Nov. 5, 1940. W. J. STUBER 2,220,796

HEAD CASING FOR VENETIAN BLINDS

Original Filed March 6, 1940

Fig. 1.

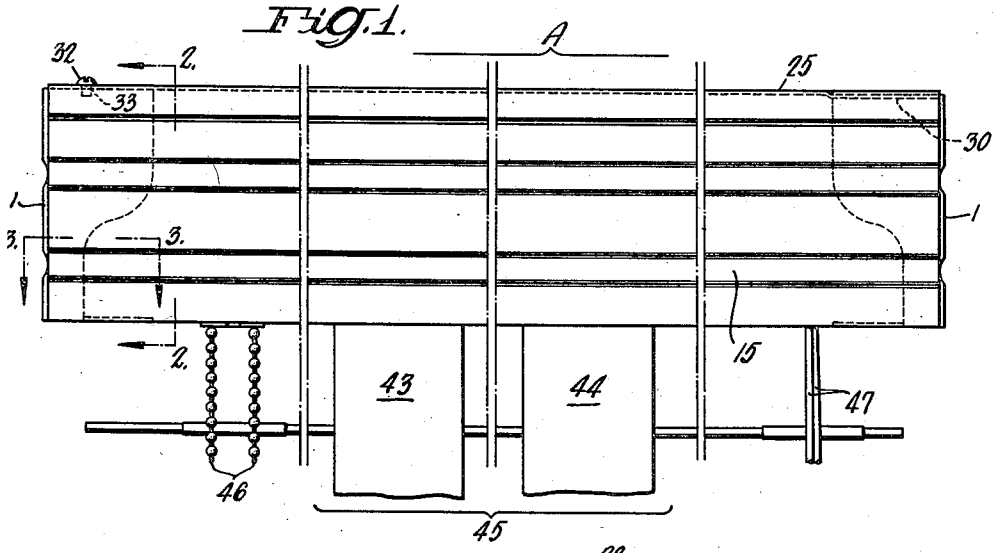


Fig. 5.

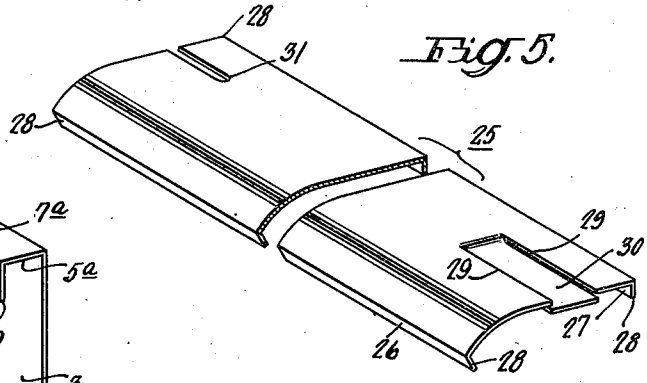


Fig. 4.

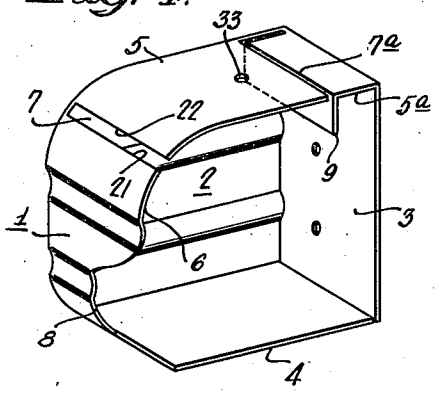


Fig. 2.

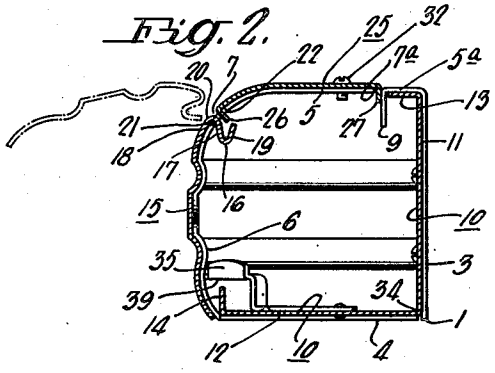
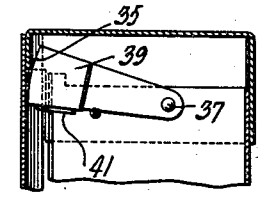


Fig. 3.



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Patented Nov. 5, 1940 2,220,796

UNITED STATES PATENT OFFICE

2,220,796

HEAD CASING FOR VENETIAN BLINDS

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Original application March 6, 1940, Serial No. 322,604. Divided and this application June 25, 1940, Serial No. 342,344

14 Claims. (Cl. 156—17)

This invention relates to Venetian blinds and especially to the head casing disclosed in the copending application, Serial No. 322,604 filed March 6, 1940, of which the present application is a division.

The object of the present invention is to provide a head casing of artistic appearance and simple rugged construction involving a minimum number of parts including a head rail of peculiar construction which forms the bottom and back of the casing and supports the operating mechanisms of the blind; a pair of brackets for removably supporting the head rail to provide for complete removal of the head rail therefrom and which constitute the end closure plates for the casing; and removable top plate and front plates which complete the casing and afford ready accessibility to the operating mechanisms without removal of the head rail from its supporting brackets.

The construction of the head casing will be fully disclosed hereinafter, reference being had to the accompanying drawing, of which:

Fig. 1 is a front elevation;

Fig. 2 is a transverse section taken on the line 2—2, Fig. 1;

Fig. 3 is a fragmentary sectional plan view taken on the line 3—3, Fig. 1;

Fig. 4 is a perspective view of one of the end brackets; and

Fig. 5 is a perspective view of the top plate.

As shown in Fig. 1, the blind comprises a head casing A which completely encloses all the operating parts of the blind. The head casing A is composed of a pair of end brackets 1, 1, respectively, one left hand and one right hand, of which the left hand bracket is shown in Fig. 4.

Each of the end brackets is stamped from a single piece of sheet metal to produce an end closure plate 2, a back flange 3, a bottom flange 4, a top flange 5, and a front flange 6.

The top flange 5 and front flange 6 are separated by a slot 7 and the lower portion of the front flange 6 is cut away, as indicated at 8, for purposes hereinafter set forth.

The top flange 5 terminates short of the back flange 3 which latter is provided with a forwardly projecting portion 5a which lies in the same plane as and forms a continuation of the top flange 5 with a slot 7a formed between the two. The forward edge of the flange portion 5a is bent downwardly to form a lip, as indicated at 9, for securing the upper edge of the head rail 10 in place in the brackets 1, 1 respectively.

As most clearly shown in Fig. 2, the head rail 10 is of an angular cross-sectional construction and comprises a vertical back flange or plate 11 and a horizontal bottom flange or plate 12, with a horizontal forwardly inturned flange 13 along the upper edge of the vertical back plate 11 and a vertically inturned flange 14 along the front edge of the bottom plate 12.

As shown in Fig. 2, the back plate 11 lies flatly against the inside surfaces of the back flanges 3, 3 of the end brackets 1 respectively, with the edge flange 13 lying under the flange portion 5a of each end bracket between the depending lip 9 and the back flange 3, whereby flexing of the back plate 11 forwardly at its top edge is prevented and a rigid structure is produced.

The bottom plate 12 of the head rail 10 lies flatly on the top surfaces of the bottom flanges 4, 4 of the end brackets 1, 1, respectively, and is held in this position by the weight of the blind suspended from the tilting mechanism which is carried on the upper surface of the bottom plate 12 of the head rail 10.

The back plate 11 of the head rail 10 being formed integral with the bottom plate 12 and arranged in a plane at right angles to that of the bottom plate 12, together with the narrower upstanding front flange 14, rigidifies the bottom plate and prevents its flexing or bowing intermediate its ends under the weight of the blind which is carried exclusively by the head rail; and the flange 13 on the upper edge of the back plate 11, in a like manner, rigidifies the back plate 11 and prevents it from bowing intermediate its ends under strains transmitted thereto from and by the bottom plate 12.

By reason of the above noted construction of the head rail, it may be made of light weight thin gage metal at correspondingly low cost by automatic machines at low manufacturing cost. In a like manner the end brackets, top plate and front plate of the head casing may be constructed of similar metal under similar manufacturing processes and at similar low cost.

The front plate 15 is constructed and associated in such a manner with respect to the end brackets, the top plate and the bottom plate that it will maintain a firm position normally in contact with the front flanges 6, 6, of the end brackets 1, 1 respectively and yet be readily swung out of position or totally removed to inspect the working parts of the blind carried by the head rail, but in such a manner that it cannot be accidentally dislodged. Toward these ends the upper edge of the front plate 15 is provided with

a double hook flange 16 comprising a backwardly and downwardly extending portion 17 arranged in downwardly divergent relationship to the upper marginal portion 18 of the front plate 15, and an upward rearwardly extending portion 19 arranged in upwardly divergent relationship to the portion 19. The double hook flange 16 passes into the slots 7, 7 in the end brackets 1, 1, respectively with the bend 20 at the intersection of the parts 18 and 19 hanging on the upper edges 21 of the front flanges of the end brackets 1, 1 respectively and acting as a hinge for the front plate.

The pivot 20 of the front plate lies behind the plane of the front plate 15, thereby throwing the center of gravity of the front plate outwardly in front of the pivot 20 and resulting in the weight of the plate 15 itself causing said plate to make firm contact with the front flanges 6, 6 of the end brackets 1, 1 respectively, thus avoiding objectionable loose swinging motion of the front plate.

Should the front plate 15 be accidentally raised in its own plane or at any angle less than the approximate 90° angle shown between the broken line and full line positions of the front plate 15 as shown in Fig. 3, the upturned rearwardly divergent edge portion 19 of the front plate 15 will engage behind the lower or front edges 22, 22 of the top flanges 5, 5 respectively of the two end brackets and prevent dislodgement of the front plate 15 from the end brackets 1, 1.

In order to remove and replace the front plate 15 it must be moved to a position approximating that shown in broken lines in Fig. 2, with respect to the end brackets 1, 1, whereby the hook edge 19 can slip through the slots 7, 7. In replacing the front plate, after the upturned edge 19 is past the edges 22, 22 of the end bracket slots 7, 7 the front plate may be swung downwardly to slide the hook portion 17 of the front plate through said slots until the pivot bend 20 sets on the edges 21, 21 of the slots 7, 7, after which the end plate, if released will assume its normal position in contact with the front flanges 6, 6 of the end brackets as a result of the relationship between the pivot 20 and the center of gravity of the front plate 15.

The top plate 25 of the head casing A, like the front plate 15, is composed of light weight metal and is provided with a downward rearwardly extending front flange 26 which hooks into the slots 7, 7, of the end brackets 1, 1 respectively; and with a rear downwardly extending perpendicular flange 27 which projects through the slots 7*a*, 7*a*, in said brackets. With this arrangement the top plate is prevented from moving laterally and by reason of the ends 28, 28 of the flanges 26 and 27 engaging the inner faces of the end plates 2, 2 of the end brackets 1, 1, the top plate 25 is held against longitudinal displacement.

Vertical displacement of the top plate 25 may be prevented by any suitable means, for example, as shown in Fig. 5, by slitting the plate inwardly from one end thereof as at 29, 29 and depressing the intervening portion 30 to provide a tongue adapted to slip under the top flange 5 of one of the end brackets. The opposite end of the plate 25 may be provided with a similar tongue or it or both ends may be provided with a slot or opening 31 for passage of a screw 32, see Figs. 1 and 5, tapped into an opening 33 formed in the top flange 5 of the end bracket.

Normally the head rail may be removed from the end brackets by pulling the bottom plate forward, whereupon the forward edge of the flange 15 on the top of the back plate 11 bears against the rear face of the lips 9, 9 on the end brackets and acts as a fulcrum for the whole of the head rail 10, causing the front edge of the bottom plate 12 to rise, while the rear edge of said plate, where it joins at 34 with the lower edge of the back plate 11, slides along the bottom flanges 4, 4 of the end brackets until the flange 13 clears the lower ends of the lips 9, 9, whereupon the head rail may be moved bodily forward and turned about its longitudinal axis in moving the ends of the bottom and back plates 11 and 12 outward through the cut-outs 8, 8 in the front flanges 6, 6 of the two end brackets 1, 1 respectively.

In order to prevent accidental forward movement of the head rail 10 along the bottom flanges 4, 4 of the end brackets 1, 1, catches 35 are pivotally connected at 37 to and adjacent the opposite ends of the bottom plate 12 of the head rail 10, with the outer edges 39 of the latches 35 adapted to be swung into position behind the front flanges 6, 6 of the end brackets 1, 1, as shown in Figs. 2 and 3 respectively, lugs 41 being provided and projecting upwardly from the latches 35 for manually operating said latches into and out of locking position with respect to said flanges.

The bottom plate 12 of the head rail 10 is provided with suitable openings for the passage of the ladder tapes 43 and 44 of the blind 45; the tilting cord or chain 46; and the elevating cords 47.

The tilting, elevating and cord locking mechanisms are fully disclosed in the aforesaid copending application and for that reason are not shown in the present case.

I claim:

1. A head casing for Venetian blinds, comprising a removable head rail of L-shaped cross-section constituting bottom and back plates respectively of said casing, end brackets each comprising an end closure plate for said casing, and a bottom flange on each end plate for supporting said bottom plate.

2. A head casing for Venetian blinds, comprising a removable head rail of L-shaped cross-section constituting bottom and back plates respectively of said casing, end brackets each comprising an end closure plate for said casing, a bottom flange on each end plate for supporting said bottom plate and relatively spaced flange portions on each end plate for holding said back plate therebetween.

3. A head casing for Venetian blinds, comprising a removable head rail of L-shaped cross-section constituting bottom and back plates respectively of said casing, end brackets each comprising an end closure plate for said casing, a bottom flange on each end plate for supporting said bottom plate, relatively spaced flange portions on each end plate for holding said back plate therebetween, and a front flange on and extending perpendicular to said bottom plate.

4. A head casing for Venetian blinds, comprising a removable head rail of L-shaped cross-section constituting bottom and back plates respectively of said casing, end brackets each comprising an end closure plate for said casing, a bottom flange on each end plate for supporting said bottom plate, relatively spaced flange portions on each end plate for holding said back plate therebetween, a front flange on and ex-

tending perpendicular to said bottom plate, and a top flange on and extending perpendicular to said back plate.

5. A head casing for Venetian blinds, comprising a removable head rail of L-shaped cross-section constituting bottom and back plates respectively of said casing, end brackets each comprising an end closure plate for said casing, a perimetrical flange on each end enclosure plate including a bottom flange portion for supporting said bottom plate, a back flange portion for limiting movement of said back plate in one direction, and a lip for limiting movement of said back plate in the opposite direction.

6. A head casing for Venetian blinds, comprising a removable head rail of L-shaped cross-section constituting bottom and back plates respectively of said casing, end brackets each comprising an end closure plate for said casing, a perimetrical flange on each end enclosure plate including a bottom flange portion for supporting said bottom plate, a back flange portion for limiting movement of said back plate in one direction, a lip for limiting movement of said back plate in the opposite direction, and a front plate provided with a hook entered in a slot in the perimetrical flange of each end bracket for pivotally and removably supporting said front plate.

7. A head casing for Venetian blinds, comprising a removable head rail of L-shaped cross-section constituting bottom and back plates respectively of said casing, end brackets each comprising an end closure plate for said casing, a perimetrical flange on each end enclosure plate including a bottom flange portion for supporting said bottom plate, a back flange portion for limiting movement of said back plate in one direction, a lip for limiting movement of said back plate in the opposite direction, a front plate provided with a hook entered in a slot in the perimetrical flange on each end bracket for pivotally and removably supporting said front plate, a top plate having a front flange entered in said end bracket slots, and a back flange entered in a relatively spaced slot in the perimetrical flange of each end bracket for movably maintaining said top plate in position.

8. A head casing for Venetian blinds, comprising a removable head rail of L-shaped cross-section constituting bottom and back plates respectively of said casing, end brackets each comprising an end closure plate for said casing, a perimetrical flange on each end enclosure plate including a bottom flange portion for supporting said bottom plate, a back flange portion for limiting movement of said back plate in one direction, and a lip for limiting movement of said back plate in the opposite direction, said perimetrical flanges being cut away on the front portions thereof adjacent said bottom flange portions to afford ingress and egress of said head rail to and from the interiors of said end brackets.

9. A head casing for Venetian blinds, comprising a pair of end brackets provided with perimetrical flanges respectively, and a front plate provided with a stiffening flange of substantially S-shaped cross-section along its upper edge and engageable in slots formed in said end bracket flanges.

10. A head casing for Venetian blinds, comprising a pair of end brackets provided with perimetrical flanges respectively, and a front plate provided with a stiffening flange of substantially S-shaped cross-section along its upper edge and engageable in slots formed in said end bracket flanges with the center of gravity of the front plate offset laterally to the point of engagement of said S-shaped flange with one edge of each slot to cause the front plate to lie normally in contact with said end bracket flanges solely under the influence of gravitation.

11. A head casing for Venetian blinds, comprising a pair of end brackets provided with perimetrical flanges respectively, and a front plate provided with a stiffening flange of substantially S-shaped cross section along its upper edge with one turn of said S-shaped flange engageable with one edge of the slots in said bracket flanges to function as a pivot for said front plate and the second turn of said S-shaped flange engageable with the second edge of said slots to prevent displacement of said flange from said slots under vertical planar movement of said front plate.

12. A head casing for Venetian blinds comprising a pair of end brackets provided with perimetrical flanges respectively, a removable back plate arrangeable in a vertical plane therein with its lower edge resting on lower horizontal portions of said flange against vertical back portions of said flanges, and relatively short vertical lips depending from upper horizontal portions of said flanges in front of said back plate to confine the upper edge of said back plate between said lips and said back portions of said flanges.

13. A head rail, for Venetian blinds, of L-shaped cross-section forming a horizontal bottom plate and a vertical back plate.

14. A head rail, for Venetian blinds, of L-shaped cross-section forming a horizontal bottom plate and a vertical back plate joined integrally along intersecting edges of the two, and a perpendicular flange along the opposite parallel edge of at least one of said plates.

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