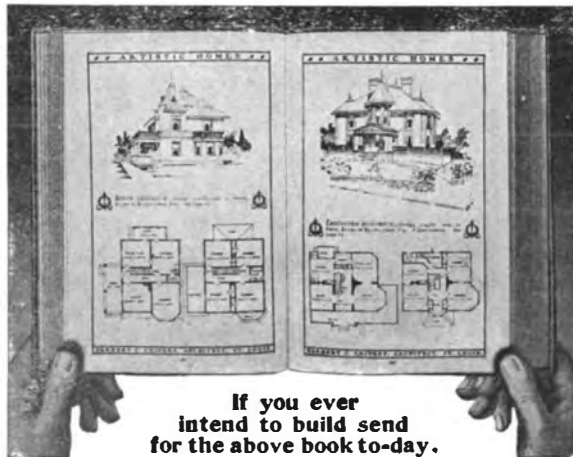
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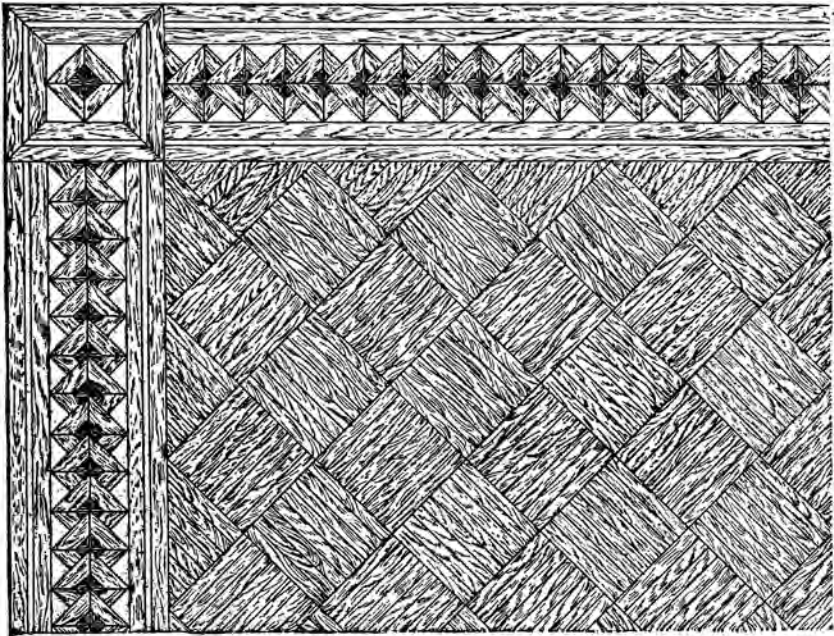
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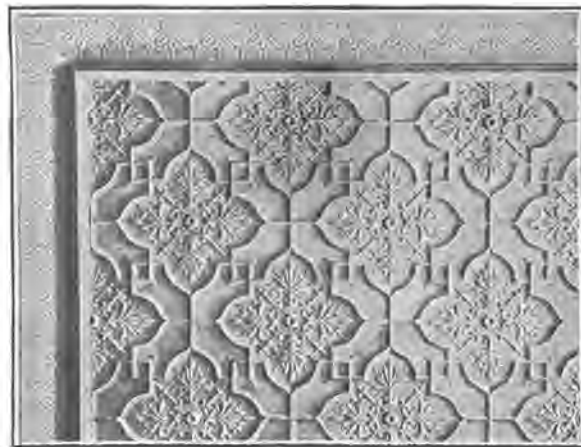
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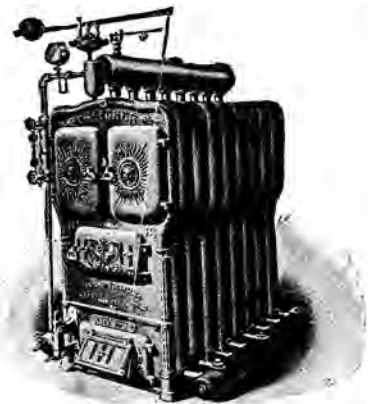
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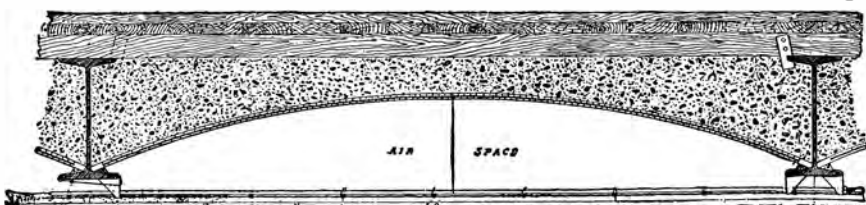
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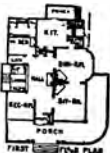
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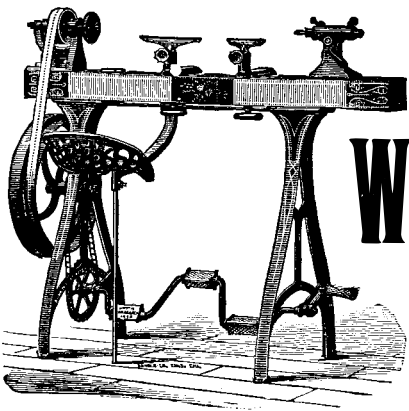
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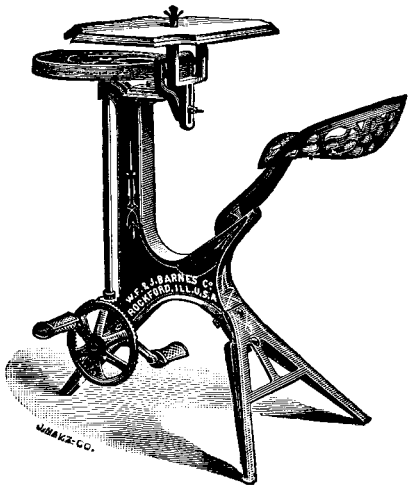
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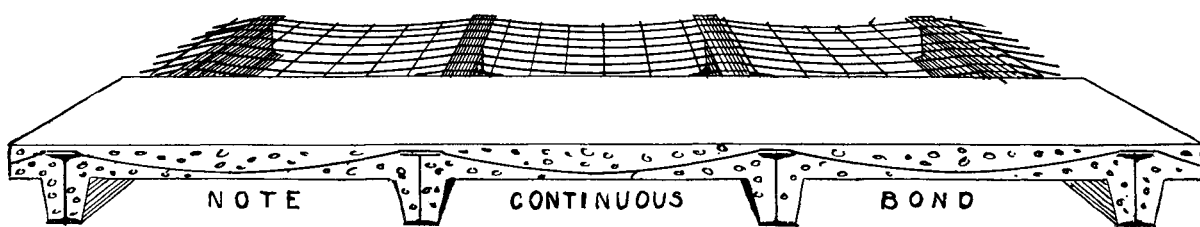


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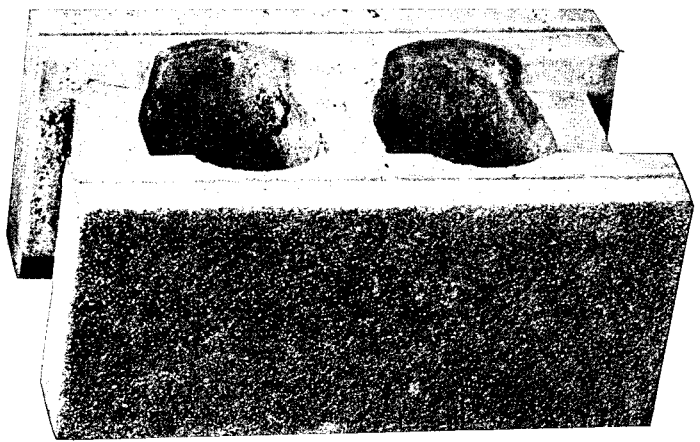
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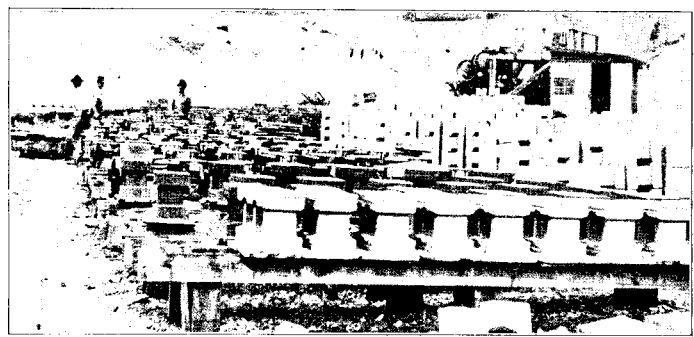


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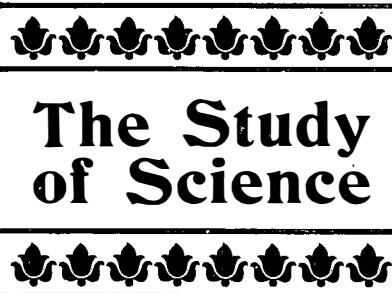
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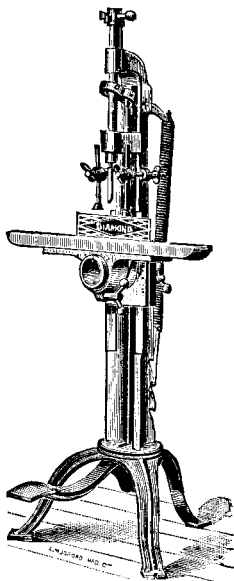


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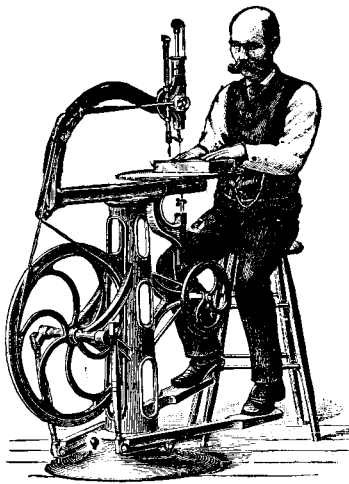
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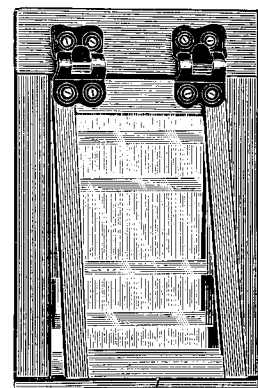
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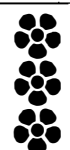
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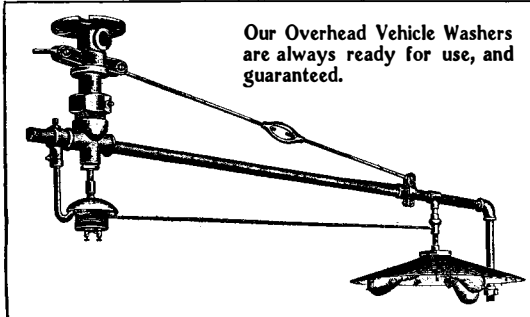
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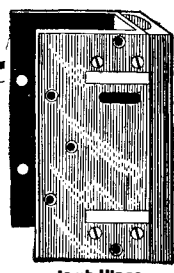
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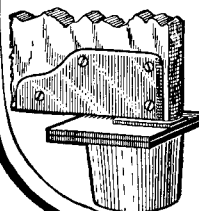
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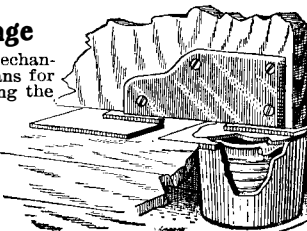
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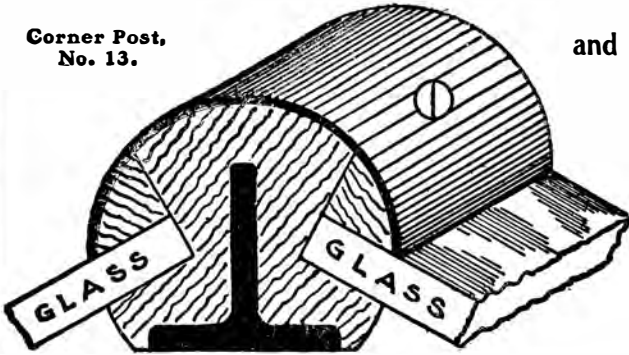
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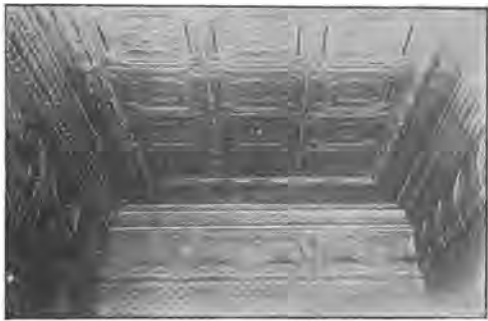
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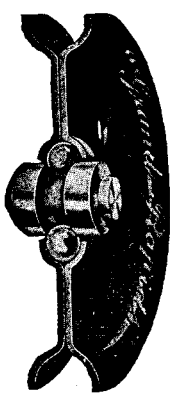
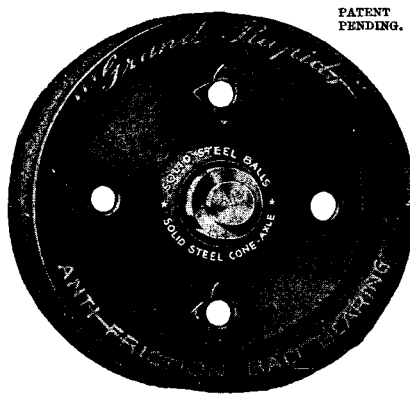
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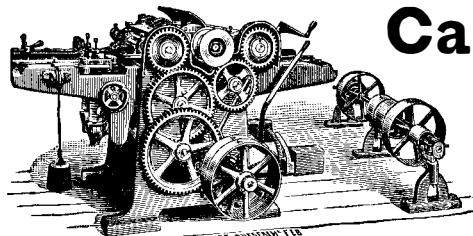
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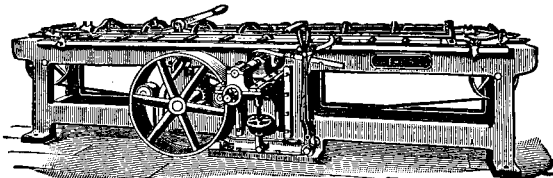
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