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FIXTURE FOR SUPPORTING AND TRAVERSING  
DRAPES AND THE LIKE  
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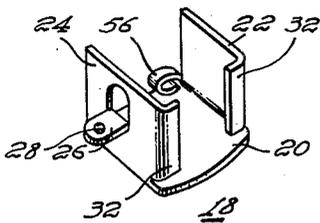
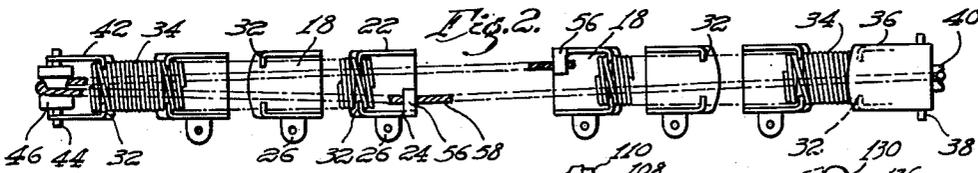
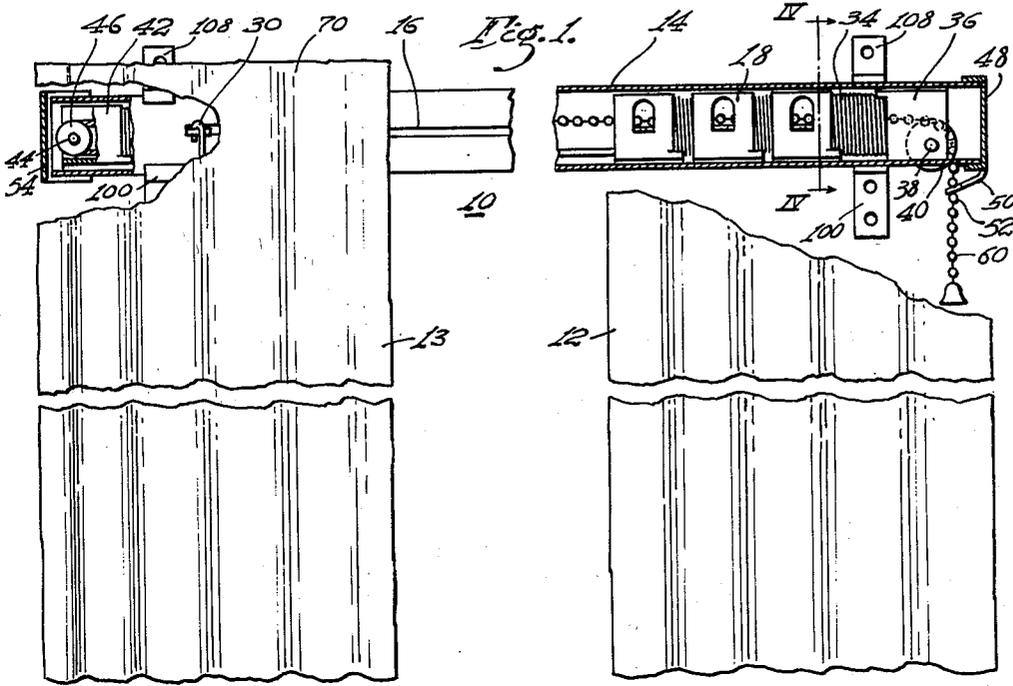


Fig. 3.

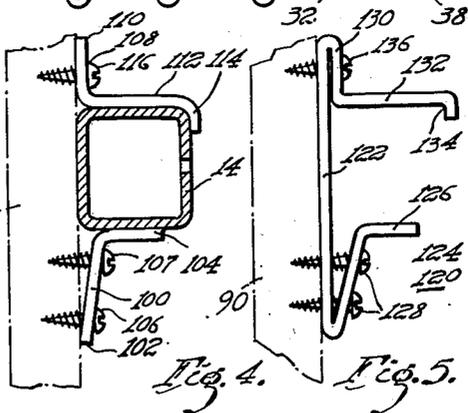


Fig. 4.

Fig. 5.

WITNESSES:

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## FIXTURE FOR SUPPORTING AND TRAVERSING DRAPES AND THE LIKE

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3 Claims. (Cl. 160—343)

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This invention relates to fixtures suitable for supporting drapes, curtains and the like and for traversing them uniformly to open and closed positions.

It is desirable to support movable drapes, curtains and the like in such a manner that they are folded into similar neat folds in both open and closed position, or in any intermediate partly open position. Furthermore, the mechanism for traversing the drapes should be simple in construction, easy to operate and reliable. It is well known that many drapery fixtures do not meet these requirements, since they often catch or bunch, requiring considerable tugging to free the drapes or, on occasion, the operator must mount a ladder to untangle jammed parts. The prime object of this invention is to provide a drapery fixture capable of satisfactorily meeting these requirements.

Another object of this invention is to provide a fixture for supporting and traversing drapes, curtains and the like uniformly by means of a single operating element.

A further object of the invention is to provide a fixture for traversing drapes, curtains and the like easily without binding or bunching of the drapes.

A still further object of the invention is to provide supporting brackets for supporting a tubular fixture with an overhang at any desired location.

Other objects of the invention will in part be obvious and in part appear hereinafter.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description and drawing, in which:

Figure 1 is a broken view in elevation partly in section,

Fig. 2 is a top plan view showing the arrangement of the operating elements of the fixture,

Fig. 3 is a view in perspective of one of the slider elements of the fixture,

Fig. 4 is an enlarged sectional view taken on line IV—IV of Fig. 1 showing the supporting bracket, and

Fig. 5 is a side elevation view of a modified form of supporting bracket.

Referring to Fig. 1 of the drawing, there is illustrated the fixture 10 arranged for supporting and traversing two drapes 12 and 13 to open and closed position. The fixture 10 comprises a tubular member 14 of non-circular cross section, preferably having at least two flat sides, and more specifically being of polygonal cross

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section. It has been found that the square tube shape shown in the drawing is particularly suitable. The tube 14 is provided with a longitudinal slot 16 in the front vertical face extending from substantially one end of the tube to the other. Disposed within the tube 14 are a plurality of slider members 18 fitting closely, but freely for relatively easy longitudinal movement. A right-hand group of slider members supports the right drape 12 and the left drape 13 is supported on a corresponding left-hand group of slider members. The number of slider members 18 is determined by the number of points of support deemed desirable for each of the drapes 12 and 13. Furthermore, if the drapes in open or gathered position are to have a large number of folds, then a proportionately large number of slider members will be employed. If the drapes are to fold with a few relatively large folds, then a smaller number of slider members may be employed.

Referring to Fig. 3 of the drawing, there is illustrated in more detail one of the slider members 18. Each slider member comprises a flat bottom 20 and two flanged sides 22 and 24 fitting at least three of the sides of the square tube closely but slidably. The front flanged side 24 is provided with a lug 26 formed by punching and striking out a portion of the side. The lug is perforated at 28 for supporting one drape hook 30. The lug 26 is so proportioned and positioned as to slide freely in the longitudinal slot 16 preferably, though not necessarily, without contacting the sides of the slot. The weight of the drape is transmitted through the lug 26 to the flanges 22 and 24 and bottom 20 which butt against the walls of the tube 14 without binding. The flat sides of the tube cooperating with the bottom 20 and sides 22 and 24 resist twisting of the slider under the weight of the drape. The sliders will reciprocate easily in the tube even under heavy loads.

Each slider member 18 is provided with a pair of inwardly projecting tab means 32 for fitting between the helices of an extension helical spring 34. In fitting between the helices the tab means 32 separate them a distance equal to the thickness of the tabs. It has been found that it is necessary to have the tabs 32 fit into the spring 34 at two diametrically opposite portions, in order to prevent kinking or warping of the spring with a resultant undesirable binding action occurring. The spring 34 in unstretched condition is of a diameter slightly less than the distance between the slider walls 22 and 24. The

slider members may be slipped readily over the spring 34 between helices at regular intervals prior to placing the sliders and coil spring within the tube 14.

One end of each coil spring 34 is held in a fixed position within the tube 14 by a terminal member. The assembly of the sliders, coil springs and terminal members is shown in detail in Figure 2 of the drawing. At the right-hand end of the fixture is a terminal member 36 which conveniently is an inverted slider member without a lug, though the terminal member may take any other desirable configuration. The tab means 32 on the terminal member 36 passes between diametrically opposite helices of the spring with at least two turns of the spring being engaged. The terminal member 36 is fixed by the pin 38 carrying the pulley 40, the pin passing through the walls of the tube 14 thereby fixing it with respect to the tube. At the left end of the tube is another terminal member 42 which may be similar in shape to a slider member, but having no tab thereon, the left end terminal member being fixed by the pin 44 passing through it and the walls of the tube. The pin 44 carries a second pulley 46.

The right-hand open end of the tube 14 is provided with a closure 48 which may be affixed to the tube by means of a machine screw or other suitable retainer. The closure 48 has a depending lip 50 provided with a wedge shaped slot 52 whose use will be described hereinafter. The left-hand end of the tube 14 may be closed by a U-shaped cap 54 conveniently held in place by the pin 44 passing through the legs of the U. The pins 44 and 38 may be cotter pins.

Referring to Fig. 2 of the drawing in particular, there is illustrated the flexible cord mechanism for operating both right and left-hand groups of the slider members. The innermost sliders attached to each of the coil springs 34 are provided with a clamping portion 56 suitable for engaging an operating cord 58. The end of the cord 58 is attached to the innermost slider member 18 on the right-hand spring, then passes through the left-hand spring 34 over the pulley 46, then returns within the same coil spring for engagement at the clamping portion 56 of the innermost slider member on the left-hand spring and then passes through the right-hand spring to the pulley 40. It terminates as a beaded chain 60. The chain 60 is adapted to be held by engagement of the beads in the tapered slot 52 in the lip 50 in any position of adjustment.

It will be apparent that on disengaging the beaded chain 60, as shown in Fig. 1, from the slot 52 and pulling downwardly on the chain, the cord 58 will pull the terminal slider 18 attached to the left-hand spring thereby extending the entire spring. Each of the sliders in the left-hand group will move in accordance with the extension of the spring, in an amount proportional to their distance from the terminal 42, and, accordingly, the lugs 26 will be separated an equal distance from each other and thereby the left-hand drape 13 will be spread into an open position. The end of the cord 58 passing over the pulley 46 will also be moved and will pull on the end slider 18 attached to the right-hand spring to extend the spring and similarly separate each slider member of the right-hand group, thereby spreading the right-hand drape 12 a similar amount. The chain 60 may be pulled any selected distance and then fixed in such position by passing the beaded chain into the wedge slot 52. If it is desired to

open the drapes, the chain 60 is simply pulled and swung clockwise out of the wedge slot 52 to be released and the contracting tendency of the springs will pull each set of sliders to the ends of the tube, thereby gathering the drapes.

The traversing fixture shown in Fig. 1 has proved to be of an extremely simple and reliable construction. In one test, the mechanism was operated 8,000 times, which is an amount equal to better than 10 years normal service, with complete satisfaction.

Because of the flat sided cooperating construction of the tube 14 and slider members 18 and the resulting feature of easy longitudinal sliding without twisting or binding even with heavy drapes, the drape supporting lugs 26 extend laterally thereby making a compact fixture. Accordingly, only a short stiff heading 70 on the drapes 12 and 13 will be sufficient to conceal completely the tube 14 when the drapes are drawn. Furthermore, the exposed portions of the fixture 10 consist of only the tube 14 and chain 60, thereby it is not inartistic even when the drapes are opened. The fixture is easily cleaned since it does not gather dust readily.

It will be appreciated that while the mechanism shown in Figs. 1 and 2 is adapted for handling two drapes or curtains or the like simultaneously, it may be desirable to employ a similar mechanism for opening and closing a single curtain, for example a shower curtain. In that case, only a single unit corresponding for example, to the right half of Fig. 1 alone, comprising a single spring 34 and the desirable number of slider members 18 will be placed within a tube. Furthermore, for use in showers or the like, the longitudinal slot 16 need not be placed in a vertical or side surface of the tube 14, but may be located so that the slot is at the bottom thereof.

Referring to Fig. 4, there is illustrated a support for holding the tube 14 of the fixture in position on a wall 90, window frame or the like. The support comprises cooperating lower bracket 100 and upper bracket 108. The lower bracket 100 is provided with a vertical arm 102 which may be fastened by means of screws 106 and 107 to the wall 90. A horizontal flange 104 is formed at an angle of greater than 90° to the vertical arm 102. An angle of 100° to 105° has been found satisfactory. The bracket 100 is initially fastened by the screws 106 and 107 to a position where the flange 104 is horizontal.

The upper bracket 108 comprises a vertical portion 110 to be fastened against the wall 90, a right angled horizontal arm 112 fitted to extend over the top side of tube 14, and a lip 114 to clamp over the edge to hold the tube 14 when screw 116 is tightened.

A method of employing the support is to fasten the lower bracket 100 to the wall 90 to a position where the flange 104 is horizontal, the tube 14 being then rested on it, and then to fasten the upper bracket 108 in place by screw 116. The lowermost screw 106 will have but little play, while screw 107 will have considerable travel before it is snug. By driving screws 107 and 106 the bracket 100 will be drawn in to the wall 90 and the horizontal flange 104 will cam up the tube 14 tightly against bracket 108.

Fig. 5 of the drawing illustrates a modified form of unitary support 120 functioning similarly to that of Figure 4. The support 120 comprises a back portion 122 to fit against a wall or frame. A lower bracket portion is formed from an up-

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wardly bent portion 124 disposed at an angle of 10° to 20° to the back 122 and carrying a horizontal flange 126 forming an angle of from 100° to 110° thereto. Screws 128 are applied to the bent portion 124 both to fasten the support to the wall as well as to draw the bent portion towards the back portion. From the upper end of the back portion 122 is an upper bracket portion comprising a parallel downwardly extending vertical portion 136 having a horizontal arm 132 and a lip 134 for holding a tube in place when screw 138 is applied to the vertical portion 136.

It will be apparent that the angle between flange 104 and arm 102 or flange 124 and arm 126 in Fig. 5 may be varied within a considerable limit—to as much as 135°. Also, the bracket 108 in Fig. 4, or the upper horizontal arm 132 in Fig. 5, may be shaped to conform to the shape of the tube 14 if it has other than a square section.

The tube 14 may overhang the supports of Figs. 4 and 5. This enables the drapes 12 and 13 to completely conceal a window or other opening.

Since certain changes may be made in the above apparatus and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matters shown in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim as my invention:

1. In a fixture for traversing drapes and the like, in combination, a tube provided with a longitudinal slot, a single extension helical spring disposed within the tube, means for fixing one end of the helical spring adjacent one end of the tube, a plurality of slider members disposed about the helical spring and fitting the interior of the tube with a relatively easy longitudinal sliding fit, each slider member having a bottom portion conforming to and resting on the tube and flange portions conforming to and fitting the sides of the tube for carrying the load of a drape, each slider member having a pair of inwardly extending tab means passing between and detachably affixed to the helices of the spring at two points on diametrically opposite portions thereof, the tab means providing for movement of the slider member in correspondence with the expansion and contraction of the helical spring, a lug attached to each slider member extending through said slot for supporting a flexible drape member for longitudinal motion, and a flexible pull member attached to a slider member nearest the free end of the helical spring.

2. The fixture of claim 1 wherein the tube has a polygonal cross-section and the bottom

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and the flange portions of the slider members are of similar polygonal cross-section.

3. A fixture comprising, in combination, a tube having two opposed flat sides and provided with a longitudinal slot, two extension helical springs disposed within the tube, one spring being adjacent to and attached to one end of the tube and the other spring attached to the other end of the tube, means adjacent each end of the tube for fixedly attaching an end of the spring adjacent said end, a plurality of slider members disposed about each helical spring, the slider members having wall portions fitting the major cross-section of the interior walls of the tube closely with a relatively easy longitudinal sliding fit, the wall portions of the slider members fitting against and cooperating with the flat sides of the tube to withstand twisting, each slider member having a pair of inwardly extending tab means passing between and detachably affixed to the helices of the spring at two points on diametrically opposite portions thereof, the tab means connecting each slider member to the spring for movement in correspondence with the expansion and contraction of the spring, a lug attached to each slider member extending through said longitudinal slot, a flexible member connected to the terminal slider member adjacent the free end of each spring, a pulley disposed at one end of the tube, and the flexible member passing from the point of connection to the terminal slider on the spring fixed to the end of the tube opposite the pulley, over the pulley and returning, thence to the terminal slider on the spring adjacent the pulley and thence to the opposite end of the tube to a point outside the tube whereby a pull on the flexible member will operate the springs simultaneously.

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