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ROTATABLE SHELF CABINET

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FIG. 1.

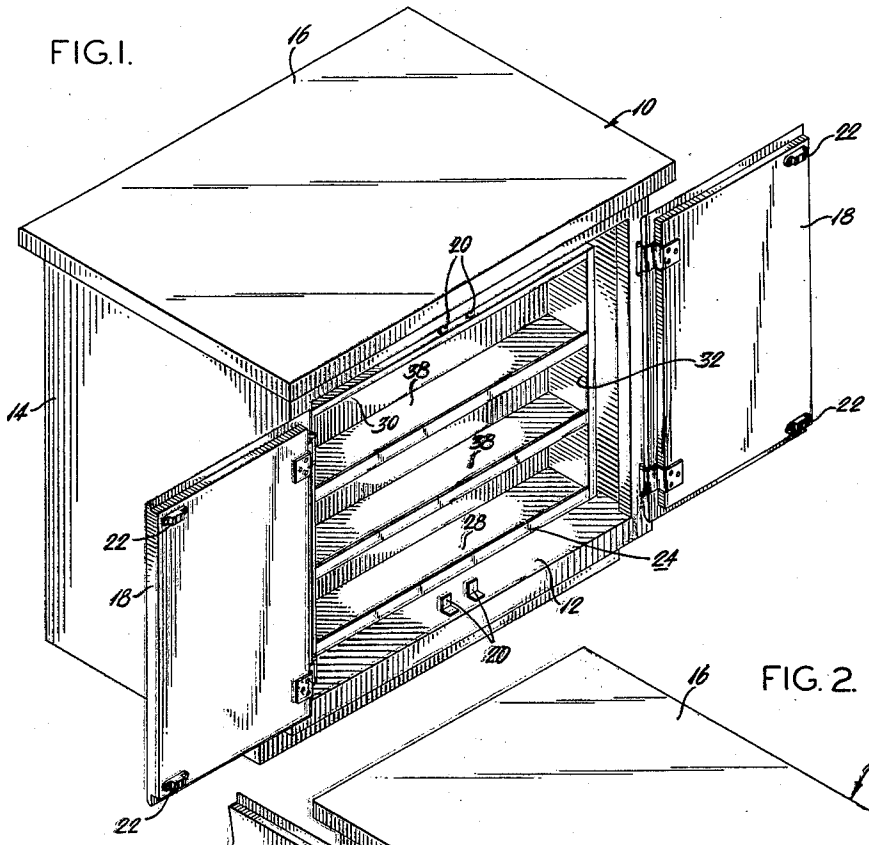
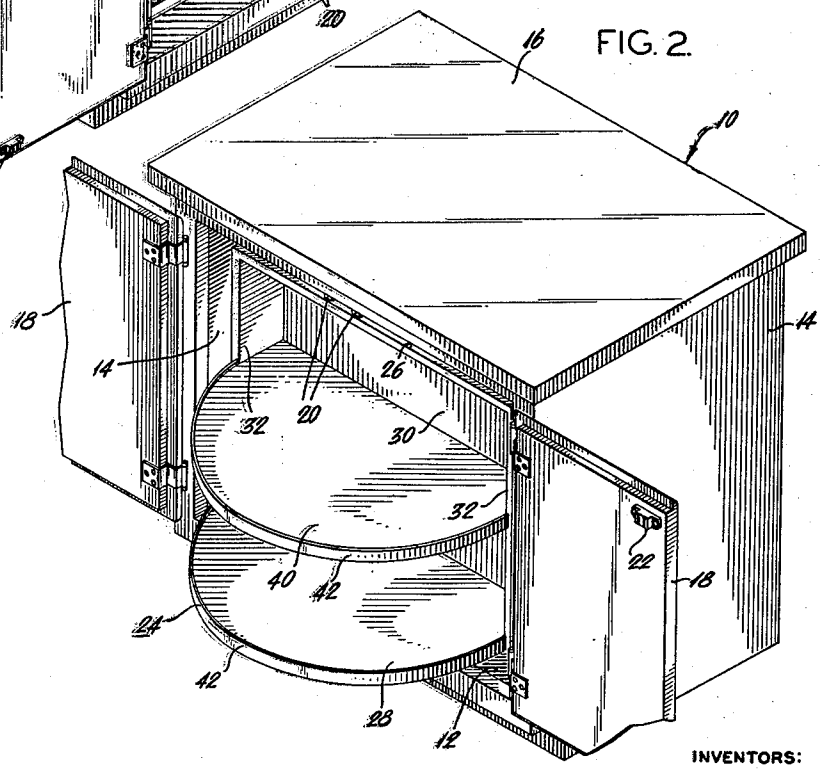


FIG. 2.



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FIG. 3.

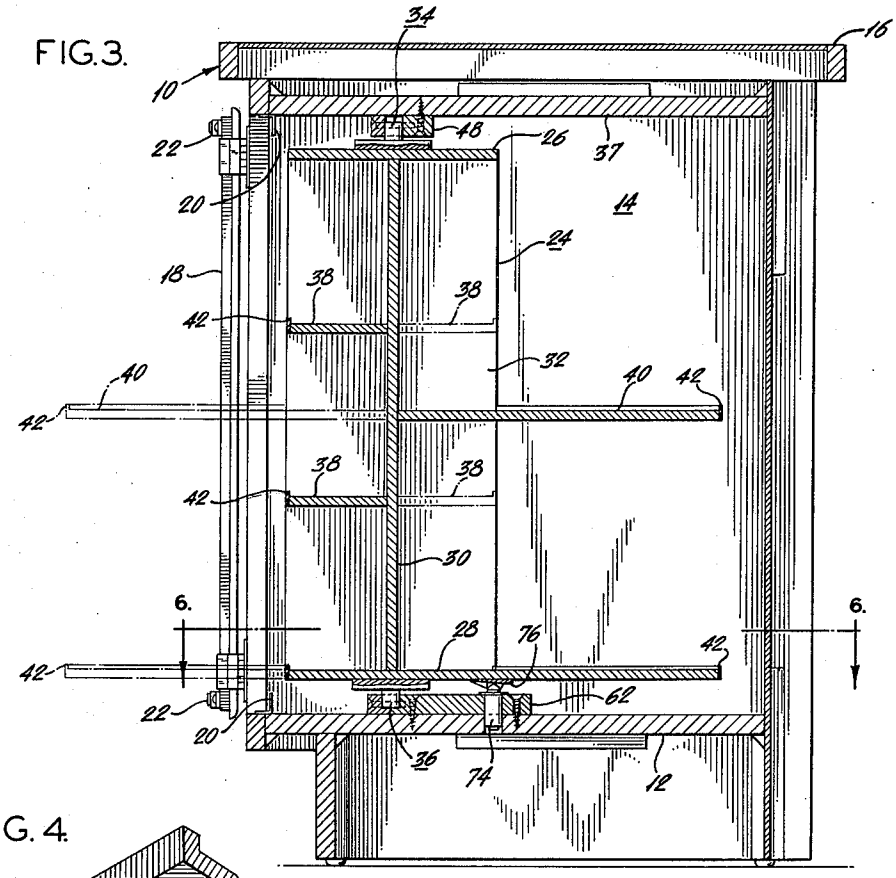


FIG. 4.

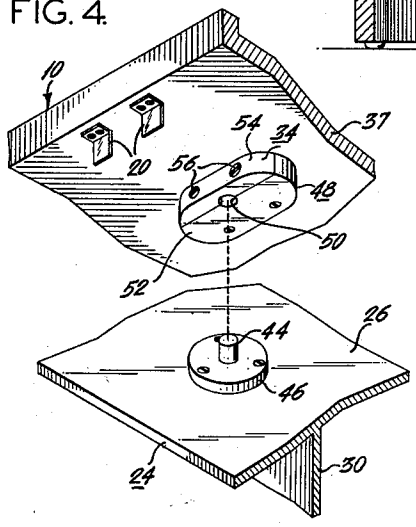
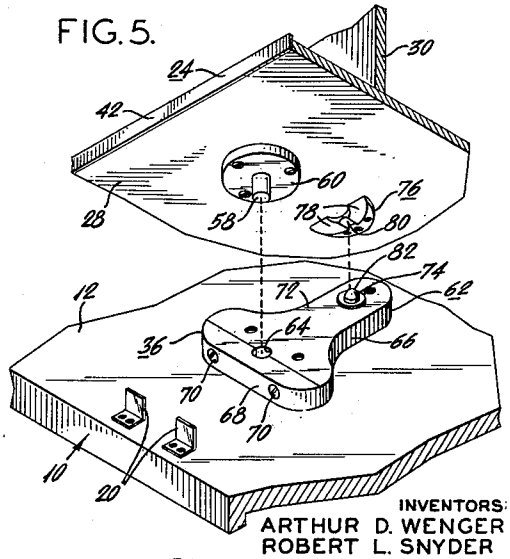


FIG. 5.



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FIG. 6.

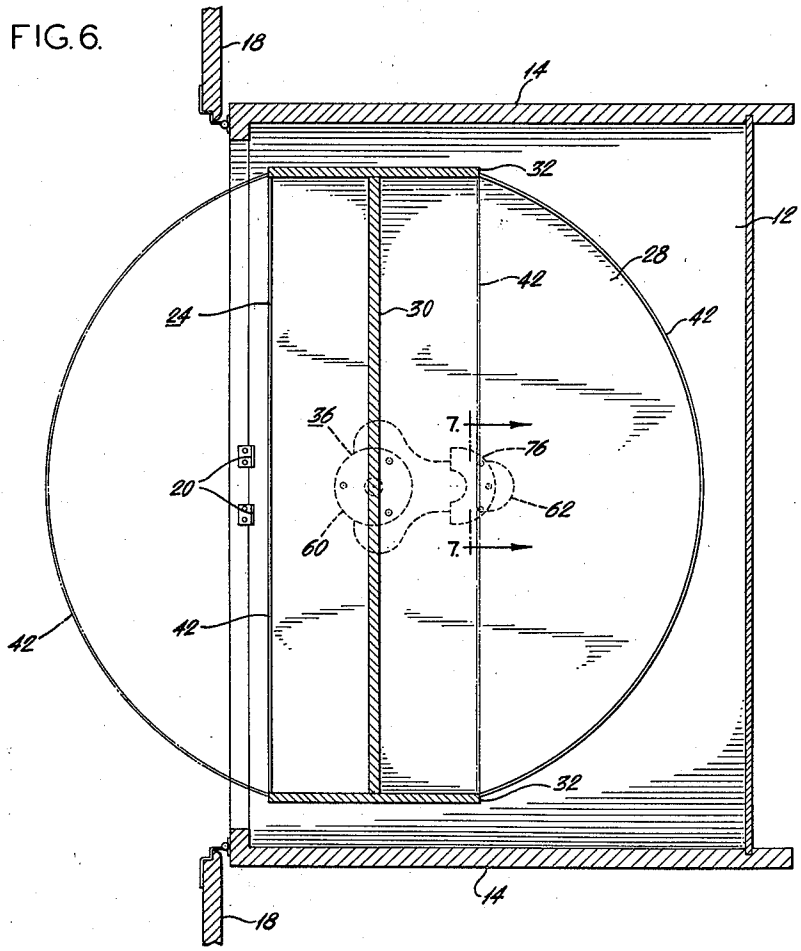


FIG. 7.

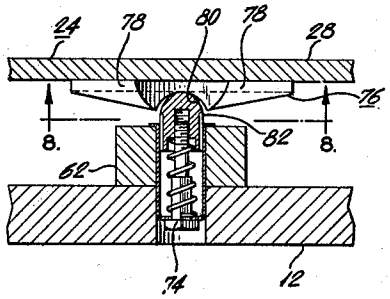
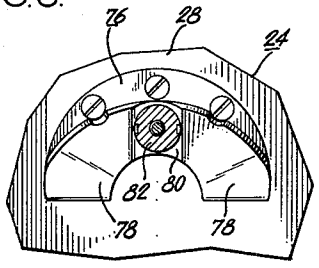


FIG. 8.



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ROTATABLE SHELF CABINET

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1 Claim. (Cl. 312—305)

The present invention relates generally to cabinet constructions of the type having rotatable interior shelving units and more specifically to such a cabinet construction having a novel shelf arrangement and mounting assembly.

A familiar problem in the use of storage cabinets and particularly kitchen cabinets is the difficulty of storing small items along with large utensils on the same shelves. In the usual arrangement, larger utensils are stored in the rear with smaller items in the shelf fronts for ready identification and removal. However, such an arrangement makes removal of the larger utensils difficult if not impossible without removal of the smaller items. Should the smaller items be placed to the rear of the shelves, in most instances, they cannot be seen or reached without prior removal of the larger utensils.

It is an object of the present invention to solve the above problem by providing a cabinet construction which permits a maximum utilization of available cabinet space, accommodating both large and small items in such a manner as to permit ready identification and removal of any of the cabinet contents without disturbing the remaining items.

It is a further object of the invention to provide a cabinet construction as described which through rotary movement of the shelving unit affords a projection of the cabinet shelves outwardly from the cabinet for improved access thereto.

An additional object of the invention is to provide a cabinet construction as described wherein the rotating shelving unit is easily removed and replaced for ease of construction, installation, and cleaning.

Still another object of the invention is to provide a cabinet construction as described having a simple shelving unit bearing arrangement and a positioning means to register and maintain the retracted disposition of the shelving unit.

A still further object is to provide a cabinet construction as described which may be readily adapted to existing cabinet structures with only slight alteration thereof.

Additional objects and advantages of the invention will be more readily apparent from the following detailed description of an embodiment thereof when taken together with the accompanying drawings in which:

FIG. 1 is an isometric view showing a cabinet construction in accordance with the present invention with the rotatable shelving unit in the retracted position;

FIG. 2 is an isometric view of the cabinet of FIG. 1 with the shelving unit rotated 180 degrees into the extended position;

FIG. 3 is a sectional view taken centrally through the cabinet in the position illustrated in FIG. 1;

FIG. 4 is an exploded perspective view showing the details of the shelving unit upper bearing assembly;

FIG. 5 is an exploded perspective view showing the details of the shelving unit lower bearing assembly and positioning means;

FIG. 6 is a view taken along line 6—6 of FIG. 3;

FIG. 7 is a view taken along line 7—7 of FIG. 6; and

FIG. 8 is a view taken along line 8—8 of FIG. 7.

Referring to the drawings, a preferred embodiment of the invention includes a cabinet closure 10 of conventional construction having a bottom 12, sides 14, top 16, and

hinged doors 18. Stops 20 are provided top and bottom to engage the doors in the closed position, and catches 22 on the doors are employed to retain the doors in the closed position in a conventional manner.

Rotatably mounted within the cabinet closure in a manner to be more fully described herebelow is a shelving unit 24 having horizontal top and bottom members 26 and 28 between which extends a vertical shelving wall 30. Side members 32 on the ends of the top and bottom members and vertical shelving wall complete the shelving unit frame.

As seen most readily in FIG. 3, the shelving unit is rotatably mounted by means of upper and lower bearing assemblies 34 and 36 to the false top 37 and bottom 12 of the cabinet closure with the axis of rotation of the shelving unit being substantially closer to the front of the cabinet closure than the rear thereof. The forward location of the axis of rotation permits the use of shelves extending from the vertical wall of differing widths in front and rear storage regions divided by the vertical wall. Accordingly, front shelves 38 extending forward of the vertical wall 30 substantially to the front of the cabinet closure are considerably shallower than the rear shelf 40 extending from the back of the vertical wall 30. The horizontal bottom member 28 extends forwardly and rearwardly to form the front and rear bottom shelves of the shelving unit. Flange strips 42 are provided on the outer edges of the shelves to retain objects stored thereon.

As shown in FIGS. 2 and 6, the rear shelves are of an arcuate shape to permit a maximum utilization of the rear storage area while permitting clearance of the rear shelves upon rotation through the front of the cabinet.

The upper bearing assembly as shown in detail in FIG. 4, includes a cylindrical stud 44 projecting vertically from the horizontal top member 26 and secured thereto by base 46 which may be bolted or screwed to the top member. A bearing plate 48 mounted to the under surface of the cabinet top is adapted to receive the stud 44 within a bore 50. The bearing plate is divided into a fixed portion 52 and a removable portion 54 with the juncture of the fixed portion and removable portion passing vertically through a diameter of the bore. When assembled, the removable portion is secured to the fixed portion by means of bolts 56.

The lower bearing assembly is similar to the upper bearing assembly, including a stud 58 secured by a base 60 to the lower side of the horizontal bottom member 28. The stud 58 is received by a bearing plate 62 on the cabinet bottom 12 having a bore 64 to receive the stud 58 and comprising a fixed portion 66 and a removable portion 68 attached thereto by bolts 70. The fixed portion 66 extends rearwardly in a tail portion 72 in which is mounted a bullet catch 74. An arcuate-shaped cam plate 76 is secured to the under surface of the horizontal bottom member 28 so as to coact with the bullet catch to register and maintain the rotatable shelving unit in the retracted position. As shown most clearly in FIGS. 7 and 8, the cam plate includes cam surfaces 78 terminating in a central radially disposed groove 80 adapted to receive the head 82 of the bullet catch. The bullet catch is preferably of the adjustable type so that the force required to rotate the shelving unit may be varied as desired.

In operation, the rotatable shelving unit is normally in the position shown in FIGS. 1 and 3 with the shallower shelves forward for storage of small items. For access to the large rear shelves, the shelving unit is rotated in either direction to dispose the rear shelves in the projecting manner shown in FIG. 2, from which position items stored thereon may be readily removed and replaced. On return of the shelving unit to the retracted position of FIGS. 1 and 3, the bullet catch engages the cam plate groove thereby registering and maintaining the

unit in the retracted position so that the cabinet doors may be closed.

The removable portions 54 and 68 of the bearing plates 48 and 62 may be easily removed to permit removal of the entire shelving unit. This feature greatly facilitates not only the assembly of the cabinet but also cleaning of the rear storage area, adjustment of the bullet catch, refinishing of the cabinet interior, and retrieval of items which may inadvertently be dislodged from the shelves when the shelves are passing through the rear storage area. It can be seen that the present structure permits a rapid removal of the shelving unit for such purposes, a screw driver being the only tool required.

The present shelving unit and bearing assemblies may be easily installed in existing cabinet closures. Removal of existing shelves and the simple installation of the upper and lower bearing plates are the only steps required.

Manifestly, changes in details of construction can be effected by those skilled in the art without departing from the spirit and scope of the present invention as defined in and limited solely by the appended claim.

We claim:

A cabinet construction comprising a cabinet closure, a shelving unit rotatably disposed within said closure for rotation about a vertical axis, bearing assemblies rotatably securing said shelving unit to the top and bottom of said closure, each of said bearing assemblies comprising a cylindrical stud secured to and extending vertically from said shelving unit, and a bearing plate on said cabinet closure, said bearing plate including a bore adapted to receive and journal said stud, said bearing plate comprising a fixed portion secured to said cabinet closure, and an adjoining removable portion adapted for attachment to said fixed portion, the juncture of said fixed portion and said removable portion passing vertically through a diameter of said bore such that removal of said removable portions from each of said bearing assemblies permits horizontal removal or insertion of said rotatable shelving unit; the vertical axis of rotation of said shelving unit being substantially closer to the front of said cabinet closure than the rear thereof, said shelving unit including horizontal top and bottom members, a vertical wall extending between said top and bottom members dividing

said shelving unit into opposed front and rear storage regions, said shelving unit horizontal bottom member forming a bottom shelf of said shelving unit in both front and rear storage regions thereof, at least one additional shelf extending from said vertical wall in said front and in said rear storage regions, said shelves respectively extending substantially to the front and rear of said cabinet closure, the shelves of the rear storage region being substantially arcuate in shape to provide maximum shelf space in the rear storage region, the shelves of said front storage region being substantially shallower than the shelves of said rear storage region due to the forward position of the axis of rotation of the shelving unit, whereby on rotation of said shelving unit the shelves of said rear storage region extend beyond the front of said cabinet closure to facilitate placement and removal of items stored thereon, and means for registering and maintaining the rotatable shelving unit in a retracted position with the shallower shelves extending toward the front of the cabinet closure, said means comprising a bullet catch mounted on the bottom of said cabinet closure, and a cam plate secured beneath said shelving unit horizontal bottom member, cam surfaces of said cam plate terminating in a central radially disposed groove, said cam plate being so positioned as to coact with said bullet catch to dispose said bullet catch in said groove and thereby arrest rotation of said shelving unit when said shelving unit is rotated into the retracted position.

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