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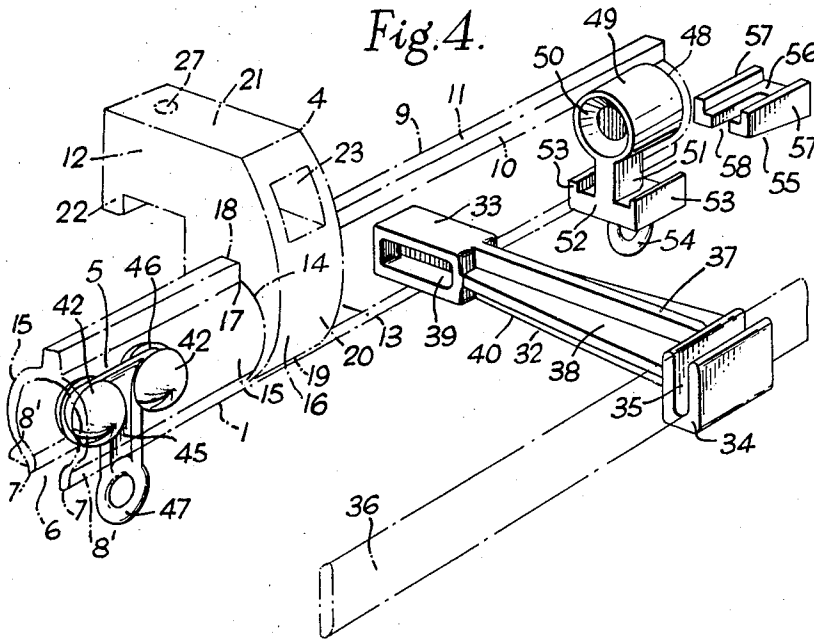
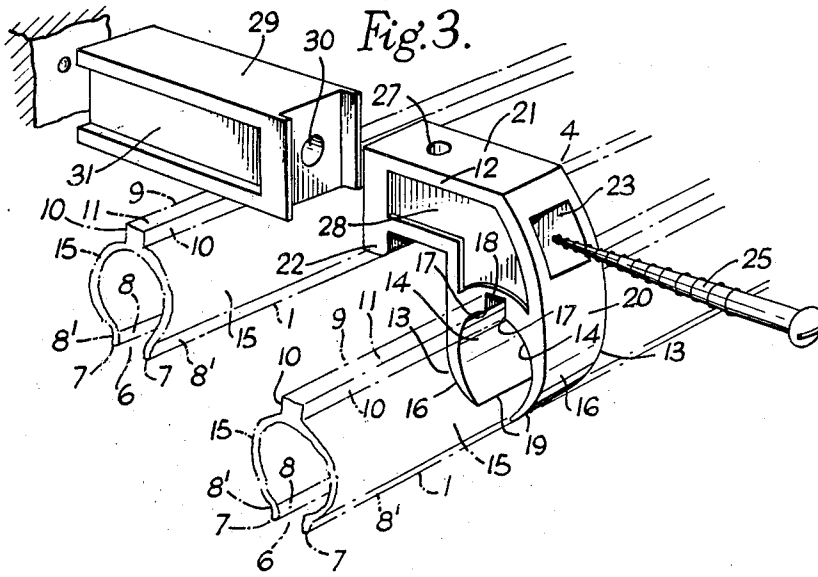
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MEANS FOR SUSPENDING CURTAINS

Filed Oct. 28, 1957

3 Sheets-Sheet 2



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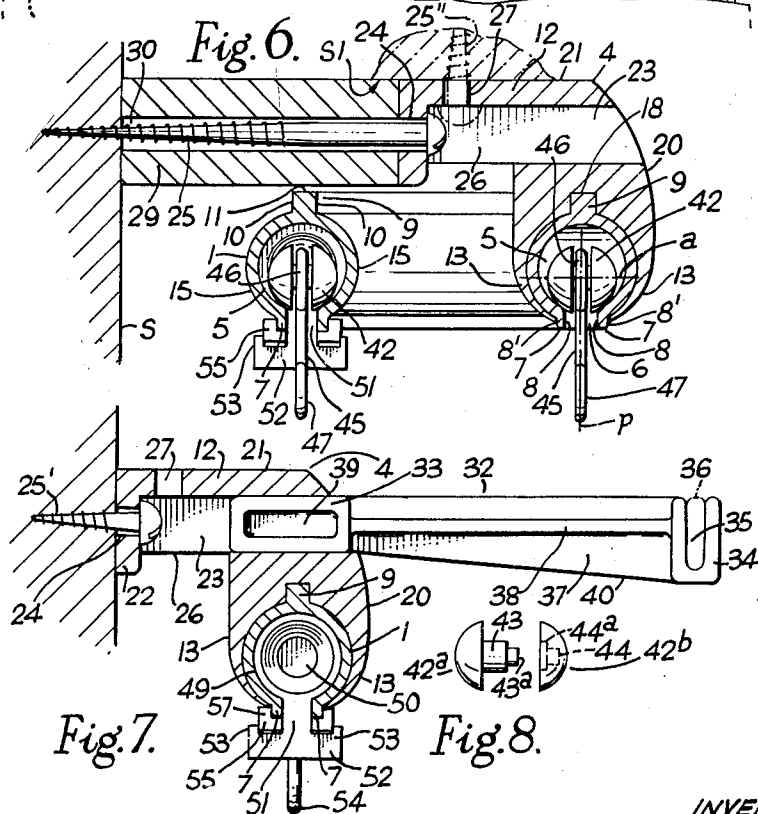
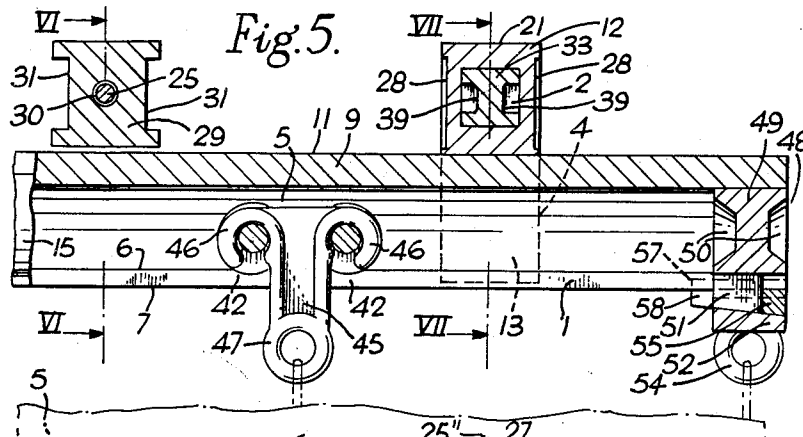
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1

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MEANS FOR SUSPENDING CURTAINS

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2 Claims. (Cl. 16—94)

This invention relates to means for suspending curtains, and has reference particularly to curtain fittings of a previously proposed form comprising, in combination, a cylindrical tubular track having a longitudinal slot therein, said track being of a deformable material enabling it to be flexed longitudinally and having a downwardly protruding external reinforcing rib along each side of the said slot, runners each consisting of a pair of peripherally grooved spherical rollers arranged to run in tandem within and along the tubular track, these rollers being connected by an element having portions engaged in the grooves in the two rollers and a depending curtain-attachment portion projecting down through the slot, supporting brackets for the track each comprising a pair of jaws arranged to embrace opposite sides of the track, and end stop elements in the form of cylindrical pieces dimensioned to fit and adapted to be secured within the tubular track.

The object of the present invention is to introduce general improvements into a curtain fitting of the form referred to, as will be hereinafter described, the primary aim being to provide a fitting which is light in weight, robust and silent in use.

According to this invention the cylindrical tubular track of the improved fitting is formed at a location opposite to the longitudinal slot therein with an upwardly protuberant and longitudinally extending external reinforcing rib, and the fitting is characterised in that each of the track supporting brackets consists of a one-piece component having a pair of integral jaws and a groove therein to receive the said upwardly protuberant reinforcing rib, the bracket being adapted to be mounted upon the track by sliding it on to the same from one end thereof.

Thus, as will be appreciated, each supporting bracket is slidably engageable with the tubular track and when once mounted upon the latter can be slid therealong into the desired position.

In order that the invention may be more clearly understood and readily carried into practical effect, specific examples of the various parts of the improved curtain fittings will now be described with reference to the accompanying drawings, wherein,

Figure 1 is a purely schematic plan view of one arrangement of a complete curtain fitting constructed in accordance with this invention, the arrangement including overlapped portions of tubular track, and the figure depicting in a general way supporting brackets for this track, extensions of said brackets and valence brackets,

Figure 2 is a detail plan view, partly in section, of the central portion of the said fitting,

Figure 3 is a perspective view illustrating one of the track supporting brackets and an associated bracket extension,

Figure 4 is a fragmentary "exploded" perspective view showing one of the runners, a valence bracket and an end stop element together with its longitudinally recessed wedge,

2

Figure 5 is a longitudinal sectional view taken on the line V—V of Figure 2,

Figures 6 and 7 are cross-sectional views taken on the lines VI—VI and VII—VII of Figure 5, and

Figure 8 shows the separate halves of one of the two spherical rollers of a runner.

Like parts are designated by similar reference characters throughout the drawings.

Referring to the drawings, the tubular track or each separate portion thereof, as the case may be, consists of a length of extruded plastic material of substantially cylindrical form, the material being of such a nature as to be deformable, thereby enabling the track either to be flexed longitudinally or, as shown in Figure 1, to be set into a curve such as those indicated at 2 or that indicated at 3, according to requirements.

The use of a deformable plastic material for this purpose also has the advantage of facilitating the setting up of the tubular track 1 and its retention by supporting brackets 4. Moreover, the movement of runners 5 in the track is very quiet. In the bottom of the cylindrical track is formed a parallel-sided longitudinal slot 6 adjacent to each side of which the track is formed with a downwardly protruding and rounded external reinforcing rib 7 having vertical sides 8 and 8' (see Figures 3 and 6). At a location diametrically opposite to the longitudinal slot 6 therein the tubular track 1 is also formed with an upwardly protuberant and longitudinally extending external reinforcing rib 9. The rib 9 is of square cross-section, having vertical sides 10 and a horizontal flat top surface 11. The width of the rib 9 is reduced to a minimum, compatible with reasonable strength.

The uniformly spaced brackets 4 by means of which the tubular track 1 is supported in position are injection moulded. Each such bracket is, as depicted more clearly in Figures 3 and 6, generally of angular form—comprising a horizontally disposed upper portion 12 the outer end of which abuts at substantially a right angle a vertically disposed lower portion having a pair of pincer-shaped integral jaws 13 defining a substantially cylindrical cavity having its longitudinal axis disposed substantially perpendicular to the vertical plane of the longitudinal axes of the horizontally disposed upper and vertically disposed lower portions of the bracket. The jaws are curved, their inner concave surfaces 14 conforming closely to the outer convex surfaces 15 at opposite sides of the tubular track 1. The outer surfaces 16 of the jaws 13 are also convex, and the jaws are so shaped that they gradually taper in the downward direction. The upper ends of the opposed concave surfaces 14 of the jaws define the lower edges 17 (Figure 3) of a square section groove formed in the bracket 4, this groove being complementary to, and enabling the bracket to seat upon, the upwardly protuberant reinforcing rib 9 extending along the top of the tubular track 1. When the bracket 4 is so seated as illustrated in Figures 6 and 7, the depending jaws 13 embrace the opposite sides of the track 1, the straight lower extremities 19 of the jaws extending down practically to the outer sides 8' of the downwardly protruding ribs 7 flanking the longitudinal slot 6 in the track. The front surface 20 of each supporting bracket 4 is outwardly curved continuously right from the flat horizontal top 21 of the bracket to the lower edge of the frontal jaw thereof. The horizontally disposed upper portion 12 of each bracket extends rearwardly for some distance beyond the depending jaws 13 and terminate in a vertically disposed square back pad 22. Extending into the said upper portion 12 from the uppermost end portion of the vertically disposed portion of the bracket is a longitudinally extending cavity 23 of square shape in cross-section (see Figure 5), this cavity terminating

3

at its rear end in front of the back pad 22 and having an entrance from the curved front surface 20 of the vertically disposed portion of the bracket. Means terminating in the interior hollow of the cavity 23 are provided for attaching the bracket to a fixed surface. A small circular hole 24 of a diameter sufficient to receive a securing screw 25 (Figure 6) or 25' (Figure 7) is provided centrally in the back pad 22. The screw 25 or 25' requires to be inserted horizontally through the cavity 23 before being passed through the hole 24 for screwing home to secure the bracket 4 against a vertical surface S. In the location of the underside of the upper portion 12 of the bracket 4 located between the front of the back pad 22 and the back of the rear one of the jaw 13, there is formed an opening 26 providing access to the interior of the cavity 23. Opposing this opening, there is a small circular hole 27 formed in the top wall of the cavity i.e. in the top 21 of the bracket. A screw 25 inserted vertically upwards through the opening 26 and passed through the hole 27 can be screwed home to secure the bracket against a horizontal surface S (Figure 6). In this way there are provided alternative ways of securing the bracket. The opposite mainly flat sides of the latter may, as shown, be recessed at 28 such wise as to enhance the appearance of and lighten the weight of the unit.

A track-supporting bracket 4 may, as illustrated in Figures 2, 3 and 6, be extended by placing against its back pad 22 the front end of an injection moulded plastic extension 29 in the form of a mainly solid elongated block which is centrally bored from end to end, the bore 30 being disposed to register with the screw hole 24 in the back pad. The extension block 29 may, as shown more clearly in Figure 3, be recessed at the sides, as indicated at 31, for the sake of appearance and lightness.

For insertion slidably into the horizontal cavities 23 formed in the upper portions 12 of the supporting brackets 4 there are provided injection moulded unitary valence brackets 32. Each such valence bracket comprises a square-section inner end portion 33 so dimensioned as to be a force fit in a cavity 23 in a track-supporting bracket. At its outer end the valence bracket is formed with a transversely extending vertical portion 34 which is deeply grooved at 35 to receive a valence rail 36, the groove extending at right angles to the median line of the bracket 32. The said inner and outer end portions are connected by integral and intersecting vertical and horizontal webs 37 and 38 respectively which gradually taper from the grooved outer end portion 34 towards the square-section inner end portion 33 the opposite sides of which latter are recessed at 39 for the sake of appearance and lightness. As will be appreciated, the webbed shank of each valence bracket 32 is cruciform in cross-section. As will be appreciated from a consideration of Figure 7, the sloping lower edge 40 of the vertical web 37 prevents a valence bracket 32 from being pushed too far into the cavity 23 of a track-supporting bracket 4.

Each of the runners 5 in this example is made up of injection moulded components. It comprises two spaced spherical rollers 42 (Figure 2) arranged to run in tandem along the tubular track 1. Each of these rollers 42, made up of two initially separate complementary halves 42a and 42b (see Figure 8) pressed and held together by a force fit, is in the form of a ball having, as shown in Figure 6 a diameter slightly less than that of the inside of the tubular track 1. Each of the halves 42a and 42b consists of a segment of a sphere. Formed centrally and integrally on the flat face of one half 42a is a cylindrical axle-like spigot 43 the outer end portion 43a of which is of reduced diameter, whereas formed in the opposed flat face of the complementary half 42b is a circular hole or socket 44 an outer portion 44a of which is dimensioned to receive the outer end of the largest portion of the spigot 43 whilst an inner portion

4

of the hole or socket is of reduced diameter to accommodate the reduced outer end portion 43a of the said spigot. When the complementary halves are pressed together to complete the spherical roller 42, a peripheral groove is left around the latter. The two grooved spherical rollers 42 of each runner 5 are connected together by a common curtain-attachment element 45 in the form of a relatively thin injection moulded plate of T-form. As depicted in Figure 5, the plate 45 of each runner 5 comprises, in effect, two suitably spaced centrally apertured tyre-like bearing portions 46 for the spigots 43 (axles) of a pair of the composite spherical rollers and a centrally apertured eye portion 47 located beneath and centrally between the bearing portions 46, all three portions being inter-connected by a thin but suitably ribbed web constituting the major portion of the plate 45. The eye portion 47 is, of course, engageable by a curtain suspending element of any conventional form. To fit a roller 42 upon the plate 45 the two halves 42a and 42b of the roller, initially separated, are first arranged at respectively opposite sides of the plate, whereupon the spigoted half 42a is inserted through a bearing portion 46 and the protruding end 43a of the axle-like spigot is pressed into the hole or socket 44 in the complementary half 42b.

When a runner 5 is positioned in the tubular track 1, by insertion of the rollers 42 thereto from one of its open ends, these rollers are snugly located in the track interior with their lower surfaces resting and riding on the correspondingly shaped internal wall portions of the track defining the slot 6 therein. The runner 5 is accordingly in the nature of a small truck running along the inside of the tubular track. As will be seen in Figure 6, there is a clearance between the depending portion of the curtain-attachment element 45 and the sides of the slot 6, so that the runner can be tilted or rocked to a limited extent from side to side. This rocking movement takes place easily and smoothly by virtue of the spherical seating of the surfaces of the rollers. In this connection it will be understood that the axes *a* of the spherical rollers 42 are normally disposed horizontally at right angles to a vertical plane *p* extending centrally through the longitudinal slot 6 (see Figure 6), but are inclined with respect to this plane when the runners are tilted or rocked. The convex surfaces of the spherical rollers 42 ensure that the runners travel smoothly even when tilted or rocked laterally. The construction is, therefore, such as to enable a suspended curtain such as that indicated at C in Figure 5 to be easily drawn, without jamming of the runners even in the event of the curtain being pulled either forwards or backwards out of the vertical planes in which it normally hangs. Thus, the drawing of a curtain without the assistance of a draw cord, and by a person awkwardly positioned, for example by intervening furniture, is facilitated.

Finally, a specific example of a plastic end stop element, indicated at 48, will now be described. One of these elements 48 is normally intended to be engaged and secured in each of the opposite ends of the track 1 or each separate length thereof, as the case may be, although similar elements may be secured in the track at any desired intermediate positions. Each end stop element 48 is injection moulded and comprises a main cylindrical portion 49 of a cross-sectional dimension which conforms with the internal diameter of the tubular track 1. For the sake of lightness, the opposite ends of the cylindrical portion 49 are fairly deeply recessed at 50. Depending vertically from one end of the main cylindrical portion 49 is a portion 51 of flat section adapted to extend down through the longitudinal slot 6 in the track (see Figures 4 and 7). Moulded integrally with the lower end of the vertically depending portion 51 is a horizontally disposed wedge support 52 of channel form in cross-section. That is to say, this support is in the form of a mainly flat small tray having upstanding

5

longitudinal sides 53. Moulded integrally with the underside of the wedge support 52 is an eye 54 for engagement with a curtain-suspending element. Insertible longitudinally into the tray 52, between the upstanding sides 53 thereof, is an injection moulded plastic wedge 5 opposite side of said uppermost end portion from the side thereof abutting the horizontally extending member and extending substantially horizontally into the horizontally extending member, and a valence bracket having one end portion thereof engaged in the socket and a slot disposed in an opposing end portion for supporting a valence.

I claim:

1. Apparatus for suspending curtains comprising a support bracket having a substantially vertically extending member and a substantially horizontally extending member the longitudinal axes of which intersect at substantially a right angle in a vertical plane, the uppermost end portion of the vertically extending member abutting on one side with one end portion of the horizontally extending member adjacent the point of intersection of their longitudinal axes, the lowermost end portion of the vertically extending member having a pair of integral jaws defining a substantially cylindrical cavity having its longitudinal axis disposed perpendicular to the vertical plane and a longitudinally extending slotted opening therein, a tubular track engaged in the cylindrical cavity and having a longitudinally extending slotted opening in

6

register with the slotted opening of the cavity, slidable means engaged in the tubular track for supporting the curtains, the uppermost end portion of the vertically extending member having a socket therein opening on the opposite side of said uppermost end portion from the side thereof abutting the horizontally extending member and extending substantially horizontally into the horizontally extending member, and a valence bracket having one end portion thereof engaged in the socket and a slot disposed in an opposing end portion for supporting a valence.

2. Apparatus according to claim 1 wherein the horizontally extending member has means therein terminating at the interior hollow of the socket for attaching the bracket to a fixed surface.

References Cited in the file of this patent

UNITED STATES PATENTS

581,621	Schenker	Apr. 27, 1897
934,475	Taussig	Sept. 21, 1909
963,261	Topping	July 5, 1910
2,727,272	Hankin et al.	Dec. 20, 1955

FOREIGN PATENTS

132,657	Australia	June 2, 1949
489,851	Great Britain	July 28, 1938
512,119	Great Britain	Aug. 29, 1939
714,537	Great Britain	Sept. 1, 1954