April 22, 1958 J. B. CODY 2,831,582

ROTARY SHELF UNIT

Filed Oct. 19, 1955

Fig. 1

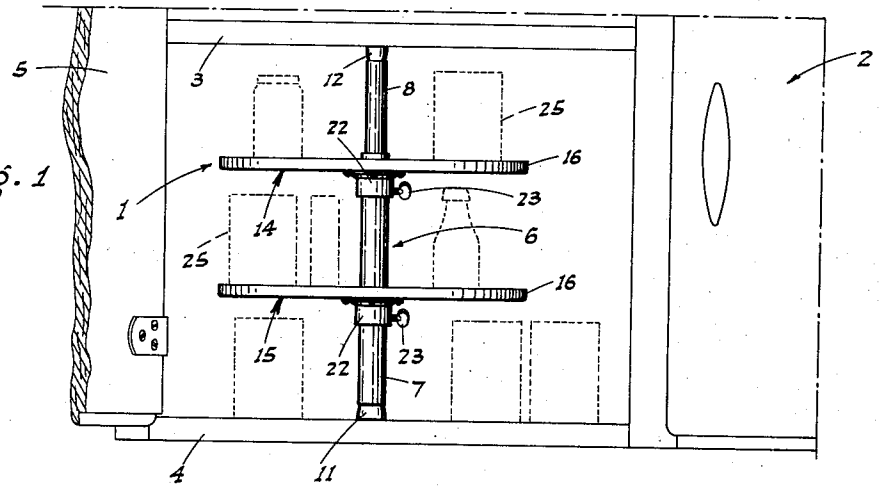
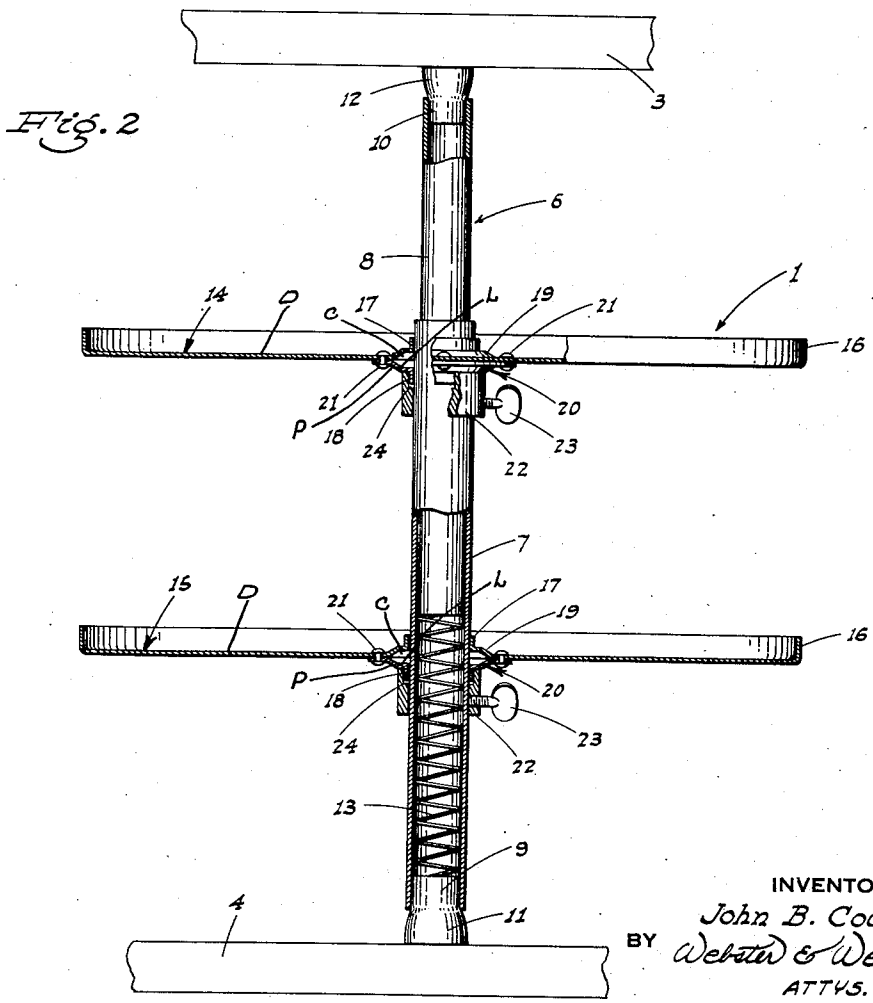



Fig. 2




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United States Patent Office 2,831,582 Patented Apr. 22, 1958



2,831,582

# ROTARY SHELF UNIT

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Application October 19, 1955, Serial No. 541,418

2 Claims. (Cl. 211—146)

This invention relates to, and it is a major object to provide, a rotary shelf unit, of "Lazy-Susan" type, adapted to be disposed in a cupboard for the reception of, and convenient access to, objects or supplies supported by said unit. While adaptable for other uses, such rotary shelf unit is especially designed for placement in a kitchen cupboard to receive culinary supplies, such as spices in containers, or the like.

Another object of this invention is to provide a rotary shelf unit which may be installed, between the fixed shelves of a cupboard, with facility and without the use of tools; the unit being effectively maintained in place by means of an extensible post assembly fitted with friction pads at the ends, and including a spring tending at all times to increase the effective length of said assembly, whereby the pads bear positively at the ends in holding relation against said upper and lower fixed shelves.

A further object of the invention is to provide a rotary shelf unit, as above, which includes a plurality of circular shelves which are not only mounted in a novel manner for free or non-binding revolving motion, but are also readily manually adjustable for selective vertical spacing.

It is also an object of the invention to provide a rotary shelf unit which is simple in structure and designed for ease and economy of manufacture.

Still another object of the invention is to provide a practical, reliable, and durable rotary shelf unit, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is an elevation of the rotary shelf unit as mounted in position in a cupboard; the cupboard door being shown open and partly broken away.

Fig. 2 is an enlarged elevation of the rotary shelf unit in use as in Fig. 1; the view being partly in section and partly broken away.

Referring now more particularly to the drawings, and to the characters of reference marked thereon, the novel rotary shelf unit is indicated generally at 1, being adapted for use in a cupboard, indicated generally at 2, which includes a fixed upper shelf 3, a fixed lower shelf 4, and—in the present disclosure—a door 5 which is shown in its open position.

The rotary shelf unit 1 comprises an extensible post assembly, indicated generally at 6, which assembly embodies a lower upstanding tube 7 into which an upper tube 8 is telescoped with a relatively close but slidable fit; the upper tube 8 projecting a substantial distance above the upper end of the lower tube 7, as well as telescoping into the latter sufficient to permit of substantial vertical telescopic adjustment.

End plugs 9 and 10 of resilient material, such as rubber, are tightly engaged in the lower end portion of the tube 7 and the upper end portion of the tube 8, respectively. The end plugs 9 and 10 extend outwardly from



the related ends of the corresponding tubes in the form of friction pads, indicated at 11 and 12, respectively.

A helical compression spring 13, always under load, is disposed in the lower tube 7 and engages between the end plug 9 and the lower end of the upper tube 8, thus always tending to urge said upper tube 8 in an upward direction.

An upper rotary shelf 14 and a lower rotary shelf 15 surround the lower tube 7 in vertically spaced relation, with the shelf 15 disposed a distance above the lower end of said tube 7. As the rotary shelves 14 and 15 are of identical construction and mounting on the lower tube 7, a description of one will suffice for both.

The rotary shelves 14 and 15 are each of circular configuration in plan, being formed with an upstanding peripheral flange 16 for the purpose of preventing objects on the shelf from falling off when such shelf is revolved.

Each of the rotary shelves comprises a shelf-disc D which is formed with a central opening C defined by an upwardly projecting upper hub 17 and a downwardly projecting lower hub 18 disposed in vertically spaced relation; such hubs being fixed with the shelf by means of radially outwardly converging, annular flanges, the upper flange being indicated at 19 and the lower flange at 20. The flange 19 is integral with the rotary shelf, whereas the flange 20 is an initially separate part secured to said shelf by a circumferential row of rivets 21.

The hubs 17 and 18, which are integral with the flanges 19 and 20, are of the same inside diameter, and engage on the lower tube 7 with a relatively close but turnable—as well as axially slidable—fit.

Each of the rotary shelves is rotatably and vertically adjustably supported, at a selected position on the lower tube 7, by a collar 22 surrounding said tube and secured thereto in vertically adjustable relation by a thumb screw 23. The collar 22 is formed, at the upper end portion, with an inwardly and upwardly opening channel 24 in which the lower hub 18 engages in turnable relation; the upper edge of said collar—outwardly of the channel 24—bearing against the under side of the lower annular flange 20.

With this arrangement, including the hubs 17 and 18, and channeled collar 22, each shelf is rotatably supported at a selected position of vertical adjustment on the lower tube 7. By reason of the employment of the vertically spaced hubs 17 and 18, with the latter running in guided relation in the channeled collar 22, each shelf is effectively mounted for free rotation and yet without any wobbling action or binding on the lower tube 7 under the influence of the weight of the objects on the shelf. As will be seen from the drawing, each annular flange 20 includes a horizontal ledge L at the base, which projects radially out from the upper end of hub 18, and a portion P sloping thence upwardly and radially out of the shelf-disc D. This ledge is directly engaged by the upper edge of the collar 22 in supporting relation, so that no load is placed on the hub itself, which—being of sheet metal—is quite thin.

The above described rotary shelf is installed, in a cupboard 2, in the following manner:

Firstly, the upper tube 8 is manually pressed downwardly into the lower tube 7 and against the compression of spring 13 until the over-all height of the post assembly 6 is less than the distance between the shelves 3 and 4 of the cupboard. Thereafter, with the upper tube 8 still held in a depressed position the rotary shelf unit 1 is placed in the cupboard in the position it is intended to occupy. Nextly, the upper tube is released from the hand and it slides upwardly under the action of the compression spring 13, resulting in the friction pads 11 and 12 of the end plugs 9 and 10, respectively, being forcefully engaged against the adjacent surfaces of the shelves 3 and 4. As a result, and with the spring 13 always under

load, the pads 11 and 12 frictionally grip or bind against the shelves 3 and 4 so that the rotary shelf unit thereafter is maintained in position, with the shelves 14 and 15 free to be rotated by hand about the lower tube 7 for the purpose of gaining easy access to the objects, indicated generally at 25, on said shelves.

The described rotary shelf unit therefore provides a very practical and useful device of multiple shelf, "Lazy Susan" type, for installation in a kitchen cupboard or the like to support objects, such as containers of spice, for convenient access.

Preferably, the major parts of the rotary shelf unit, such as the tubes and rotary shelves, are formed of light weight metal, such as aluminum.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. In a rotary shelf unit which includes a stationary cylindrical post, a rotary shelf surrounding the post and having a central opening about the post, and means mounting the shelf on the post for revolving thereabout; said means including a relatively thin hub depending from the shelf and engaging the post in turnable relation, means connecting the hub and shelf and including a horizontal annular ledge projecting radially out from the upper end of the hub, and a collar secured on the post below the hub and having a channel into which the hub projects with a relatively close running fit; the upper edge of the collar about the channel engaging the ledge in supporting relation.



2. In a rotary shelf unit which includes a stationary cylindrical post, a rotary shelf surrounding the post and having a central opening about the post, and means mounting the shelf on the post for revolving thereabout; said means including a relatively thin hub depending from the shelf and engaging the post in turnable relation, a collar engaging and adjustably secured on the post below the hub, and an annular flange rigid with and extending radially out from the upper end of the hub and connected to the shelf, said flange including a horizontal annular ledge about the hub and said flange sloping thence upwardly and radially out to the shelf; the upper end portion of the collar surrounding the hub and the upper edge of the collar engaging said ledge in supporting relation.

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