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[54] **CURTAIN ROD AND CORD LINE PULL SYSTEM**
14 Claims, 14 Drawing Figs.

[52] **U.S. Cl.**..... **160/344,**
 16/87.2, 160/123

[51] **Int. Cl.**..... **A47h 5/032**

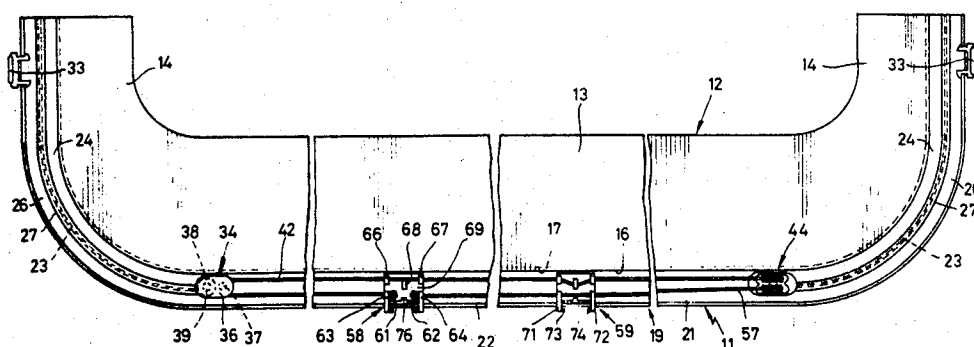
[50] **Field of Search**..... **160/344,**
 345, 346, 347, 123-126; 16/87, 87.2, 87.4, 87.6,
 87.8, 93, 94, 95, 96; 211/105.2

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ABSTRACT: A ceiling mounted curtain rod and cord line pull system. The rod has a front attachment rod with a rib on its front. A pair of identical engaging pieces are drawn along the rod by cords mounted to respective ones of them and supported on the upper side of the engaging pieces and the web. Each engaging piece is releasably engaged to draw along separate curtain supports which separably engage the rod to support the curtain.



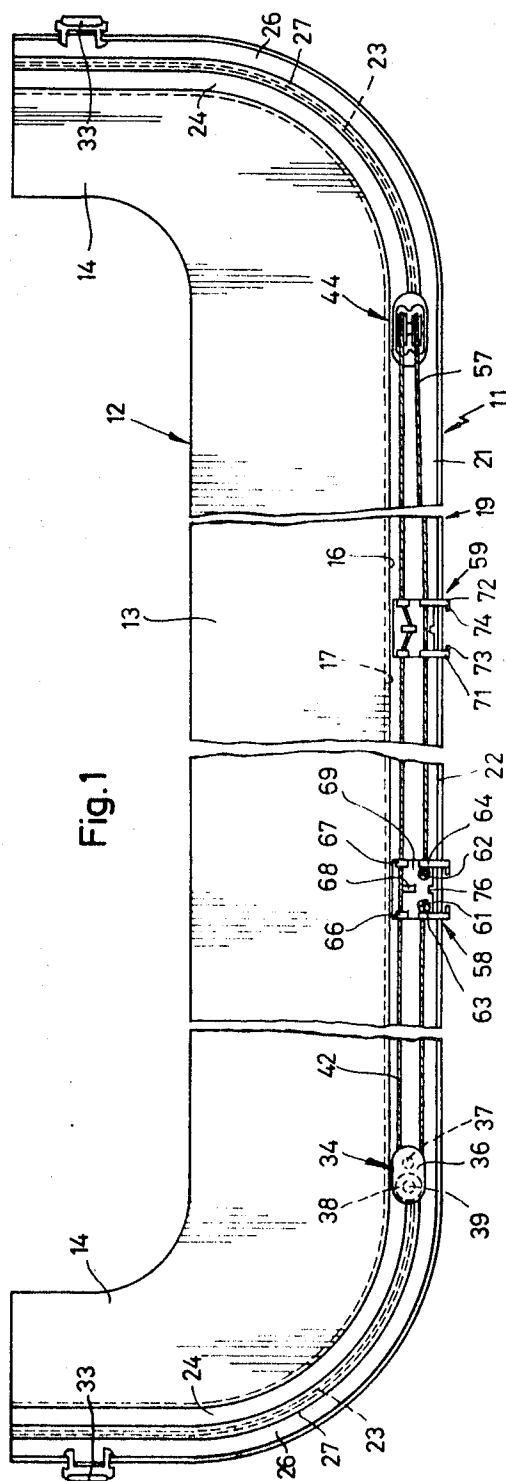


Fig. 1

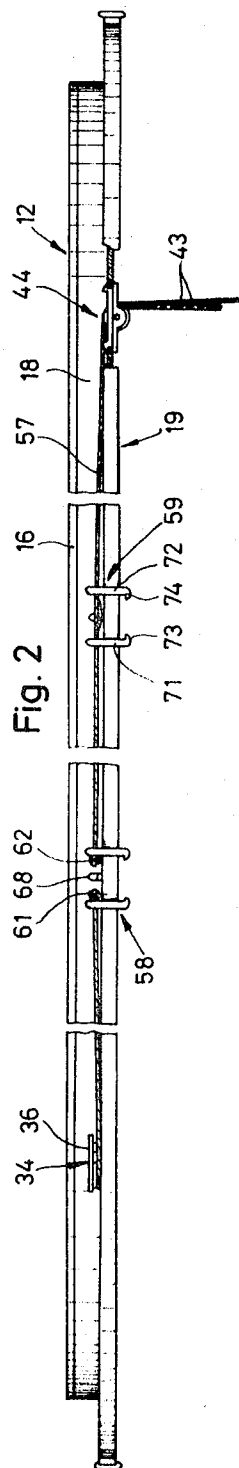


Fig. 2

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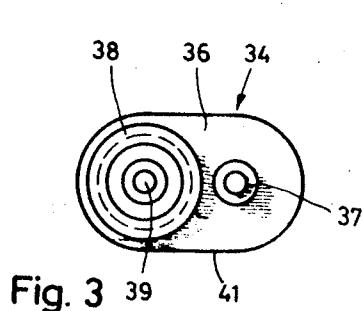


Fig. 3

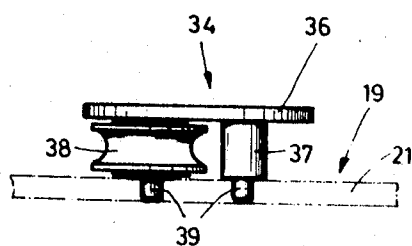


Fig. 4

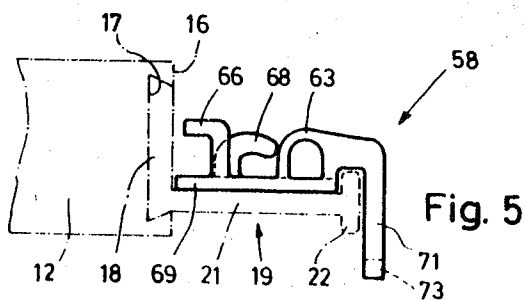


Fig. 5

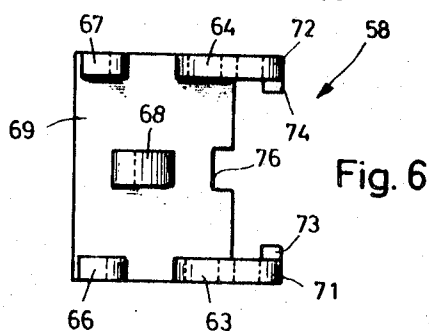


Fig. 6

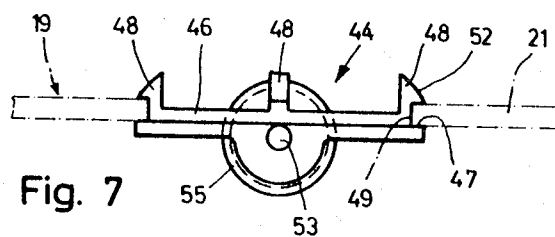


Fig. 7

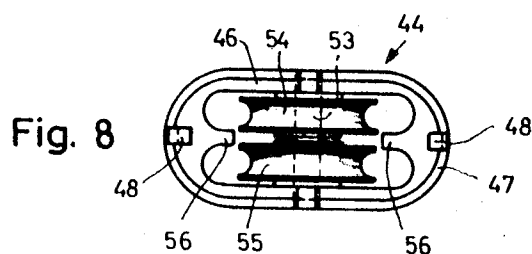


Fig. 8

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Fig. 9

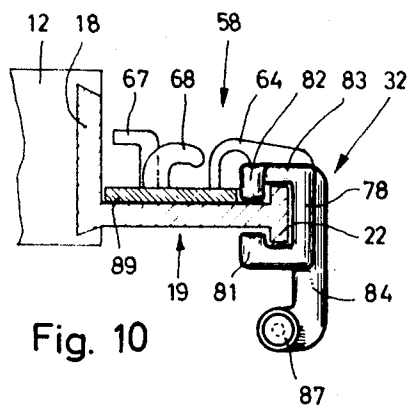
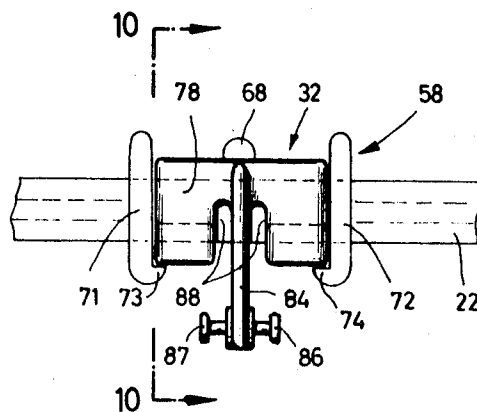


Fig. 10

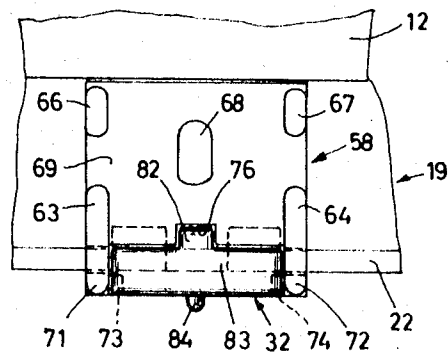


Fig. 11

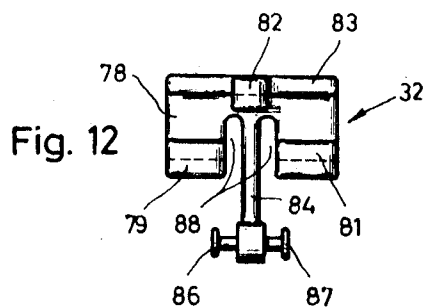
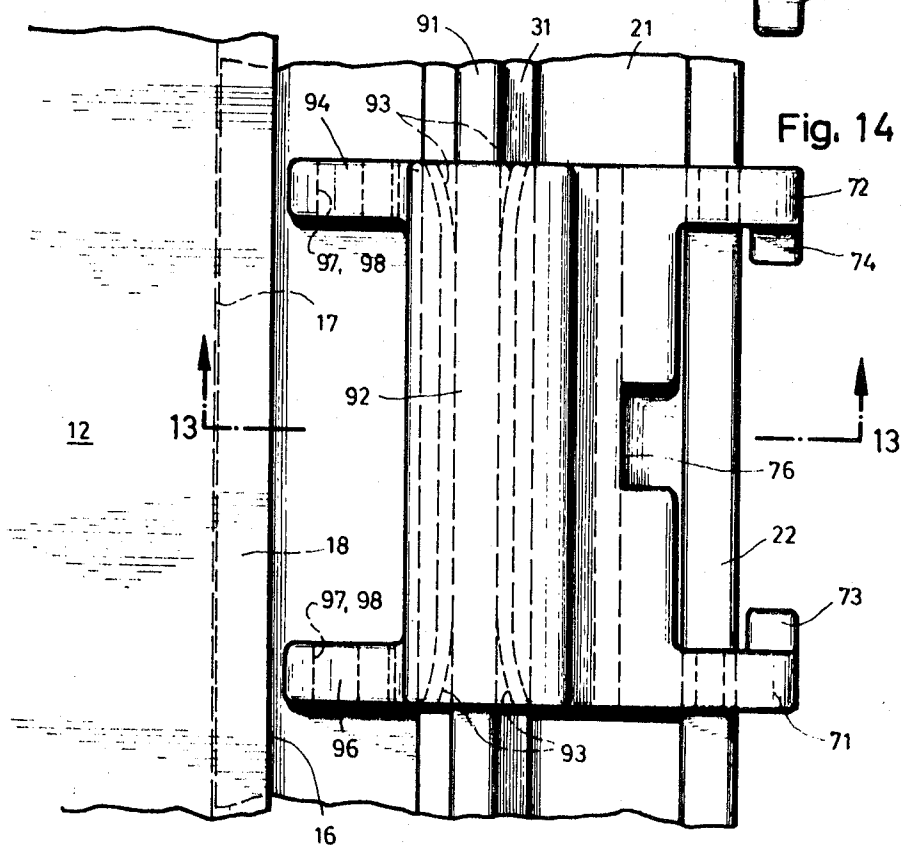
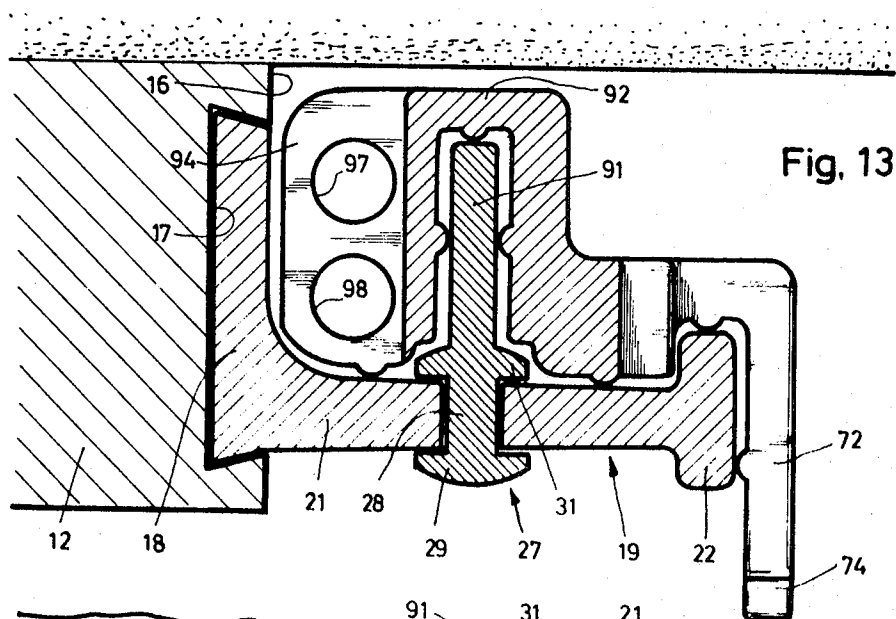


Fig. 12

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CURTAIN ROD AND CORD LINE PULL SYSTEM

The invention relates to a curtain rod with a cord having two cord lines, extends horizontally in the area of the curtain rod and vertically, grippable by the user, outside the curtain rod. The curtain rod has a first deflecting device which possesses a vertical deflecting shaft, a second deflecting device which presents a horizontal deflecting shaft and two guide carriages, one of which is fastened to one cord line and the other to the other cord line.

A curtain rod has already been proposed where the cords run in grooves specially produced for this purpose. This makes the system relatively expensive, as the production of the grooves requires a not inconsiderable expenditure. Moreover, it is not quite easy to thread the cords in the grooves so that they lie correctly therein. Moreover, the additional grooves make the rod wide. Finally it is not quite easy to append the guide carriages through the narrow groove slots, and as the cords are relatively far removed from the running surfaces, the guide carriages are under tilting load and therefore may jam. It has already also been proposed to guide the cords, not in narrow grooves, but in a more accessible manner. This, however, has the disadvantage that the cords can fall out of their guides, resulting in an ugly appearance, and when the cords are then pulled, it is not at all certain that they will return to their starting position.

The object of the invention is to provide a curtain rod which does not have the above disadvantages and which can be used together with existing curtain rods.

This problem is solved according to the invention in that the horizontally extending cord lines are arranged on the top side of a front attachment rod. Such front attachment rods can be fastened on existing curtain rods in a known manner; they do not require additional space for the cords and carry these on their top side, so that they cannot fall off.

Other objects, advantages and features of the invention will be evident from the following description taken together with the drawings in which:

FIG. 1 shows a top view of a pull system according to the invention;

FIG. 2 shows a front view of the pull system according to FIG. 1;

FIG. 3 shows a bottom view of a first deflecting device;

FIG. 4 shows a front view of the deflecting device according to FIG. 3;

FIG. 5 shows a side view of an engaging piece according to FIGS. 1 and 2 with the curtain rod and front attachment rod indicated;

FIG. 6 shows a top view of the engaging piece according to FIG. 5;

FIG. 7 shows a front view of a second deflecting device with the front attachment rod indicated;

FIG. 8 shows a top view of the deflecting device according to FIG. 7;

FIG. 9 shows a front view of the engaging piece according to FIGS. 1 and 2 with the support body locked;

FIG. 10 shows a section along line 10—10 in FIG. 9;

FIG. 11 shows a top view of the engaging piece and of the support body;

FIG. 12 shows a rear view of the support body;

FIG. 13 shows a section along line 13—13 in FIG. 14;

FIG. 14 shows a top view of another engaging piece.

Referring to the figures, a curtain rod 12 includes a straight rod section 13 and at its ends two curved rod sections 14. On its front face 16 the curtain rod 12 has a dovetail-shaped groove 17, into which a vertical web 18 is glued which has a vertically standing rib 22 at its free end.

A front attachment rod 19 has two cord lines 43 guided side-by-side and deflecting devices 34, 44. It would not be possible to pass around the curved rod sections 14 if slots 23 had not been cut into it. Thereby, on either side of the front rod 19, two strips 24 and 26 are formed, which have been

glued together after being bent with the aid of a double-T profile 27 as seen in FIG. 13. The double-T profile 27 lies with its rib 28 in the slot 23 and engages over and under the strands 24, 26 with crossarms 29, 31. Profile 27 provides a good connection for the strips 24, 26 and arms 29, 31 cover up inexact cuts. The procedure is to first glue the strip 24 in the groove 17. Then the double-T profile 27 is glued to the strip 24, whereupon the strip 26 is glued in turn to the double-T profile 27.

In order for sliding support bodies 32 (FIGS. 9—11) to be slipped on to rib 22, short areas of rib 22 have been removed in the area of the two ends of the front attachment rod 19 and these are closed by spring clamps 33.

In the left area of FIGS. 1 and 2, a first deflecting device 34 is provided, which is injection molded in one piece from oval plate 36 and vertically standing shafts 37. On the left shaft, a guide roll 38 has been mounted. The device is secured on the front attachment rod 19 by means of two pegs 39. To attach the first deflecting device 34 it suffices to provide two small bores in the front rod 19, into which the shafts 37 are glued. It does not matter which way around the plate 36 is installed. Also, the deflecting device together with the vertical web 18 prevents the cord 43 from slipping out.

As is evident from FIG. 1, the edge 41 of the plate 36 practically bears against the vertical web 18, thereby preventing line 42 of cord 43 from slipping upward and becoming unhooked.

A second deflecting device 44, very easy to insert, has an oval frame 46 which possesses a curved shoulder 47, and from which four snap prongs 48 protrude upward, so that the deflecting device 44 can fasten and be glued to the horizontal web 21 of the front attachment rod 19. Thereby, a very good hold is obtained on the front rod 19 and the second deflecting device 44 cannot slip out of place during drying. For attachment it is simply necessary to push the deflecting device 44 from below into a correspondingly formed recess 49 of the horizontal web 21 until the snap prongs 48 snap in. For better introduction the snap prongs 48 have a sliding surface 52.

Transversely in the oval frame 46 a horizontal shaft 53 is provided, on which two guide rolls 54 and 55 are provided, which can rotate independently of each other. For better conduction of the cord, projections 56 are provided. The previously mentioned cord line 42 runs over the guide roll 54, while cord line 57 runs over guide roll 55, and both are deflected downward together as per FIG. 2.

On the front attachment rod 19, run two engaging pieces 58, 59. On the engaging piece 58, the cord line 57 is fastened by means of knots 61, 62, the respective ends being passed through vertically standing eyelets 63, 64. However, through the eyelets 63, 64 of the engaging piece 59, cord line 57 runs free and is merely guided by the eyelets.

In the case of cord line 42, the situation is the reverse: It runs between hooks 66, 67 of the engaging piece 58 and the vertical web 18 unhindered and merely guided.

In the case of engaging piece 59, on the contrary, cord line 42 first runs between the hook 66 and the vertical web 18, then between a hook 68 directed to the right as per FIG. 5 and the eyelets 63, 64, and then again between hook 67 and the vertical web 18.

Thus engaging piece 58 cannot be displaced in relation to cord line 57, whereas the engaging piece 59 can be displaced in relation to cord line 42 by holding cord 43 fast and shifting the engaging piece 59 to the left or right as per FIG. 1 with a force that is not exerted in normal operation. Then the hooks 66, 67, 68 slip in relation to cord line 42. The hooks 66, 67, 68 exert an action of entrainment by canting.

The hooks 66, 67, 68 and the eyelets 63, 64 are provided on a plate 69 of rectangular form, which rests flat on the horizontal web 21 and moreover is guided for longitudinal displacement between the vertical web 18 and the rib 22. The eyelets 63, 64 terminate in two webs 71, 72 which wrap over the rib 22 and project downwardly. At their free ends they have snap prongs 73, 74 pointing toward each other. The plate 69 further has a recess 76.

How the engaging pieces 58, 59 are connected with the sliding support body 32 is shown in FIGS. 9 to 12. Two lugs 79, 81 starting from a front plate 78 grips the rib 22, while the latter engages with a lug 82. The actual sliding surface is formed by a span 83. On a resilient member 84, molded in one piece on the front plate 78, there are fastened two knobs 86, 87 from which a pinched pleat hook, for example, can be suspended. In order for the spring 84 to be deflected well, recesses 88 open at the edge are provided in the front plate 78.

When an engaging piece 58, 59 is to be connected with a sliding support body 32, one pushes the latter onto the rib 22, lifts the engaging piece 58 or 59 slightly, which can be best done by pivoting it slightly counterclockwise as per FIG. 10 and with a center of rotation at 89, then bringing the sliding support body 32 under the webs 71, 72. Then one again pivots clockwise. The webs 71, 72 slip with their snap prongs 73, 74, along the side faces of the sliding support body 32 and finally lock under the latter.

FIGS. 13 and 14 show a guide rib 91 which grows upwardly out of the transverse rib 31. On this guide rib 91 the engaging piece 58 is guided by means of a saddle 92. In order to make it readily possible to go around bends, curved springs 93 are provided in the saddle 92. The guide rib 91 prevents the cord 43 from falling off the front attachment rod.

At variance with the previously shown example, two shoulders 94, 96 are provided in the back of the saddle 92 which have openings 97, 98. These again serve, as before, to guide or fasten the two sections.

The invention has a number of advantages: With the curtain rod one can, as previously, push the support bodies onto the front attachment rod and only then interlock the frontmost support body of a curtain with the respective engaging piece. The support bodies may then look alike and one needs no special guide carriage support bodies. It is a particular simplification that it is here just as easy to hang up or take down a curtain moveable with a pull system as is the case with a curtain without pull system. The locking point is well visible to the user, although a front attachment rod is practically always located just below the ceiling. A very good connection is obtained between the engaging piece and the support body, regardless of whether the curtain is opened or closed. In particular the engaging piece cannot pivot upward without human interference because of the snap prongs. The engaging pieces can be produced rationally. An engaging piece forms a guide for the cord line not attached to it, so that even if handled incorrectly the cord line always lies parallel to the other and does not become entangled. Even when the cord has unintentionally become longer or shorter or when one support body has forcibly been displaced in relation to the other, the curtain always closes in the middle. The engaging piece runs well and does not tilt. The device according to the invention can be produced in a very flat construction, as is necessary for front attachment rods, which only have available a few millimeters of free space to the ceiling of a room. If necessary, the sliding support body of the first embodiment may be lock-engaged on the rib. These sliding support bodies also readily run around narrow bends. In the second embodiment the guide rib serves both to conduct the support body and to provide a satisfactory pull conduction.

What is claimed is:

1. Pull system for curtains closing in the middle comprising a plastic curtain rod to be attached on ceilings, bearing at its front side a front attachment having a broad horizontal web and a rib on the front thereof,

a pair of cord lines supported horizontally on said web's upper side by said curtain rod and extending vertically, grippable by the user,

curtain support bodies engaging said curtain rod and movable therealong and

a pair of identical, unitary, plastic, driving engaging pieces adapted to be drawn in push-pull along said curtain rod by said cord lines, installed on the upper side of said pieces, one of which is fastened to one cord line and the other to the other cord line, both sliding on said web,

said engaging pieces engaging and releasably locking with each of the leading one of said curtain support bodies to move said bodies along said curtain rod on operation of said cord lines.

2. A pull system according to claim 1 in which said engaging pieces have a portion which extends over the front face of said curtain rod and locks with said curtain support body.

3. A pull system according to claim 1 in which said engaging pieces have two portions spaced apart about the width of said curtain support bodies to permit said bodies to be positioned therebetween, each of said portions having a prong directed toward the other and engaging said curtain support body thereunder.

4. A pull system according to claim 1, in which said engaging pieces are identical and to one engaging piece one cord line is attached and the other cord line can run through it, while to the other engaging piece the other cord line is attached and said one cord line can run through it.

5. A pull system according to claim 4, in which one cord line is secured to one engaging piece so as to be difficult to displace, while the other cord line is immovably fastened to the other engaging piece.

6. A pull system according to claim 1, in which each said engaging piece has a plate which rests on said curtain rod; said plate having two upwardly extending eyelets in the area of the front of said curtain rod, two upwardly extending hooks in the area of the rear of said curtain rod and a third upwardly extending hook facing the front of said curtain rod about in the center of said plate.

7. A pull system according to claim 1, in which said engaging piece has a plate with recess therein which rests on said curtain rod and a portion of a lug which engages over said rib is engageable in said recess.

8. A pull system according to claim 1, in which said curtain rod has a guide rib thereon and said engaging piece has a saddle portion engaging over said guide rib, said cord lines being arranged between said guide rib and the rear of said curtain rod.

9. A pull system for curtain rods comprising:

a curtain rod,

a pair of cord lines supported horizontally by said curtain rod and extending vertically, grippable by the user,

a pair of guide carriages movable along said curtain rod, one of which is fastened to one cord line and the other to the other cord line to be drawn along said curtain rod thereby,

said curtain rod being wide and having curved portions divided by longitudinal slots into flexible strips which are glued at opposed end faces.

10. A pull system according to claim 9, in which between the strips, a rib having a T-shaped profile is glued which lies with its long rib between the strips and engages said strips with a transverse portion.

11. A pull system according to claim 10, in which said transverse portion has said long rib upwardly projecting thereon.

12. Pull system for curtains, comprising

a curtain rod,

a pair of cord lines supported horizontally by said curtain rod and extending vertically, grippable by the user,

curtain support bodies engaging said curtain rod and movable therealong and

a pair of engaging pieces adapted to be drawn along said curtain rod by said cord lines, one of which is fastened to one cord line and the other to the other cord line,

said engaging pieces being adapted to engage and releasably lock with said curtain support bodies to move said bodies along said curtain rod on operation of said cord lines,

said engaging pieces have two portions spaced apart about the width of said curtain support bodies to permit said bodies to be positioned therebetween, each of said portions having a prong directed toward the other and engaging said curtain support body thereunder.

13. A pull system according to claim 12, in which each said engaging piece has a plate which rests on said curtain rod; said

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plate having two upwardly extending eyelets in the area of the front of said curtain rod, two upwardly extending hooks in the area of the rear of said curtain rod and a third upwardly extending hook facing the front of said curtain rod about in the center of said plate.

14. A pull system according to claim 12, in which said cur-

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tain rod has a rib on the front thereof and said curtain support has lugs which engage over and under said rib, said engaging piece has a plate with recess therein which rests on said curtain and a portion of said lug which engages over said rib is engageable in said recess.

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