United States Patent

[11] **3,614,044**

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[54] **SHELF MOUNTING WITH LOCKING SLIDER**
7 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **248/243,** 108/108, 211/134, 248/250
[51] **Int. Cl.** **A47g 29/02**
[50] **Field of Search** 248/235, 250, 245, 244, 246; 108/109, 110, 108, 107, 152; 211/134, 135, 148, 153, 182, 177

[56] **References Cited**

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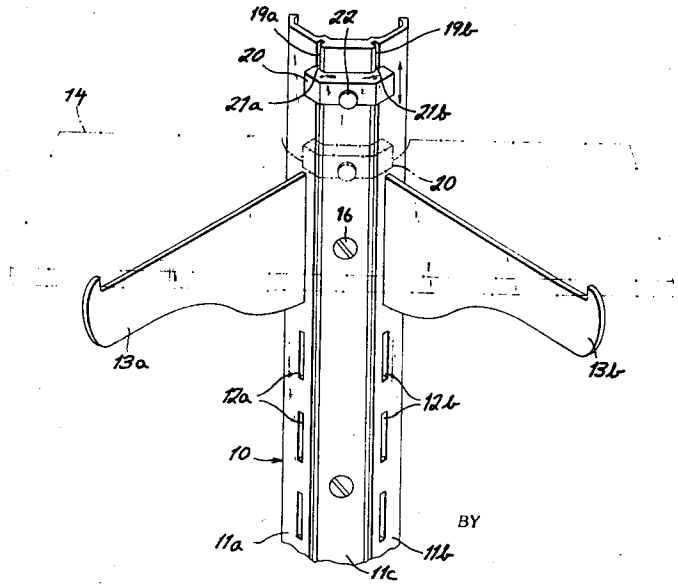
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ABSTRACT: A standard with mounting slits for shelf-supporting arms has two relatively inclined longitudinal faces formed with a pair of vertical grooves for the guidance of a slider adapted to be locked in position, against an intervening third face, to hold down an edge of a shelf carried by a pair of divergent arms.



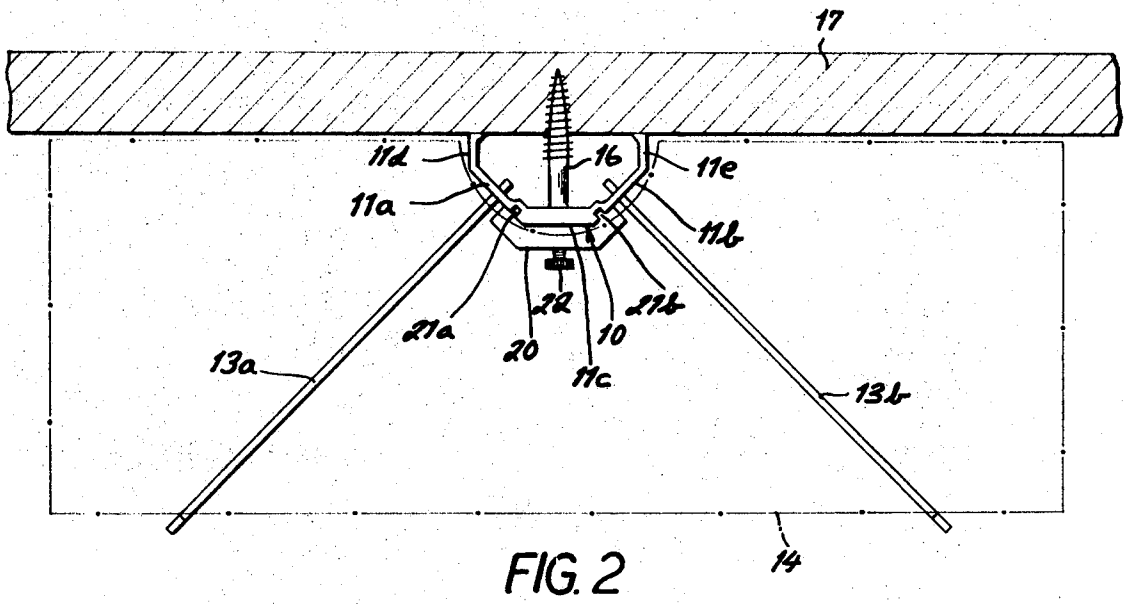


FIG. 2

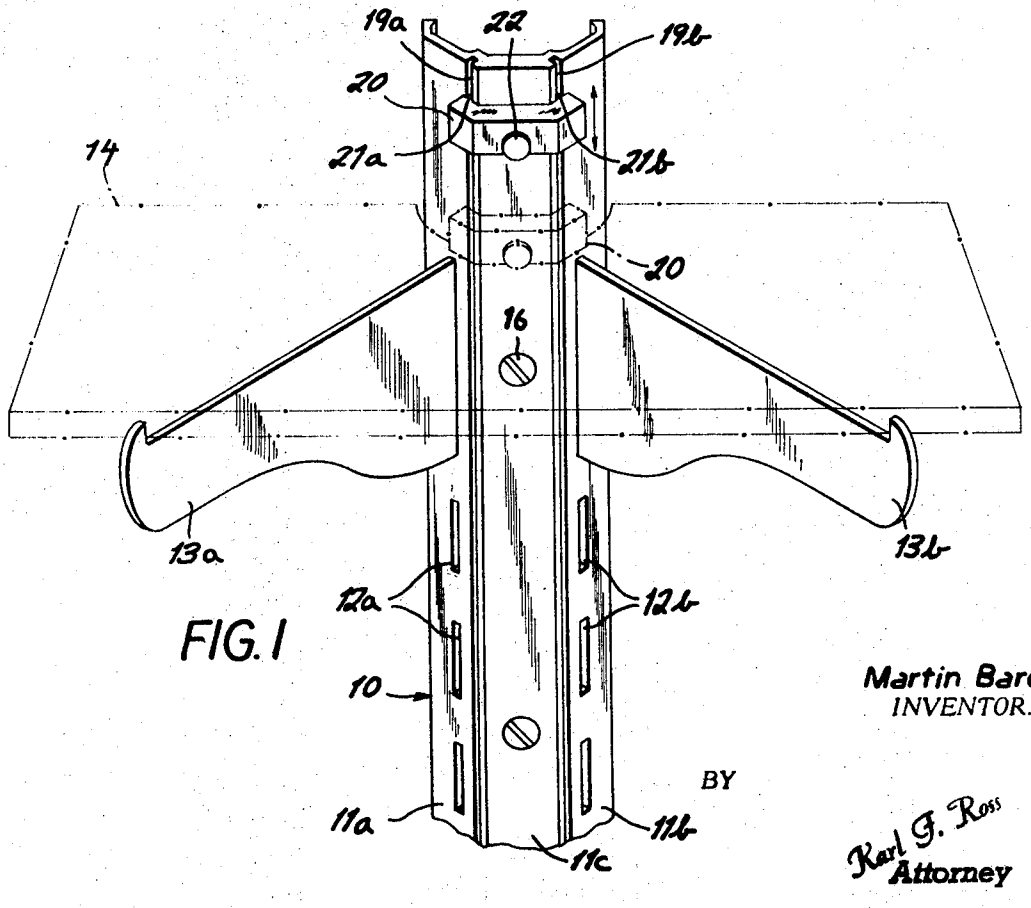


FIG. 1

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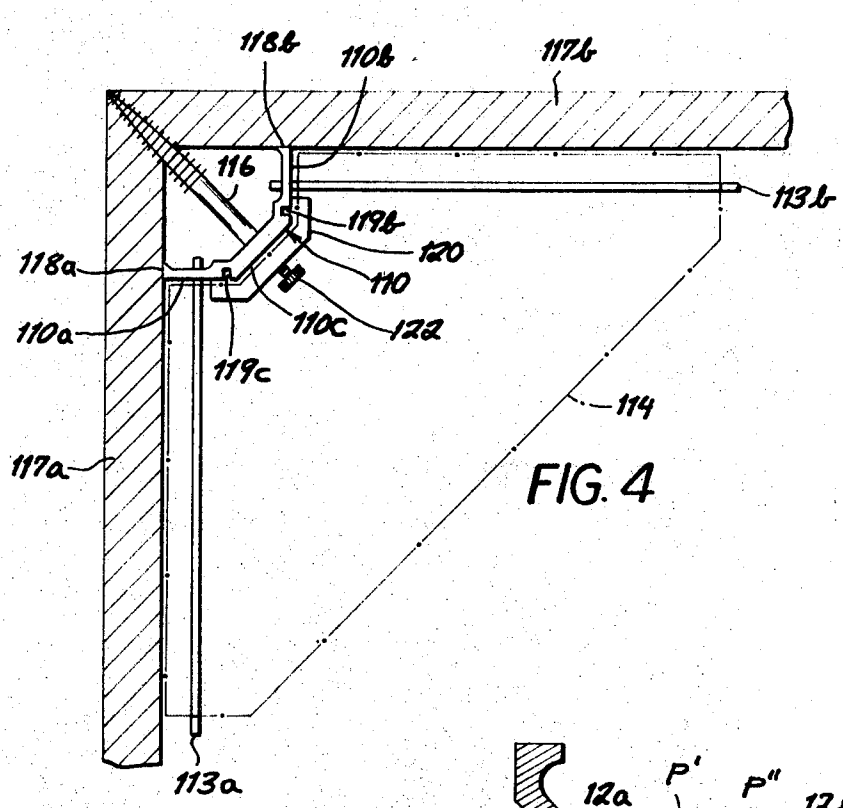


FIG. 4

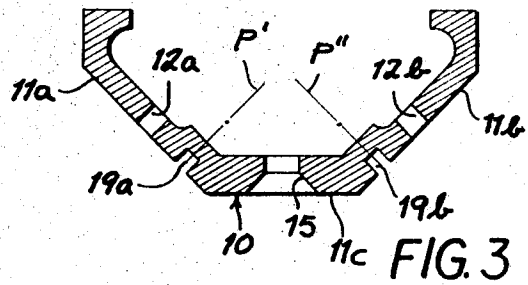


FIG. 3

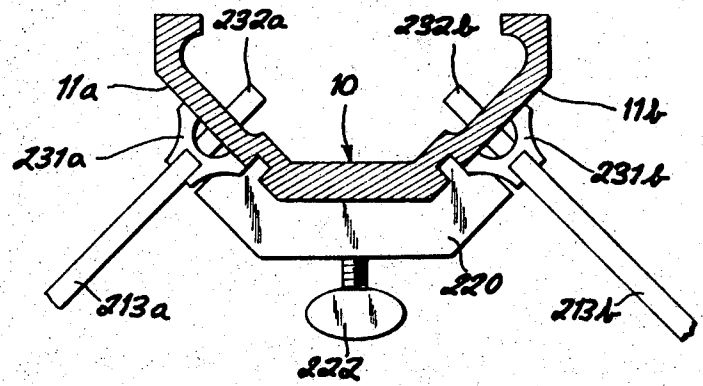


FIG. 5

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SHELF MOUNTING WITH LOCKING SLIDER

My present invention relates to a shelf mounting of the general type described in my U.S. Pat. Nos. 3,339,751 and 3,502,293.

This kind of mounting comprising a standard, i.e. an upright bar standing either free or against a wall, to which one or more shelf carriers may be secured at different levels. Such a shelf carrier may comprise a pair of substantially horizontal arms or brackets diverging from the standard which, for this purpose, may be provided with two sets of vertically aligned slits adapted to receive the rear extremities of these brackets. In an advantageous construction disclosed in my last-mentioned patent, the standard has a semipolygonal cross section defining several angularly adjoining vertical faces on its front surface, the slits being provided in two nonadjoining faces while an intervening, solid face is used as an anchorage for several retaining screws serving to attach the standard to a wall. If a shelf supported by a pair of such divergent arms or equivalent carriers means is not symmetrically loaded, it could become sufficiently unbalanced to tilt to one side and to slide off its mounting.

An object of my present invention, therefor, is to provide means in such mounting for preventing the accidental dislodgment of a supported shelf.

Another object is to provide means for positively retaining a shelf on a standard of this description to avoid any danger of accidental displacement of a loaded or unloaded shelf, e.g. during dusting, by a push from below.

A related object is to provide retaining means of this character effective at any level to which the shelf carrier may be adjusted.

In accordance with my instant invention, I provide a slider which is vertically movable along the standard above the carrier arm or arms and can be locked against the standard in contact with the upper surface of a shelf supported thereon.

More specifically, the slider may have lugs engaging in a pair of vertical grooves advantageously lying in rearwardly converging planes so as to prevent any detachment of the slider from the standard except by upward (or possibly downward) longitudinal displacement. Thus, the grooves may be formed in the nonadjoining faces which have the mounting slits for the divergent arms; the locking means for the slider may then comprise a frictional detent, such as a screw, bearing upon the intervening unslitted face. The above and other features of my invention will be described hereinafter with reference to the accompanying drawing in which:

FIG. 1 is a perspective view of part of a shelf-supporting standard provided with a slider according to my present invention;

FIG. 2 is a top view of the assembly of FIG. 2 shown fastened to a wall;

FIG. 3 is a cross-sectional view of the standard shown in FIGS. 1 and 2;

FIG. 4 is another top view illustrating a modification of the assembly of FIGS. 1 and 2; and

FIG. 5 is a fragmentary bottom view of another modified assembly, with the standard shown in cross section. In FIGS. 1 and 2 I have shown a standard in the form of a tubular metal bar 10 of polygonal cross section, more specifically a section which will be recognized as half of a regular octagon. Bar 10 has two faces 11*a*, 11*b* formed with vertical slits 12*a*, 12*b* to accommodate brackets 13*a*, 13*b* at different elevations; the brackets extend at right angles to each other and support a shelf 14 indicated in dot-dash lines. It will be understood that additional pairs of brackets and shelves supported thereby may be secured to the standard 10 at other levels.

An intervening face 11*c* of bar 10 is provided with mounting holes 15 for the passage of fastening screws 16 which enter a supporting wall 17. Faces 11*d* and 11*e* of the bar, each having a width equal to half that of faces 11*a*, 11*b* and 11*c*, terminate in a pair of enlarged flanges 18 which lie in a common plane and bear flat upon the wall 17.

A shelf 14, which may be a glass plate, is locked in position on brackets 13*a*, 13*b* by means of a slider 20 which spans the forward face 11*c* of bar 10 and is provided with a pair of lateral lugs 21*a*, 21*b* slidably engaging in vertical grooves 19 *a*, 19 *b* of the bar. As best seen in FIG. 3, the grooves 19 *a*, 19 *b* lie in a pair of rearwardly converging vertical planes P'P'', parallel to brackets 13 *a* and 13 *b*, formed in the nonadjoining or flanking faces 11 *a*, 11*b* of bar 10. A screw 22, received in a threaded center bore of the slider, bears upon the intervening face 11 *c* upon being tightened with the aid of a screwdriver, thereby clamping the slider 20 in its selected position on the bar 10. The slider, resting against the upper surface of shelf 14, firmly holds the shelf in its illustrated position. Grooves 19 *a*, 19 *b* extend far enough downwardly to allow the slider 20, or an identical retaining member independent thereof, to clamp a shelf resting on brackets inserted into a pair of lower slits 12 *a*, 12*b*.

In FIG. 4 I have shown a slightly modified bar 110 whose polygonal cross section has only three sides 110*a*, 110*b*, 110*c* terminating in enlarged flanges 118*a*, 118 *b*, which bear upon respective walls 117*a*, 117*b*. Screws 116 (only one shown) pass diagonally from side 110*c* into the corner between walls 117*a* and 117 *b*. A shelf 114 is supported by brackets 113*a*, 113*b* respectively extending from sides 110 *a* and 110*b* alongside walls 117*a* and 117*b*.

Again, a slider 120 is guided in the aforedescribed manner in a pair of vertical grooves 119*a*, 119*b* on the exposed faces of the nonadjoining sides 110*a*, 110*b* of bar 110. As before, a screw 122 comes to rest against the exposed face of side 110*c* to lock the slider in its position just above shelf 114.

With the grooves 19*a*, 19*b* or 119*a*, 119*b* disposed inwardly of the rows of slits 12*a*, 12*b*, the slider 20 or 120 can move along the entire length of the bar, or of its grooved portion, even in the presence of brackets 13*a*, 13*b* or 113*a*, 113*b* at various levels.

Naturally, a single guide groove for the slider (e.g., in face 11*c*) would suffice if the latter had a lug or lugs received therein with positive fit, e.g. in dovetail fashion. With the two-groove arrangement illustrated, however, shallower sliders can be used without any risk of canting so that free displaceability of the unclamped slider remains assured.

The bar 10 or 110 may be provided with a detachable head or finial, engaging the uppermost screw 16 as disclosed and claimed in my prior U.S. Pat. No. 3,502,293, which can be readily removed to allow for the insertion or withdrawal of the slider or sliders.

According to another feature of my invention, the slider may be designed to overlie a part of each bracket so as to come to rest directly on the brackets to lock them in position in the absence of an intervening shelf. This has been illustrated in FIG. 5 where brackets 213*a*, 213*b* have enlarged bases 231*a*, 231*b* in broad surface contact with the faces 11*a*, 11*b* of the standard 10 (cf, FIG. 3), with bayonet lugs 232*a*, 232*b* extending from these bases through the slits 12*a*, 12*b* of the standard. A slightly modified slider 220, carrying a thumb screw 222 as a locking means, partly overlies the bases 231*a*, 231*b* to hold the brackets in their engaged position. With this arrangement it is possible to place a load, such as a box or a radio receiver, directly on the brackets without fear that they may be loosened from the standard.

Naturally, a similar result could be obtained in the assemblies of FIGS. 1 –4 by simply enlarging the slider without modifying the brackets. In such a case the guide grooves for the slider could also be disposed outwardly of the slits 12*a*, 12*b*.

I claim:

1. A shelf mounting comprising a standard with a front surface forming two flanking vertical faces and an intervening vertical face angularly adjoining one another, said flanking faces being provided with respective grooves lying in rearwardly converging vertical planes; a pair of divergent arms projecting substantially horizontally from said flanking faces; and a slider vertically movable along said flanking faces; and a

slider vertically movable along said standard above said arms, said slider having lugs guided in said grooves and being provided with a locking screw engageable with said intervening face for arresting said slider in contact with the upper surface of a shelf resting on said arms.

2. A shelf mounting as defined in claim 1 wherein said flanking faces are provided with slits respectively receiving said arms.

3. A shelf mounting comprising a standard with a front surface forming two flanking vertical faces and an intervening vertical facing angularly adjoining one another, said flanking faces being provided with slits and with grooves offset from said slits, said grooves lying in rearwardly converging vertical planes; a pair of divergent arms received in said slits and projecting substantially horizontally from said flanking faces; a slider vertically movable along said standard above said arms, said slider having lugs guided in said grooves; and locking means for arresting said slider in contact with the upper surface of a shelf resting on said arms.

4. A shelf mounting as defined in claim 3 wherein said slider partly overlies said arms for retaining same in position in the absence of said shelf.

5. A shelf mounting as defined in claim 4 wherein said arms are provided with enlarged bases in broad-surface contact with said flanking faces.

6. A shelf mounting as defined in claim 5 wherein said locking means comprising a screw on said slider engageable with said intervening.

7. A shelf mounting comprising a standard with a front surface having a slit closed at the bottom; a shelf-supporting arm removably lodged in said slit and projecting substantially horizontally from said standard; a slider vertically movable along the said standard above said arm; and locking means for arresting said slider in contact with the upper surface of a shelf resting on said arm, said slider partly overlying said arm for retaining same in position in the absence of said shelf.