March 26, 1957 A. WEBER 2,786,522

SUPPORTING AND DRAWING DEVICE FOR CURTAINS AND THE LIKE

Filed June 6, 1955

Fig. 1.

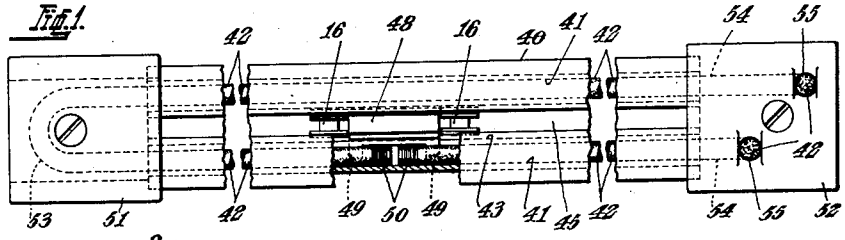


Fig. 2.

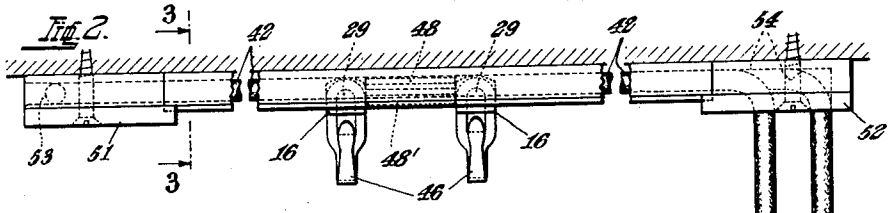


Fig. 3.

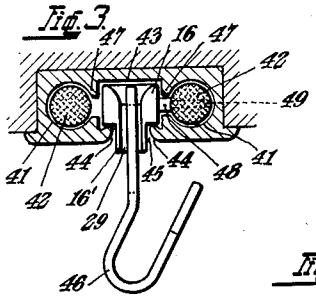


Fig. 4.

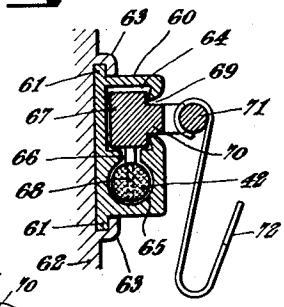
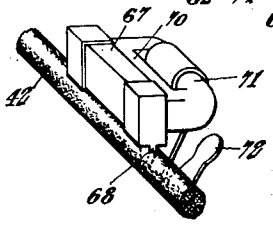


Fig. 5.



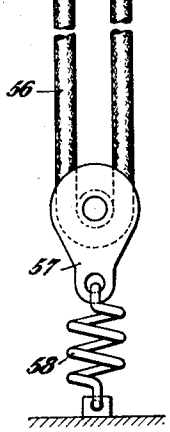


Fig. 6.

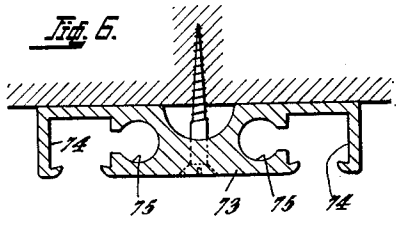
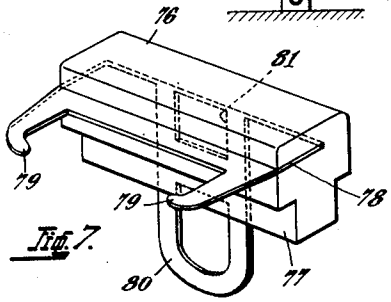


Fig. 7.



INVENTOR:
ALEXANDER WEBER

By
Richardson, David and Norton

Attys

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SUPPORTING AND DRAWING DEVICE FOR CURTAINS AND THE LIKE

Alexander Weber, Zollikofen, near Bern, Switzerland, assignor to Hans Beer, Bern, and Firm Awepa, Zollikofen, near Bern, Switzerland

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9 Claims. (Cl. 160—345)

This invention relates to a supporting and drawing device for curtains, hanging scene wings, folding walls and the like which are slidably supported by means of runners guided in a channelled rail, whereby a draw cord slidably extends and is longitudinally guided in a separate channel of the rail provided with a longitudinal slot of width narrower than the thickness of the draw cord and at least one master runner is connected to the draw cord by pin means traversing the slot and piercing the draw cord.

While in U. S. patent application Serial No. 348,788 a device of this character is described, it is an object of the present invention to provide an improved master runner which is particularly adapted for use in hollow profile rails of comparatively very small cross sectional dimensions, in which case certain detachable parts of hitherto known master runners, if reduced proportionally, would become too small.

Another object of the invention is the provision of a master runner having pin means which are integral with the guiding body of the runner, whereby the guiding body is guided by the rail in parallel relation to the draw cord channel and the pin means are maintained in coupling engagement with the draw cord exclusively by the guiding effect of the rail upon said body and said draw cord.

A further object of the invention is to provide a master runner adapted to couple the two ends of the draw cord so that the latter constitutes an endless pulling member.

Other objects and advantages of the invention relate to various improved details of construction and novel arrangements of the parts of the supporting and drawing device as will be more fully set forth in the detailed description to follow.

In the accompanying drawing:

Fig. 1 is a view from below of an embodiment of a curtain supporting and drawing device, part of the supporting rail being broken away;

Fig. 2 is a lateral longitudinal view of Fig. 1;

Fig. 3 shows a cross section along line 3—3 of Fig. 2, however drawn to a larger scale;

Fig. 4 shows in cross section another supporting rail together with a master runner;

Fig. 5 is a perspective view of a master runner and a portion of the draw cord of Fig. 4;

Fig. 6 shows a further supporting rail in cross section, and

Fig. 7 is a perspective view of another master runner.

The curtain supporting and drawing device shown in Figs. 1 to 3 comprises a hollow profile rail 40 which preferably consists of aluminum, brass, artificial resin or the like and has internally two parallel cylindrical channels 41 for the two runs of an endless draw cord 42 slidably extending therein and in the middle therebetween and parallel thereto a separate channel 43 of substantially rectangular cross section for the runners 16 slidably supported by two ledges 44 of the rail 40. Each runner 16 has a guiding portion 16' projecting outwardly through

a slot 45 laterally defined by the ledges 44 which guide said runners in said slot. For supporting a curtain (not shown) the runners 16 have each an intermediary constricted portion 29 whereon a hook 46 is pivotally suspended.

The two draw cord channels 41 are inside of the rail each in communication with the runner channel 43 through a slot 47, which slots are arranged in alinement with the common axial plane of the draw cord channels 41 which comprises also the longitudinal axis of the runner channel 43. The draw cord 42 is guided over the whole length of the rail 40 by the cylindrical surface of channel 41 which normally may have a width of about ⅛ inch only and permits a slight radial play of the draw cord, while the width of the slot 47 is sufficiently less than the thickness of the draw cord in order to avoid wedging of the latter in said slot.

The height of the runner channel 43 is approximately the same as the width of the draw cord channels so that the total height or thickness of the rail 40 can be very greatly reduced and may be about ¼ to ⅓ inch only and the total width of the cross section according to Figure 3 remains still below 1 inch. Tests have proved that the function of the runners and the operation of the draw cord is not hampered at all in a rail structure of such reduced dimensions.

For transmitting the travelling motion of one or the other run of the draw cord 42 upon a curtain a master runner 48 is disposed immediately between two ordinary runners 16 in the channel 43 to co-operate at its front faces with said two adjoining runners. The master runner 48 is supported by the ledges 44 and has a portion 48' projecting therebetween to be guided in the slot 45 of the rail 40. This master runner has two lateral projections 49 spaced from each other in sliding direction (Figures 1 and 3) the free ends of which are directed towards each other and which projections, previous to inserting the master runner in the rail 40, are both inserted into the draw cord 42 each at a pre-pierced point thereof, whereupon the draw cord 42 together with the runners 48 and 16 are positioned in the respective channels 41 and 43 of the rail 40, so that the two projections 49 traverse the corresponding slot 47 in the rail 40. If there is a second curtain intended for sliding in the opposite direction a second master runner is provided to be coupled to the other run of the draw cord and to co-operate with two of the ordinary runners supporting said second curtain.

The engagement of the draw cord 42 by the projections 49 of the master runner 48 which form undetachable integral parts of the latter is only secured by the structural fact that the master runner and the draw cord are both guided in the rail at a substantially unaltering distance from each other. As seen from Figure 1, the master runner can also be used for coupling the two ends 50 of the draw cord together in order to provide an endless drawing member. In this case each cord end is wound round with thread and is preferably lacquered thereafter for preventing an eventual giving way by fringing, while the projections 49 of the master runner 48 traverse said ends in front of the respective wound portion 50.

As shown in Figures 1 and 2, at the one end face of the rail 40, a cord reversing guide 51 and, at the other end face, a cord deviation guide 52 are fitted. Said guides have respectively a cord reversing channel 53 or two separate cord deviating channels 54, which channels 53 and 54 correspond with the channels 41 of the rail 40. The outer openings 55 of the two channels 54 at the lower face of the guide 52 are staggered to each other in longitudinal direction of the rail so that said guide may also be used on a rail arranged with the outer slot 45 sideways, whereby the two runs of the downwardly hanging

loop 56 of the draw cord are still spaced from each other. The loop 56 may run round a universal reversing guide member 57 which is engaged by a spring 58 or a weight for tensioning the draw cord.

The rail 60 shown in Figure 4 has two outer side flanges 61 by means of which it is mounted on a lateral support 62 having correspondingly two projecting flanges 63 which engage the rail flanges 61. The rail 60 has besides a runner channel 64 only one draw cord channel 65 which communicates with the channel 64 through an internal slot 66. Figures 4 and 5 show a modification of a master runner having on its sliding body 67 two spaced projections 68 for engaging the draw cord by traversing the rail slot 66 and the draw cord. The master runner is guided in the outer rail slot 69 by means of another projection 70 forming on the outside a stirrup 71 whereon a hook 72 is pivotally mounted for supporting together with the hooks of ordinary runners a curtain.

The rail 73 shown in Figure 6 is a double type of the rail 60, having two runner channels 74 and two draw cord channels 75, the axes of these parallel channels being contained in a common plane, so that the rail may have a very reduced height of about ¼ inch only. This rail is adapted to support two or more complementary sections of a curtain, which can be moved in opposite direction to one another by means of an endless draw cord. The distance between the two draw cord channels 75 is the same as in the rail 40.

Figure 7 shows a further modification of a master runner, adapted to be made in very small dimensions so as to fit for instance in a runner channel which is about ¼ inch wide and less than ⅛ inch high. The sliding body 76 of said runner is made of synthetic resin and has a narrower portion 77 with which the runner is guided in the outer slot of the rail. In the body 76 is secured a sheet metal piece 78 bent at right angle, the one leg of which provides two spaced projections 79 for engaging the draw cord by traversing the same, while the other leg forms an annular projection 80 traversing the portion 77 and intended to be used for connection with the curtain. The metal piece 78 has within the body 76 an aperture 81 which is fully traversed by material of said body for anchoring purposes. The free ends of the projections 79 are slightly directed towards each other for better engagement with the draw cord.

Preferably the runners, master runners and direction changers consist of pressed material, such as synthetic resin, as far as their sliding surfaces are concerned, and the sectional rails consist of metal. Specially the synthetic resin under the commercial designation "nylon" is excellently suitable for the purposes in view since its coefficient of friction is low, its resistance against wear is high and its melting point lies at about 290° C. far above the possible local heating due to friction so that no deformation will occur. Instead of runners sectional rails equipped with rollers may be provided.

While the preferred embodiments of the invention have been shown and herein described, it will be understood that the same was capable of modification without departure from the general scope and spirit of the invention as defined in the claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A supporting and drawing device for curtains and the like, which are slidably supported by means of runners guided in a channelled rail, a draw cord slidably extending and being longitudinally guided in a separate channel of said rail, said draw cord channel having a longitudinal slot of width narrower than the thickness of said draw cord, at least one master runner being connected to said draw cord by pin means traversing said slot and piercing said draw cord, characterized in that said pin means are integral with the guiding body of said master runner, whereby said guiding body is guided by said rail in parallel relation to said draw cord channel and said pin means are maintained in coupling engagement with said draw cord exclusively by the guiding effect of said rail upon said body and said draw cord.

2. A device as claimed in claim 1, wherein said draw cord channel and said runner channel communicate with each other through a slot arranged longitudinally in the interior of said rail, characterized in that said master runner has two pin-like projections extending transversely of and spaced from each other in its sliding direction for traversing said internal slot and piercing said draw cord, whereby said master runner is capable of coupling the two ends of said draw cord together in that each projection traverses one of the end portions of said draw cord in order to transform the latter in an endless draw cord.

3. A device as claimed in claim 2, wherein the runner channel of said rail has a longitudinal slot at the exterior of said rail, characterized in that said master runner has alongside a projection for extending into said slot and for being guided in longitudinal direction of said rail by rail flanges defining said slot.

4. A device as claimed in claim 1, characterized in that said master runner is positioned immediately between two ordinary runners and has front surfaces for co-operating as a shifting member with said runners.

5. A device as claimed in claim 3, characterized in that said master runner has at its projection extending into said outer slot a suspension means for carrying a portion of a curtain.

6. A device as claimed in claim 5, characterized in that said two pin-like projections and said suspension means consist of a single metal piece which is rigidly embedded in the remaining portion of said master runner.

7. A device as claimed in claim 1, wherein said rail has two parallel substantially cylindrical channels for a draw cord extending to and fro, characterized in that the axes of said two draw cord channels together with the axis of at least one runner channel are located in a common plane, whereby all said channels are substantially equal in height so as to limit the total height of said rail in direct relation with the height of said channels.

8. A device as claimed in claim 1, characterized in that at the two ends of said rail two cord guides are provided for altering the direction of said draw cord, one of said guides having two separate cord deviating channels each with an outer opening on the same longitudinal side of said rail, said two openings being staggered to each other in longitudinal direction of said rail.

9. A device as claimed in claim 1, wherein said rail has two parallel channels for a draw cord extending to and fro, characterized in that to each one of said draw cord channels a runner channel is provided on the outer side thereof.

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