June 30, 1964 J. ROJAKOVICK 3,139,045

ADJUSTABLE SHELVING AND SHELF HANGERS

Filed July 3, 1963

Fig. 1.

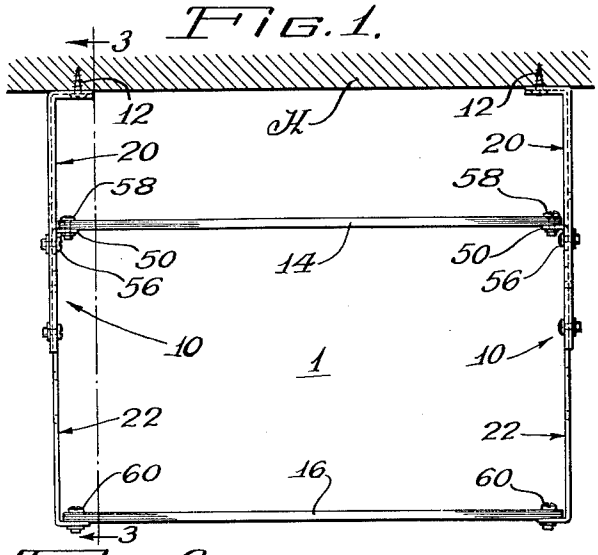


Fig. 2.

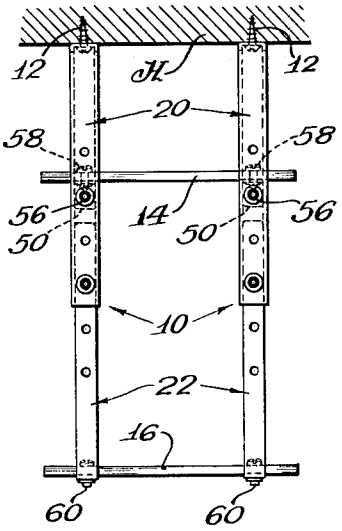


Fig. 3.

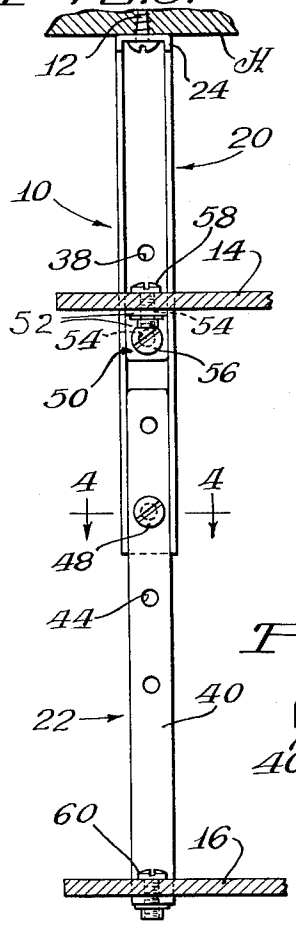


Fig. 5.

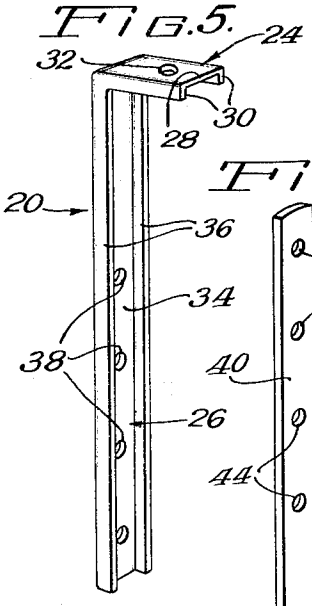


Fig. 6.

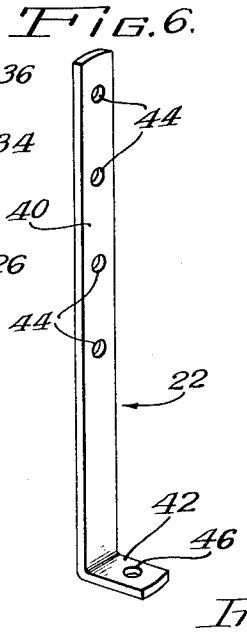
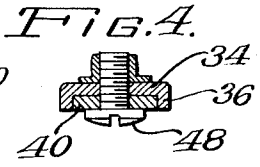


Fig. 4.



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ADJUSTABLE SHELVING AND SHELF HANGERS

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3 Claims. (Cl. 108—109)

This invention relates to new and useful adjustable shelving and shelving hangers.

While many types of shelving and shelving brackets and hangers exist for various purposes, a great many are simply not adapted to be hung from or supported by a horizontal surface. The shelving and hangers of this invention are both adjustable and peculiarly adapted to be suspended from a horizontal surface. The shelving and hangers of this invention are especially useful in the kitchen where by making use of the shelving and hangers, shelves may be provided beneath kitchen wall cabinets without utilizing the wall as a support and without taking up part of the countertop space of which there never seems to be enough.

Not only does this invention provide shelving which is adjustable vertically, but it also factilitates the practical utilization of shelves of widely varying contours and size.

Thus it is a principal object of this invention to provide novel shelving and novel hangers for use in shelving.

More particularly it is an object of this invention to provide shelving incorporating a plurality of hangers, in which said hangers define a vertical track member adapted to slidingly guide a complementary adjustable member and wherein said members may be fixed relative to each other by connecting means so that the adjustable member remains non-oscillatably seated within said track member, and wherein said hangers include means for supporting said hangers from a horizontal surface and separate means for supporting at least one shelf therefrom.

Yet another object of this invention is to provide a new and useful shelf hanger which is adapted to be hung from a horizontal surface wherein said hanger includes complementary elongated track and elongated slidable members and means fixedly connecting said members for retaining said slidable member within said track member and wherein means for dependingly supporting said shelf hanger and means for supporting a shelf from said shelf hanger are also provided.

Further objects and advantages of this invention will become apparent from the following description and drawings of which:

FIGURE 1 is a side elevational view of an illustrative embodiment of the shelving of this invention;

FIG. 2 is an end elevational view of the shelving of FIG. 1;

FIG. 3 is an enlarged view, partially in section, taken substantially along line 3—3 of FIG. 1;

FIG. 4 is an enlarged sectional view taken substantially along line 4—4 of FIG. 3;

FIG. 5 is an enlarged perspective view of the illustrative suspension member of FIG. 1; and

FIG. 6 is an enlarged perspective view of the illustrative slidable member of FIG. 1.

FIGURES 1 to 6 inclusive illustrate one form in which the invention of this application may be embodied. Referring first to FIGURE 1, shelving unit 1 is illustrated as being dependingly supported from a horizontal surface H. Shelving unit 1 includes a plurality of hangers 10 dependingly connected to horizontal surface H by screws 12 or other suitable fastening means. Shelving unit 1 also includes an upper shelf 14 and a lower shelf 16 suitably connected to hangers 10 in a manner to be described.

As is most clearly discernible from FIGURES 3, 5 and 6, each hanger 10 desirably comprises an elongated suspension member 20 and an elongated slidable member 22 both of which are generally L-shaped. Suspension member 20 includes a hanger arm 24 and an elongated vertical arm 26. The hanger arm includes a central web 28 and spaced reinforcing flanges 30 and defines an opening 32 through which suitable fastening means such as screws 12 are adapted to pass to connect the hanger to the horizontal surface.

Vertical arm 26 comprises a central web 34 and spaced parallel flanges 36 perpendicularly disposed with respect to web 34. Together web 34 and flanges 36 define a U-shaped channel or track means in which slidable member 22 is adapted to be seated and by which slidable member is adapted to be slidingly guided in a longitudinal direction. Vertical arm 26, in its web portion, also defines a plurality of openings 38 for purposes to be described.

Slidable member 22 includes an elongated adjustable arm 40 and a support arm 42, both of which are generally rectangular in cross-section. Adjustable arm 40 defines a plurality of openings 44 spaced along its length while support arm 42 defines an opening 46. Openings 44 are positioned to be alignable with openings 38 in vertical arm 26 so that suitable connecting means such as nuts and bolts 48 may be located within and at said openings to fix the suspension and slidable members with respect to each other so that relative movement between them will be resisted.

Extending inwardly of hangers 10 there are provided suitable upper shelf supporting and fastening means. Those means, in the embodiment illustrated, are shown as a bracket 50 which includes a pair of arms 52 defining openings 54 therein. Bracket arms 52 as seen in FIG. 3 are of substantially the same width as central web 34 of vertical arm 26 to provide a snug, but slidable fit of bracket arm 52 between flanges 36. Openings 54 are located so that opening 54 of vertical bracket arm 52 is alignable with openings 38 and so that the opening 54 of horizontal bracket arm 52 is alignable with suitable openings in upper shelf 14. To connect vertical bracket arm 52 to vertical arm 26, nut and bolt fastening means 56 are provided and to connect horizontal bracket arm 52 to shelf 14 nut and bolt fastening means 58 are provided. The nut and bolt fastening means facilitate convenient and repeated assembly and disassembly of the shelving unit as a whole and further facilitate storage and shipping of the shelving unit.

In the illustrative embodiment of this invention nut and bolt connectors 60 have been used to connect the lower shelf 16 to support arms 42 of slidable member 22. Nut and bolt connectors 60 pass through suitable apertures in lower shelf 16 which apertures are positioned to be aligned with support arm openings 46. In that manner lower shelf 16 is connected to and forms a part of the overall shelving unit.

As shown in FIGS. 2, 3 and 4, both of the suspension and slidable members 20 and 22 are elongated. To provide for a wide range of vertical adjustability, each of those members is at least as long as about eight times the perpendicular distance between flanges 36 of the suspension member, although shorter members may be used for special purposes. So also are there provided a plurality of alignable openings 38 and 44 to increase the range of possible vertical adjustment of the hangers.

While a single shelf may be provided, the use of two or more shelves tends to provide a shelving unit of greater rigidity. Rigidity and strength is also imparted to the shelving unit by the particular hanger construction of this invention.

While it is shown in other of the figures, FIG. 4 especially shows that the one transverse dimension of the slidable member 22, its width, is substantially the same as the perpendicular distance between flanges 36 of sus-

pension member **20**. Thus it is that when slidable member is placed or positioned within the track means of the suspension member the only possible direction in which the slidable member may be moved parallel to the plane defined by the inner surface of said web is one longitudinally thereof. That enhances the rigidity of the hangers **10**, hence of the overall shelving unit and means that a single connecting means, such as nuts and bolts **48** may be used to fix said members with respect to each other and to retain adjustable arm **40** within the track of vertical arm **26** thereby preventing oscillatory movement between suspension and slidable members **20** and **22**.

The foregoing makes it clear that the shelving of this invention is widely adjustable and is useful in a wide range of environments. The hangers utilized to dependingly support the shelves are very stable in any position of adjustment, even at the position of greatest elongation because of the dimensional relationship between the suspension and slidable members and the guidance function provided by the track defining suspension member.

While, as mentioned previously, the shelving is especially useful for suspension beneath a kitchen wall cabinet to hold such things as spices, cook books, clocks, radios, decorative items, or the like, it may also be used elsewhere where suspended shelving is desirable. And, while in the embodiment illustrated the hangers have been shown as being suspended by the track defining means, it will be appreciated that the illustrative hangers might be suspended by the slidable members thereof as well.

While one embodiment of this invention has been described in some detail, it is apparent that minor modifications and changes may be made therein without departing from the spirit and scope of the invention. As such I intend the scope of my invention to be limited only insofar as may be necessary in view of the appended claims.

I claim:

1. A shelf hanger comprising, in combination, an elongated member adapted in use to be positioned generally vertically and such position determining the orientation of the elements as recited hereinafter, said elongated member including an upper suspension member including a relatively long vertical arm and a relatively short top horizontal arm, said suspension member being in the shape of a channel having a central web and parallel side flanges, said top horizontal arm having a hole in the web thereof for detachable reception of means for securing the hanger

to a top downwardly facing surface, said vertical arm having a plurality of vertically spaced holes in the web thereof, a slidable member in the form of a relatively flat piece rectangular in cross-section including a relatively long vertical leg and a relatively short bottom horizontal foot, said vertical leg having a plurality of holes therein spaced vertically similar to the spacing of the holes in the suspension member, and the vertical leg being fitted in the space between the flanges of the suspension member and being dimensioned to be snugly received therein, detachable securing means in aligned holes of the suspension member and slidable member for rigidly securing those members together, an L-shaped bracket having a vertical leg with a hole therein received in the space between the flanges of the suspension member and a leg extending horizontally therefrom, and a detachable means in aligned holes in said vertical leg of the bracket and suspension member for rigidly securing the bracket in position, said horizontal leg of the bracket and bottom foot of the slidable member having holes for reception of detachable means for securing shelf members thereon.

2. The shelf hanger set out in claim 1 wherein the length of each the vertical arm of the suspension member and the long vertical leg of the slidable member is at least eight times the distance between the flanges of the suspension member.

3. Adjustable shelving including a plurality of hangers as set out in claim 1, the hangers being disposed at and distributed around a predetermined area with the horizontal legs of the brackets and the bottom horizontal feet extending inwardly from the periphery of said area, and a plurality of shelves coincident in size and shape with said area, one of the shelves being mounted on and detachably secured to the plurality of bottom horizontal feet and another on the horizontal legs of the brackets.

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