Making built-in furniture

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MAKING
BUILT-IN FURNITURE
IT is the intention of the publishers to make this series of little volumes, of which *Making Built-In Furniture* is one, a complete library of authoritative and well illustrated handbooks dealing with the activities of the home-maker and amateur gardener. Text, pictures and diagrams will, in each respective book, aim to make perfectly clear the possibility of having, and the means of having, some of the more important features of a modern country or suburban home. Among the titles already issued are the following: *Making a Rose Garden; Making a Lawn; Making a Tennis Court; Making a Water Garden; Making Paths and Driveways; Making a Poultry House; Making a Garden with Hotbed and Coldframe; Making a Garden of Small Fruits; Making a Rock Garden; Making a Garden to Bloom this Year; Making a Garden of Perennials; Making the Grounds Attractive with Shrubbery; Making a Bulb Garden; Making a Garage; Making and Furnishing Outdoor Rooms and Porches*; with others to be announced later.
The built-in sideboard gives the desired space for silver and table linen, the long drawer affording room for table cloths.
Dividing screens whose sides are lined with china cupboards on one side and bookcases on the other.
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INTRODUCTION AND CLASSIFICATION

LABOR-SAVING and expense-saving devices are the hobbies of our day and generation. They accord admirably with the insistent demand for simplicity that we are coming more and more to recognize and heed in our notions alike of furnishing and domestic management. With the increasingly complex conditions of modern life, it is indeed imperative that we economize effort and energy in every possible way if we would have time and strength to retain a due share in all the varied interests by which we are surrounded.

Now there is no single feature in the field of house furnishing that, if rightly employed, makes more for this most desirable simplicity of arrangement and a concomitant convenience in household care than built-in furniture. The possibilities in this sort of house equipment are mani-
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fold and worthy of close consideration, whether from motives of economy or because taste or the exigencies of individual circumstances commend some such simple, compact and convenient solution of a furnishing problem. It is susceptible of successful adaptation to a wide range of requirements.

Few, perhaps, realize the full extent of its varied possibilities. We may have all kinds of built-in closets, cupboards and chests of drawers, seats, settles, lockers, bookcases, sideboards, dressers, serving tables, desks, screens and even bedsteads so that one is not far wrong in claiming for built-in furniture a field of practically universal application to mobiliary needs.

It is not, however, to be in any sense regarded as a cheap, temporary makeshift to be hastily nailed together in a haphazard way by a handy man about the house and to be tolerated only till something better can be got to take its place. On the contrary, it is quite permanent in character and has a definite and dignified sphere of its own. Some of the foremost archi-
tects have designed built-in furniture and their plans have been executed with singularly felicitous results.

It is true that if a minimum of expense in equipping a room is aimed at, it is perfectly safe to say that, for a given sum, greater results may be obtained from built-in furniture than from any other method of furnishing. No other furniture that can be bought for the same money will have the same sterling value, strength and dignified simplicity. But built-in furniture is not essentially inexpensive to contrive. Its installation may involve heavy expenditure. Mahogany or old oak paneling or other costly material may be used in its construction.

Its cost, workmanship and quality of design depend entirely upon the person for whom it is made. Just here, perhaps, a word of warning and advice is needed to those about to have built in their rooms any of the objects aforementioned. Unless you are an exceptionally skilful and experienced amateur carpenter, do not attempt to do the work yourself. Further-
more, do not entrust it to any but a thoroughly capable workman. It is the truest economy to have only the best workmanship obtainable and the best quality of wood, whatever kind it may be. Otherwise the result will always appear cheap, rough and botched and be generally unsatisfactory.

Admirable as built-in furniture may be, there is such a thing as having too much of it. Occasionally some one with a grotesque, "art nouveau" turn of mind attempts to furnish a whole room or even a whole house with built-in furniture to the almost total exclusion of movables—an ill-advised, tasteless thing to do, quite at variance with the principles that first inspired the contrivance of fixed equipments.

Built-in furniture was never intended to supplant but rather to supplement movable furniture and any departure from common sense in its use, any crude and foolish abuse of its obvious purpose, can only invite popular prejudice against its every aspect.

Discretion and good taste will dictate
its use under one form or another, in this place or that, as circumstances recommend or require as, for instance, in a room where it is necessary to economize space. In this way its presence is welcome but, employed to excess, it necessarily creates an uncomfortable impression of rigidity and suggests furniture paralysis. One or two pieces are highly desirable where economy of space is an important consideration and, for this reason, it is especially suitable in very small houses or in apartments where everything must be stowed away as compactly as in a ship's galley.

Quite apart from its arrangement according to particular objects such as bookcases, settles or cupboards, built-in furniture may be classified in three other divisions with reference to structure, purpose and material or finish.

Under (1) "Structure" we have (a) furniture planned at the outset and built in at the same time that the house is built and (b) furniture planned and built in afterwards.

Under (2) "Purpose" we have (a) fur-
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niture for personal or bodily accommoda-
dation such as settles, benches or desks
and (b) furniture for storage purposes
such as bookcases, drawers and cupboards.
Lastly, under (3) “Material or Finish”
we have (a) furniture constructed of
“natural” wood, mahogany, walnut or the
like, having somewhat of the appearance
if not the actual nature of movable furni-
ture and (b) furniture painted like the
rest of the woodwork in the room so that
it is frankly an integral part of the gen-
eral scheme. Such furniture indeed par-
takes of the architectural character of its
surroundings and may be said to come well
within the architectural purview.

There is a distinct advantage in having
furniture planned by the architect and
built in when the house is built. Its de-
sign and proportion will have the benefit
of the architect’s fresh interest and con-
scientious endeavor and structurally the
work will probably be better than if it
were only a piece job.

Then, too, as a house grows, conditions
will suggest spontaneously a bit of built-in
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furniture here or there and it is always better to carry out an inspiration at its first blush. When installing built-in furniture at a later date, due care must be observed to consider its architectural aspect and have it in keeping with its setting.

Generally speaking, with the exception of settles, the built-in furniture for storage purposes will be found more desirable for practical use and more susceptible of agreeable treatment than that designed for personal accommodation. Built-in desks, dressing stands, tables or bedsteads, for example, are apt to be rather trying to manage and there is always the danger of their giving a room an uncomfortably rigid appearance. However, they can be satisfactorily treated and if practical reasons of convenience rather than whimsical faddishness require their construction, the attempt is well worth the making.

As regards finish, it is always preferable both from principles of architectural honesty and good taste that built-in furniture should look like what it really is, an in-
Integral part of the architectural whole. It should therefore be finished like the rest of the woodwork in the room and not allowed to masquerade under different aspect as a piece of detachable equipment.

The question of the wood to be used for built-in furniture, even though it is to be covered with paint, must receive due consideration. From the very nature of things any piece of furniture will receive much more constant and trying usage than the ordinary woodwork in a room and it is worth while to employ, when possible, some sort of hard wood that will not be so susceptible to the ravages of accidental dents as a softer material.

Then, too, a hard wood will take on a better and more resisting finish. Get the best seasoned wood obtainable and, after all joinery and carpentry work has been completed, it is not a bad idea to let the piece remain for a while before applying the final finish, for even well seasoned wood when freshly sawn and planed will shrink or swell somewhat for a time with atmospheric changes.
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When painting it is much better to apply a number of thin coats rather than several heavier coats. Let each coat dry thoroughly and rub it down before putting on the next. Of course this will be more trouble and take a much longer time but the result will be worth while. The finish will last ten times longer and the paint will not flake off and mar the appearance of the whole piece. In using white pine be sure to give the wood a coat of orange shellac before putting on the paint, otherwise the resin will come through and make a stain.

Too much attention cannot be paid the hardware or metal mounts of built-in furniture. Upon the hinges, scutcheons, knobs and handles will depend much of the charm of the whole piece. Well polished brass or black iron standing out in strong relief against a background of white or gray paint impart great individuality and distinction. To secure an excellent decorative effect from the mounts it is not necessary that they be elaborate or fantastic. Only let them be graceful of de-
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sign, however simple, and well placed and the piece of built-in furniture they adorn will become an object of beauty and solid satisfaction.
Making Built-In Furniture

CLOSETS, CUPBOARDS AND DRAWERS

"Order is heaven's first law," we are told. Any institution, therefore, that will conduce to orderliness is presumably to be held in high esteem. Now, of all household contrivances, none so effectually assist the orderly soul to realize the laudable ideal of "a place for everything and everything in its place" as closets, cupboards and drawers.

Closets, cupboards and drawers, consequently, are deserving of an important place in any discussion of built-in furniture. Closets and cupboards, it should be premised, are really pieces of built-in furniture and should be so regarded although we may not generally be in the habit of rating them in that capacity. If you doubt the propriety of the definition, try the experiment of removing a closet open-
ing and leaving a bare, plastered, una-
donned wall surface instead. This will
convince you.

To what extent closets “furnish” a
room depends, of course, upon their treat-
ment. Our eighteenth century forebears,
in the fine old Colonial and Georgian
houses that we so greatly admire, were not
grudging to accord closets and cupboards,
when they had them at all, a due measure
of outward decorative treatment.

Look at some of the stately paneled
overmantels flanked on each side by round-
arched cupboards, perhaps with an exqui-
site bit of carving above them. Open the
double, strap-hinged doors and see the
shaped and recessed shelves with project-
ing “posts” for the better display of a
punch bowl or some choice bit of china,
dear to the heart of the housewife. Look
at the scallop-carved and coved-top inside
the cupboard. Perchance contrasting
paint and gilding may have been judi-
ciously added to heighten the decorative
effect. Surely now you will assent to the
decorative and furnishing value of such a
A well designed corner china cupboard that forms a distinctive furnishing feature
cupboard especially if you substitute for a moment, in your mind’s eye, a bare expanse of wall where before were paneled doors and graceful rounded arch or carved pediment.

China cupboard patterned for a Georgian dining-room

We ought, before going further, to distinguish between the terms "closet" and "cupboard." According to its etymological derivation a closet is a place
"closed" in, of whatever size, so as to be entirely shut off from what is without. Their privacy has been devoted to the stowage of such things as were not intended for the public gaze or household gear required for only occasional use—such things, in other words, as were needful from time to time in the domestic economy but not desirable to be paraded on exhibition. The usual function of a closet, therefore, is purely prosaic and utilitarian.

A cupboard, on the other hand, as its name denotes, was designed for one special purpose and was usually intended for a degree of display, as well as china storage, so that it became a subject for more frequent decorative treatment than the closet exterior—witness the corner china cupboards or "buffets" in some eighteenth century houses, with either paneled or glazed and muntined doors, fluted pilasters at the sides and carved or molded pediment atop.

These old builders of Colonial and Georgian houses frankly recognized the necessity or convenience of closets and cup-
boards, treated them with the respect that was their due and gave them the decorative dignity they deserved because their furnishing value was so evident. The men of the eighteenth century were honest in honoring and adorning the features that were necessary or convenient and the precedent they set may well supply the principle to govern our own employment of built-in furniture although we have developed and enlarged its possibilities beyond their wildest dreams.

Our level-headed forebears, if a piece of built-in furniture—a closet, cupboard or settle—was either necessary or convenient had it made and added such grace of line or adornment as they might. So also must we do. If a thing is either necessary or obviously convenient, have it and then grace it as we may to make it comely and consonant with its architectural and decorative surroundings. Otherwise, if we follow mere whim in planning for built-in furniture, we shall land nowhither but in confusion and a surfeit of ill-assorted grotesques.
Having thus settled upon a sane guiding principle, let us first consider the practical treatment of closets. Our modern habits have developed a need for more and larger closets than the Colonials ever thought of because they kept most of their chattels in chests. Indeed, in going through old houses, one always feels that the closet accommodation was wofully inadequate. It certainly was, according to our notions, and was sometimes altogether lacking.

Nevertheless, the principle we have agreed upon holds good. Closets are necessary, therefore treat them worthily and not as though you were ashamed of them. The only possible way of concealing them and ignoring their presence from the architectural or decorative points of view is to let them inconspicuously into paneled wainscot that extends above the height of the door. As so few of our rooms, however, are adorned in this manner, the question of concealment is not worth considering.

In placing a closet it is well, where conditions permit, to put it where it will
balance some other architectural feature of the room—a door or a window. In the treatment of its frame and door or doors the same motifs that we find in the entrance doorway should be repeated. Just in this connection it is worth noting, by way of a hint, that some of our early builders secured a very good effect by using two narrow doors, with appropriate hinges and handles, instead of one broad door both for rooms and closets. Another method of dealing with a closet door, suitable for use in a bedroom, is to have a full length mirror set in as one large panel.

Where no adequate closet accommodation has been provided in a room, there is often an alcove where one of capacious dimensions might readily be constructed. In such cases paneling ought to be run all the way to the ceiling. A door or doors of convenient height and width will be fitted. Above a height that may be easily reached by any one standing on the floor, it is sometimes a good idea to have the remaining space reaching to the ceiling filled in with small closets for the accom-
modation of things that are not often needed, to obtain which we do not mind taking the step-ladder. Near the floor, if desired, such a paneled alcove might contain several drawers. Altogether such a combination piece of built-in furniture might be both more valuable and more sightly than the unadorned alcove space that made its construction possible.

It is not only in bedrooms but in other...
Closets, Cupboards, Drawers

parts of the house as well, sometimes in the hallways, that we find meaningless alcoves that would be much better filled in with some such piece of built-in furniture as that just described. It ought always to be remembered, however, in filling such an unproductive space with a piece of built-in furniture that the cue for its treatment in design and color must be taken from the best note in its surroundings. In the practical equipment of bedroom closets ventilators should always be provided and lighting arrangements made. All closets should be lighted and where it is not possible to have electric lights it is an excellent idea to have at least white paint so that reflection may make the closet as bright as circumstances permit.

The corner cupboards and buffets and the cupboards flanking the fireplace in old houses have already been alluded to as well as the means employed for their embellishment. Adaptations of the same sort of arrangement are perfectly applicable to our own needs. There is in this direction, indeed, a particularly rich field for devel-
Maintaining. In the dining-room of the small house, for example, a well designed built-in cupboard with agreeably patterned glazed doors is often a godsend. It saves space, provides a proper receptacle for holding china that the occupants might not otherwise be able to have and bears an air of decorative distinction that adds tremendously to the furnishing of the room.

It is not only the builders of small and inexpensive houses or the dwellers in cramped apartments that are glad to avail themselves of the resources of built-in cupboards. The writer knows of at least one Georgian dining-room, in a city house where no expense was spared in the building or equipment, that has numerous alcoves the upper part of which in every case is made into a cupboard closed in with glazed doors whose graceful muntins add not a little to the decorative charm of the room. The lower part of each alcove, to the height of two and a half or three feet from the floor, is filled with tiers of drawers for silver and table linen. The tops of these tiers of drawers answer for
Linen cupboards built in under and at the sides of hall window
serving tables. Here the use of built-in furniture was purely a matter of preference and not the result of any necessity.

In a treatise of this kind one cannot do much more than state physical possibilities; the matters of design and embellishment cover too large a field and must be left to the taste and judgment of the individual. For small apartments, built-in furniture in combination pieces is almost indispensable to ordinary comfort. The lower part of one of these combinations may conceal a kitchenette while the upper part with glazed doors, curtained inside, may contain cooking utensils, kitchen supplies or dishes.

The mention of these combination cupboards reminds one of a very ingenious arrangement copied from an old Bavarian model. It is a cupboard built in a small alcove beside a fireplace. When the door is opened the well filled shelves of a small but complete larder meet the gaze. There is also an adequate equipment of dishes. The interesting feature of the cupboard, however, is that the door is so arranged
with hinges that the upper part, instead of opening vertically, lets down horizontally and forms a small table supported on a leg, also hinged, that forms the central stile between the panels when the door is closed. The accompanying drawing explains the plan.

Of whatever size or shape we make our built-in cupboards, or wherever we put them, there is the one guiding principle to observe—let them have a reason, either
necessity or convenience, and let them be in keeping with the style of their surroundings.

Lastly as to suggestions for drawers,

Drawers built in under the slope of attic walls

there is hardly a place where a thrifty or ingenious housekeeper may not conceive the notion of having them built. To prove this we may quote an instance to be found
in a very old house in the quaint little Dutch town of Hurley near Kingston-on-Hudson.

In a tiny bedroom, the bed is constructed on top of a capacious chest of drawers solidly built into their place. As may be imagined a great deal of space is saved by this device. The bed is about as high from the floor as the upper berth in a steamer stateroom.

A most commendable place to have built-in drawers is along the sloping sides of attic walls where it is impossible for any one to stand upright. Here they may be of infinite convenience without taking away any of the available floor space that might be used for other furniture. Such a placing is an excellent exhibition of economy and thrift.

Under window seats, also, drawers may often be built to great advantage. In whatever place they are put it is always worth while to see that they are provided with proper runners or, better still, rollers so that they may pull out and push in easily.
OF SEATS AND CHESTS

THE chair, as we know it, is a comparatively modern institution. It did not come into common use in England till the seventeenth century. Before that time, most of the chairs were for state purposes in the houses of the great and the majority of people sat on stools or made shift with whatever they could find to sit upon—the tops of chests and the like, for example. Going back a little further, we find that even the seats of state were, to all intents, built into their places and were made after the type of the medieval choir stall.

Considering, therefore, the ancestry of built-in seats, it is not surprising that most of them display somewhat stall-like characteristics. Their several sorts we shall now rehearse, trusting that the list given may prove fruitful of suggestions to be seized upon for individual needs. More than that it is not possible to give,
for this little book, in its brief compass, cannot and does not pretend to be a compendium of carpentry or joinery to tell people how to make built-in furniture with their own hands.

The making of built-in furniture requires just as proficient craftsmanship as most cabinet making. If the reader is already a skilled amateur craftsman, he will not need instruction. If he is not, he will need more explanation and guidance than a volume twice the size of this could furnish before he could essay the simplest venture. If he is not skilful enough to attempt his own work, let him entrust his commission to the best carpenter available. He will assuredly rue it if he does not.

The main function of these pages is to state what has been done, make suggestions for what may be done and leave the reader to make choice according to his wisdom or his wants—in other words, the book is merely an exposition of the resources of built-in furniture.

Despite the stall-like character of many built-in seats and their apparent rigidity,
they are exceedingly comfortable. Indeed a built-in and unupholstered seat is often more comfortable than a thickly padded chair. If people would only remember that seat comfort is more a matter of measurement and shape than of padding they could frequently secure a far greater degree of ease than they do, and that with much lower upholstery bills.

The “rake” or slant of the back, the depth, the width and the slope of the seat, its height from the floor, the “cant” and shape of the arms, if there be any—these are the essential factors to be considered in ensuring a thoroughly comfortable and satisfactory seat for the reward of our trouble. It must be remembered, also, that a seat that is comfortable to one person may be extremely uncomfortable to another so that individual preference, after due trial and experiment, must be the final determining consideration in this respect.

The three chief “don’ts” to observe in seat building are:—Don’t have the seat too high from the floor; don’t make the seat too deep or too sloping; don’t give the
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back too much "rake" or slant or it will fail to afford any support.

The simplest form of built-in seat is the built-in chest or locker. These are found chiefly as window seats, or else running around the wainscot of halls or club rooms. They are to be especially recommended for club houses, bungalows, porches or wherever numbers of people are likely to come together at one time for social purposes. Without taking up an undue amount of space they furnish the utmost seating capacity; besides, the abundant storage accommodation they give inside is not to be overlooked.

Such chest-seats may either have the wainscoting as a straight back or a slanting back, if that is judged more comfortable, may be built within the window recess or against the wall. In that case the seat will have to project further into the room.

In building these chest-seats it is most important to decide at the outset whether they are to be used with or without a cushion on top. If a cushion is added as
Engle settles of excellent pattern and built-in Georgian china cupboard
an afterthought, when the chest has been made for use without cushions, the seat will always be uncomfortably high and uninviting. In this connection do not forget that if the lid is to be frequently raised to get things out or put them away, cushions will be a great inconvenience.

Another extremely simple form of built-in seat is just a bench built along the side of a wall. It is practically the same as the chest-seat with the chest left out. One thing, however, must not be forgotten. The chest-seat has the front part of the chest to keep the seat above it rigid and firm. Therefore in building the bench be sure to see that there is sufficient support underneath to prevent it from "giving" or sagging or, perhaps, squeaking when a heavy person sits on it.

These simple bench seats may often be used effectively in living halls, especially against the paneling on the side where the staircase ascends, thus having the banister spindles and the wainscot below as a background, or in the space between a chimney jamb and a side wall. The attractiveness
of these bench seats is not seldom increased by cushioning them with chintz-covered cushions and hanging a full, tucked curtain of the same material from the seat to the floor.

Still another very simple form of built-in seat is to be highly recommended for deep window recesses, especially the recesses formed by dormer windows. This style of seat has several drawers underneath and provides considerable storage space. It has a couple of practical advantages over the chest-seat in that the seat itself is stationary so that, if a cushion is used, there is no bother from that source and, in the second place, articles laid in drawers are always more accessible and more readily kept in order than things put away in chests. Then, too, the drawers come right out before you and there is less tiresome stooping over to find what you wish.

Both the chest-seats and the seats with drawers beneath have this advantage over the simple bench seat. Coming straight down to the floor, there is no place where dirt can collect underneath and escape no-
Of Seats and Chests

tice and there are no inconvenient corners to be cleaned out.

Another form of built-in bench seat that may be found desirable in certain places is the folding bench. The seat at the back is hinged to the wall and the supporting legs in front are hinged underneath the seat so that, when closed, the seat folds up flat against the wall and the legs hang down flat against the seat. This seat, of course, is finished with hooks to fasten it back to the wall when not needed for use.

It is a type that might be suggested for porches or other places where an occasional increase of seating capacity is required. Though not beautiful it can be made of an unobjectionable design and has the great recommendation of not taking up unnecessary room where a free space is desired and there is no trouble about cleaning underneath it.

All the aforementioned seats are flat and made without other considerations to comfort than designing for proper height and depth. They are also made upon
purely utilitarian principles without any special reference to decorative effect. The other built-in seats, about to be named, settles and settees, are usually constructed with more calculation for creature comfort and more eye for decorative propriety.

Possibly the form of settle that is most familiar to many of us is that so often seen on piazzas of old houses flanking the doorway and apparently bidding the visitor, waiting to be admitted, be seated and at ease. So placed they have an engaging air of hospitality and one wishes there might be more of them. It is worth adding here that these "stoop" settles, which are generally painted white or some light color, may often have their pleasing appearance greatly enhanced by painting the thumb-nail molding at the top or on the arms mahogany color or black.

These built-in settles are best suited for use in living-rooms, libraries and large hallways and in those places they seem to gravitate naturally to the neighborhood of the fireside. In one delightfully fur-
nished living-room, in a Pennsylvania country house the writer knows of, two generous settles, facing each other, have been set on either side of a broad fireplace. A great, projecting hood comes out from the chimney jamb, partly overhanging them, and the floor beneath is paved with large red quarry tiles.

The effect of this whole arrangement is to bring the hearth somewhat out into the room and thus emphasize its importance as the focus of family life. By such placing and environment the settles are tied into the permanent equipment of the room, become a fixed architectural feature and in no way conflict with the other furnishings.

Such settles may be most suitably placed in the space between chimney jambs and side walls or near staircases in hallways. The settle ends, by being well shaped, may have a distinct decorative value and add a characteristic note of interest to a room. Settles are usually made with high backs and high ends. Cushions may be added to the seats, pillows supplied and the backs,
even, may be cushioned if desired so that almost any settle can be made to fit quite in with the rest of the furnishing scheme. Be always careful, however, to consider

A well patterned corner settle with wainscot back

well the measurements. Otherwise, instead of being places of comfort they will be veritable seats of penance.

One other kind of built-in seat ought to be mentioned, perhaps, but it is so
freakish that it can scarcely be commended. It is a reversible seat made on the same principle as the reversible backs of the seats in railway carriages. Indeed a railway carriage seat would answer every purpose quite as well and be just as pleasing in appearance. Fortunately there are not many seats of this description. The particular contrivance the writer had in mind was made so that the sitter could write at a built-in desk with the back in one position and turn about and face the room with the back reversed.
BOOKCASES, SIDEBOARDS AND DRESSERS

BOOKCASES, like closets and cupboards, form one of the most important divisions of the whole subject of built-in furniture. For a library, or a living-room in a house where books are prized and the collection added to from time to time, there is no single feature that requires greater consideration in the way of careful planning. Construction, color, height and placing must all be duly weighed. Badly planned bookcases, besides wasting valuable space and being inconvenient, can completely spoil an otherwise well furnished room.

Let us first discuss their construction. Books are exceedingly heavy and if the shelves are not properly made they will inevitably soon sag and present an untidy and disagreeable appearance. The boards for the shelves should be of an inch in thickness and preferably of a hard
Bookcases and Sideboards

wood with plenty of stiffness and resistance to bear the weight placed upon them. Even though the rest of the case may be of some soft wood painted, the shelves are best made of hard wood.

The upright divisions should be sufficiently close together to afford the support necessary to prevent sagging, for even the toughest wood will sag in time if subjected to too great a weight. Four feet and a half or five feet apart is a good interval for the placing of the uprights if the uprights are only in front and the shelves continue uninterrupted back of them, it is well to have X braces at the back of the case to give additional stiffness.

Bookcases are sometimes built so that the backs of the shelves abut directly on the plaster or wainscoting of the wall, but it is a better plan and does not greatly increase the cost to face the cases at the rear with thin poplar sheathing. Doing this makes it easier to give the cases a thorough cleaning when necessary.

If it is desired to have adjustable
shelves to accommodate books of different height, the usual arrangement at the up-rights of notches or pins and pegs may be used. For the sake of stability and uniformity of appearance, however, it seems preferable to have stationary shelves. The spaces between shelves can easily be so graded as to suit the different standard sizes of books.

Beginning with the lower shelves and working upward, provision should be made for quartos, octavos, large and small, and duodecimos. Comparatively few books larger than quartos or smaller than duodecimos are printed and in some part of the library it is generally possible to have a small case where folios and sextodecimos may be put.

In reckoning the sizes of books it is safe to allow eight inches in height for duodecimos, ten inches for octavos and twelve inches for quartos. Between the tops of books and the bottom of the shelf next above them there ought to be at least an inch of space. Therefore, beginning at the lower part of the case, between one
Built-in bookcases of proper height and simple construction
shelf and the bottom of the one next above it there ought to be spaces of thirteen, eleven and nine inches for the respective sizes, quartos, octavos and duodecimos.

In depth the shelves should be at least a foot and it is better if they can be fourteen inches. The lowest shelf ought always to be raised two or three inches or even a little more above the floor on a foundation or plinth. All the moldings used at the bottom or top should be simple but bold and full of character. Do not have the cornice at the top too elaborate or projecting too far beyond the rest of the case.

Occasionally it is found desirable, at least with some cases, to have the lower part, about two or two and a half feet from the floor made into cupboards or even fitted with drawers. Cupboards are better looking and do not break up the structural lines as much as drawers. These cupboards or drawers are for the accommodation of maps, folios, prints and the hundred and one things that collect in a library and are needed from time to time
but which it is not well to have lying about loose.

It is not advisable to make the cases more than five feet in height and very often it will be found that a range of cases even lower than that will look exceedingly

Bookcase for recess with traceried glazing

well. The tops of the bookcases afford a convenient place for bric-a-brac and various objects of interest but great care and discrimination must be exercised, along with severe restraint, to keep the number of articles set there within bounds. The
tendency is always to overload and spoil the appearance of the whole room.

In some instances or in certain parts of a room where other features admit of it or even require it, cases seven or eight feet high may be used to advantage but should always have cupboards, projecting slightly beyond the line of the shelves, running up two and a half or three feet from the floor. Such tall cases always appear better, too, with the shelves enclosed behind glazed doors. The tracery of the muntins breaks the too insistent severity of their lines.

This brings us to the question of enclosed or open shelves in general. With the low cases some people prefer to have glazed doors which, if well designed and proportioned, may be unobjectionable. Others like to have their shelves curtained. Paucity of books and shelves filled with nondescript odds and ends can be the only excuse for this practise.

Open shelves are always the most convenient and are, beyond all question, the best looking. Furthermore, they allow
the decorative value of the backs of the books—a very considerable value indeed—to be fully appreciated.

As to color and finish, the bookcases may be governed either by the other furnishings of the room or they may coincide with the treatment of the woodwork. Viewed from the furniture point of view, the first is quite proper; considered as part of the structural equipment of the room, the latter is equally correct.

If bookcases are to line the walls of a library, the question of placing is exceedingly simple. If only two or three cases are to be used, put them where the books will be most accessible, where the decorative value of the bindings will be greatest and where they will best coincide with the architectural character of the room.

We come next to sideboards. Where one wishes to have a sideboard built in, it may be made an architecturally interesting feature by the paneling of the lower part, by the traceried or leaded glass doors of the cupboards, by pilasters, moldings, cornices and the like amenities.
Built-in and glazed bookcases where the traceried muntins conform to the Georgian architecture of the house
Bookcases and Sideboards 43

The design and dimensions must obviously depend wholly upon the architectural tone of the room. In some old houses special recesses were provided for sideboards. When such recesses exist, sideboards may be readily built in them and will not need to project much into the room although they should always be made deep enough to accommodate properly the linen or whatever else it may be convenient to keep in them.

The metal mounts must not be overlooked as a means of embellishing sideboard and other built-in cabinet work. Allusion has, however, been made to this item before. In planning a built-in sideboard do not make any provision for mirrors. They are unnecessary in a sideboard, are apt to be vulgar in appearance and generally make it look like part of the equipment of a barber shop.

Sideboards may also be built in a shallow bow window or in front of a range of windows. In such cases, of course, they will have no top structure.

Serving tables, also, may be built in re-
cesses but any cupboard that may be placed above them should be high enough, two and a half feet at least, from the top of the table not to interfere with the placing and removal of dishes and platters. It is possible to furnish a dining-room completely, with the exception of the dining table and chairs, and have the whole in good taste if the design be good.

Kitchen tables with drawers beneath and cupboards below the drawers, for baking pans and the like, are economical of space and are often a great convenience in a small house or an apartment.

In places where a table at the side of the room is needed only occasionally, one may be hinged to the wall so as to hang down when not in use. Hinged legs that fold under will support it at the outer edge when open.
MISCELLANEOUS

In this chapter are grouped the lesser pieces of built-in furniture and the pieces not so frequently met with as those described in the foregoing pages. First of all we come to desks or secretaries which may be constructed with slanting, falling or flat tops according to fancy. Oftentimes they are made in combination with bookcases or in the space between bookcases.

The chief requisite in desk building, of course, is that there be a good light, preferably a light coming from the left. This implies convenient proximity to a window.

The wood of the desk may appropriately correspond with either the movable furniture or with the fixed woodwork. Generally, however, the latter is more desirable.

The desks shown in the accompanying illustrations are simple in construction, in harmony with the other woodwork of the
rooms and supplied with abundant light which, in one instance, comes from the left, in the other from a window directly over the desk and opposite the person seated thereat.

Unobjectionable shelves in an otherwise unusable corner

In both examples the style is, perhaps, a bit severe and suggestive of Mission and "art nouveau" influences but they serve well enough to illustrate principle and placing. The same ideas may be carried out in any other style desired.
Time and time again there is a real need for one or more shelves but people hesitate to have them because of their usually un-prepossessing appearance. With careful thought for their placing, however, and for the design of the supporting brackets, which must not be left to the taste and discretion of the commercial carpenter, there is no good reason why they should be at all objectionable.

Although a very small piece of furniture, a magazine rack, similar in pattern to the prayer-book racks affixed to the backs of pews, built onto the wall just below a window sill will be found a great convenience.

Built-in screens next claim our attention. Where it is desired to divide a very long room and make two rooms of it a built-in screen will often supply just the needed solution. Against either side may be built bookcases, shelves, settles or whatever one wishes; but in any event let the screen be high enough so that its character and purpose as a screen or division may be unmistakable. In some cases it may be advis-
able to have only the lower part filled in solidly and then the upper part may consist of a grille of balusters. Such an arrangement may often give an excellent effect.

Built-in screen of Jacobean design with settle at corner

When it comes to furnishing the bedroom, almost any necessary article can be built in place. Dressing tables may readily be constructed in the embrasure of a window where the light will fall full in the face of the person seated before it. The
Two built-in writing desks well placed for light
light coming from above and from the sides of the mirror, there can be no shadows on the reflection of the face.

Either a single or a triply divided mirror with adjustable sides may be used. Quite apart from any consideration of space saving or economy in cost, this scheme has something to be said in its favor on account of the assurance of excellent light.

Wardrobes, of course, may easily be built in alcoves or across corners. To be sure we all know that in many inexpensive houses and in some also that are more pretentious they are frequently built into bedrooms but in most cases they are so insufferably hideous that naturally every one with a modicum of decent taste is strongly prejudiced against them. If properly designed in accordance with the architectural tone of the room there is no logical objection to them.

Last of all we come to bedsteads. They are not beds like the old Norman or Dutch sleeping cupboards in the wall than which nothing worse from a sanitary point of
view could possibly be imagined. The design shown in the cut is a modern German conception and commends itself to American consideration either for adaptation to nursery needs or for large attic rooms in country houses where, on the occasion of frequent house parties over week ends, it is necessary to provide what are practically dormitory accommodations for numerous guests whom it would be impossible to supply with individual rooms.

With careful construction and scrupulous attention always paid to their condition there is no reason why they should not

A German scheme for built-in bedsteads
be as sanitary as any other wooden bed-
stead. Of course it goes without saying
that they must be placed in such relation
to the windows that they will be sure to
get a fair and necessary amount of sun-
shine and air.

In regard to the finish it may be said
that built-in bedroom furniture should al-
ways be painted in a light color like the
rest of the woodwork in the room. Such
treatment will contribute materially to the
general appearance of cleanliness, neatness
and cheer.

In the foregoing pages by means of text
and illustrations an attempt has been made
to set forth in their best light the possibil-
ities of built-in furniture and its applic-
cability to our needs. With a subject of
such extent and such varied forms, it is
out of the question, in brief compass, to
be more than cursorily suggestive.

Before concluding, however, one caution
must be given which applies to the whole
situation. Built-in furniture is like cheese.
A little of it goes a great way. Too
much of it cloys and breeds a distaste.
There is, perhaps, scarcely a house where one or two pieces of built-in furniture are not thoroughly desirable. Their character will differ in different instances. But let any ill-advised person begin to overdo the fashion and the result can only be distressing and ugly.

Certain kinds of houses can stand more built-in furniture than others. Bungalows and several types of summer cottages, as a rule, take kindly to a good deal of it. In all cases, however, discretion and good judgment must determine just what is to be done and necessity or obvious convenience will point the way.

THE END