Jan. 21, 1958 R. S. YEATS 2,820,512

REMOVABLE VENETIAN BLIND SLAT

Filed Nov. 16, 1955

FIG. 1

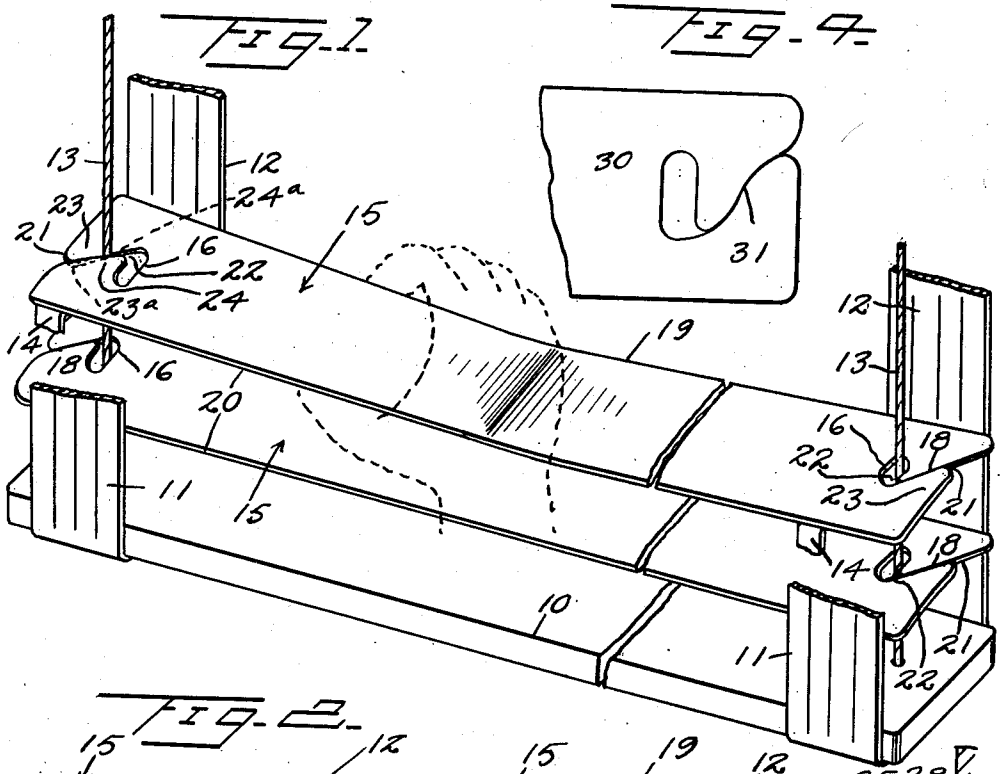
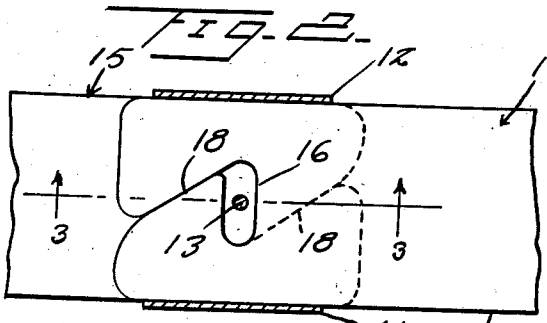


FIG. 4

FIG. 2



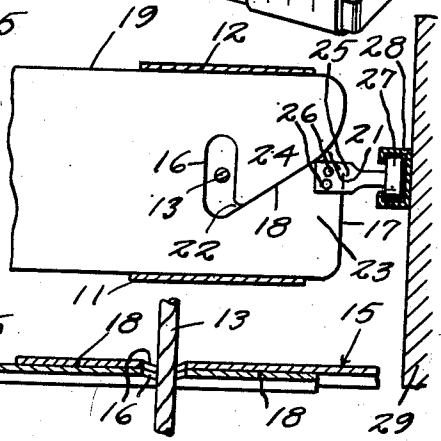


FIG. 5

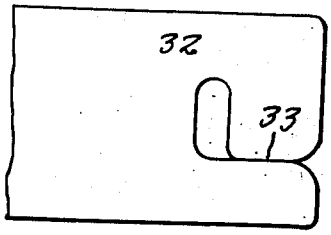
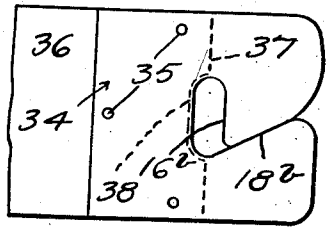


FIG. 3

FIG. 6



INVENTOR

Robert S. Yeats

BY John N. Randolph

ATTORNEY

United States Patent Office 2,820,512 Patented Jan. 21, 1958

2,820,512

REMOVABLE VENETIAN BLIND SLAT

Robert S. Yeats, San Diego, Calif.

Application November 16, 1955, Serial No. 547,290

5 Claims. (Cl. 160—173)

This invention relates to an improved construction of slat for Venetian blinds and has for its primary object to provide a slat which may be readily removed and replaced without dismantling the Venetian blind.

Another important object of the invention is to provide a construction of Venetian blind slat which cannot become accidently disengaged from the Venetian blind due to action of the wind or rough handling yet which is capable of being quickly and easily removed and replaced by a simple tilting and endwise movement of the slat or a group of the slats.

A further object of the invention is to provide an improved slat construction enabling ready removal of a slat from a Venetian blind and which, due to its unique construction, cannot be replaced improperly in the Venetian blind.

Still a further object of the invention is to provide an improved construction of slat which will provide substantially the same appearance as a conventional slat except when being applied or removed.

Another object of the invention is to provide an improved slat construction which will not prevent or obstruct the use therewith of a guide and roller unit commonly employed in windy areas to prevent swinging of the Venetian blind.

A further object of the invention is to provide an improved construction of slat which is readily adapted for use in connection with a multiple type Venetian blind employed with exceptionally wide windows.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating presently preferred embodiments thereof, and wherein:

Figure 1 is a perspective view of a lower portion of a Venetian blind equipped with the improved slat, said view being fragmentary and partly in section;

Figure 2 is a fragmentary horizontal sectional view, partly in top plan, showing a portion of an extensible type Venetian blind employing the same type of slats as illustrated in Figure 1;

Figure 3 is an enlarged detailed longitudinal sectional view taken substantially along a plane as indicated by the line 3—3 of Figure 2;

Figures 4 and 5 are fragmentary top plan views each of an end of a slat and illustrating modifications of the form as shown in Figures 1 and 2, and

Figure 6 is a fragmentary plan view of an end of a different slat equipped with an adapter unit corresponding to an end of a slat as shown in Figures 1 and 2.

Referring more specifically to the drawing, a bottom portion of a Venetian blind is illustrated in Figure 1 including a bottom or base bar 10 which is suspended from a top rail, not shown, of the Venetian blind by fabric tapes 11 and 12 and elevating cords 13. Lower ends of the front tapes 11 are suitably secured to the front edge of the bar 10 and the lower ends of the rear tapes 12 are suitably secured to the back edge of the

bar 10. The elevating cords 13 are secured to the bar 10 substantially midway between the adjacent tapes 11 and 12 and preferably substantially midway of the side edges thereof. The complementary tapes 11 and 12 have slat supporting cross tapes 14 extending therebetween and secured thereto. The supporting tapes 14 are relatively narrow as compared to the tapes 11 and 12 and are disposed in staggered relation, as seen in Figure 1, so that the cords 13 extend upwardly between the supporting tapes, as is conventional. All of the structure as previously described and as shown in Figure 1 is conventional except that the parts 11 to 14 are located nearer the ends of the bar 10 and the side edges of the Venetian blind, than is conventional, for a purpose which will hereinafter become apparent.

Only two of the slats are illustrated in Figure 1. These slats, each designated generally 15, are of identical construction and it will be understood that all of the remaining slats of the Venetian blind are of the same construction as the two slats as shown. Each of the slats 15 is formed of very thin metal which is capable of being readily flexed, as is conventional for Venetian blinds, and said slats are bowed transversely, as illustrated in Figure 3, as is likewise conventional. However, the slats 15 differ from conventional metal Venetian blind slats in reference to the construction of the end portions thereof which are identical, so that a description of one will suffice for both. Each end of each slat 15 is provided with a transversely extending slot or elongated opening 16 of a length substantially less than the width of the slat and which is disposed substantially nearer the adjacent end 17 of the slat, than is conventional. Each slat end portion is cut by a slicing or shearing cut along a line disposed diagonally of the axis of the slat from adjacent an end of the slot 16 through the adjacent end 17, as seen at 18. As seen in Figures 1 and 2, the shear line at the right hand end portion of the slat 15 extends from the slot 16 diagonally toward the longitudinal edge 19 of the slat which constitutes the back edge thereof, as the slat is mounted in the Venetian blind, and the shear line 18 at the left hand end portion of the slat 15, as seen in Figures 1 and 2, extends from the opposite or rear end of the slot 16 toward the other longitudinal edge 20, which constitutes the front edge of the slat as it is mounted in the Venetian blind in Figures 1 and 2. This constitutes an important feature since, as will be readily apparent, the slats 15 may be reversed end for end and the shear lines 18 will still be disposed exactly as in Figure 1 so long as the convex side of the slat is facing upwardly. Thus, the slat cannot be replaced incorrectly in the Venetian blind as long as its convex surface faces upwardly.

As best seen in Figure 2, the shear edge faces which abut to form the shear line 18 have outer end portions which are beveled or flared away from one another to define a flared throat 21 which opens outwardly of the edge 17. Similarly, one of the same shear edges is beveled or flared at the inner end thereof to define a flared throat 22 which opens into an end of the slot 16 with which said shear line 18 is associated. It will be noted, and as best illustrated in Figure 2, that the throats 21 and 22 of each slat end portion are laterally offset relative to the longitudinal axis of the slat and on opposite sides thereof.

When the slats 15 are disposed in the Venetian blind, as illustrated in Figure 2 and by the bottom slat in Figure 1, the cords 13 will normally extend upwardly through the central portions of the slots 16 and will be spaced from the inner throats 22. When the slats are tilted, the throat 22 at one end of each slat will approach one of the cords 13 while the end of the other slot 16,

which is remote from the throat 22 thereof, will approach the other cord 13. However, as the edges defining each shear line 18 are disposed in abutting engagement, action of the wind or even rough handling of the Venetian blind will not result in the slats becoming disengaged from the cords 13. However, the slats may be readily disengaged and removed from the Venetian blind. This can be accomplished as illustrated in Figure 1 by grasping a slat near the left hand end thereof, for example, and bending the left hand slat end upwardly slightly and at the same time elevating the back edge 19 of said slat end. This will cause the left hand cord 13 to be positioned at the throat 22 of the left end of the slat and will also cause the slat portion 23 to be deflected downwardly relative to the slat portion 24, which is deflected upwardly. Said slat portions 23 and 24 are disposed on opposite sides of the shear line 18 and have edges 23*a* and 24*a*, respectively, which in the normal position of the slat are disposed in abutting engagement to form the shear line 18. Said normally abutting edges 23*a* and 24*a* are displaced vertically away from one another when the portions 23 and 24 are deflected in opposite directions to define a gap therebetween through which the left hand cord 13 can readily pass from the throat 22, outwardly through the outer throat 21, to thus release the left hand slat end from the cord. The downward deflection of the slat portion 23 is partially accomplished by pressure of the cord 13 thereagainst when said cord is initially lodged in the inner throat 22.

The slat 15 can be disengaged in a like manner from the other right hand cord 13 by a similar action, executed by grasping the slat with the other, left hand, near the right hand end of the slat, and tilting the slat in the opposite direction or so that its front edge 20 will be elevated and so that the right hand inner throat 22 will be positioned in engagement with the right hand cord 13 and the other right hand end portion 23 will thus be deflected downwardly, in the same manner as previously described, to form a gap or slot at the right hand shear line 18 through which the right hand cord may pass to complete disengagement of the slat 15 from the Venetian blind.

Similarly to apply the slat to the blind, one end of the slat is placed against one of the cords 13 so that the cord will be lodged in the outer throat 21 after which by canting or tilting the slat and applying pressure thereto against the cord, said cord will press downwardly on the portion 23 for displacing the shear edges 23*a* and 24*a* apart so that the cord may be passed therebetween into the slot 16. Thereafter, the other cord is caused to pass in the same manner between the other complementary edges 23*a* and 24*a* into the other slot 16 to complete the reapplying of the slat to the Venetian blind.

It will also be apparent that a group of adjacent slats may be grasped simultaneously and removed in the same manner as heretofore described from a Venetian blind.

Figure 2 illustrates the adaptability of the slats 15 to Venetian blinds of the type used for wide windows which are equipped with three pairs of vertical tapes 11 and 12, only one end pair and the intermediate pair of which are illustrated in Figure 2. For such use, two sets of slats 15 are employed with the adjacent ends of the substantially coplanar slats disposed in overlapping relation and engaging the center elevating cord 13, as seen in Figures 2 and 3. With this arrangement, the slots 16 of the overlapping slat ends will be disposed in alignment and the shear lines thereof will be disposed substantially parallel and will extend in opposite directions from opposite or remote ends of the two slots 16. Said overlapping slat ends will be substantially concealed by the intermediate vertical tapes 11 and 12 between which said slat ends are disposed. As it will be apparent, the slats 15 in the Venetian blind arrangement as illustrated in Figures 2 and 3 may be applied and removed individually in the same manner as previously described

in reference to the slats 15 as disposed in the conventional Venetian blind arrangement of Figure 1.

Figure 2 also illustrates the adaptability of the slats 15 for use with Venetian blinds equipped with guide channels and rollers as is provided in certain windy localities. A bracket arm 25 is attached by fastenings 26 to the outer portion of the part 23 and is supported thereby axially of said slat. A roller 27 is journalled on the outer end of the bracket arm 25 and engages in a guide channel 28 which is disposed vertically against and secured to an inwardly facing surface of a vertical side 29 of a window frame.

Figure 4 illustrates a slightly modified construction of a Venetian blind end, differing from the ends of the Venetian blind 15 as illustrated in Figures 1 to 3, only in that in lieu of the straight shear line 18, the Venetian blind end 30 of Figure 4 has a shear line 31 of sinuous shape. Figure 5 illustrates still another modified form of slat end portion differing from the ends of the slat 15 only in that the shear line 33 at each end thereof is disposed parallel to the axis of the slat.

Figure 6 illustrates a cut off slat end 34 corresponding to either end of the slat 15, having a slot 16*b* corresponding to the slot 16 and a shear line 18*b* corresponding to the shear line 18. The adapter 34 is adapted to be secured by fastenings 35 to either side of an end portion of a conventional wooden slat 36, the end 37 of which is disposed in alignment with the axis of the slot 16*b*. Said end 37 is provided with an elongated notch 38 disposed beneath the inner longitudinal half of the slot 16*b*, so that said slot is completely exposed. It will be apparent that the slat 36 may be employed in the same manner as the slat 15 as shown in Figure 1. The slat 36 may also be employed in the same manner as the slats 15 as shown in Figure 2 and when thus utilized, the intermediate adapters 34 may be arranged on opposite sides of the adjacent ends of the coplanar slats 36 so that the ends 37 of said slats may be disposed in abutting engagement between the two adapters 34.

Various other modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A removable and replaceable Venetian blind slat having a slot adjacent each end thereof elongated in a direction crosswise of the slat, and each slat end portion having a shear line extending into an end portion of the slot of said slat end portion and opening outwardly of the end of said slat, said shear line separating portions disposed on opposite sides thereof and which are capable of being flexed relative to one another away from substantially coplanar positions whereby normally abutting edges of said portions forming said shear line are displaced apart to define a gap therebetween through which an elevator cord of a Venetian blind is adapted to pass into or out of engagement with the slot of said slat end portion for connecting the slat end portion to the Venetian blind or for disconnecting it therefrom, the edges of said portions defining the shear line being normally disposed in abutting engagement for closing the slot thereof to prevent disengagement of each end portion of the slat from the elevator cord which extends through its slot, one of said shear line forming edges having a beveled inner end defining a flared throat opening into the slot and adapted to receive a portion of the cord to facilitate deflecting said slat portions in opposite directions out of coplanar positions to provide the gap through which the cord can be passed out of engagement with the slat, and each of the shear lines being disposed diagonally of the axis of the slat.

2. A Venetian blind slat as in claim 1, said shear line forming edge portions having outer ends flared away from one another to define a flared throat opening outwardly of an end of the slat and adapted to receive the elevator

cord and for cooperation therewith for deflecting the slat portions separated by the shear line in opposite directions out of coplanar positions for movement of the cord through the gap therebetween into engagement with the slot.

3. A removable and replaceable Venetian blind slat having a slot adjacent each end thereof elongated in a direction crosswise of the slat, and each slat end portion having a shear line extending into an end portion of the slot of said slat end portion and opening outwardly of the end of said slat, said shear line separating portions disposed on opposite sides thereof and which are capable of being flexed relative to one another away from substantially coplanar positions whereby normally abutting edges of said portions forming said shear line are displaced apart to define a gap therebetween through which an elevator cord of a Venetian blind is adapted to pass into or out of engagement with the slot of said slat end portion for connecting the slat end portion to the Venetian blind or for disconnecting it therefrom, said shear lines being disposed substantially parallel to one another and extending diagonally with respect to the longitudinal axis of the slat whereby a slat portion at each end of the slit constitutes an elongated tapered projection which is disposed substantially crosswise of the slat and is capable of being readily deflected away from a position coplanar with the slat.

4. In a removable and replaceable Venetian blind slat, said slat having a slot adjacent an end thereof elongated in a direction crosswise of the slat, said slat having a shear line extending into an end portion of the slot and opening outwardly of the end of the slat located adjacent said slot, said shear line being disposed diagonally of the

axis of the slat and separating portions of the slat disposed on opposite sides thereof, said slat portions being capable of flexing relative to one another away from substantially coplanar positions whereby normally abutting edges of said portions forming the shear line are displaceable apart to define a gap therebetween through which an elevator cord of a Venetian blind is adapted to pass into or out of engagement with the slot for connecting said end of the slat to the Venetian blind or for disconnecting it therefrom, the edges of said portions forming the shear line being normally disposed in abutting engagement for closing the slot to prevent disengagement of the slat from the elevator cord, and one of said shear line forming edges having a beveled inner end defining a flared throat opening into the slot and adapted to receive a portion of the elevator cord to facilitate deflecting said slat portions out of coplanar positions to provide the gap through which the cord can be passed out of engagement with the slat.

5. In a removable and replaceable Venetian blind slat as in claim 4, wherein said shear line is generally sinuous in shape.

References Cited in the file of this patent

UNITED STATES PATENTS

803,696	Lang	Nov. 7, 1905
2,111,978	Lawson	Mar. 22, 1938
2,428,909	Elliott	Oct. 14, 1947
2,509,677	Edmonds	May 30, 1950
2,523,038	Mayer	Sept. 19, 1950
2,573,326	Fusco	Oct. 30, 1951