

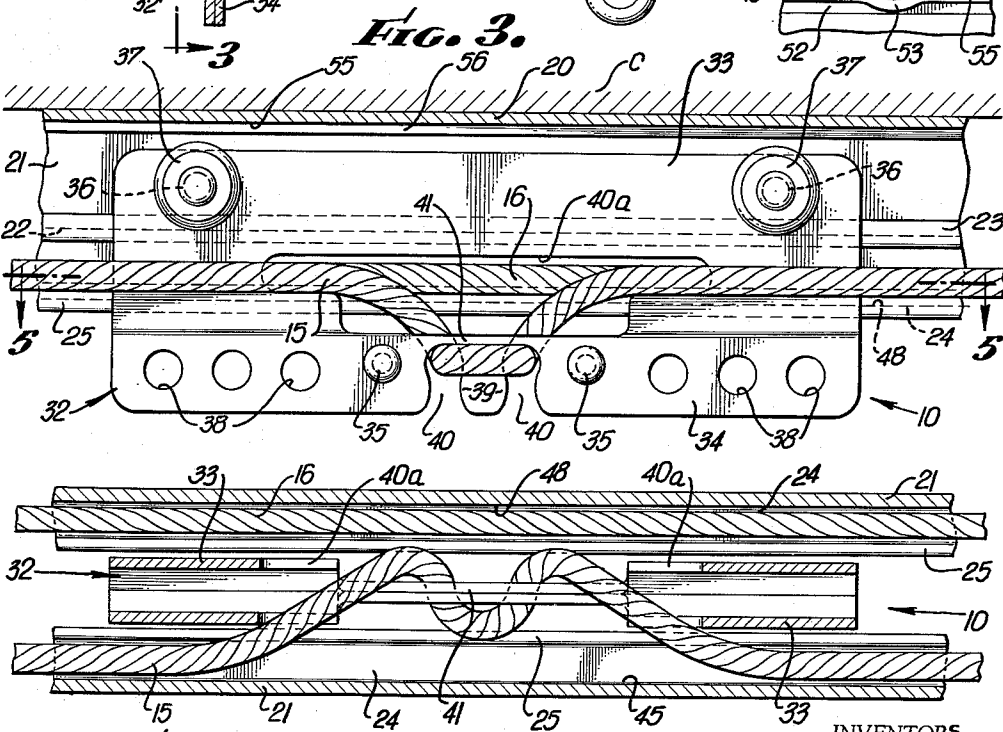
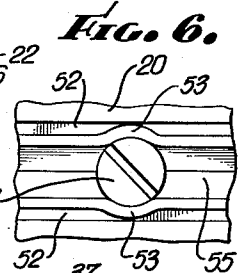
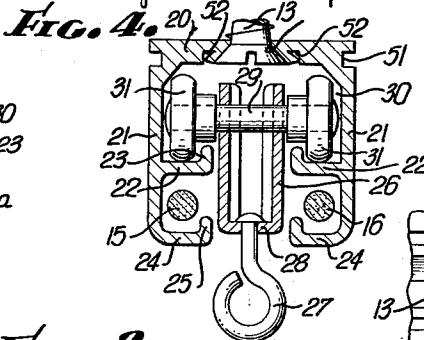
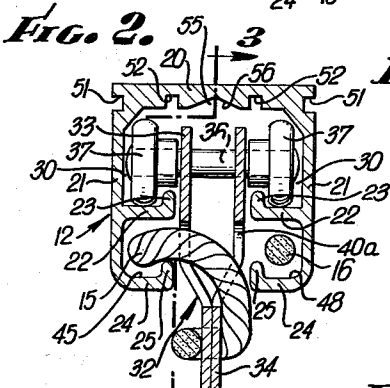
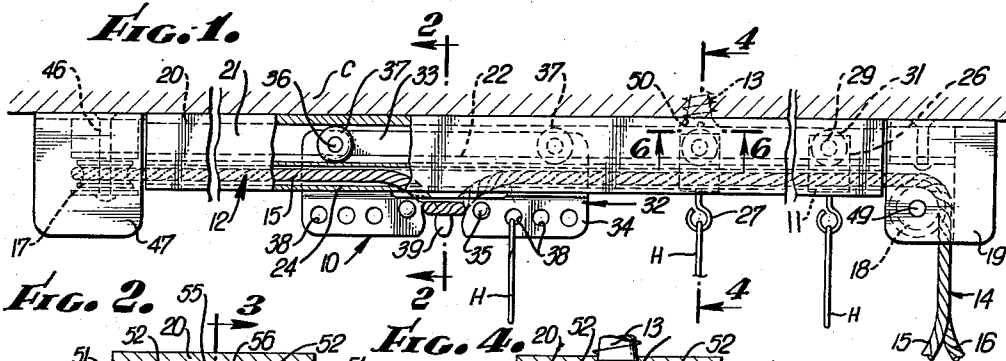
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DRAPERY APPARATUS

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DRAPERY APPARATUS

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The present invention relates to drapery apparatus, and more particularly to apparatus for shifting drapery, and the like, along a supporting structure, as between open and closed positions.

An object of the invention is to provide apparatus for moving drapery between open and closed positions, which operates silently and smoothly.

Another object of the invention is to provide apparatus for moving drapery between open and closed positions, in which the draw or operating cord is prevented from interfering with movement of the master and auxiliary drapery carriers along a supporting track.

A further object of the invention is to provide apparatus for moving drapery along a supporting track in which separate guides are provided for the carrier rollers or slides and the draw or operating cord, to prevent their interfering with one another, the separate guides allowing proper reversal or return of the operating cord over pulleys at the ends of the supporting track, enabling the pulleys to be mounted appropriately close to a ceiling, or other support, to which the track is secured.

An additional object of the invention is to provide an improved track for movably supporting drapes, and the like, which prevents interference between drapery carriers and an operating cord, which is strong and sturdy, and which can be produced relatively economically.

Yet another object of the invention is to provide a track for movably supporting drapery, and the like, in which holes for fastening elements, such as screws, can be punched without producing burrs or other projections in the track that might interfere with proper movement along the track of the mechanism for shifting the drapery. Actually, countersunk holes can be punched in the track without producing the interfering projections.

Still a further object of the invention is to provide a track for movably supporting drapery, and the like, which automatically centers punches, drills, and similar devices, used in producing holes in the track for the reception of fastening elements, such as screws, adapted to secure the track to a supporting ceiling or corresponding structure.

This invention possesses many other advantages, and has other objects which may be made more clearly apparent from a consideration of a form in which it may be embodied. This form is shown in the drawings accompanying and forming part of the present specification. It will now be described in detail, for the purpose of illustrating the general principles of the invention; but it is to be understood that such detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

FIGURE 1 is a side elevational view, parts being shown in longitudinal section, of an apparatus embodying the invention;

FIG. 2 is an enlarged cross-section taken along the line 2—2 on FIG. 1;

FIG. 3 is a longitudinal section taken generally along the line 3—3 on FIG. 2;

FIG. 4 is an enlarged cross-section taken generally along the line 4—4 on FIG. 1;

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FIG. 5 is a longitudinal section taken along the line 5—5 on FIG. 3; and

FIG. 6 is an enlarged fragmentary view taken along the line 6—6 on FIG. 1.

The apparatus shown in the drawings is used for supporting and shifting drapery (not shown), or similar members, across a window, wall or other supporting structure. The drapery is suspended in any suitable manner, as by means of drapery pin hooks H, from a master carrier 10 and auxiliary carriers or hangers 11, and is adapted to be moved along a supporting traverse track or rail 12 that may be attached to an upper ceiling C, or the like, in any suitable manner, as by use of screws 13. An operating or draw cord 14 is attached to the master carrier 10 for shifting it along the track 12. One run 15 of this operating cord extends on one side of the track, the cord then passing over a suitable reversing pulley 17 at an end of the track, the opposite run 16 then returning along the track for passage over one of a pair of pulleys 18 arranged in side-by-side relation and suitably supported in an end bracket 19 at the opposite end of the track, the draw cord then extending vertically, in a known manner, for passage over a lower pulley (not shown), and then extending upwardly for passage over the other of the pulleys 18 carried by the end bracket 19, the cord then extending along the traverse track to the master carrier 10.

As specifically shown, the traverse track or rail 12 includes an upper central web 20 from which vertical side flanges 21 extend. These side flanges are integral with opposed intermediate webs 22 extending toward each other, but spaced substantially from one another, the intermediate webs merging into upwardly projecting vertical flanges or lips 23. Integral with the side flanges 21 are opposed lower horizontal webs 24 extending toward one another and merging into lower vertical flanges or lips 25 spaced substantially from one another. The intermediate webs 22 and their lips 23, and the lower webs 24 and their lips 25, are spaced from one another to permit movement therebetween of the body portions of the master carrier 10 and of the auxiliary carriers 11.

The auxiliary carriers 11 may be of any suitable form. As specifically shown, its body 26 may be of U-shape form, there being an eye 27 depending from its central web 28 for the reception of a suitable drapery pin hook H, or other element, attached to the drapery. Extending horizontally through the upper portion of each carrier body 26 is a shaft 29 projecting into the opposed, upper guide channels or grooves 30 defined between the upper central web 20, intermediate webs 22 and side flanges 21, rollers 31, or the like, being rotatably mounted on the shaft 29 for riding upon the intermediate webs 22, lateral movement of the rollers being limited by their engagement with the vertical retaining lips 23, and by the side flanges 21 themselves.

The body 32 of the master carrier 10 is elongate and may include opposed plates, the upper portions 33 of which are spaced from one another, extending into the space between the opposed intermediate lips 23 and also the opposed lower lips 25. The lower portions 34 of the body contact one another, being suitably attached to each other, as by means of rivets 35. Longitudinally spaced transverse shafts 36 are suitably secured to the upper portions 33 of the body, these shafts extending into the upper grooves 30, there being rollers 37, similar to the rollers 31 of the auxiliary carriers 11, rotatably mounted on the end portions of each shaft 36 for riding upon the intermediate webs 22. As in connection with the other rollers 31, lateral movement of the rollers 37, and of the entire master carrier 10 for that matter, is limited by engagement of the rollers 37 with the intermediate lips

or flanges 23 and also with the upper portions of the side flanges 21.

The lower portion 34 of the master carrier body may have a plurality of holes or openings 38 therein for the reception of drapery pin hooks H, or the like, to be attached to the drapery, and usually to an end portion thereof. This lower portion 34 also has a depending tongue or finger 39 separated from parts of the lower body forwardly and rearwardly thereof to provide slots or openings 40 through which the operating or draw cord 14 can pass. As disclosed, the operating or draw cord is attached to the master carrier body by extending one run, as the run 15 from one side of the body 32 through a longitudinal body opening 40a to the other side of the body and then down under a body bridge portion 41 and back through a lower body space 40 to one side of the tongue 39, over the tongue and back through the other body space 40 on the opposite side of the tongue for passage upwardly around the intervening bridge, and then back through the longitudinal opening 40a to the original side of the master carrier body.

The operating cord 14 extends along a lower guide channel or groove 45 in the track, being connected to the master carrier 10, as in the manner illustrated and described, and then continuing along the same longitudinal lower groove 45 toward the end reversing pulley 17 rotatable on a vertical pin 46 suitably supported by an end bracket 47 attached to the end of the track 12 in any suitable manner. The operating cord 14 runs from the reversing pulley 17 back through the opposed lower guide channel or groove 48, and then over one of the adjacent pulleys 18 mounted on a horizontal pin or shaft 49, suitably supported in the end bracket 19 at the opposite end of the track 12. As mentioned above, the draw cord passes downwardly from one pulley 18 and then around a lower pulley (not shown), continuing upwardly for passage over the other of the pair of end pulleys 18, and back into the lower guide channel or groove 45.

The master carrier 10 is secured to the drape, as to its end portion, and the auxiliary carriers 11 are secured at desired spaced points to the drape. In order to shift the drape along the track 12, one of the vertical runs of the draw cord 14 is pulled downwardly, the draw cord moving in its opposed guide channels 45, 48, and in that manner sliding the master carrier 10 along the track 12, the pairs of longitudinally spaced rollers 37 of the master carrier preventing its tilting or rocking, and insuring its smooth travel in the upper guide grooves 30 and along the upwardly facing surfaces of the intermediate webs 22. The draw cord 14 remains in the lower guide channels or grooves 45, 48, the upwardly extending flanges or lips 25 preventing inadvertent outward movement of the cord from the lower guide channels into the central portion of the track 12 where the cord might interfere with the shifting of the carriers 10, 11 along the track. The cord 14 remains in its lower guide grooves 45, 48 despite the fact that the diameter of the cord is less than the distance between the lower vertical lips 25 and the intermediate webs 22. The cord tends to remain in the lower portions of its guide grooves 45, 48, and will not shift laterally inwardly from these guide grooves, because of the retaining function of the upwardly extending flanges or lips 25.

The draw cord 14 can be shifted in either direction to move the master carrier 10 and the auxiliary carriers 11 in one direction or the other along the track 12, shifting the drapery to a closed position or an open position, as desired. By virtue of having the guide grooves 45, 48 for the cord 14 in the lower portion of the track 12, the end pulleys 17, 18 can be made of ample dimension and appropriately mounted in the end brackets 47, 19 without the problem of interference by the upper supporting ceiling C. Accordingly, the vertical dimensions of the track 12 can be held to a minimum, the pulleys 17, 18 them-

selves being made of ample size to provide a long effective and silent life.

The track 12 can be made of any suitable material, such as an aluminum extrusion. It can be secured to the supporting structure C, such as the ceiling, in any suitable manner, as by use of screws 13, passing through holes 50 in the central web 20. It can be supported by other means, as by use of brackets (not shown), adapted to be received in outer upper longitudinal grooves 51 in the track. When screw attachments, or the like, are used, suitable holes 50 are provided at spaced points along the central web. It is preferred to punch such holes in the web 20, because of rapidity and economy in manufacture. To avoid interference between the screws 13 and the carriers 10, 11, it is preferred that such holes be countersunk.

The punching of holes in the web 20 could produce burrs or protuberances extending downwardly of the web, which might interfere with the carriers 10, 11 as they move along the track 12. To avoid such interference, parallel longitudinally extending relief grooves 52 are provided in the interior of the central web 20 of the track. These relief grooves are spaced from one another a distance greater than the diameter of the tapered countersunk hole portion 50 or of the head of the screw 13 to be received in the countersunk portion of the hole. Accordingly, when the hole is punched in the central web 20, as by driving the punch (not shown) from the interior of the web through to its exterior, the material of the web is displaced in an outward direction, being forced into the relief grooves 52, as shown most clearly at 53 in FIG. 6. The material flows horizontally into the grooves 52, and will not extend downwardly of the web 20 as a projection or protuberance within the confines of the track. Accordingly, when a screw 13 having a countersunk head is threaded into the ceiling C, the countersunk head will lie within the countersunk portion of the hole 50, such as shown in FIGS. 1 and 6, free from downward projection relative to the central web 20, the adjacent inner portions of the central web 20 forming a flush continuation of the lower end of the screw head.

To insure the centering of the punched hole 50 in the central web 20, a longitudinally extending centering groove 55 is provided interiorly of and along the entire length of the web of the track. This centering groove has its sides 56 diverging from each other in a downward direction, as shown most clearly in FIGS. 2 and 4. When the punch engages the interior of the web 20, the upwardly converging side walls 56 of the centering groove will engage the punch and insure its retention in a centered position, so that the hole 50 is produced at its intended location. There is no tendency for the punch to shift to any degree laterally and produce an off-center hole.

The centering groove 55 also insures the appropriate centering of a hole that may be drilled through the web 20. As an example, in the installation of the track 12 on an overhead support C, such as a ceiling, it may be necessary to provide holes 50 at different locations than those which have been prepunched. A portable drill is ordinarily used, which the installer must hold over his head, with the drill bit engaging the web 20. It is difficult to start the hole at a centered position, even when a centering punch is first used. With the centering groove 55, the drill bit need merely be placed upwardly against the web 20 and in its groove 55, the sides 56 of the groove centering the bit accurately transversely of the upper web 20 of the track, and insuring the starting and completion of the hole 50 in a centered position.

We claim:

1. In apparatus for supporting and drawing drapery and the like: a track having an upper central web, substantially parallel, vertical side flanges depending from said web, opposed lower horizontal webs extending inwardly from said side flanges, and opposed intermediate webs extending inwardly from said vertical side flanges

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and defining opposed upper grooves with said upper web, said intermediate webs further defining opposed lower guide grooves with said lower webs, said lower grooves having longitudinally extending openings confronting each other; a carrier in said track having oppositely directed means in said upper grooves resting on and movable along said intermediate webs, said carrier extending downwardly between said lower grooves and across their openings and being attachable to the drapery; and a draw cord for shifting said carrier along said track and disposed in said lower grooves and engageable with said lower webs, intermediate webs, and side flanges to be confined thereby in said lower grooves and guided thereby in its longitudinal movement in said lower grooves; the lower portion of each of said side flanges between said intermediate and lower webs being a lower continuation of the portion of such flange above said intermediate web.

2. In apparatus for supporting and drawing drapery and the like: a track having an upper central web, substantially parallel, vertical side flanges depending from said web, opposed lower horizontal webs extending inwardly from said side flanges, and opposed intermediate horizontal webs extending inwardly from said vertical side flanges and defining opposed upper grooves with said upper web, said intermediate webs further defining opposed lower guide grooves with said lower webs, said lower grooves having longitudinally extending openings confronting each other; a carrier in said track having rollers in said upper grooves resting on and rollable along said intermediate webs, said carrier extending downwardly between said lower grooves and across their openings and being attachable to the drapery; and a draw cord for shifting said carrier along said track and disposed in said lower grooves and engageable with said lower webs, intermediate webs, and side flanges to be confined thereby in said lower grooves and guided thereby in its longitudinal movement in said lower grooves; the portion of each of said side flanges between said intermediate and lower webs being a lower continuation of the portion of such flange above said intermediate web.

3. In apparatus for supporting and drawing drapery and the like: a track having an upper central web, substantially parallel, vertical side flanges depending from said web, opposed lower horizontal webs extending inwardly from said side flanges, and opposed intermediate horizontal webs extending inwardly from said vertical side flanges and defining opposed upper grooves with said upper web, said intermediate webs further defining opposed lower guide grooves with said lower webs, said lower grooves having longitudinally extending openings confronting each other; a carrier in said track having oppositely directed means in said upper grooves resting on and movable along said intermediate webs, said carrier extending downwardly between said lower grooves and across their openings and being attachable to the drapery; a draw cord for shifting said carrier along said track and disposed in said lower grooves; and lip portions extending upwardly from the inner ends of said intermediate webs and lower webs to retain said oppositely directed means in said upper grooves and said draw cord in said lower grooves, said draw cord being engageable with said lower webs, intermediate webs, side flanges, and lip portions extending upwardly from said lower webs to be confined thereby in said lower grooves and guided thereby in its longitudinal movement in said lower grooves; the lower portion of each of said side flanges between said intermediate and lower webs being a lower continuation of the portion of such flange above said intermediate web.

4. A track for supporting a carrier attachable to a drapery and the like and movable along the track by a draw cord, comprising a central web, substantially parallel, vertical side flanges depending from said web, opposed lower horizontal webs extending inwardly from said side flanges, and opposed intermediate horizontal webs extending inwardly from said vertical side flanges and defining

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opposed upper grooves with said upper web in which the carrier is adapted to be movably supported, said intermediate webs further defining opposed lower guide grooves with said lower webs in which the cord is adapted to be shiftably mounted and in which it is adapted to be guided by engagement with said lower webs, intermediate webs, and side flanges, said lower grooves having longitudinally extending openings confronting each other, the portion of each of said side flanges between said intermediate and lower webs being a lower continuation of the portion of such flange above said intermediate web.

5. A track for supporting a carrier attachable to a drapery and the like and movable along the track by a draw cord, comprising a central web, substantially parallel, vertical side flanges depending from said web, opposed lower horizontal webs extending inwardly from said side flanges, and opposed intermediate horizontal webs extending inwardly from said vertical side flanges and defining opposed upper grooves with said upper web in which the carrier is adapted to be movably supported, said intermediate webs further defining opposed lower guide grooves with said lower webs in which the cord is adapted to be shiftably mounted and in which it is adapted to be guided by engagement with said lower webs, intermediate webs, and side flanges, said lower grooves having longitudinally extending openings confronting each other, the portion of each of said side flanges between said intermediate and lower webs being a lower continuation of the portion of such flange above said intermediate web, and lip portions extending upwardly from the inner ends of said intermediate webs and lower webs and adapted to retain the cord in said lower grooves and the carrier in the upper grooves.

6. A track adapted to be attached to a supporting structure for supporting a carrier attachable to a drapery and the like and movable along the track by a draw cord, comprising a web for attachment to the supporting structure, means secured to said web for guiding the carrier and draw cord along the track, said web having longitudinally extending relief grooves therein and holes in said web between said grooves for the reception of fastening elements adapted to be secured to the supporting structure, said relief grooves allowing web material to be deformed thereinto during production of said holes.

7. A track adapted to be attached to a supporting structure for supporting a carrier attachable to a drapery and the like and movable along the track by a draw cord, comprising a web for attachment to the supporting structure, means secured to said web for guiding the carrier and draw cord along the track, said web having longitudinally extending relief grooves therein and countersunk holes in said web between said grooves for the reception of fastening elements having countersunk head portions and adapted to be secured to the supporting structure, said relief grooves allowing web material at the countersunk portions of said holes to be deformed thereinto during production of said holes.

8. A track adapted to be attached to a supporting structure for supporting a carrier attachable to a drapery and the like and movable along the track by a draw cord, comprising a web for attachment to the supporting structure, means secured to said web for guiding the carrier and draw cord along the track, said web having longitudinally extending relief grooves therein and holes in said web between said grooves for the reception of fastening elements adapted to be secured to the supporting structure, said relief grooves allowing web material to be deformed thereinto during production of said holes, said web having a centering groove therein between said relief grooves, said centering groove being defined by side walls diverging inwardly of said web and laterally outwardly toward said relief grooves to center a tool for producing a hole through said web between said relief grooves.

9. A track for supporting a carrier attachable to a drapery and the like and movable along the track by a

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draw cord, comprising a central web, side flanges depending from said web, opposed lower webs extending inwardly from said side flanges, and opposed intermediate webs extending inwardly from said side flanges and defining opposed upper grooves with said upper web in which the carrier is adapted to be movably supported and and opposed lower grooves with said lower webs in which the cord is adapted to be shiftably mounted, said central web having longitudinal extending relief grooves therein and holes in said central web between said relief grooves for the reception of fastening elements adapted to be secured to a supporting structure, said relief grooves allowing material of said central web to be deformed thereinto during production of said holes.

10. A track for supporting a carrier attachable to a drapery and the like and movable along the track by a draw cord, comprising a central web, side flanges depending from said web, opposed lower webs extending inwardly from said side flanges, and opposed intermediate webs extending inwardly from said side flanges and defining opposed upper grooves with said upper web in which the carrier is adapted to be movably supported and opposed lower grooves with said lower webs in which the cord is adapted to be shiftably mounted, said central web having a centering groove therein defined by side walls diverging inwardly and laterally toward said side flanges to center a tool for producing a hole through said central web.

11. A track for supporting a carrier attachable to a drapery and the like and movable along the track by a draw cord, comprising a central web, side flanges depending from said web, opposed lower webs extending inwardly from said side flanges, and opposed intermediate webs extending inwardly from said side flanges and defining opposed upper grooves with said upper web in which the carrier is adapted to be movably supported and opposed lower grooves with said lower webs in which the cord is adapted to be shiftably mounted, said central web having longitudinally extending relief grooves therein and holes in said central web between said relief grooves for the reception of fastening elements adapted to be secured to a supporting structure, said relief grooves allowing material of said central web to be deformed thereinto during production of said holes, said central web having a centering groove therein between said relief grooves, said centering groove being defined by side walls diverging inwardly of said central web and laterally outwardly toward said relief grooves to center a tool for producing a hole through said central web between said relief grooves.

12. In apparatus for supporting and drawing drapery and the like: a track having an upper central web, substantially parallel, vertical side flanges depending from said web, opposed lower horizontal webs extending inwardly from said side flanges, and opposed intermediate horizontal webs extending inwardly from said vertical side flanges and defining opposed upper grooves with said upper web, said intermediate webs further defining op-

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posed lower guide grooves with said lower webs, said lower grooves having longitudinally extending openings confronting each other; a carrier in said track having oppositely directed means in said upper grooves resting on and movable along said intermediate webs, said carrier extending downwardly between said lower grooves and across their openings and being attachable to the drapery; and a draw cord in said lower grooves extending through one of said openings for connection to said carrier for shifting said carrier along said track, said cord being engageable with said lower webs, intermediate webs, and side flanges to be confined thereby in said lower grooves and guided thereby in its longitudinal movement in said lower grooves; the portion of each of said side flanges between said intermediate and lower webs being a lower continuation of the portion of such flange above said intermediate web.

13. In apparatus for supporting and drawing drapery and the like: a track having an upper central web, substantially parallel, vertical side flanges depending from said web, opposed lower horizontal webs extending inwardly from said side flanges, and opposed intermediate horizontal webs extending inwardly from said vertical side flanges and defining opposed upper grooves with said upper web, said intermediate webs further defining opposed lower guide grooves with said lower webs, said lower grooves having longitudinally extending openings confronting each other; a carrier in said track having oppositely directed means in said upper grooves resting on and movable along said intermediate webs, said carrier extending downwardly between said lower grooves and across their openings and being attachable to the drapery; a draw cord in said lower grooves extending through one of said openings for connection to said carrier for shifting said carrier along said track, said cord being engageable with said lower webs, intermediate webs, and side flanges to be confined thereby in said lower grooves and guided thereby in its longitudinal movement in said lower grooves; the portion of each of said side flanges between said intermediate and lower webs being a lower continuation of the portion of such flange above said intermediate web; and lip portions extending upwardly from the inner ends of said intermediate webs and lower webs to retain said oppositely directed means in said upper grooves and said draw cord in said lower grooves.

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