Aug. 26, 1958 A. J. TOTI 2,849,061

VERTICAL SLAT BLIND CONTROL

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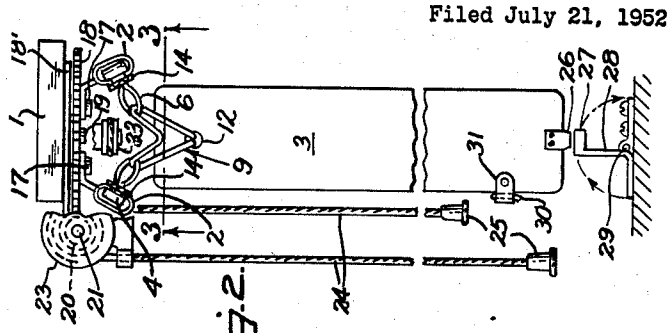


Fig. 2.

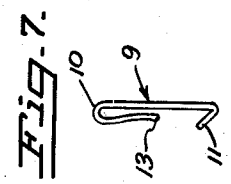


Fig. 7.

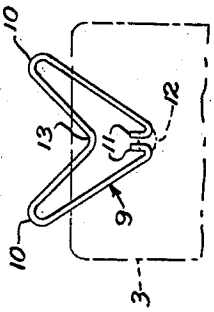


Fig. 6.

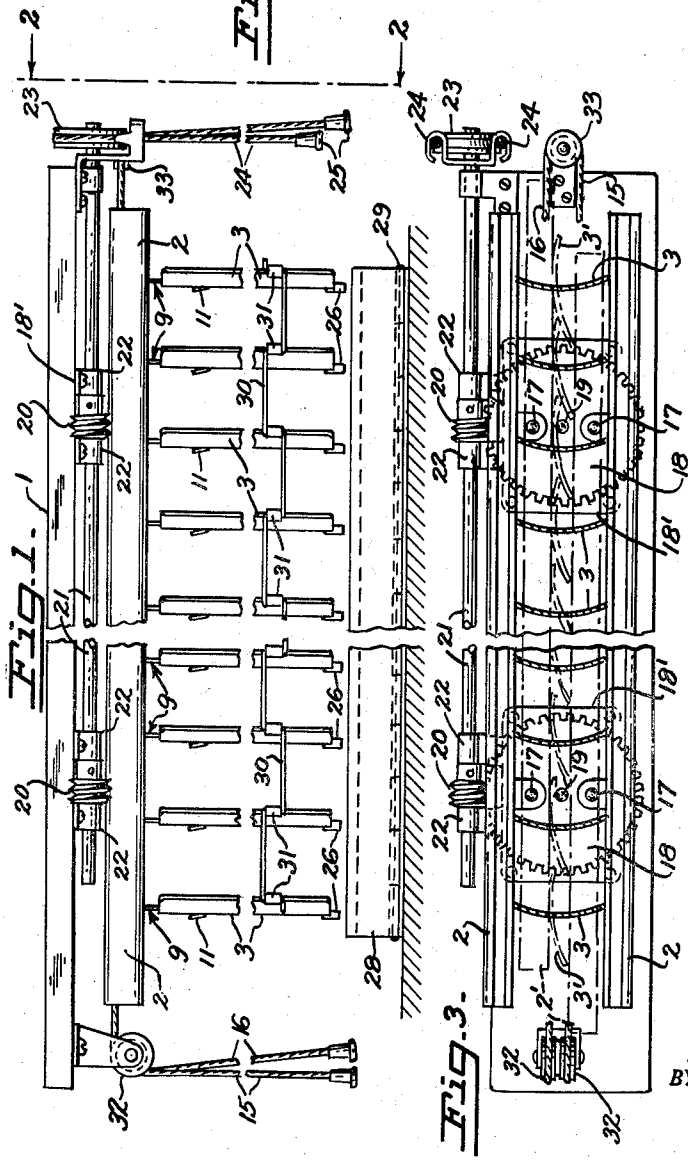


Fig. 1.

Fig. 4.

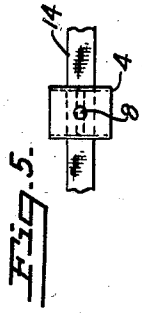


Fig. 5.

Fig. 3.

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VERTICAL SLAT BLIND CONTROL

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7 Claims. (Cl. 160—176)

This invention relates to Venetian blinds of the type wherein the slats each hang vertically and are controlled for opening and closing from the upper end only.

The principal object of the present invention is to provide novel simplified means for slidably supporting and controlling the upper ends of the slats.

Another object is holding the lower ends of the slats in the positions adjusted at their upper ends.

Other objects and advantages of the invention will appear in the following description and accompanying drawings:

In the drawings Fig. 1 is a broken elevation of a vertical slat blind embodying my improvements.

Fig. 2 is a vertical end view of Fig. 1 as seen from the line 2—2.

Fig. 3 is a bottom view of the slat suspending tracks as seen from the line 3—3 of Fig. 2.

Fig. 4 is a full size detail showing the carriers and swivel eyelets which support the slats, but with one carrier turned 90° to show its end form.

Fig. 5 is a top plan view of the carrier immediately above it.

Fig. 6 is a side view of the wire hanger which suspends each slat from the two tracks.

Fig. 7 is an edge view of the hanger.

Briefly, my novel slat suspension for the vertical slats includes a pair of laterally spaced tracks in which slidable carriers ride, and each slat is suspended from two carriers—one from each track. The tracks are parallel and means is provided to move them from a position close together to quite a distance apart while simultaneously moving the tracks longitudinally in opposite directions to move the two carriers of any one slat past each other to almost in tandem line and thereby turn the slats from an open position with their planes normal to the tracks to more or less a slanted position, to final closed position at a narrow angle from extending parallel to the tracks with margins overlapping.

In the drawings 1 is a top head board to carry the entire structure, and which head board may be the ceiling of a deep set window space or suitably supported by brackets against a wall above a window. Carried from the underside of the board are the two tracks 2 from which the blind slats 3 are suspended. These tracks extend horizontally and are of channel cross sections as shown in Fig. 2 and are set at an angle to converge upwardly and with their open sides in confronting relation. In each track is a series of oblong carriers 4 (see Figs. 4 and 5) preferably made of sheet metal and which slidably engage opposite sides of both edges of the channel tracks in the grooves 5 and each carrier is provided with a metal eyelet 6 having a shank 7 passing loosely through the body of the carrier and headed over as at 8 to keep it from falling out yet preserve its freedom to turn, and also slide.

The upper ends of the slats 3 are each suspended from two of the carrier eyelets, one from each track, by a special wire hanger 9 taking roughly the form of an M

as shown separately in Figs. 6 and 7, and in place in Fig. 2 with the two upper bends 10 of the hanger each looped through one of the eyelets 6, the ends of both legs brought together and hooked as at 11 to pass through a hole 12 in the slat 3 from one side and with the downwardly extending central bend 13 of the hanger overlapping the upper end of the slat so as to pinch the slat firmly against the two legs 9 of the hanger.

The carriers are spaced for maximum separation of the slats (when fully open) by a thin narrow flexible tape 14 pierced by the shanks 7 of the eyelets and which tape doubles up between the eyelets outside of the tracks as the carriers are moved close together in pulling the slats to one or both sides of the window by strings 15, 16 passing over pulleys 32, 33 in the usual manner by suitable attaching of the cords to some only of the carriers 4, as well understood in this art, and of course the one end carrier against which the carriers are pulled is suitably stopped against outward movement from the tracks.

The tracks 2 are pivotally attached at 17 to the undersides of two spaced disks or gears 18 each pivoted at 19 to base plates 18' in turn secured to the head board 1.

The gears 18 are each engaged by a worm gear indicated at 20, 20, fixed to a longitudinally extending shaft 21 suitably supported in bearings 22 carried by the base plates, and at the outer end of the shaft is a pulley wheel 23 over which passes a pull cord 24 with handles 25 at its ends for operating the gears 18 in either direction to thereby move the tracks from full line spread position to inward close position shown dotted in the Fig. 3 at 2' and gradually turn all of the slats to slanted and finally closed slightly overlapping position shown dotted at 3' in Fig. 3. It should be noted that the two disk gears, worm gears, shaft, bearings, and mounting plates from a rigid mounting unit, an important feature in overhead blind apparatus.

The slats may be slanted either to the right or to the left depending on which way the gears 20 are revolved by pulling one or the other end of the cord 24 and of course will be locked in any adjusted position by the worm gear drive.

To stop the free swinging of the lower ends of the slats, especially on windy days and open windows, a small magnet may be secured to the end of each slat as at 26 to be attracted to an iron rod 27 supported on tiltable brackets 28 hinged at 29 to the floor (or wall or window sill) so that the rod can be thrown into or out of active position. Additionally, maximum separation of the lower ends of the slats may be assured by a limit spacing cord or small chain 30 passing from slat to slat and secured thereto as by a small sheet metal clip 31 crimped or beaded in place.

Having thus described my improved vertical slat blind control, what I claim is:

1. A vertical slat blind suspension comprising a pair of horizontally extending laterally spaced parallel tracks, means above the tracks suspending said tracks for simultaneous opposite lateral and opposite longitudinal directional movement, means suspending a series of slats, each slat from both tracks, including two carriers, each carrier respectively slidably engaging one only of the tracks for free movement therealong, the means suspending the tracks including a plurality of downwardly extending connections to the tracks at points thereon clearing said carriers, and whereby the carriers are free to slide past said connections.

2. In a vertical slat blind of the character described comprising vertically disposed slats, a pair of parallel spaced tracks at the upper end of the blind, means supporting the tracks for simultaneous lateral and opposite

directional longitudinal movement, a row of carriers slidably positioned and retained in each track, a plurality of hangers each swivelly connected to one of said carriers of each track, each hanger engaged with the upper end of one of said slats in a manner to prevent relative turning movement, said tracks being each of channel cross section with their open sides in confronting relation.

3. In a vertical slat blind of the character described comprising vertically disposed slats, a pair of parallel spaced tracks at the upper end of the blind, means supporting the tracks for simultaneous lateral and opposite directional longitudinal movement, a row of carriers slidably positioned and retained in each track, a plurality of hangers each swivelly connected to one of said carriers of each track, each hanger engaged with the upper end of one of said slats in a manner to prevent relative turning movement, said tracks being each of channel cross section with their open sides in confronting relation, and tilted transversely at an angle converging upwardly.

4. In the structure as set out in claim 1 the means suspending the tracks for movement including a pair of horizontal disk gears pivoted to a fixed support and to the lower sides of which said tracks are pivoted at opposite points from the disk pivoting, worm gears engaging said disk gears respectively and secured to a common shaft, and manually operated means at one end for turning said shaft.

5. In a slat blind of the character described in which the slats hang vertically and are movable horizontally along a path for opening the blinds bodily, magnetic means at the lower ends of the slats stabilizing them in place anywhere along said path, including a small magnet on each slat and a movable iron bar extending long

the path of movement of the slats and mounted in a manner adapting it to be moved into and out of attracting distance with all of the magnets.

6. In a vertical blind an overhead mounting unit comprising a pair of spaced disk gears, a pair of spaced channel tracks extending across the side of both gears with the open sides of the channels in confronting relation and pivoted thereto, a pair of worms in mesh respectively with said disk gears, a shaft on which said worms are secured, bearing means for said shaft and said disk gears, all secured together as a mounting unit.

7. For a venetian blind with vertical slats suspended from carriers on two laterally spaced parallel tracks, a unitary wire hanger for the upper end of each slat bent to the form of a double V one within the outline of the other with their upper ends joined to form two spaced loops to engage said carriers, and the lower ends of the V's arranged to rigidly engage opposite sides of the upper ends of the slat.

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