

Sept. 3, 1957

W. J. ODOM, JR
MOUNTING AND ADJUSTING MEANS
FOR VERTICAL VENETIAN BLINDS
Filed Aug. 30, 1954

2,804,923

Fig. 1

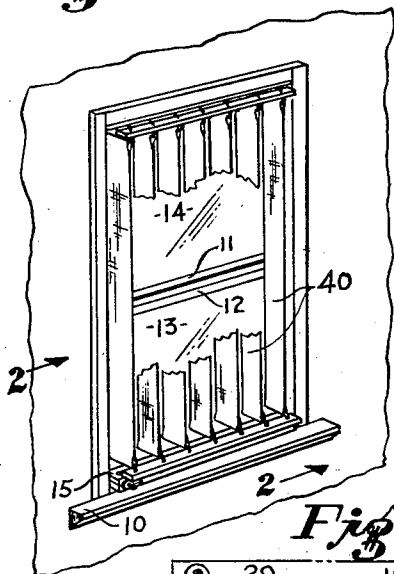


Fig. 2

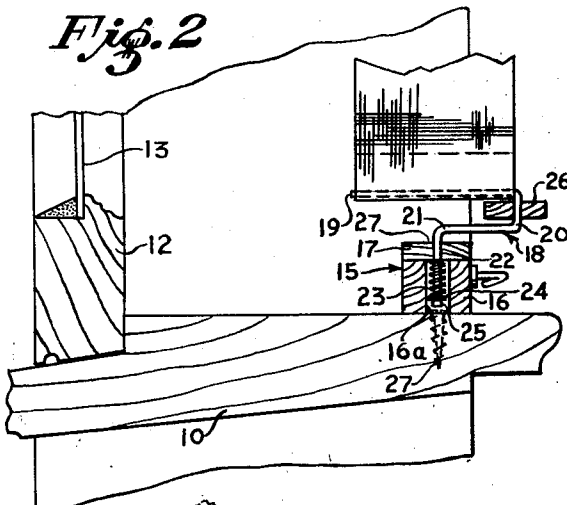


Fig. 6.

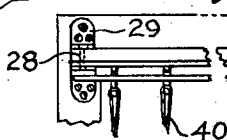


Fig. 3

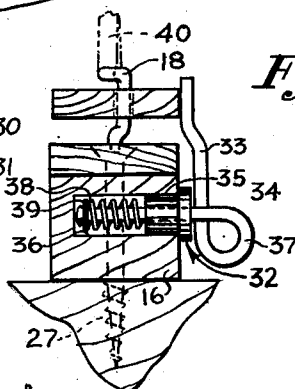


Fig. 4

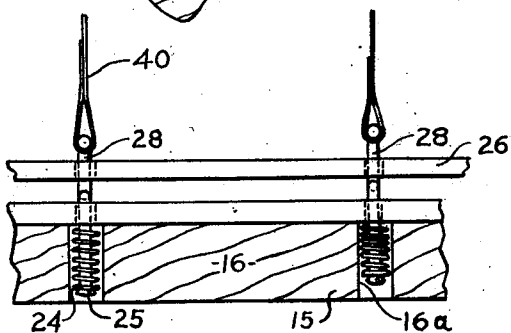
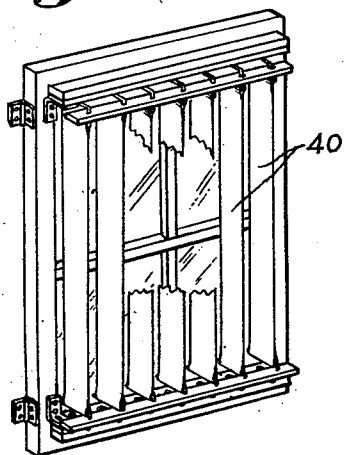


Fig. 5

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MOUNTING AND ADJUSTING MEANS FOR VERTICAL VENETIAN BLINDS

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Application August 30, 1954, Serial No. 452,976

2 Claims. (Cl. 160—176)

My invention relates to improved means for mounting and adjusting window blinds of the kind comprised of a number of strips extending in side by side relation across a window, the angle of the strips with respect to the light coming through the window being simultaneously adjustable for all the strips.

Such blinds having the strips arranged vertically instead of horizontally as in the usual type of Venetian blinds have important advantages over the latter.

Since the strips or slats do not have to maintain a horizontal position but hang vertically, they may be made of fabric. Also since the strips are spaced vertically, the usual window sash may be readily raised and lowered by inserting the hand between adjacent strips. The shades may be made cheaply and are of light weight as compared to Venetian blinds which are not only more cumbersome but also much more complicated since they require supporting tapes, which wear out, raising and lowering cords passing through openings in each slat, pulleys mounted in a head board, and a heavy bottom board strong enough to carry all the slats when the blind is fully raised, the cords being also heavy enough to carry this weight of all the slats. Adjusting cords are also required to vary the inclination of the slats.

Standard Venetian blinds are also difficult to clean since their surfaces are interrupted by the supporting tapes and raising cords as compared with the uninterrupted vertical surfaces of the vertical slat type of blind to which my invention relates.

Because of the advantages enumerated, several forms of the vertical slat type of blind, hereinafter referred to as a "vertical Venetian blind" have been put on the market but in general are somewhat complicated and consequently unnecessarily expensive and have other drawbacks.

Known types of vertical Venetian blinds are generally fitted with adjusting mechanism of considerable weight comprising mechanical elements of special type and subject to wear with consequent liability to faulty functioning.

It is an object of my invention to provide a vertical Venetian blind with novel operating means of simple and inexpensive design which may be readily fitted to windows of either the sash or casement type, or on French doors or half glass doors, and the like, the extreme simplicity of the design resulting in a minimum of installation requirements.

A further object of my invention is to provide adjustment means for a vertical Venetian blind, said means comprising very few parts, such parts being subject to no appreciable wear so that the blind with its adjusting means will last indefinitely.

Another object of my invention is to provide a vertical Venetian blind made of low cost materials yet which is of good appearance.

Still another object of my invention is to provide a vertical Venetian blind which may be manufactured with little or no special tooling, and with very few tools, so that the cost of manufacture is correspondingly low and the time spent per unit produced is very low.

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A particular object of my invention is to provide a vertical Venetian blind of such simple construction that it may easily be installed wherever required by the home owner himself with the use of ordinary household tools.

Another object of my invention is to provide a vertical Venetian blind in which vertical strips of suitable material, such as a glass fiber plastic, are simply pushed on or slid off the parts on which they are mounted so that cleaning or replacement of the strips is very easily effected.

Still further objects and features of my invention will hereinafter appear from a study of the following description read in conjunction with the accompanying drawings which illustrate embodiments of my invention at present considered preferable by me;

In the drawings:

Figure 1 is a perspective view showing the general arrangement of the vertical Venetian blind of my invention mounted in the frame of the usual type of window having vertically movable sashes.

Figure 2 is a cross section on the line 2—2 of Figure 1 drawn on a larger scale.

Figure 3 is a fragmentary detail showing a holding device which may be incorporated in an upper or lower framing member, or both, in order to hold the strips in a closed position.

Figure 4 is a perspective view showing the blind of my invention mounted on a vertically pivoted, or casement type window.

Figure 5 is a fragmentary view showing how the vertical strips of the blind are mounted on supporting hooks.

Figure 6 is a fragmentary view of a pivoted arrangement of mounting means for the blind of my invention which enables the blind to be swung away from the window facilitating access thereto for cleaning or repair of the window glass.

Referring now to Figures 1 and 2, the numeral 10 indicates the lower sill of a window frame in which sashes 11 and 12 are mounted for vertical movement. Lower panes 13 and upper panes 14 are mounted in the lower and upper sashes respectively.

The structure of the blind of my invention comprises identical upper and lower mounting members so that a description of one will apply to the other and therefore only the lower member, shown in Figure 2, will be described.

A lower mounting bar 15, conveniently formed from a length of rectangular wooden rod 16, is drilled at about 3 inch intervals with $\frac{3}{8}$ " holes 16a extending the length of the bar which is long enough to extend across the width of the sash but terminates short of the sides of the window opening by a distance of about 2 inches, at least at one end. It should be noted that dimensions are given by way of illustrative example only, since wide variations in dimensions from those given may be made according to the specific construction of the window frame and the wishes of the owner, in constructing the shade.

The top of the rod 16 is covered by a strip 17 secured to the rod in any suitable manner. The strip is drilled with holes co-axial with the larger holes 16a and of a diameter to be a free fit for the vertical blind strip support hooks 18. The support hooks are formed from heavy gauge steel wire and are of identical form. The hooks comprise a horizontal portion 19 slightly longer than the center to center distance of holes 16a, a vertical portion 20, a lower horizontal portion 21, somewhat less than half the length of the upper horizontal portion, and a lower vertical portion 22. The lower vertical portions 22 pass through coiled compression springs 23, the upper ends of which abut the under side of strip 17, while the lower ends abut washers 24 resting on the pinched-flat end 25 of the lower vertical portion 22. Each spring 23

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is mounted under compression between washer 24 and the under side of strip 17.

During the shaping operation of support hooks 18, an adjusting member 26 formed as a rigid elongated strip is mounted on the vertical portion between the horizontal portions of the hooks, this vertical portion passes through holes drilled in the strip 26 to freely fit portion 20 of the hooks, the holes being spaced to exactly correspond to the spacing of holes 16a in mounting member 15.

The lower mounting bar 15 may be secured to the sill 10 as by screws 27. The upper mounting bar may be secured to the top of the window frame.

If desired the mounting bars 15 may be pivotally secured in position with respect to the window so that the whole blind may be swung outwardly from the window glass to enable it to be cleaned as easily, or more easily, than a window fitted with the usual types of blind, either roller or Venetian, since such blinds usually obstruct free access to the top of the window pane.

Means for mounting the bars 15 for pivotal movement when required is shown by way of example in Figure 6 which shows the blind on a casement window. One end of each mounting bar 15 (the upper bar being shown) is pivoted by pin 28 passing through a double arm bracket 29. The other end of each bar bears against a bracket 30 provided with an upturned lip 31. Brackets 29 and 30 are secured to the window frame. Since the springs 23 exert a force on the mounting bars 15 tending to move them toward one another, the free end of the bars will be effectively held in position by the lip 31 of brackets 30. It is to be understood that the upper mounting member is arranged similarly to the lower mounting with the suspending hooks facing those of the lower mounting member.

If it is desired to mount the blind for pivotal movement when positioned within the window frame, one end of the upper and lower mounting members are pivotally held by the screws 27 while the opposite ends are held in any suitable manner as for instance by brackets or clips similar to brackets 30.

A transverse movement of the adjusting strip 26 will be effective to swing all the hooks mounted in a bar 15 to an equal amount. The movement permitted to the adjusting member is preferably such that the hooks may be rotated through 180° until the ends of the hooks abut against the upper vertical portions of the adjacent hooks.

Preferably a simple detent member 32 is provided in the lower rectangular rod 16 by which the blind may be held in closed position. As shown in Figure 3 the detent member 32 may comprise a short length of wire with a vertical portion 33 and a horizontal portion 34 pivoted in a plug 35 of wood inserted in a bore 36 drilled part way through rod 16. The vertical portion 33 is joined by a loop 37 to the horizontal portion 34. A coil spring 38 is arranged under tension between the inner face of plug 35 and a washer 39 seated on the inner end of the horizontal portion 34 and positioned thereon by the pinched flat end of portion 34.

The support hooks 18 are vertical to the window pane, and the blind therefore fully open, when the adjusting strip 26 projects to a maximum extent outwardly of the mounting bar 15. When the blind is closed the adjusting member or strip 26 overlies the bar 15. When it is desired to hold the blind in closed position the detent 32 is pulled outwardly and rotated so that the vertical portion 33 presses against the adjustment strip and holds it in position overlying bar 15. When it is desired to open the blind the vertical portion 33 is rotated downwardly so that the adjustment strip is free to be swung outwardly.

It is to be noted that there is sufficient friction between the vertical portions 20 of the supporting hooks 18 and the adjustment strip to hold the blind in any open position, but the detent 32 ensures that the blind will not be inadvertently opened from closed position.

The vertical strips 40 of which the blind is comprised

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may be made from any suitable material but for ease of manufacture, lightness and general suitability I prefer to use a plastic impregnated glass fiber material.

The strips are cut to uniform length, the ends folded back a short distance and united to the body of the strip by merely pressing the inner edge of the fold with a hot iron. The strips may then be simply slipped over the long horizontal portion of the hooks, the tension of springs 23 holding the strips in taut condition.

It is pointed out that the resilient retention of the strip supporting hooks in the bars 15 by springs 23 enables strips 40 which might be slightly shorter or longer than the correct length to function perfectly and be held under adequate tension since the vertical portions of the supporting hooks are free to move upwardly or downwardly through the top of the bars 15 and in the adjusting strips 26.

While in order to comply with the statute, the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise a preferred form of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

I claim:

1. In a vertical Venetian blind, provided with mounting and adjusting means having upper and lower mounting bars adapted to be secured across the top and bottom of the window, glass door and the like; an equal number of strip-supporting members rotatably mounted in said mounting bars and strips of material supported between each upper and lower pair of strip supporting members, strip-supporting members comprising: a horizontal part, a first vertical portion, a reversely extending horizontal portion, and a second vertical portion extending into said mounting bars the portions of each supporting member constituting an integral unit insuring uniformity of movement of the strips; a separate axially yieldable helical spring within said mounting bars associated with each strip-supporting member and effective to resiliently resist outward movement of each of said strip-supporting members as a whole from said bars while being effective to take up slight variations in the length of the strips of material; a first rigid unitary adjusting member provided with holes to receive and directly transmit movement to all the first vertical portions of the strip-supporting members mounted in the upper mounting bar; and a second rigid unitary adjusting member operable independently of the first rigid unitary adjusting member and provided with holes to receive and directly transmit movement to all the first vertical portions of the strip-supporting members mounted in the lower mounting bar, operation of said adjustment members being positively effective to rotate the strip-supporting members in the mounting bars, the adjustment members being narrower than the height of the first vertical portions of the strip supporting members and unaffected by movement in vertical direction of the vertical portions formed between the horizontal portions of the strip supporting members.

2. In a vertical Venetian blind, mounting and adjusting means as set forth in claim 1 and in addition comprising: a rigid adjustable member engageable against at least one of the rigid unitary adjusting members to hold the blind in closed position.

References Cited in the file of this patent

UNITED STATES PATENTS

541,346	Eckert	June 18, 1895
2,520,272	Bopp et al.	Aug. 29, 1950
2,611,426	Randall	Sept. 23, 1952
2,660,237	Bopp et al.	Nov. 24, 1953