July 12, 1955 M. RENNA 2,712,974

MULTIPLE-PURPOSE DOOR STRUCTURE

Filed Dec. 16, 1950 2 Sheets-Sheet 1

Fig. 1

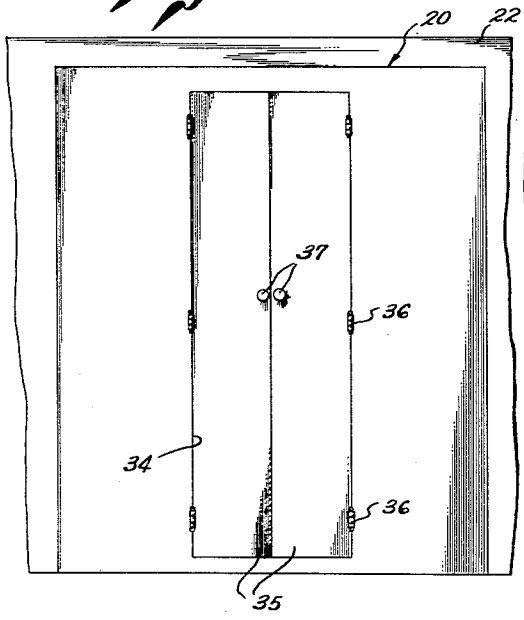


Fig. 2

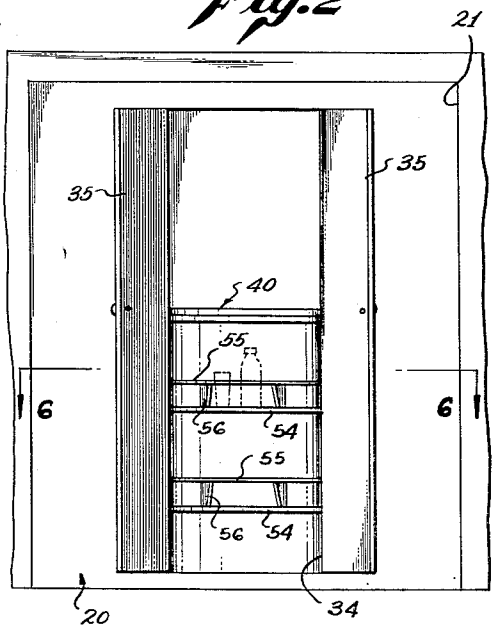


Fig. 3

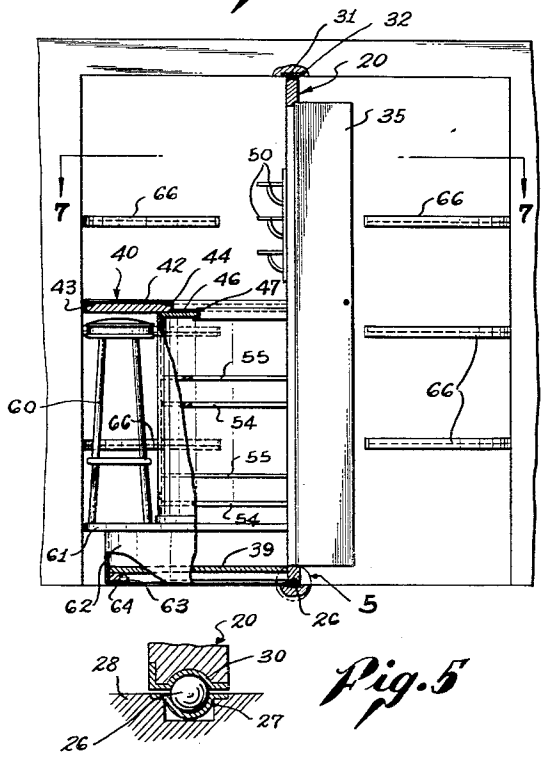


Fig. 4

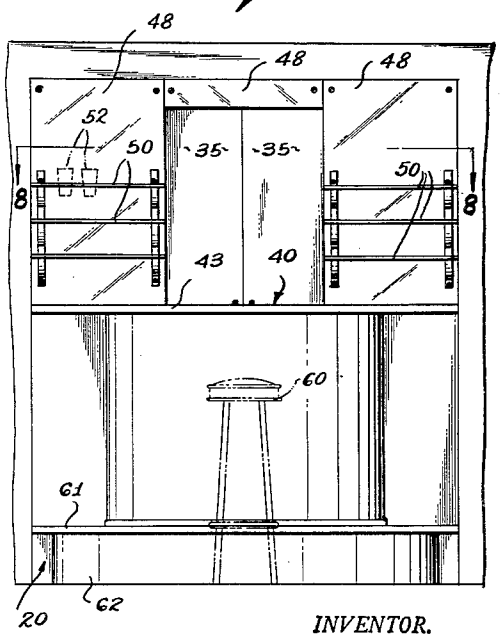


Fig. 5

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MULTIPLE-PURPOSE DOOR STRUCTURE

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Fig. 6

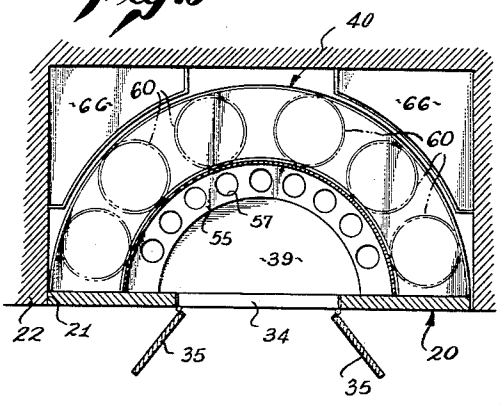


Fig. 8

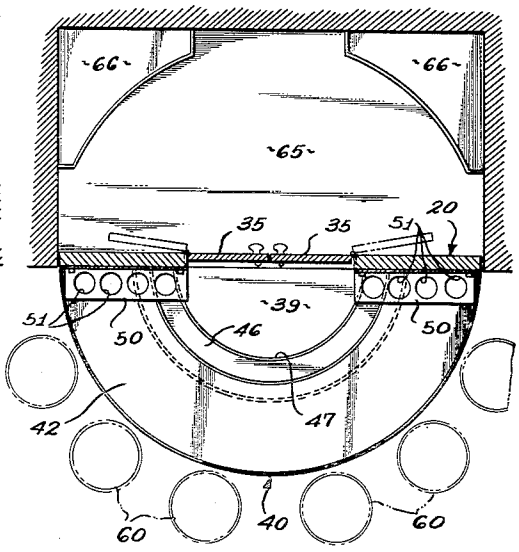


Fig. 7

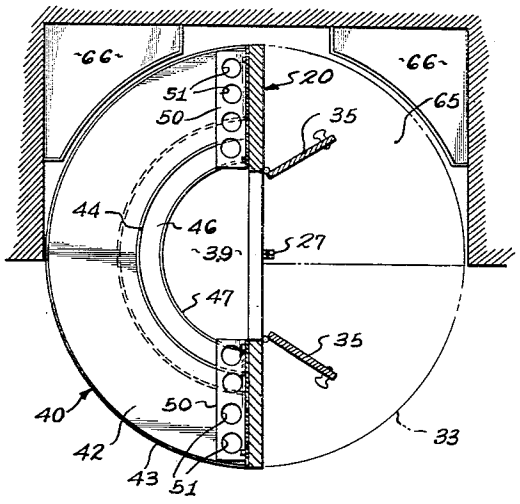
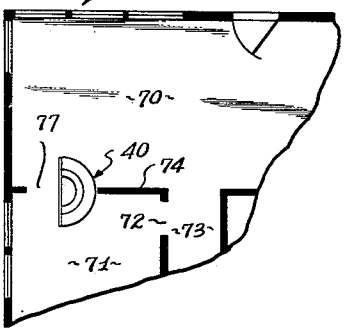


Fig. 9



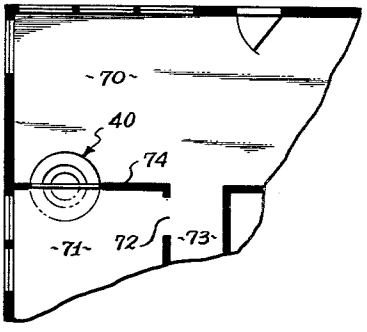


Fig. 10

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MULTIPLE-PURPOSE DOOR STRUCTURE

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Application December 16, 1950, Serial No. 201,157

12 Claims. (Cl. 312—292)

This invention relates to building construction with special reference to doors for rooms, closets or cabinets, and, more particularly, such a structure adapted to serve not only the purpose of a door but also other purposes including the purposes of a table, a bar, a serving counter and a storage closet.

The general object of the invention is to increase the desirability, utility and functional flexibility of a house; and a further object is to do so in an economical and space-saving manner, so that a house of a given total cost may have a range of utility that could otherwise be afforded only by a more expensive dwelling of substantially greater square footage.

A feature of the invention is the concept of a multiple-purpose door structure that is pivotally mounted for rotational movement from a position for one function to a second position serving another function with such ease as may justify the term finger-tip control. Thus without labor the space in which the structure operates may be quickly converted at will to different functions as different occasions arise.

In one practice of the invention, the object of the multiple-purpose structure is to serve in conjunction with a closet, cabinet or other enclosed space adjoining a room. In one rotary position the structure lies substantially entirely within the enclosed space to provide maximum free space in the room proper, the structure then serving primarily as a door for the enclosed space with the enclosed space available for storage. In a second rotary position the structure lies substantially entirely within the room to increase the utility of the room space.

In a second practice of the invention, the multiple-purpose structure is mounted in an opening between two rooms to serve various functions with relation to both of the rooms. In this practice, the structure may be rotated to either of two extreme positions 180° apart to serve as a door to close off the two rooms from each other and in either of these two closed positions the structure has at least one special function for one of the two rooms and an entirely different function for the other room. Rotated to a position intermediate these two extreme closed positions, the structure not only provides communication between the two rooms but also serves other functions to increase the utility of the two communicating rooms.

In general these objects are attained by mounting a door for rotation about a central upright axis with the equivalent of a table or serving counter mounted on one side of a door for movement with the door. Important functions are made possible by including a platform in the door structure adjacent the serving counter and by further providing an opening or doorway through the door itself for access to the platform and serving counter.

For the purpose of disclosure and to exemplify the principles involved, the invention will be described as a structure having primarily the function of a buffet bar,

such a description providing adequate guidance for any other desired application of the invention.

The various objects, advantages and features of the invention may be understood from the following detailed description taken with the accompanying drawings.

In the drawings, which are to be regarded as merely illustrative,

Fig. 1 is a front elevation of the multiple-purpose door structure in what may be termed its normal position when it is out of service;

Fig. 2 is a similar view with two closure panels open for access through a doorway that is cut in the door;

Fig. 3 is a side elevation, partly in section, of the door structure rotated 90° from its normal position to what may be termed its half-open position;

Fig. 4 is a front elevation of the door structure rotated a full 180° from the normal position of Fig. 1;

Fig. 5 is an enlarged sectional detail taken within the area indicated by the circle 5 in Fig. 3;

Fig. 6 is a horizontal section taken along the line **6—6** of Fig. 2;

Fig. 7 is a similar section taken along the line **7—7** of Fig. 3;

Fig. 8 is a similar section of the door structure taken along the line **8—8** of Fig. 4;

Fig. 9 is a fragmentary floor plan showing the door structure in its half-open position; and,

Fig. 10 is a fragmentary floor plan showing the multiple-purpose door structure mounted in an opening in a wall between two rooms, the door structure being shown in one of its two closed positions.

As best shown in Fig. 1, the multiple-purpose door structure includes a door member generally designated **20** adapted to close an opening **21** in a building wall **22**. It is contemplated that the door member **20** will rotate about a central upright axis and for this purpose it may be mounted on a suitable lower pivot and a suitable upper pivot, both pivots being in or close to the opening **21** in the wall **22**.

Fig. 5 shows how the lower pivot may comprise a steel ball **26** rotatably seated in a bearing member **27** in the floor **28**. A complementary bearing member **30** mounted in the lower edge of the door member **20** provides an inverted spherical seat resting on the steel ball **26**. Since all of the weight is carried by the lower pivot **24**, the upper pivot **25** may comprise simply a trunnion **31** carried by the door member **20** for rotation in a fixed socket member **32**. It is to be noted here that when the door member **20** rotates on these two pivots, the side edge of the door member described a circle **33** indicated by a dotted line in Fig. 7.

As shown in Figs. 1 and 2, the door member **20** is cut away to provide a full length doorway **34**. Preferably this doorway is provided with a suitable closure which in this instance comprises two narrow closure panels **35** mounted on the door member **20** by suitable hinges **36** and provided with suitable knobs **37**.

As best shown in Figs. 3 and 6, a suitable low level platform **39** is mounted on what may be termed the inner side of the door member **20** for access through the doorway **34**. This platform is in the region of the axis of rotation of the door and extends radially from that axis.

Also mounted on the inner side of the door member **20** is what may be termed variously as a table, serving counter, or bar, generally designated by the numeral **40**, which bar as viewed in plan extends around the margin of the platform **39**. To permit movement of the bar **40** through the wall opening **21** as the door member **20** rotates about its axis, the bar is dimensioned to lie entirely within the previously mentioned dotted circle **33** and preferably, for economical use of the available space as well as for the sake of pleasing appearance, the bar

has a semi-circular configuration in plan concentric to the axis of rotation of the door member.

In the preferred construction of the invention shown in the drawings, with special reference to Figs. 3 and 7, the table top or top member **42** of the bar **40** is provided with a ridge in the form of a rim member **43** around its outer margin and a similar rim member **44** around its inner margin. Preferably a suitable shallow trough **46** is provided adjacent the inner margin of the top member **42**, this trough in turn being provided with its own inner rim member **47**.

For the purpose of ornamentation, what may be termed the inner surface of the door member **20** above the bar **40** may be covered with suitable mirrors **48**, and for utility, suitable shelves **50** may be provided on this part of the door member. The shelves **50**, which may be made of plastic, may be fabricated with holes **51** best shown in Fig. 8 to hold glasses **52** as shown in Fig. 4.

It is contemplated that the interior of the bar **40** will be utilized for the storage of supplies and various articles related to its intended use and for this purpose suitable shelves **54**, semi-circular in plan, may be mounted under or inside the bar as best shown in Figs. 2 and 3. In view of the fact that the shelves **54** are located at substantial distance from the axis of rotation of the door, it is desirable to provide some expedient to retain articles on the shelves against displacement when the structure rotates. For this purpose a retaining plate **55** may be spaced above each shelf **54** on suitable brackets **56**, each retaining plate having suitable holes **57** to receive glasses, bottles and other items with the items resting on the shelf proper as best shown in Fig. 2.

The table or bar **40** may be of any desired height for use with seats of any desired height. In the preferred embodiment of the invention shown in the drawings, the bar **40** is relatively high for use with a plurality of relatively high stools **60**. Since such high seats are used it is desirable to provide a foot-rest around the bar **40** and for this purpose the outer periphery of the bar has a suitable ledge or shelf **61** at a suitable low level. Below the shelf **61**, a skirt or semi-circular wall **62** set inward from the edge of the shelf extends downward nearly to the floor.

It is desirable that the multiple-purpose structure provide storage space for the stools **60** when the bar **40** is not in use. The top of the bar **40** as well as the platform **39** back of the bar may be used for this purpose. A feature of the present preferred form of the invention, however, is that the bar **40** is recessed around its periphery below the top member **42** so that the shelf **61** may be sufficiently deep and there may be sufficient space above the shelf to permit all of the stools **60** to be stored on the shelf within the area of the previously mentioned dotted circle **33**. Figs. 3 and 6 show the stools **60** in stored positions.

In some installations it is desirable to provide auxiliary supporting means for the multiple-purpose structure at some distance from its axis of rotation. For example, as indicated in Fig. 3, a caster or small wheel **63** may be mounted in a block **64** at the lower edge of the door member **20**.

Use of the structure in a confined space

In the practice of the invention represented by Figs. 1 to 8 inclusive, the described multiple-purpose door structure is mounted in the opening of a closed space such as a cabinet or closet. In this instance the structure is mounted in a closet **65** adjoining a room. For complete utilization of the available space, the closet **65** is shown equipped with suitable corner shelves **66** lying outside the area defined by the previously mentioned dotted circle **33**. It may be noted that at least one of these shelves lies substantially below the level of the top of the bar **40**.

The utility of the described structure in this practice of the invention may be explained in terms of four different functions. The first function is to serve as a door for closing off the closet **65**; the second function is to provide a storage compartment readily accessible from the room adjoining the closet; the third function is to provide concealed storage space purposefully made less accessible; and the fourth function is to serve the major purpose of a home buffet bar for serving food and drinks.

The first function of the structure is illustrated by Fig. 1, which shows how the door member **20** in closed position is in effect, a part of the wall structure of the room. In appearance it consists of three panels, the central panel being formed by the two closure panels **35** jointly.

In the second function provided by the described structure, the platform **39**, the shelves **54** under the bar and the top of the bar **40** itself constitute closet structure providing storage space that is readily accessible from the room outside the closet **65**. Fig. 2 shows how merely opening the two closure panels **35** exposes this composite storage compartment to view as shown in Fig. 2 for utmost convenience to the occupant of the adjoining room.

The feature of the invention in its third function is in the provision of storage space that is concealed and relatively inaccessible in the sense that it may not be reached be merely opening the two closure panels **35**. Any article stored on the lowermost corner shelf **66** in the closet **65**, or stored on the floor in the corner below this shelf will be inaccessible so long as the door structure is in the position shown in Figs. 1 and 2, because at such time the semi-circular bar **40** and the intermediate corner shelf **65** are spaced closely together to cut off access. To gain access to this lower corner storage space it is necessary to revolve the door structure to a partially open position as shown in Fig. 3. Thus so long as the door member **20** is latched in the position shown in Figs. 1 and 2, it is impossible for small children to reach the concealed storage spaces by opening the two closure panels **35**.

To place the door structure in operation for its fourth function as a buffet bar, it is first rotated to a partially open position as shown in Fig. 3 and, if desired at this time, the stools **60** may be removed from the shelf **61** for placement in the positions for use shown in Fig. 8. The person who is to do the serving at the buffet bar enters the closet **65** from the opening to the right of the door structure as viewed in Fig. 3 and while in the closet completes the rotation of the structure to the position shown in Fig. 4 180° from the position shown in Fig. 1. The two closure panels **35** may then be opened from behind to permit the person in the closet to pass through the doorway **34** to stand on the platform **39** for serving over the bar.

The whole structure rotates with exceptional freedom on its two pivots so that the person entering the closet with the door structure half-turned may open the two closure panels **35** and stand upon the platform **39** to complete the rotation of the door, either propelling the door by hand or using one foot against the closet floor.

When it is desired to take the buffet bar out of service, it is a simple matter to take the reverse steps to store the stools **60** on the shelf **61** and return the structure to the closed position shown in Fig. 1.

Use of the structure between two rooms

The second practice of the invention may be understood by referring to the fragmentary floor plans shown in Figs. 9 and 10. In this particular floor plan, communication between a living room **70** and a kitchen **71** is normally by way of a kitchen door **72** and a hallway **73** since normally there is no need for more direct communication between the two rooms.

For the purpose of the present invention the wall **74** separating the living room and kitchen is provided with a large opening **75** in which the described multiple-purpose door structure is pivotally mounted in the manner heretofore explained.

The functional flexibility of the multiple-purpose structure in a building arrangement such as shown in Figs. 9 and 10 may be understood by considering seven distinct functions.

In its first function the structure is turned towards or into the living room 70 to serve as a buffet bar for as long a time period as may be desired. It will be noted that in this position the rear of the bar 40 is readily accessible from the kitchen so that it is not necessary to keep the structure completely stocked with supplies independently of the kitchen.

While the structure is providing this first function of a buffet bar in the living room 70 it may serve simultaneously to any extent desired as a storage compartment for various supplies and items required in the kitchen 71. Thus many items may be stored on the shelves 54 under the bar that are needed both for buffet service in the living room and for occasional use in the kitchen.

When the described structure is rotated to a position extending into the kitchen 71, as indicated by dotted lines in Fig. 10, the bar 40 has a third function in serving as a breakfast table. Because of its semi-circular configuration, the bar accommodates six people without undue crowding and yet occupies less floor space than the usual table of the same capacity.

While the structure is in this same position it affords a fourth function in serving for the rest of the day as a work table or ordinary kitchen table for use in preparing and serving meals. During this time, most if not all of the stools 60 will be placed out of the way on the shelf 61.

While the door structure is carrying out these last two functions in the kitchen 71 it is simultaneously available for a fifth function to serve as a storage closet accessible from the front room 70 since the two closure panels 35 open on the living room side of the structure.

A sixth function is to provide a passage way for short and convenient communication between the kitchen and living room. Fig. 9 shows how such a passage way 77 is formed merely by rotating the structure on its axis to a position intermediate the two positions shown in Fig. 10.

A seventh function, which may also be understood by considering Fig. 9, is to provide a serving counter that is accessible simultaneously from both the kitchen and the living room. It can be readily appreciated that on occasions when a large number of people are to be entertained in the living room 70, it is not only desirable to have the passage way 77 open to permit food to be carried directly from the kitchen into the living room but also to have the bar 40 positioned as shown to serve as an intermediate counter on which articles may be placed by persons in the kitchen for convenient service in the living room.

The foregoing description of the invention does not, of course, exhaust all of its possibilities but it does indicate how a house may be made more desirable, more livable and more flexible to meet the requirements of various occasions merely by the addition of a compact structure to fit into an ordinary doorway.

It will be apparent to those skilled in the art that various changes, modifications and departures from the described structure may be made within the scope and spirit of my appended claims.

I claim:

1. A multiple-purpose serving structure for an opening in the wall of a room for use in serving food, drinks and the like, said serving structure comprising: a door for said opening rotatable about an upright axis positioned centrally of the opening, said door having an aperture to serve as a doorway therethrough and being rotatable between a normal first position with one side of the door facing away from said room and a second serving position with said side of the door facing into the room; and a serving counter mounted on said one side of the door, said counter having an outer edge lying within the path of rotation of the door and an inner edge extending from one side of said doorway aperture to the other side of the doorway aperture, said inner edge extending away from the plane of said doorway aperture to provide space for a person to stand between the counter and the doorway, said counter being accessible from said room through said doorway aperture when said door is in its normal first position.

2. A structure as set forth in claim 1 in which said counter has internal storage shelves and is open on the side towards said doorway aperture to make said storage shelves accessible through the doorway aperture.

3. A multiple-purpose structure as set forth in claim 1 which includes closure means mounted on said door for said doorway aperture.

4. A multiple-purpose structure as set forth in claim 3 in which said closure means is mounted to open by swinging into said room when the door is in its normal first position.

5. A multiple-purpose structure as set forth in claim 1 which includes a platform mounted on said door near the bottom thereof to support a person in said space.

6. A multiple-purpose structure as set forth in claim 1 in which said counter has a recess around its periphery dimensioned for the storage of stools when said door is in said normal first position.

7. A multiple-purpose structure as set forth in claim 1 which includes a footrest extending around the periphery of said counter within the path of rotation of the door.

8. A multiple-purpose structure as set forth in claim 1 which includes a low shelf extending around the periphery of said counter to provide a footrest when said door is in said serving position, said shelf being adapted for the storage of stools when the door is in its normal first position.

9. A multiple-purpose structure as set forth in claim 1 in which said counter has curved outer and inner edges substantially concentric to said upright axis.

10. A multiple-purpose serving structure for an opening in a wall of a room for use in serving food, drinks and the like, said serving structure comprising: a door for said opening rotatable about an upright axis positioned centrally of the opening, said door being rotatable between a normal first closed position with one side of the door facing away from said room, and a second closed position with said one side of the door facing into the room, said door having a central aperture therein to serve as a doorway therethrough; a serving counter mounted on said one side of the door, said counter having an outer curved edge substantially concentric to said axis within the path of rotation of the door and an inner circular edge extending from one side of said doorway aperture to the other side of the doorway aperture, said inner edge being curved substantially concentrically of said axis to provide a space for a person between the counter and the doorway, said counter being provided with shelves below its top surface and being open on its inner side for accessibility to said shelves from said room through said doorway aperture when the door is in its normal closed position; and a platform supported by said door near the bottom edge thereof to support a person in said space.

11. In a building construction wherein a room is provided with a closet of rectangular plan configuration, the combination therewith of: a door for said closet rotatable about an upright axis positioned centrally of the door, said door being movable between a normal first closed position with one side of the door facing into said closet and a second closed position with said one side of the door facing into said room, said door having a central aperture therein to serve as

a doorway therethrough; a serving counter mounted on said side of the door, said counter having an outer circular edge within the path of rotation of the door, and an inner edge extending from one side of said doorway aperture to the other side of the doorway aperture, said inner edge extending away from said doorway to provide space for a person to stand between the counter and the doorway; closure means movably mounted on said door to close said doorway; and fixed shelves in the corners of said closet below the level of said counter to make articles on the shelves difficult of access through said doorway aperture when the door is in its normal first closed position.

12. A multiple-purpose structure as set forth in claim 11 in which there are at least two vertically spaced shelves in each corner of the closet with the uppermost of the two shelves positioned and dimensioned to co-

operate with the counter to cut off accessibility to the lower shelf through said doorway aperture when said door is in its normal first closed position.

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