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WINDOW CURTAIN SUPPORT
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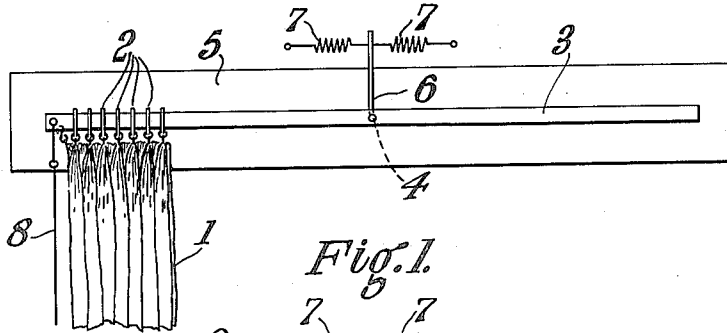


Fig. 1.

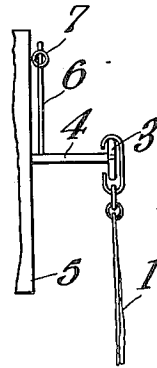


Fig. 2.

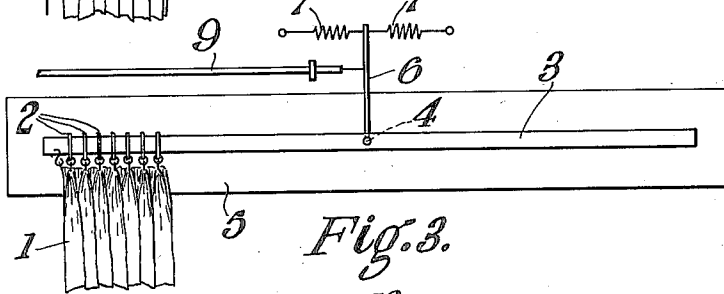


Fig. 3.

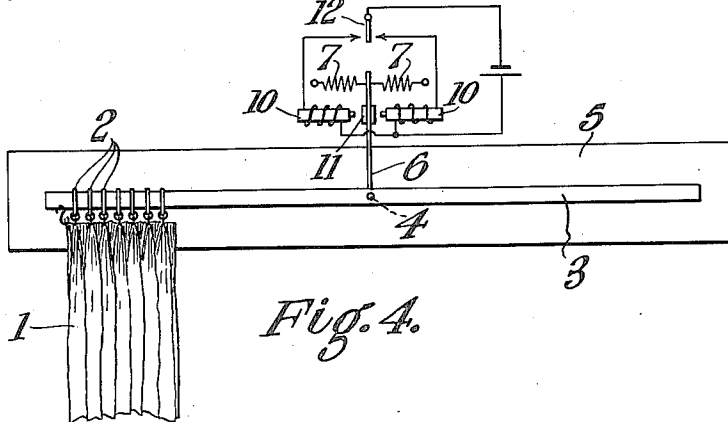


Fig. 4.

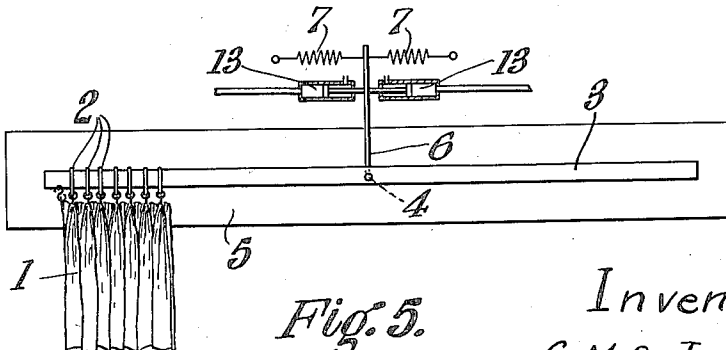


Fig. 5.

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WINDOW CURTAIN SUPPORT

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10 Claims. (Cl. 156—19)

This invention relates to window curtains or the like and has for its object the provision of improved means for effecting the movement of the curtain to and from the operative and the inoperative position.

In accordance with the invention the curtain is supported by runner elements adapted to run along a runner rail, and the movement of said curtain is effected by tilting said runner rail.

In order that the invention may be the more clearly understood certain arrangements in accordance therewith will now be described, reference being made to the accompanying drawing wherein:—

Figure 1 is a front elevation of one of said arrangements.

Figure 2 is an enlarged end view of the same.

Figures 3, 4 and 5 are similar views to Figure 1 showing alternative means by which the necessary motive power may be supplied.

Referring to all the figures the curtain 1 is supported at intervals along its upper edge by means of runner elements 2 which are supported by, and adapted to run freely along, a runner rail 3 in the usual way. As shown these runner elements 2 are of the sliding type, but they may suitably be of the kind provided with antifriction wheels so that they run along the runner rail 3 with a high degree of freedom.

This runner rail 3 is rigidly secured at a point mid-way of its length, to a horizontal pin 4 which is mounted to the top member 5 of the window frame so as to be rotatable about its axis. Thus said runner rail 3 may be tilted in either direction about the axis of the pin 4. Said runner rail 3 is yieldably maintained at a normal horizontal position by means of an arm 6 extending upwards from said pin 4 at right angles to the runner rail and tension springs 7 adapted to act in opposite horizontal directions on the upper end of said arm 6, which tension spring balance one another only when the rail is horizontal and the arm vertical.

One end, say the left hand end, of the upper edge of the curtain 1 is fixed to a point near the left hand end of the runner rail 3 and means are provided whereby the rail may be tilted in either direction from the horizontal. If the curtain 1 is at the operative position so that its upper edge extends along the runner rail 3 and it is wished to move it to the inoperative position, the left hand end of the runner rail 3 is tilted downwards and the runner elements 2 will all run under gravity to that end,

bunching the curtain 1 at the left hand side. The runner rail 3 may then if desired be returned to the horizontal position.

If it is now wished to move the curtain 1 once more to the operative position, the right hand end of the runner rail 3 is tilted downwards. The runner elements 2 will now all run as far as possible to the right, and, the left hand end of the upper edge of the curtain 1 being secured near the left hand end of the rail 3, this will cause the upper edge of the curtain to be extended along the rail with the curtain at the operative position.

A large number of devices may be provided for rocking the runner rail 3 in the two directions. One such device is a light rod 8 (Figure 1) attached to, and depending downwardly from the left hand end of said runner rail 3 and adapted to be actuated directly by hand or remotely through a mechanical device. Alternatively the runner rail may be tilted through a Bowden wire transmission 9 (Fig. 3) acting on the upwardly extending arm 6 to which the oppositely acting springs 7 are secured.

Again the tilting may be effected by electromagnets 10 (Fig. 4) adapted to act in opposite directions on an armature 11 carried by said upwardly extending arm 6, a switch 12 being provided having an intermediate "off" position and right and left "on" positions at which the right and left hand electromagnets are respectively energized.

Again, the tilting may be effected by means of suction operated device 13 adapted to act in opposite directions on said upwardly extending arm, 6, means being provided whereby one or other of said devices may be connected through respective pipes 14 with a source of low pressure fluid (not shown). This last arrangement is particularly useful in connection with window blinds for motor vehicles in which case the source of low pressure fluid may be the induction pipe of the engine.

What I claim and desire to secure by Letters Patent is:—

1. In means for supporting and effecting adjustment of a curtain to and from the operative and the inoperative positions, a pivotally tiltable supported runner rail, and curtain supporting runner elements carried by and capable of running along said runner rail, said runner elements with the curtain supported thereby remaining stationary in the horizontal position of the runner rail and adapted to carry the curtain

by gravity along the runner rail when the rail is tilted from the horizontal.

2. In means for supporting and effecting adjustment of a curtain to and from the operative and the inoperative positions, a pivotally tiltably supported runner rail, curtain supporting runner elements carried by and adapted to remain stationary in the horizontal position of the runner rail and capable of running along said runner rail when the rail is tilted from the horizontal, and means to tilt said runner rail in opposite directions from and to the horizontal whereby said runner elements with the curtain supported thereby when the rail is tilted from the horizontal run by gravity along the runner rail to the operative or inoperative positions.

3. In means for supporting and effecting adjustment of a curtain to and from the operative and the inoperative positions, a pivotally tiltably supported runner rail, and curtain supporting runner elements carried by and adapted to remain stationary on the runner rail in the horizontal position thereof and capable of running along said runner rail when the rail is tilted from the horizontal, said curtain at one of its upper corners being attached to said runner rail and otherwise free to move with the runner elements along the runner rail whereby tilting of said runner rail in opposite directions about its pivot the runner elements with the curtain supported thereby run by gravity to the extended or the folded positions of the curtain.

4. In means for supporting and effecting adjustment of a curtain to and from the operative and the inoperative positions, a runner rail pivotally tiltably supported intermediate its ends, resilient means connected to the runner rail operative to move the runner rail to and yieldingly retain it in horizontal position, and curtain supporting runner elements carried by and capable of running along said runner rail, and means to tilt said runner rail about its pivot in opposite directions against the action of said resilient means whereby said runner elements with the curtain supported thereby run by gravity to the operative or inoperative positions.

5. Means according to claim 4, wherein said resilient means comprises oppositely balanced springs.

6. In means according to claim 4, a rigid arm fixed to and extending at a right angle to said runner rail, and the resilient means to urge the runner rail to horizontal position comprises oppositely balanced springs co-acting with said arm.

7. In means for supporting and effecting adjustment of a curtain to and from the operative and the inoperative positions, a runner rail pivotally tiltably supported intermediate its ends and adapted to be tilted upon its pivotal support, and curtain supporting runner elements carried by and adapted to remain stationary on the runner rail in the horizontal position thereof and capable of running along said runner rail when the rail is tilted from the horizontal, said curtain being attached at an upper corner to said runner rail and otherwise free to move with the runner elements, whereby when the runner rail is tilted from the horizontal the runner elements with the curtain supported thereby run by gravity along the runner rail to the extended or folded positions of the curtain.

8. In apparatus according to claim 7, an arm rigid with and extending at a right angle to said runner rail near the pivot thereof, means to yieldingly urge the arm to position the runner rail to extend in a horizontal plane, and means operative to move said arm against said yielding means and tilt said runner element from the horizontal.

9. In apparatus according to claim 7, an arm rigid with and extending at a right angle to said runner rail near the pivot thereof, means to yieldingly urge the arm to position the runner rail in a horizontal plane, and electro-magnets disposed at opposite sides of said arm operative to move the arm against said yielding means and tilt the runner rail from the horizontal.

10. In apparatus according to claim 7, an arm rigid with and extending at a right angle to said runner rail near the pivot thereof, and pneumatically operated pistons disposed at and connected to opposite sides of said arm operative to move the arm against said yielding means and tilt the runner rail from the horizontal.

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