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SUPPORTING POST FOR FIXTURES

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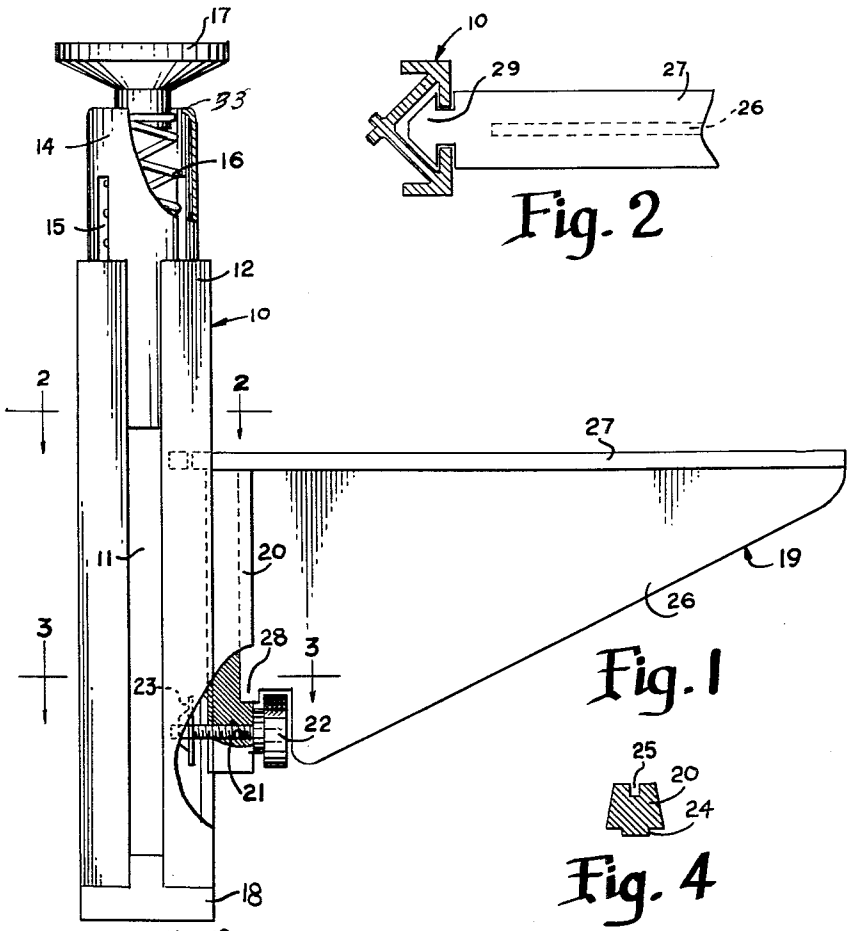


Fig. 1

Fig. 2

Fig. 4

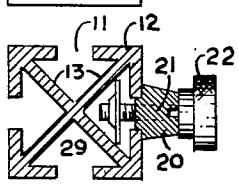


Fig. 3

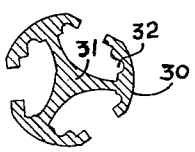


Fig. 5

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SUPPORTING POST FOR FIXTURES

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Original application Mar. 6, 1958, Ser. No. 719,653, now Patent No. 2,940,718, dated June 14, 1960. Divided and this application June 19, 1959, Ser. No. 821,591

3 Claims. (Cl. 248—356)

This invention relates to supporting posts for adjustably supporting various items such as brackets, cabinets, shelves, panels, electric lamps and the like.

This application is a division of my prior application for Fixture Support, Serial No. 719,653, filed March 6, 1958, now Patent No. 2,940,718.

The principal object of the present invention is to provide a supporting post for such items as are mentioned above, which can be quickly and easily installed where desired, without the use of tools, and which will support fairly substantial weights.

A further object of the invention is to provide such a post which can be easily removed for storage or for installation in another location.

Another object is to provide such a post, the principal part of which can be manufactured by extrusion.

A still further object is to provide such a post of sturdy construction, the parts of which can be easily constructed and assembled.

These objects are attained by means of a post of unique cross-section, in which longitudinally extending slots are formed in the outer wall thereof and internal webs connect the outer wall portions. They are also attained in part by a unique spring pressed plunger fitting into one end of the post and supported and guided by the walls and transverse webs of the post.

In the drawings accompanying the application:

Figure 1 is a side elevational view of a post and bracket embodying the invention, parts being broken away to show the construction thereof;

Figure 2 is a fragmentary cross-sectional view taken on substantially the line 2—2 of Figure 1;

Figure 3 is a fragmentary cross-sectional view taken on substantially the line 3—3 of Figure 1 with the bracket removed;

Figure 4 is a cross-sectional view of the supporting block; and

Figure 5 is a cross-sectional view of a different form of post.

Referring now to the drawings in more detail, and particularly to Figures 1 to 3 thereof, there is shown a supporting post 10 which is an elongated metal extrusion, preferably aluminum, of the cross-section shown in Figures 2 and 3. The outside walls are slotted at 11 on all four sides, leaving corners 12 which are interconnected by diagonal webs 13.

At the top of the post is a cylindrical plunger 14 partially closed at the top by an annular flange 33 which is provided with four vertical slots 15 equidistantly spaced to receive the webs 13. The portions of the side wall of the plunger between the slots are located within the spaces inside the side walls of the post and between the webs 13. A coiled spring 16 is interposed between the upper ends of webs 13 and the annular flange at the top of the plunger. A rubber pad 17 is attached to the upper end of the plunger.

Another rubber pad 18 is attached to the bottom of the post 10.

The post 10 is intended to be supported in a vertical position between two fixed surfaces such as the floor and ceiling of a room. The post is cut to a length shorter than the distance between these surfaces, but the overall length of the post 10, spring 16, plunger 14 and pads 17 and 18 is greater, so that the pad 17 can be placed against the upper fixed surface in the desired location, the spring 16 compressed by pushing upward on the post and the lower pad of the post placed directly below the upper end. When the post is released the spring expands, forcing the pad 18 against the lower fixed surface and the upper pad 17 against the upper surface, securely fastening the post in place.

On the post is a bracket structure for supporting a shelf or the like. It consists of four parts, a bracket 19, a block 20, a bolt 21 having a knurled head 22, and a nut 23.

The block 20 is preferably an aluminum extrusion of the cross-section shown in Figure 4. The block has an elongated rib 24 on one side and a groove 25 in the opposite side. The block is drilled to receive the shank of the bolt 21.

The nut 23 is drilled or punched and tapped to receive bolt 21. The nut is narrower in width than the width of slots 11 in the post 10 but is longer than the distance between the webs 13 just inside the side walls of the post 10.

Bracket 19 is composed of a vertical web 26 and a horizontal upper flange 27. The web 26 is generally triangular but is cut away at the lower corner adjacent the post, as shown in Figure 1, to receive the head 22 of the bolt. Preferably the web 26 extends downward at 28 between the head 22 of the bolt but does not rest thereon. The purpose of this will appear presently.

The flange 27 is extended beyond the end of the web adjacent the post, and the edges are slotted to form a T-shaped end 29.

To attach the bracket structure to the post the nut 23 is loosened on bolt 21, long way of the nut aligned with the appropriate slot 11, and the nut passed through the slot, with rib 24 located in the slot. The upper end of block 20 is located at the proper height and bolt 21 is rotated. Any tendency for the nut to turn appreciably is prevented by the ends thereof striking the webs 13 in post 10, so that the bolt and nut securely clamp the block 20 in position when the bolt is tightened.

The bracket 19 is then turned so that the web 26 is horizontal and the T-shaped head 29 is inserted in slot 11 above block 20. The bracket 19 is then rotated 90° to a position wherein the web depends downwardly and the head 29 is located inside of the side walls of the post on opposite sides of the slot 11. The bracket is then lowered until the flange 27 rests on the top of block 20 and the end of the web 19 adjacent the post 10 is received in groove 25 in block 20.

The bracket structure can easily be adjusted to any desired height on the post by simply loosening bolt 21 and sliding block 20 up or down. It is also readily removable by simply turning the bolt until the long dimension of the nut is aligned with the slot and can be pulled through it.

The only strain on the bolt 21 is the tension created therein by the tightening of the nut and what slight shearing stress is created by a straight downward load. The T-shaped projection 29 takes substantially all of the load placed on the bracket.

Figure 5 illustrates a somewhat different cross-sectional shape for the post. It comprises a cylindrical side wall 30 connected by webs 31. The side wall 30 of the post

is relieved at 32 to receive electrical wiring for lamps either attached to the post or placed on a shelf, thus eliminating any interference with the T-shaped projections on the bracket structures attached to the post.

From the foregoing it will be seen that the present invention provides a simple, easily installed and adjusted fixture support that is remarkably strong, yet is easily fabricated.

The scope of the invention is indicated in the appended claims.

I claim:

1. A fixture support comprising an upright post comprising a segmental outer wall, the segments of which are separated by longitudinally extending slots, said segments being connected by an internal transverse web, a tubular plunger having one end slidable longitudinally in said post, said plunger having slots in the side wall thereof extending from the end inside of the post partway toward the outer end of said plunger, said slots slidably receiving said web, an abutment adjacent the outer end of said plunger extending radially inwardly from the outer walls

thereof, and a spring in said plunger engaging said abutment and the adjacent end of said web for biasing said plunger longitudinally outwardly from said web.

2. A fixture support as defined in claim 1 wherein a pad is partially contained within said spring and extends outwardly beyond the outer end of the plunger.

3. A fixture support as defined in claim 1 wherein the outer wall of said post comprises at least three segments and said segments are connected together by internal transverse webs intersecting adjacent to the center of the post.

References Cited in the file of this patent

UNITED STATES PATENTS

1,548,053	Mead	Aug. 4, 1925
1,820,950	Schulstadt	Sept. 1, 1931

FOREIGN PATENTS

779,452	France	Apr. 5, 1935
1,013,702	France	Aug. 4, 1952