

Sept. 15, 1970

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3,528,477

TWO-WAY DRAW CURTAIN APPARATUS

Filed July 11, 1968

3 Sheets-Sheet 1

FIG. 1

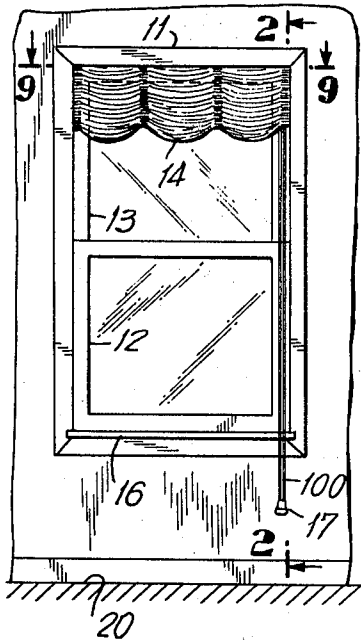


FIG. 2

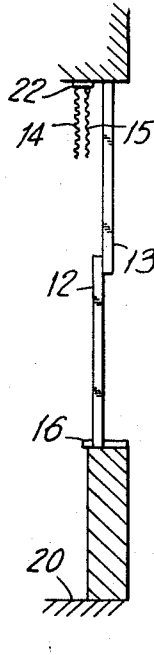


FIG. 3

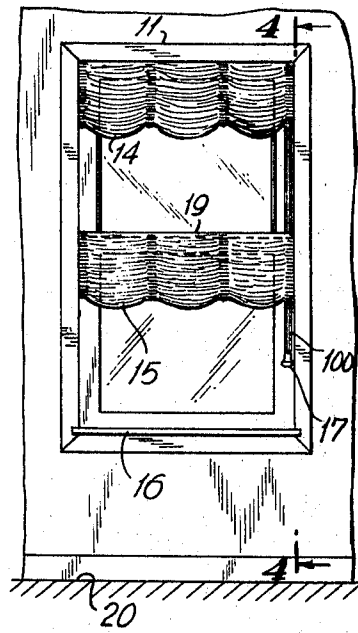


FIG. 4

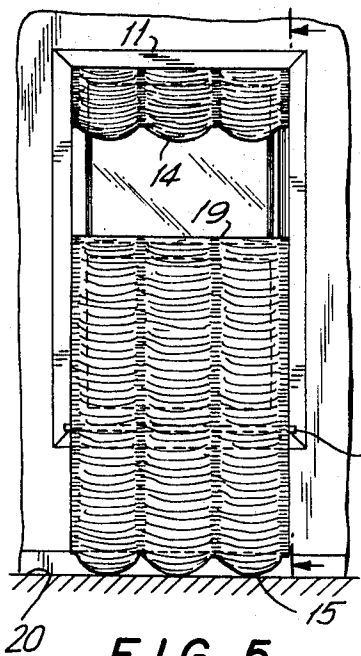
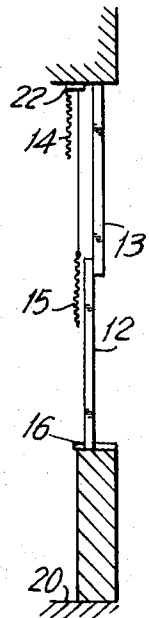


FIG. 5

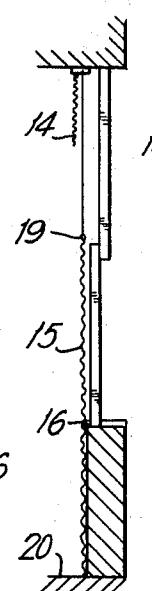


FIG. 6

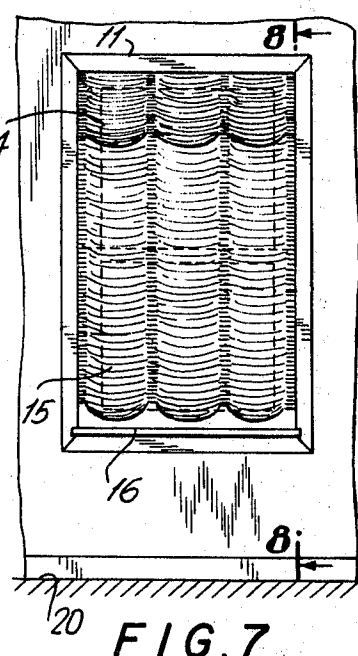


FIG. 7

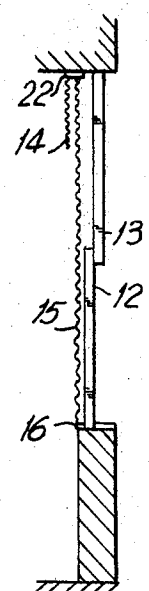


FIG. 8

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FIG. 9

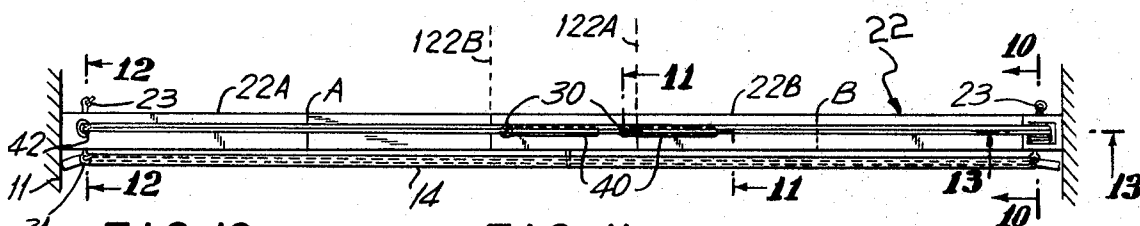


FIG. 10

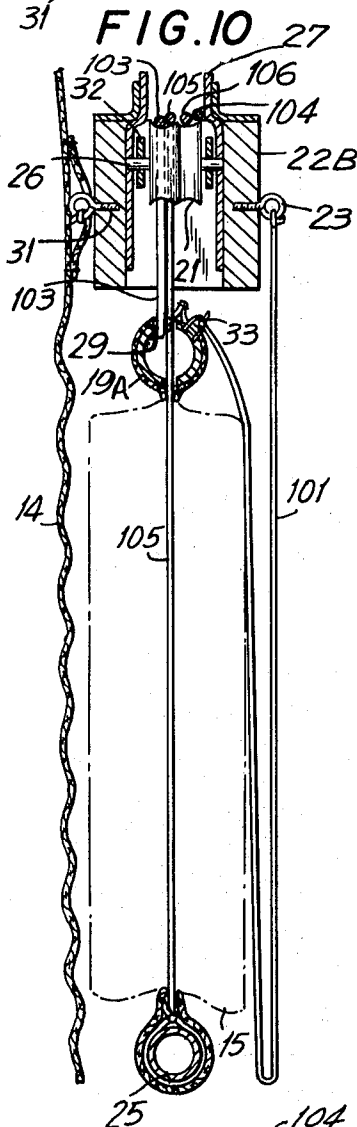


FIG. 11

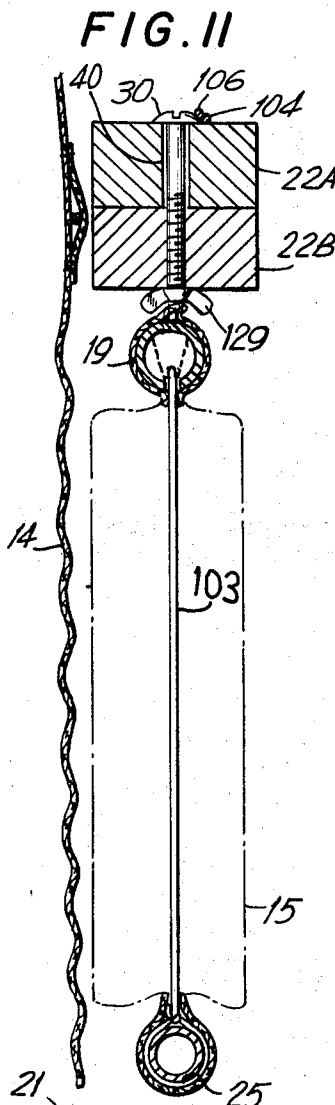


FIG. 12

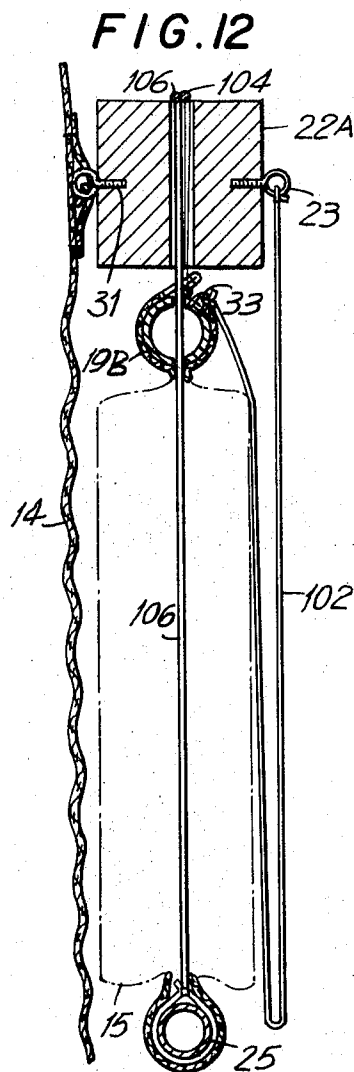
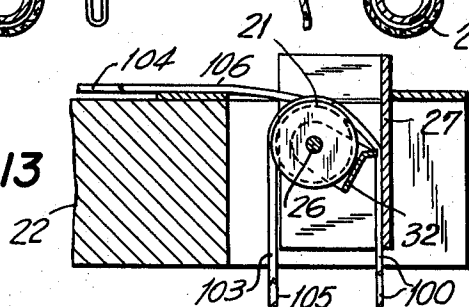


FIG. 13



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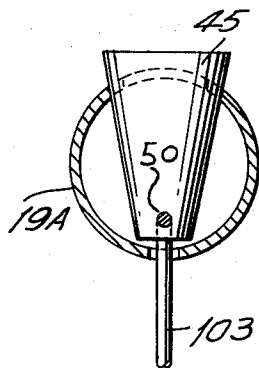
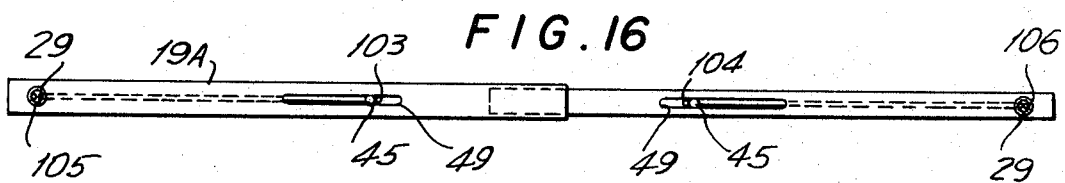
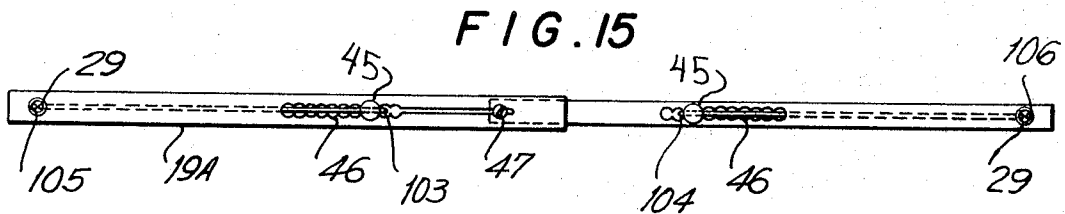
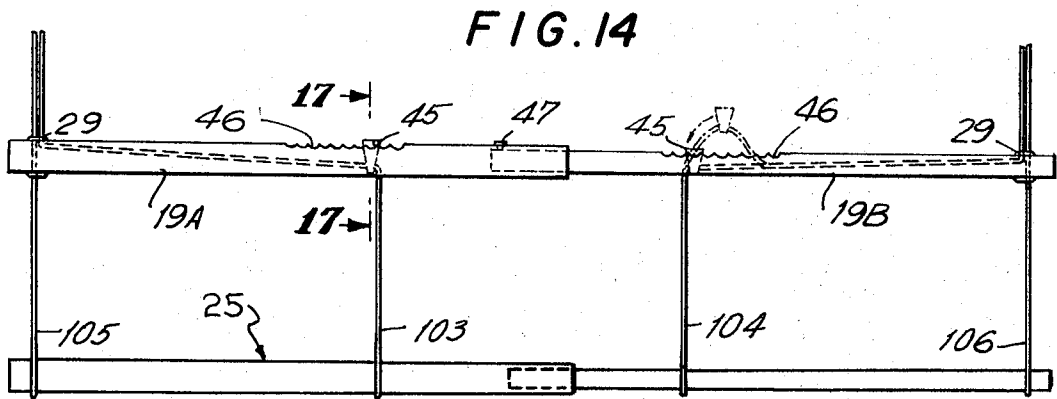
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TWO-WAY DRAW CURTAIN APPARATUS

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TWO-WAY DRAW CURTAIN APPARATUS

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U.S. Cl. 160—84

9 Claims

ABSTRACT OF THE DISCLOSURE

A two-way draw curtain apparatus which consists of a stationary curtain fixed near the top of a window opening and a movable curtain which is adjustable in length and adjustable in height. Both of these adjustments are performed by the same control cords so that the movable curtain body may be opened from the top, or opened from the bottom of the window, and its length adjusted to completely cover or partially cover the window opening. The cross members which support both curtains are also adjustable in width so that the apparatus may be installed in window openings of various sizes.

This invention relates to an improved draw curtain apparatus which permits two-way adjustment over a window opening.

More specifically, this invention relates to a draw curtain apparatus which may be deployed a predetermined distance from the top of a window frame and then extended any desired length across the remainder of the window.

In conventional draw curtains, the fabric body of the curtain is generally secured at the top of a window opening so that the control cords of the curtain, which are connected to the bottom edge of the fabric body, permit only the bottom edge to be raised or lowered over the window to any desired height. These conventional draw curtains, however, suffer from the disadvantage that when opened from the bottom, they expose the privacy of the occupants of the room. It is therefore desirable to provide a curtain which may also be opened from the top of a window while covering the bottom half of the window to maintain the privacy of the occupants of the room.

Accordingly, the present invention provides a draw curtain apparatus wherein the body of the curtain may be lowered from both the top and the bottom of a window by utilizing the same control cords. In the invention, the body of the draw curtain is not secured to the top of the window frame but fastened to a movable cross member which may be raised or lowered away from the top of the window. The bottom edge of the curtain body also contains a second cross member which may also be adjusted in height independently from the first cross member. This provides the draw curtain of the invention with two modes of adjustment so that the amount of curtain body deployed over the window as well as its position may be adjusted independently.

It is therefore an object according to the present invention to provide a draw curtain apparatus having a shade which is adjustable from both its top and bottom portions.

It is another object according to the present invention to provide a two-way draw curtain apparatus wherein adjustments of the body of the curtain may be made in two modes independently using the same control cord.

It is still a further object according to the present invention to provide a two-way draw curtain apparatus which is simple in design, easy to manufacture, and reliable in operation.

Other objects and features of the present invention will become apparent from the following detailed description considered in connection with the accompanying drawings which disclose one embodiment of the present invention.

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It should be understood, however, that the drawings are designed for the purpose of illustration only and not as a definition of the limits of the invention as to which reference should be made to the appended claims.

In the drawings wherein similar reference characters denote similar elements throughout the several views:

FIG. 1 is a plan view of the draw curtain according to the invention, fully drawn to the top of a window frame;

FIG. 2 is a view taken along section 2—2 of FIG. 1;

FIG. 3 is a plan view of the draw curtain apparatus partially extended across the bottom half of a window opening;

FIG. 4 is a view taken along section 4—4 of FIG. 3;

FIG. 5 is a view of the draw curtain apparatus shown fully extended across the bottom half of a window opening;

FIG. 6 is a view taken along section 6—6 of FIG. 5;

FIG. 7 is a plan view of the drawn curtain apparatus having its shade body drawn across the entire window opening;

FIG. 8 is a view taken along section 8—8 of FIG. 7;

FIG. 9 is a top plan view of the horizontal support member of the draw curtain apparatus which is secured adjacent to the top of the window frame;

FIG. 10 is a view taken along section 10—10 of FIG. 9;

FIG. 11 is a view taken along section 11—11 of FIG. 9;

FIG. 12 is a view taken along section 12—12 of FIG. 9;

FIG. 13 is a view taken along section 13—13 of FIG. 9;

FIG. 14 is a plan view of the apparatus illustrating the control cord arrangement of the invention;

FIG. 15 is a top plan view of the upper cross member of the curtain;

FIG. 16 is a bottom plan view of the upper cross member; and

FIG. 17 is a cross sectional view taken along section 17—17 of FIG. 14.

Referring to FIGS. 1 and 2, there is shown the draw curtain apparatus according to the invention in its fully compressed state, consisting of a pleated, Austrian type covering 14 serving as a fixed curtain in front of the movable portion of curtain 15. Fixed curtain 14 is secured to a horizontal support frame 22 bolted at the top of a window opening defined by frame 11. Movable portion 15 of the body of the curtain is designed to descend across windows 12 and 13 as controlled by cord 100. Control cord 100, which terminates below movable curtain 15 in sash weight 17, consists of a plurality of lines 103—106 which are connected at their opposite ends to elements of movable curtain 15.

Referring now to FIGS. 9—13, there is shown in detail horizontal support member 22 consisting of two segments 22A and 22B. Section 22A consists of a rectangular support extending out from the left hand side wall of frame 11 to section A where it continues in half section to the dotted line labeled 122A. In a similar manner, section 22B of the horizontal support member 22 extends from the right hand side wall of frame 11 in solid section out to point B, and in half section extends to the dotted line labeled 122B. In the region between the dotted lines, the respective half sections of member 22 overlap as shown in detail in FIG. 11. Where sections A and B of support member 22 overlap, lag bolts 30 are inserted into spaced holes in section 22B and pass in sliding adjustment into slots 40 of section 22A. Thus, when the apparatus of the invention is installed, support member 22 may be inserted between the side walls of frame 11 and adjusted to the correct length before wing nuts 129 threadably engaged to the opposite ends of bolts 30, may be tightened to frictionally compress sliding sections 22A and 22B together.

Stationary curtain 14 is secured through eyelets 31 to the front face of support member 22. Pivotal support at one end of support member 22, on axis 26, is a double pulley 21 used for collecting control cords 100. Pivotal support on axis 26 and surrounding pulley 21 is a pulley catch 32 designed to engage and hold cords 100 in a conventional manner against wall 27 and member 22 (FIG. 13).

The curtain apparatus also includes a first cross rod 19 designed for movement beneath support 22. Cross rod 19 consists of two section hollow cylindrical beam 19A and 19B as shown in FIG. 14 whose sections are telescoped into each other to permit adjustment in length. A set screw 47, threaded into 19A can be tightened against section 19B to restrict further adjustment after the correct length is determined. Each end of rod 19 includes a passageway 29 for receiving control lines 103-106. Cords 103 and 104 enter the top of passageway 29 and are conducted along a portion of the inside of rod 19. The top surface of rod 19 as shown in FIG. 15 includes a plurality of connected aperture openings 46 on each section for receiving plugs 45. Plugs 45, as shown in detail in FIG. 17 are cone shaped and include a guide hole 50 located in their apex for slidably receiving lines 103 and 104. After lines 103 and 104 pass through guide holes 50, they descend through longitudinal slots 49 on the bottom side of rod 19 as shown in FIG. 12. Control lines 105 and 106 pass directly through passageways 29 to couple, along with the ends of lines 103 and 104 to a second cross rod 25. Rod 25 is also a hollow, cylindrical, two section, beam (FIG. 14) which is normally contained in the bottom hem of the fabric curtain. The use of demountable plug 45 permits the draw curtain apparatus consisting of support 22 and cross rods 19 and 25 to be prestrung with control lines 100 and still be adjustable in width so that the user can fit the apparatus to a number of different size windows.

Referring to FIG. 9, a bushing 42 is provided on the end of support 22 opposite pulley 21 to reduce the friction of lines 103 and 105 descending through support passageway 29. The shade, according to the invention, is also provided with additional control lines 101 and 102 which descend from eyelets 23 secured to the back face of member 22 and connect to the ends of cross member 19 by means of U-bolts 33. For the purposes of illustration, lines 101 and 102 are equal in length to windowpane 13. The movement of the draw curtain according to the invention is performed as follows:

When the curtain is at its uppermost position, as shown in FIGS. 1 and 2, catch 32 may be released by pulling down slightly on cord 100. When the lines are released, cross member 19 will descend away from support member 22 until lines 101 and 102 become fully extended, as shown in FIG. 3. Lines 103-106 will maintain the movable curtain body in its compressed state due to the relative freedom of the lines within the curtain pleats and passageways 29. After lines 101 and 102 are in tension, a further release of cord 100 permits the weight of cross member 25 to pull lines 103-109 through passageways 29 of support 19 until, if desired, the entire length of curtain 15 is deployed as shown in FIGS. 5 and 6.

By pulling down on cord 100, lines 103-106, due to the relative friction created within the ruffled hem of the curtain and passageways 29, will lift the entire curtain upwards and completely close off window 12 and 13 as shown in FIGS. 7 and 8. After cross member 19 abuts against the bottom side of support member 22, the additional downward movement of control cords 100 will cause cords 103-106 to pull cross member 25 upward and collect curtain body 15 so that it may be returned if desired to its completely compressed state as shown in FIGS. 1 and 2.

It is obvious from this procedure that both the length of curtain 15 and its position with respect to the top of

frame 11 may be controlled independently and set, by means of catch 32, to any desired configuration.

It is contemplated that the hardware for this draw curtain apparatus may be sold separately from the curtain body. It is for this reason that cylindrical cross members 19 and 25 are constructed from two pieces of tubing which telescope into each other in a conventional manner as commonly found in curtain fixtures. When combining this feature within the adjustable nature of support member 22, it is obvious that the draw curtain fixture may be adapted by adjustment to fit a wide range of window openings. The material for stationary curtain 14 and movable curtain 15 may then be purchased independently and connected to the curtain fixture. While the embodiment has disclosed curtains 14 and 15 as Austrian type curtains, it is obvious that any type of curtain material may be utilized for the purposes of this invention.

While only a single embodiment of the present invention has been shown and described, it will be understood that many changes and modifications may be made thereunto without departing from the spirit and scope of the invention.

What is claimed is:

1. A draw curtain apparatus comprising a substantially horizontal support member, a first cross member disposed below said support member, a second cross member disposed below said first cross member, a multi-line control cord disposed from said support member having at least a first set of lines slidably coupled across said first cross member towards its center portion and descending and connected to said second cross member, and a second set of lines slidably coupled through said first cross member and also secured to said second cross member, said lines being collected at one end of said support member, and limit cords connecting said support member to said first cross member so as to limit the travel of said first cross member from said support member.

2. The apparatus as recited in claim 1 additionally comprising a curtain body, having a plurality of vertical side and central hems, said curtain body having its top edge coupled to said first cross member, its bottom edge coupled to said second cross member, said first set of lines passing through said central hems and said second set of lines passing through said side hems.

3. The apparatus as recited in claim 2 wherein said horizontal support member comprises a first and second section in overlapping sliding relationship, and means for securing said overlapping portions together to prevent movement thereof.

4. The apparatus as recited in claim 3 wherein said first and second cross members are each comprised of two sections having their common ends telescoped to each other.

5. The apparatus as recited in claim 4 wherein said securing means comprises at least one lag bolt coupled through the common ends of said horizontal support member.

6. The apparatus as recited in claim 5 wherein said horizontal support member additionally comprises a pulley pivotally supported at one end thereof for receiving and collecting said control cord, and a catch pivotable about the axis of said pulley for arresting the free travel of said cord.

7. The apparatus as recited in claim 6 wherein said curtain body comprises a pleated fabric.

8. The apparatus as recited in claim 7 additionally comprising a stationary curtain secured to said support member.

9. The apparatus as recited in claim 8 wherein each section of said first cross member comprises a plurality of inter-connected holes on one surface, a plug for insertion into one hole of each section, said plug including a guide hole formed in its apex for receiving one of said control

lines, and a longitudinal slot formed on the opposite side of said section for dispensing said lines to said second cross member.

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U.S. Cl. X.R.