Sept. 27, 1955 N. C. FETTER 2,718,922

PLASTIC INSERTS FOR TRAVERSE CURTAIN RODS

Filed Aug. 22, 1952

Fig. 1

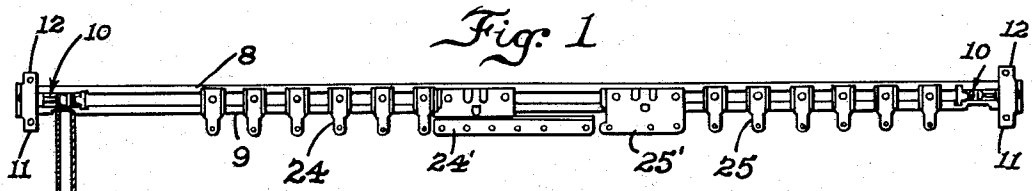


Fig. 2

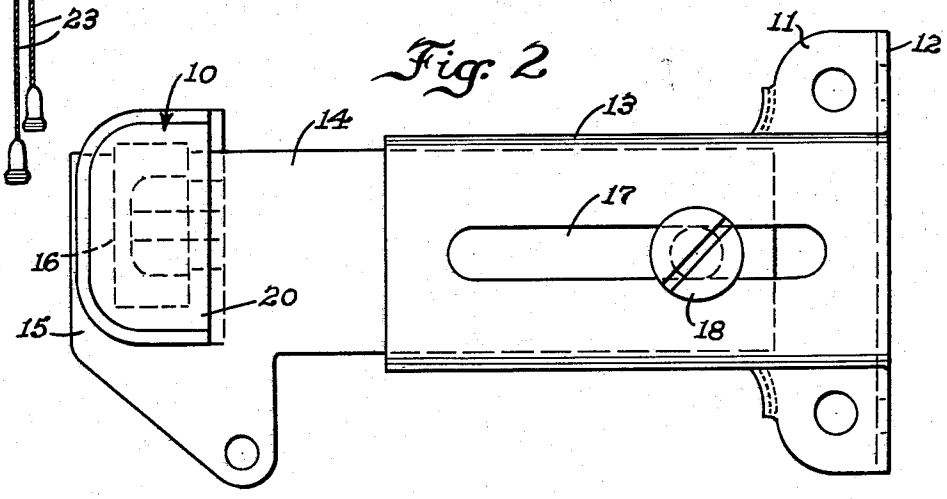


Fig. 3

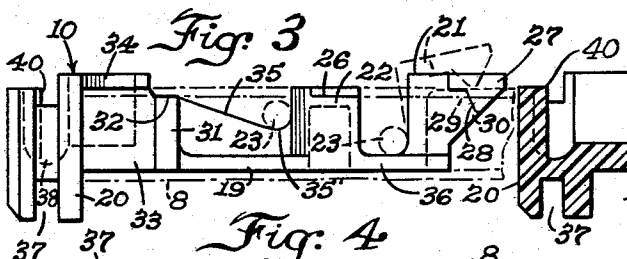


Fig. 7

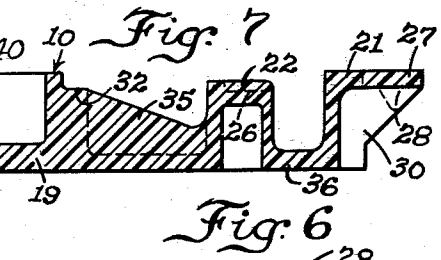


Fig. 4

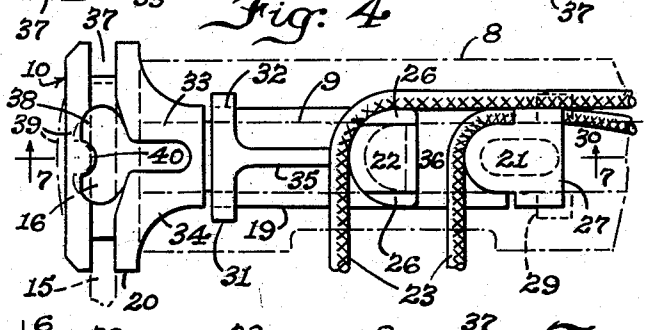


Fig. 6

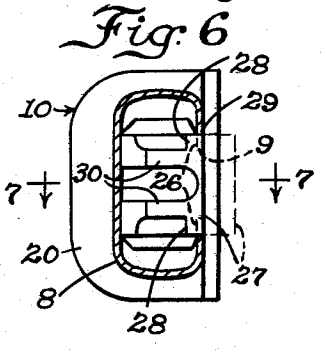
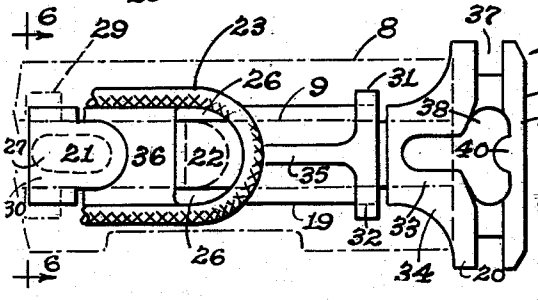


Fig. 5



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PLASTIC INSERTS FOR TRAVERSE CURTAIN RODS

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14 Claims. (Cl. 160—344)

This invention relates to traverse rods for supporting curtains and draperies, and is more particularly concerned with improved molded plastic inserts for application to the ends of such rods.

Heretofore insert assemblies were provided in the higher priced curtain rods, consisting of stampings, small pulleys, and small screw machine parts, which were costly to manufacture and difficult and costly to assemble, and were, moreover, apt to get out of order and require attention. It is, therefore, the principal object of my invention to provide improved, one-piece, molded plastic inserts, which, besides being available at a small fraction of the cost of the old assemblies, afford smoother and easier operation and involve nothing that is apt to get out of order.

The molded plastic inserts of my invention are designed to fit into the open slot that extends lengthwise of the rod, and, hence, are applicable to any section of rolled shape, provided the slot is of standard size and uniform width. In addition, these inserts have the following advantageous features—

(1) Rounded bosses are provided in longitudinally spaced relation on the inner ends of the inserts, one of substantially smaller radius than the other, and these afford low friction operation and also vertical and horizontal spacing of the cords, eliminating rubbing of one cord on the other, so that wear and tear on the cords is reduced to a minimum in addition to affording smoother and easier operation;

(2) The smaller cord-guide boss, at the outer end of the insert, is provided with a T-shaped extension on which there are inwardly projecting lugs. This extension is flexed outwardly with respect to the rod when the insert is slipped into the slot, and when the lugs on the extension line up with notches provided in the rod opening off the slot at a predetermined distance inwardly from the end of the rod, the lugs snap into the notches and lock the insert in its assembled position against accidental displacement, and yet the insert can be removed easily enough by flexing the extension outwardly to disengage the lugs from the notches.

(3) The enlarged head end of each insert has an annular groove to receive the bifurcated portion of a sheet metal supporting bracket, and the head is formed on one side of the groove to provide a wall of decreased thickness adapted to be flexed, this thinner portion having a rounded rib formed on the inner side thereof projecting normally into the groove to ride on the bifurcated portion of the bracket when the latter is entered in the groove, thereby causing some appreciable deflection of the wall and giving a snug fit, one which involves sufficient resilience so it will eliminate any likelihood of the rod working loose from the bracket.

(4) The plastic inserts are of symmetrical design with respect to the longitudinal center-line, so that the same style of insert can be used on either end of a rod and there is no confusion as to "rights" and "lefts."

The invention is illustrated in the accompanying drawing, in which—

Fig. 1 is a rear view of a curtain rod equipped with molded plastic inserts in the opposite ends thereof made in accordance with my invention;

Fig. 2 is an enlarged end view of one of the supporting brackets, showing in end elevation the molded plastic insert on the adjacent end of the curtain rod entered in the bracket;

Fig. 3 is a top plan view of one of the plastic inserts on the same scale as Fig. 2, namely, approximately twice the actual size, indicating in dotted lines the end portion of a curtain rod in assembled relation thereto;

Fig. 4 is a view of the inner or rear side of the insert appearing at the left hand end of Fig. 1, showing how the two cord-guide bosses cooperate with the opposite end portions of the pull cord, and showing again in dotted lines the end portion of the curtain rod in assembled relation thereto;

Fig. 5 is a similar view of the insert at the other end of the rod, showing how the inner one of the two cord-guide bosses is used at that end of the rod to guide the pull cord, although the insert at that end is identical with the insert used at the other end;

Fig. 6 is a cross-section on the line **6—6** of Fig. 5, indicating in dotted lines, similarly as in Fig. 3, the deflection of the end portion of the insert required in assembling and disassembling the insert, due to the provision of the snap-in locking lugs on the extension, and

Fig. 7 is a longitudinal section through the insert taken on the line **7—7** of Figs. 4 and 6.

The same reference numerals are applied to corresponding parts throughout the views.

Referring to the drawing, the reference numeral **8** designates a conventional hollow curtain rod of C-shaped cross-section having the usual longitudinally extending slot **9** on the inner or rear side, and **10** designates the molded plastic inserts provided in accordance with my invention in lieu of the insert assemblies used heretofore in such rods. Mounting brackets **11** of any suitable or preferred design, having attachment pad portions **12** adapted to be fastened by means of nails or screws to the inside, or outside, of the window frame, provide extensions **13** in which are slidably guided the shanks **14** of supporting brackets **15**, which are bifurcated, as indicated at **16**, for connection with the inserts or insert assemblies on the ends of the rod **8**, and when properly adjusted in or out on the mounting brackets **11** in relation to the slots **17** provided in the latter are adapted to be clamped in adjusted position by the tightening of screws **18**. No invention is claimed in the structure thus far described, excepting only in so far as the novel details of the molded plastic inserts **10** cooperate in a novel way with end portions of the rod **8** and the bifurcated outer end portions of the supporting brackets **15**, as above pointed out and hereinafter more fully described.

The molded plastic inserts **10** are generally T-shaped, as best appears in Figs. 4 and 5, providing an elongated leg or bar portion **19** for entry in the end of the rod **8** and an enlarged transversely extending head **20** on the one end thereof abutting the end of the rod. The bar **19** has two half-round bosses **21** and **22** provided thereon in longitudinally spaced relation, the boss **21** at the end of the bar being of appreciably smaller radius than the boss **22** that is spaced inwardly from the end. These two bosses take the place of pulleys provided heretofore in insert assemblies and are adapted to have the two end portions of the pull cord **23** slide thereon, as shown in Fig. 4, only the boss **22** being used on the insert at the other end of the rod **8** where the cord makes a return loop, the one half-length of the cord within the rod **8**

having the endmost slider 24' of the group 24, that work in the slot 9, attached thereto, and the other half-length having the other endmost slider 25' of the group 25 attached thereto for operation back and forth on the rod in the well known way in the opening and closing of the curtain or drapery. Because the bosses 21 and 22 are half-round, symmetrical with respect to the longitudinal center-line (7—7 in Fig. 4), the one style of insert 10 can be used at either end of the rod, and there is, therefore, no confusion as to "rights" and "lefts." The return loop of the cord 23 could be guided on the smaller boss 21, but it is preferred to use the larger diameter boss 22, because that makes for easier sliding and keeps the flights of cord that much farther apart with less likelihood of their rubbing on one another. The boss 22 is cut away on opposite sides at the outer end thereof along parallel lines to define shoulders 26, which are spaced to correspond to the width of the slot 9 in rod 8, so that the portions of the rod on opposite sides of the slot will fit on these shoulders, as indicated in Figs. 4, 5, and 6. The bar 19 is of small thickness throughout the major portion of its length, as best appears in Fig. 3, and this reduced thickness facilitates the flexing of the end portion that includes the boss 21, as indicated in dotted lines in Fig. 3, the boss 21 having a generally T-shaped extension 27 which lies in a plane above the top of the boss 22, so as to lie on the outside of the rod 8 on opposite sides of slot 9 when the portions of the rod 8 on opposite sides of slot 9 are disposed on the shoulders 26. V-shaped lugs 28 provided on the inner side of the cross-portion of the T-shaped extension 27 are adapted to engage in notches 29 provided in the rod 8, on opposite sides of the slot 9, at a predetermined distance inwardly from each end of the rod, as disclosed in Figs. 4 and 5, whereby to lock the inserts 10 in assembled relation to the rod and prevent accidental displacement thereof. The lugs 28 in the entry of the inserts in the opposite ends of the rod slide on the outside of the rod on opposite sides of the slot, the end portions of the inserts being flexed, as indicated in dotted lines in Fig. 3, until the lugs 28 come into register with the notches 29, whereupon they snap into place in said notches, the V-shape of the lugs 28 facilitating such assembly. While the lugs hold the inserts securely in assembled position, it nevertheless requires very little effort to flex the end portion of an insert to the extent indicated in dotted lines in Fig. 3, to permit withdrawal of the insert whenever that should be necessary, as, for example, when a new pull cord is being substituted for one that has become worn out or soiled. The extension 27 is reinforced by diagonally extendings webs 30 between the bottom of the boss 21 and the inner side of the extension 27, as clearly appears in Figs. 3, 6, and 7.

The end portions of the rod 8 have abutment with the inner side of the enlarged end portion 20, the shank 19 at this end having a transverse wall 31, the top surface 32 of which lies in a common plane with the shoulders 26 on boss 22, and are, therefore, arranged to have abutment with the inside of the rod 8 on opposite sides of the slot 9. A hollow box-like portion 33 is molded integral with the wall 31 between said wall and the end portion 20 and is of approximately the same size as the boss 22, and across the top of this box-like portion 33 is a wall 34 in substantially coplanar relation with the extension 27 and spaced from the top 32 of the wall 31 just enough to receive the wall of the rod 8 on each side of the slot 9. In other words, the shank 19 of the insert has abutment with the inner side of the rod 8 on opposite sides of slot 9 at 32 and 26, and has abutment with the outer side of the rod at 34 and 27, to prevent outward or inward displacement of the insert with respect to the slotted portion of the rod, while the shoulders 26, boss 21, and end portion 33 have abutment with the opposite sides of the slot 9 to hold the insert in alignment with the rod. A reinforcing rib 35 is provided on the longitudinal center-line of the insert between the boss 22 and wall 31 to rigidify the insert up to the portion 36 between the bosses 22 and 21, so that when the end portion 21 is flexed the rest of the insert will not flex with it. This rib is cut away, as indicated at 35' in Fig. 3, behind the guide 22, leaving ample room for the cord 23 to slide on the guide 22 crosswise of one end of the rib 35, thereby locating the one lap or flight of the cord closer to the slotted side of the rod, the other lap or flight of the cord sliding on guide 21 operating on that guide farther away from the slotted side of the rod, as indicated in Fig. 3.

The enlarged end portion 20 of each insert is of generally rectangular form, as best appears in Figs. 2 and 6, and has a circumferentially extending groove 37 molded therein of a width approximately equal to the thickness of the supporting bracket 15, the bifurcated portion 16 of which is adapted to be entered in the groove, as shown in Fig. 2 and in dotted lines in Fig. 4. In order to enable easy connection of the inserts with the brackets and yet provide sufficient friction hold and resilience in the structure at the same time, to insure a good connection regardless of minor variations in thickness of brackets, I hollow out the enlarged end portion 20 in the plane of the groove 37, as at 38, in transverse relation to the chamber in the box-like end 33 of the shank 19 and communicating therewith, as best appears in Figs. 4 and 5, and I make the outer wall 39 of the groove 37 at this portion of appreciably reduced thickness for increased flexibility, and, then, provide on the inner side of this thinner wall section at the mid-point a rounded rib 40, which, when the bifurcated portion 16 of the bracket 15 is entered in the groove 37 from either side of the insert, will cause the thin wall section to be flexed outwardly, as indicated in dotted lines in Fig. 4, thereby keeping the rib 40 pressed tightly against the outer side of the bifurcated portion 16 while the inner side of said bifurcated portion is pressed tightly against the opposite side of the groove, as indicated in dotted lines in Fig. 4, whereby to afford the desired friction hold and resilience in the structure to reduce liklihood of the rod becoming displaced from the bracket even if the bracket is a trifle thin or is worn.

It is believed the foregoing description conveys a good understanding of the objects and advantages of my invention. The appended claims have been drawn to cover all legitimate modifications and adaptations.

I claim:

1. As an article of manufacture, a one-piece molded insert for the end of a hollow traverse curtain rod comprising a generally T-shaped body, the leg portion of the T being adapted to be entered in either end portion of a tubular C-section curtain rod, the latter having a longitudinally extending slot in one wall thereof between the ends of the C, said leg portion being elongated and of reduced cross-section in relation to the cross-portion of the T, which is adapted to engage the end of said rod, both ends of said cross-portion being formed alike for use interchangeably in attaching the rod to a supporting bracket, said leg portion having cord guides provided thereon in the form of bosses in longitudinally spaced relation on the longitudinal center line of said leg portion and there being guide-ways defined on opposite sides of said leg portion lengthwise thereof for support of the insert in the longitudinally extending slot in said C-section rod independent of engagement elsewhere inside said rod.

2. As an article of manufacture, a one-piece molded insert for the end of a hollow traverse curtain rod comprising a generally T-shaped body, the leg portion of the T being adapted to be entered in either end portion of a tubular C-section curtain rod, the latter having a longitudinally extending slot in one wall thereof between the ends of the C, said leg portion being elongated and of reduced cross-section in relation to the cross-portion

of the T, which is adapted to engage the end of said rod, both ends of said cross-portion being formed alike for use interchangeably in attaching the rod to a supporting bracket, said leg portion having cord guides provided thereon in longitudinally spaced relation on the longitudinal center line of said leg portion, said cord guides being in the form of half-round bosses, one of smaller diameter at the outer end of said leg portion and another of larger diameter in inwardly spaced parallel relation to the first, the two bosses being symmetrical with respect to said longitudinal center-line.

3. As an article of manufacture, a one-piece molded insert for the end of a hollow traverse curtain rod comprising a generally T-shaped body, the leg portion of the T being adapted to be entered in either end portion of a tubular C-section curtain rod, the latter having a longitudinally extending slot in one wall between the ends of the C, said leg portion being elongated and of reduced cross-section in relation to the cross-portion of the T, which is adapted to engage the end of said rod, said leg portion having cord guides provided thereon in longitudinally spaced relation, said cord guides being in the form of bosses on said leg portion in spaced parallel relation on the longitudinal center-line of said leg portion, whereby said insert is adapted for use interchangeably in either end of the rod, the boss spaced inwardly from the end of said leg portion having parallel shoulders provided thereon for engagement on opposite sides of the slot in the C-section rod and on the inner side of said rod adjacent said slot, the boss at the end of said leg portion having a wall thereon in a plane in spaced in parallel relation to said shoulders for abutment on the outer side of the rod alongside said slot.

4. As an article of manufacture, a one-piece molded insert for the end of a hollow traverse curtain rod comprising a generally T-shaped body, the leg portion of the T being adapted to be entered in either end portion of a tubular C-section curtain rod, the latter having a longitudinally extending slot in one wall thereof between the ends of the C, said leg portion being elongated and of reduced cross-section in relation to the cross-portion of the T, which is adapted to engage the end of said rod, said leg portions having cord guides provided thereon in longitudinally spaced relation, said cord guides being in the form of bosses on said leg portion in spaced parallel relation on the longitudinal center-line of said leg portion, whereby said insert is adapted for use interchangeably in either end of the rod, the cross-portion of the T-shaped body having an annular groove provided therein in a plane normal to said center-line adapted to receive the hook of a supporting bracket engaging the insert from either side of said cross-portion.

5. As an article of manufacture, a one-piece molded insert for the end of a hollow traverse curtain rod comprising a generally T-shaped body, the leg portion of the T being adapted to be entered in either end portion of a tubular C-section curtain rod, the latter having a longitudinally extending slot in one wall thereof between the ends of the C, said leg portion being elongated and of reduced cross-section in relation to the cross-portion of the T, which is adapted to engage the end of said rod, said leg portion having cord guides provided thereon in longitudinally spaced relation, said cord guides being in the form of bosses on said leg portion in spaced parallel relation on the longitudinal center-line of said leg portion, whereby said insert is adapted for use interchangeably in either end of the rod, the cross-portion of the T-shaped body having an annular groove provided therein in a plane normal to said center-line adapted to receive the hook of a supporting bracket engaging the insert from either side of said cross-portion, the outer wall of said annular groove being flexible and resilient and the same having a rounded projection on the inner side thereof which by engagement with the hook of said bracket when entered in the groove from either side of said cross-portion is adapted to cause flexing of said outer wall, for the purpose described.

6. As an article of manufacture, a one-piece molded insert for the end of a hollow traverse curtain rod comprising a generally T-shaped body, the leg portion of the T being adapted to be entered in either end portion of a tubular C-section curtain rod, the latter having a longitudinally extending slot in one wall thereof between the ends of the C, said leg portion being elongated and of reduced cross-section in relation to the cross-portion of the T, which is adapted to engage the end of said rod, said leg portion having cord guides provided thereon in longitudinally spaced relation, said cord guides being in the form of bosses on said leg portion in spaced parallel relation on the longitudinal center-line of said leg portion, whereby said insert is adapted for use interchangeably in either end of the rod, the cross-portion of the T-shaped body having an annular groove provided therein in a plane normal to said center-line adapted to receive the hook of a supporting bracket engaging the insert from either side of said cross-portion, said leg portion also having a reinforcing rib provided thereon between and connecting the cross-portion and the boss nearest said cross-portion, said rib being in a plane on the longitudinal center-line of said leg portion passing through the two bosses, and said rib being partially cut away next to the boss to which it is joined to define a locating notch for a cord when engaging said boss as a cord guide so that the cord runs on said boss in a plane nearer the slotted wall of the rod.

7. In a traverse curtain rod construction, for support on a pair of brackets each having an upwardly extending hook, an elongated member inserted in one end of a hollow curtain rod and supported on one of said hooks, said member having on the rod-enclosed end portion thereof a semi-circular cord guide of smaller diameter on the inner extremity of said portion and a second semi-circular cord guide of larger diameter intermediate the ends of said portion in spaced parallel relation on the longitudinal center-line of said insert member, whereby said insert member may be inserted and used for cord guide purposes interchangeably in either end with either curved side of said guides uppermost, and a curtain operating cord defining an elongated U-loop inside said rod that is suitably guided at the U-bend to permit pulling of either end of the cord to operate curtain support slides back and forth on the rod, said cord having its end portions extending downwardly over the two guides on said insert member and out of said hollow curtain rod through an opening provided in said rod.

8. In a traverse curtain rod construction, for support on a pair of brackets each having an upwardly extending hook, an elongated member inserted in one end of a hollow curtain rod and supported on one of said hooks, said member having on the rod-enclosed end portion thereof a semi-circular cord guide on the inner extremity of said portion and a second semi-circular cord guide intermediate the ends of said portion in spaced parallel relation on the longitudinal center-line of said insert member, whereby said insert member may be inserted and used for cord guide purposes interchangeably in either end of said rod with either curved side of said guides uppermost, and a curtain operating cord defining an elongated U-loop inside said rod that is suitably guided at the U-bend to permit pulling of either end of the cord to operate curtain support slides back and forth on the rod, said cord having its end portions extending downwardly over the two guides on said insert member and out of said hollow curtain rod through an opening provided in said rod.

9. A traverse curtain rod construction as set forth in claim 8, wherein said insert member includes an outer end portion that projects from the rod and is symmetrical in form on top and bottom with respect to said longitudinal center-line, said outer end portion having grooves

provided in coplanar relation in opposite sides thereof for reception of the upwardly extending hook portion of the bracket at either end of the curtain rod from one or the other side of said member in the same plane.

10. A traverse curtain rod construction as set forth in claim 8, wherein said member includes an outer end portion that projects from the rod and is symmetrical in form on top and bottom with respect to said longitudinal center-line, said outer end portion having an annular groove provided therein adapted to receive the upwardly extending hook portion of the bracket at either end of the curtain rod from one or the other side of said member in the same plane, said member having a flexible resilient portion alongside said groove arranged to be flexed in the entry of said hooked bracket portion from either side, whereby to exert friction drag resisting accidental displacement of said member from supporting connection with said bracket.

11. A traverse curtain rod construction as set forth in claim 8, wherein said member includes an outer end portion that projects from the rod and is symmetrical in form on top and bottom with respect to said longitudinal center-line, said outer end portion having grooves provided in coplanar relation in opposite sides thereof for reception of the upwardly extending hook portion of the bracket at either end of the curtain rod from one or the other side of said member in the same plane, said member having a flexible resilient portion alongside said grooves grooves arranged to be flexed in the entry of said hooked bracket portion from either side, whereby to exert friction drag resisting accidental displacement of said member from supporting connection with said bracket.

12. A traverse curtain rod construction as set forth in claim 8, wherein said insert member includes an outer end portion that projects from the end of the rod and is symmetrical in construction at top and bottom with respect to said longitudinal center-line for supporting connection with a bracket hook at either end of the curtain rod alike with either side of the end portion facing downwardly toward the hook, said member having on the outer end portion a flexible resilient part that is arranged to be flexed when the connection with the bracket is made either way, whereby the part exerts friction drag resisting accidental displacement of said member from supporting connection with said bracket.

13. In a traverse curtain rod construction, for support on a pair of brackets each having an upwardly extending bifurcated portion, a one-piece molded elongated member inserted in one end of a hollow metallic curtain rod of C-shaped cross-section, said rod having a longitudinally extending slot in the one wall thereof between the ends of the C, said member being supported on one of said bifurcated portions, the material of which said elongated member is molded being flexible and resilient, said member having on the rod-enclosed end portion thereof in spaced parallel relation on the longitudinal center line of said portion two bosses serving as cord guides when said portion is inserted in either end of said rod the extremity of said portion being flexible and having a transversely extending catch portion thereon which in the insertion of said member in the end of said rod rides along the slotted wall of said rod with the extremity of said portion flexed transversely of said portion, and said slotted wall having a depression adapted to receive said catch portion to lock said member releasably to said rod in assembled relationship.

14. In a traverse curtain rod construction, for support on a pair of brackets each having an upwardly extending bifurcated portion, a one-piece molded elongated member inserted in one end of a hollow metallic curtain rod of C-shaped cross-section, said rod having a longitudinally extending slot in the one wall thereof between the ends of the C, said member being supported on one of said bifurcated portions, the material of which said elongated member is molded being flexible and resilient, said member having on the rod-enclosed end portion thereof in spaced parallel relation on the longitudinal center line of said portion two bosses serving as cord guides when said portion is inserted in either end of said rod, that end portion of said member left projecting from the rod for support on the bifurcated portion of the bracket having vertically extending grooves provided therein on opposite sides extending inwardly from opposite ends of said portion to permit engagement on the bifurcated portion of the bracket from either side, one wall of said grooved portion being flexible and having a projection which by sliding engagement on the bifurcated portion of the bracket in the entry thereof in said grooved portion is adapted to cause flexing of said wall, whereby frictionally to resist displacement of the assembled parts from assembled relationship.

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