Sept. 1, 1936. C. H. HUCKE 2,052,828

WINDOW SHADE SUPPORTING STRUCTURE

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Fig. 1

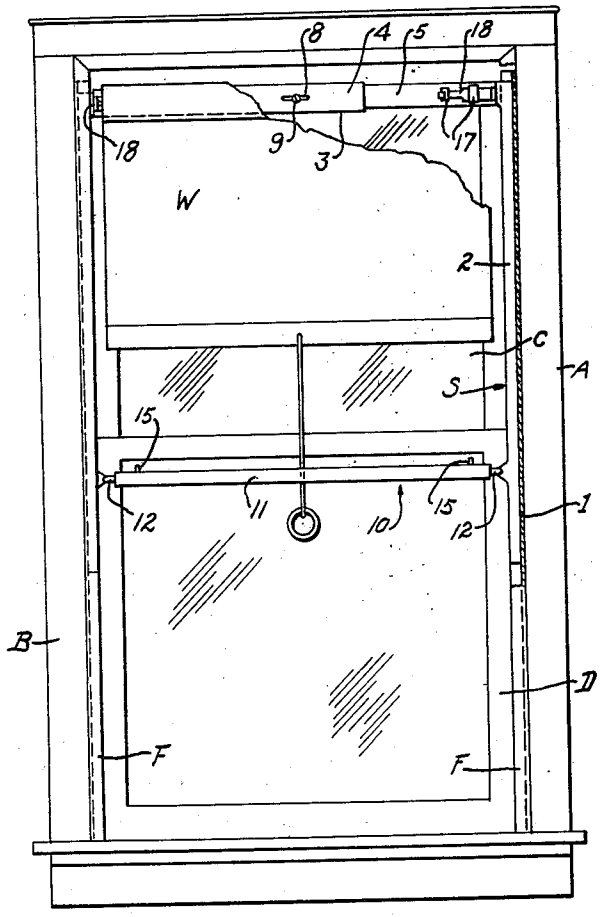
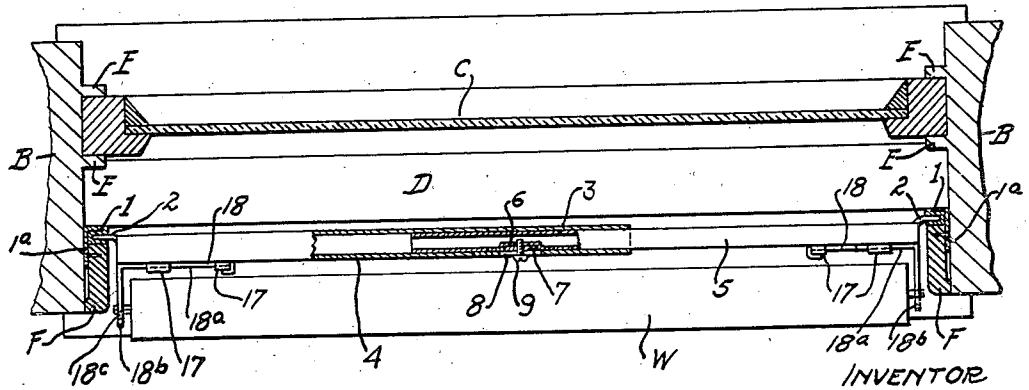


Fig. 2



INVENTOR
C. H. HUCKE

BY J. E. Cook

ATTORNEY

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Fig. 3

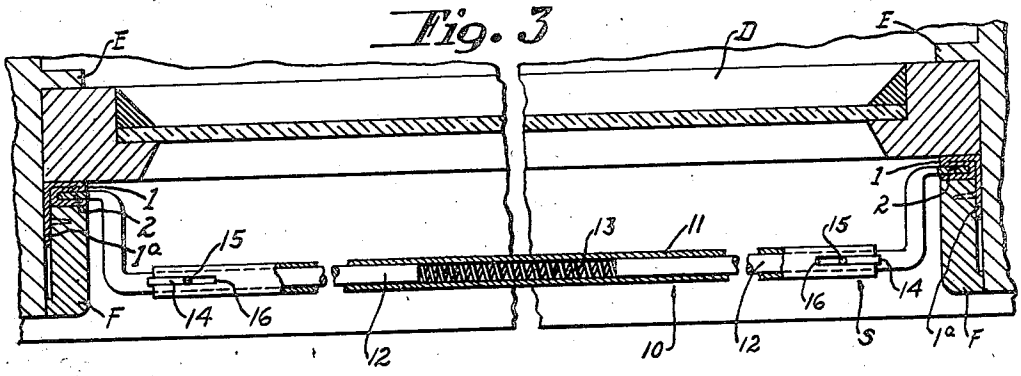


Fig. 6

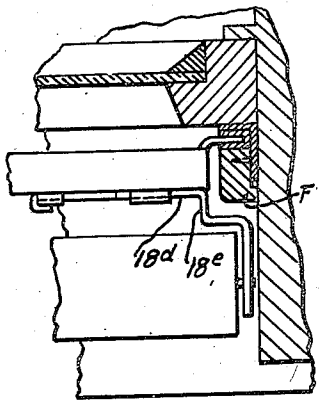


Fig. 4

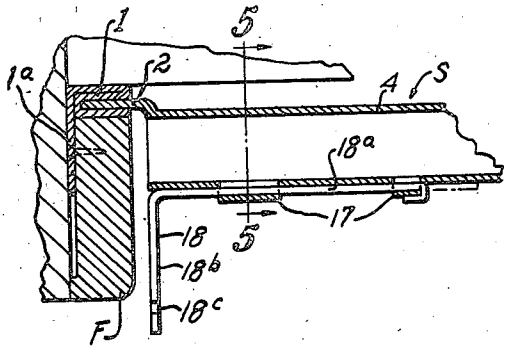


Fig. 5

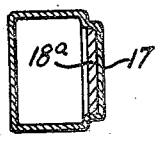
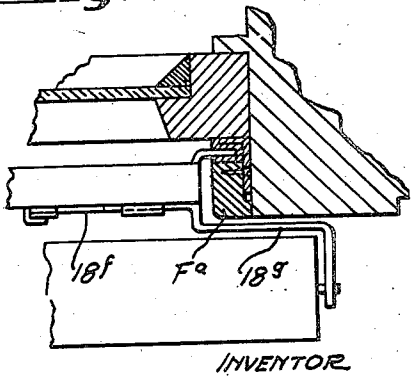


Fig. 7



INVENTOR
C. H. HUCKE
BY J. S. Cook
ATTORNEY

Sept. 1, 1936. C. H. HUCKE 2,052,828

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Fig. 8

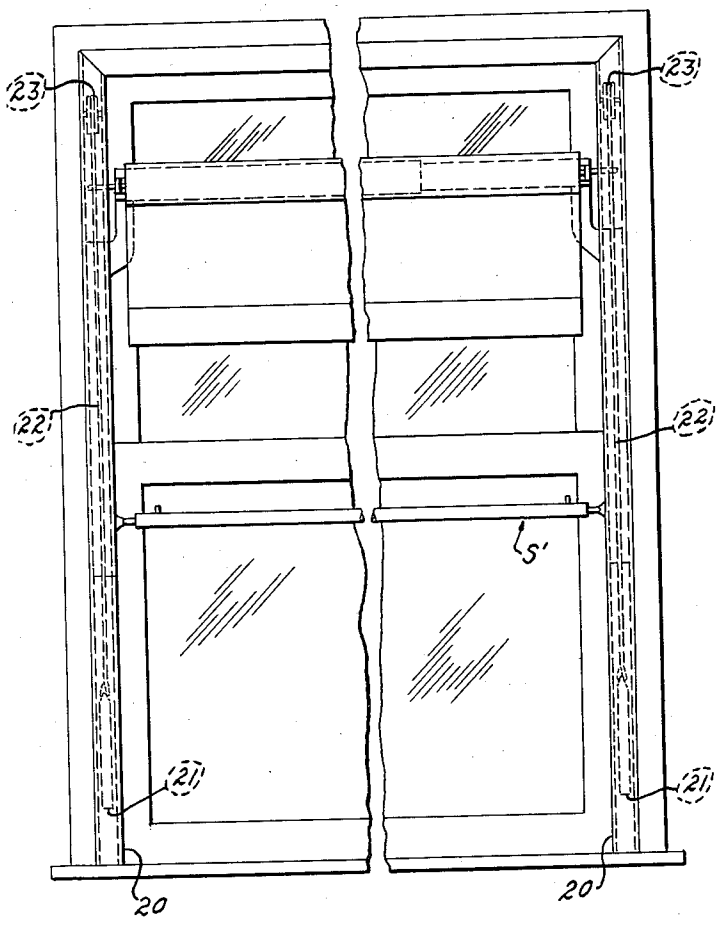


Fig. 9

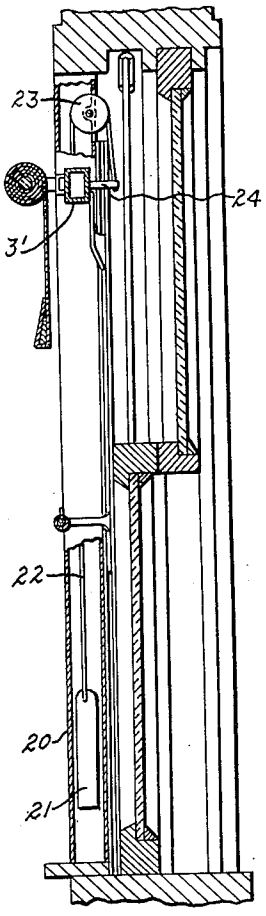
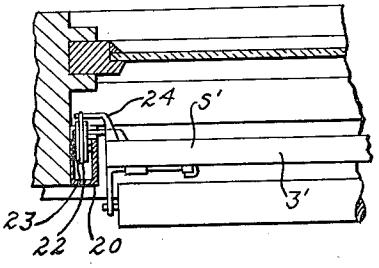


Fig. 10



INVENTOR
C. H. HUCKE
BY J. H. Cook
ATTORNEY

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WINDOW SHADE SUPPORTING STRUCTURE

Charles H. Hucke, St. Louis, Mo.

Application March 16, 1935, Serial No. 11,452

12 Claims. (Cl. 156—27)

This invention relates generally to window shade supporting structures, and more specifically to a supporting structure for a window shade which is capable of being adjusted longitudinally of a window so as to position the roll of the window shade at different levels relative to the window, the predominant object of the invention being to provide a structure of the type mentioned which, while of very simple construction and arrangement, will efficiently perform its intended function.

Fig. 1 is a front elevation of a window structure showing the improved shade-adjusting means associated therewith, a portion of the window shade being broken away to show parts of the shade-supporting means which would be otherwise hidden.

Fig. 2 is an enlarged view, partly in horizontal section and partly in plan, illustrating the upper portion of the improved shade-supporting means.

Fig. 3 is a view similar to Fig. 2, but on a slightly larger scale and with a portion of the window structure broken away to conserve space, which illustrates the lower portion of the improved shade-supporting means.

Fig. 4 is a fragmentary sectional detail illustrating a part of the upper portion of the improved shade-supporting means.

Fig. 5 is a section on line 5—5 of Fig. 4.

Fig. 6 is a fragmentary sectional detail illustrating a slightly different type of shade-supporting bracket associated with the improved shade-supporting structure.

Fig. 7 is a view similar to Fig. 6, but illustrating a different type of shade-supporting bracket associated with the improved shade-supporting means.

Fig. 8 is a fragmentary front elevation of a window structure showing a modified form of the invention associated therewith.

Fig. 9 is a vertical section of the structure illustrated in Fig. 8.

Fig. 10 is a fragmentary sectional detail illustrating in horizontal section a portion of the structure illustrated in Figs. 8 and 9.

In the drawings, wherein are shown for the purpose of illustration, merely, several embodiments of the invention, A designates a window structure generally which is of the usual and well known construction, said window structure including a window frame B, an upper sash C, and a lower sash D. The sashes C and D are arranged for vertical movement in the usual manner, and to this end the window structure includes parting strips E and stops F. The stops F are in the form of strips which extend vertically of the window structure in the usual manner at the inside of the window frame, said stops and the parting strips E cooperating with parts of the window frame in a manner to provide guideways in which the lower sash D is adapted to move.

Interposed between the rear faces of the strips F at opposite sides of the window frame, as shown most clearly in Fig. 3, are guideways 1, which are formed preferably of metal bent to the shape illustrated in the drawings. In other words, each of these guideways includes a portion 1^a which is interposed between the stop and an adjacent face of the window frame. At the rear end of the portion 1^a of each guideway the metal of which it is formed is bent at a substantial right angle to said portion 1^a, and said metal is then bent upon itself and is shaped to provide the guideway proper. The guideways 1 extend from the sill of the window structure substantially to the uppermost frame element thereof, and are secured by suitable fastening devices to the stops F. The window shade supporting means is designated generally by the reference character S, and comprises a pair of side members 2 which extend longitudinally of the shade-supporting means and are extended into the guideways 1 for movement vertically thereof. At the upper end of the window shade supporting means S a cross member 3 is provided, which is formed of a pair of hollow elements 4 and 5 arranged in telescopic relation, the elements 5 being extended into the element 4 as shown most clearly in Fig. 2. A portion of the material of the element 5 is forced inwardly to provide a depression 6 in which a section of metallic material 7 is fixedly seated. This section of material 7 is provided with a screw-threaded opening formed therein which registers with an opening formed through the material of the element 5 at the base of the recess 6. The element 4 is provided with a slot 8, and a screw 9 is extended through this slot and is passed through the screw-threaded opening in the section of material 7 and the opening in the base of the recess of the element 5. The head portion of the screw 9 is seated against the outer face of the element 4 by screwing the screw 9 inwardly when it is desired to clamp the elements 4 and 5 together so as to prevent relative movement thereof. The side members 2 of the shade-supporting means S are secured to or formed integrally with the elements 4 and 5, as shown most clearly in Fig. 2.

Adjacent to the lower ends of the side members 2 is a cross member 10 which preferably is in the form of a tube 11, as shown in Fig. 3. Extended into the tube 11 at the opposite ends thereof are

rods 12, these rods in the form of the invention shown in Fig. 3 being bent rearwardly and then outwardly, where they are attached to the side members 2 of the shade-supporting means. The inner ends of the rods 12 are spaced apart, and between said inner ends of said rods an expansible and contractible coil spring 13 is arranged. The coil spring 13 tends to force the rods 12 outwardly in a manner to move the inner faces of the side members 2 into close contact with the faces at the bases of the guideways 1. The rods 12 are provided with upwardly projected extensions 14 which are provided with upstanding fingers 15, said portions 14 being arranged in slots 16 formed at the opposite ends of the tube 11. The slots 16 are open at the ends of the tube 11, and by arranging the portions 14 of the rods 12 in said slots the slots provide guideways for said portions 14 when the rods are moved toward and from each other.

The elements 4 and 5 which provide the upper cross member 3 of the shade-supporting structure S are provided adjacent to their outer ends with pairs of straps 17. These straps are formed by slitting the material of the elements 4 and 5 and pressing material located between said slits outwardly to provide embracing portions shaped as shown in Fig. 5. The pairs of straps 17 at the opposite ends of the cross member 3 receive shade-supporting brackets 18, each of these brackets comprising a leg 18^a, which is arranged in contact with the front face of the associated element of the cross member 3, and an angular leg 18^b which extends outwardly from the outer end of said leg 18^a. The legs 18^a of the brackets 18 are embraced by the straps 17, as shown in Fig. 5, and the legs 18^b are provided with suitable openings 18^c which support the window shade W. The innermost ends of the leg portions 18^a of the brackets 18 are bent in the manner illustrated in Fig. 4, so that said bent portions embrace the innermost straps 17. Because of this arrangement the brackets 18 are prevented from moving outwardly beyond their proper positions with relation to the cross member 3, and the presence of the shade between the opposed brackets 18, of course, prevents inward movement of said brackets relative to said cross member.

In the use of the improved window shade supporting means disclosed herein, when it is desired to raise or lower the shade bodily relative to the associated window structure so as to move the roll of the shade vertically with respect to the window structure, the fingers 15 are grasped and moved inwardly a slight distance. This has the effect of imparting like movement to the rods 12, thus contracting the coil spring 13 and relieving the frictional grip between the inner end faces of the side members 2 and the faces at the bases of the guideways 1 in which said side members operate. The shade-supporting means may then be moved vertically relatively to the window to the desired position, when the fingers are released to permit the coil spring 13 to expand and move the rods 12 outwardly, whereupon the inner faces of the side members 2 will be forced into close frictional contact with the faces at the bases of the guideways 1 so as to retain the shade-supporting means in the position to which it has been adjusted.

Because of the telescopic arrangement of the elements 4 and 5 of the upper cross member 3, and because of the presence of the coil spring 13 between the inner ends of the rods 12, the shade-supporting means S is fully capable of being adjusted for use with windows of different widths. In other words, by unscrewing the screw 9 slightly the elements 4 and 5 of the cross member 3 may be adjusted with respect to each other to provide a wider or narrower shade-supporting structure. The coil spring 13 provides for like inward movement of the side members 2 at the lower portion of the shade-supporting structure. The brackets 18 also are adjustable so as to provide for the reception of shade rolls of different lengths. This adjustment may be accomplished originally when the shade-supporting structure is placed in use. By having the legs 18^a of the bracket extended inwardly at their inner ends, as indicated by dotted lines in Fig. 4, so as to properly position the brackets, the inner end portions of the legs 18^a may then be bent to form the hook-like portions at the inner ends thereof which prevent outward movement of the brackets.

In Figs. 6 and 7 I illustrate forms of the invention which are slightly different from the form shown in Figs. 1 to 5. In Figs. 1 to 5 the shade is of such width that it is located between the stops F of the window structure, while in Figs. 6 and 7 wider shades are employed.

In Fig. 6 the bracket 18^d is provided with an outwardly extended leg portion 18^e that includes a double bend; that is to say, the leg portion 18^e of the bracket 18^d is bent around the outer portion of the stop F' so that a shade may be supported which is wider than the space between the stops. In Fig. 7 a bracket 18^f is illustrated which is provided with a leg portion 18^g, which extends laterally beyond the window opening in the frame of the window structure. By employing brackets such as that illustrated in Fig. 7 a shade of greater width than the window opening in the window frame may be employed.

In Figs. 8, 9, and 10 I illustrate a form of the invention which involves the use of weights for counterbalancing the shade-supporting structure S'. In this form of the invention the window frame at its opposite sides is provided with housings 20 for counterbalancing weights 21. The housings 20 extend from the sill of the window structure to the upper portion thereof, and the weights 21 are attached to suitable cords 22 which pass over pulleys 23 suitably supported in the upper portions of the housings 20. The ends of the cords 22 opposite to the ends thereof to which the weights 21 are attached are connected to extensions 24 projected from the upper cross member 3', and as a result of this arrangement the weights will counterbalance the sash-supporting structure and permit free movement of same vertically of the window structure. The counterbalancing arrangement illustrated in Figs. 8, 9, and 10 is intended for use particularly with shade-supporting structures associated with unusually wide windows where the weight of such shade-supporting structures may render free movement of the shade-supporting structures slightly inconvenient.

I claim:

1. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, said shade support being comprised of top, bottom, and rigid side members producing a rectangular frame structure, the rigid side members of which move

through said guideways, means associated with said shade support for operably supporting a window shade, and means for maintaining said shade support in different positions relative to the guideways to which it may be adjusted.

2. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, said shade support being comprised of top, bottom, and rigid side members producing a rectangular frame structure, the rigid side members of which move through said guideways, means associated with said shade support for operably supporting a window shade, and means co-operating with said guideways for maintaining said shade support in different positions relative to the guideways to which it may be adjusted.

3. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, said shade support being comprised of top, bottom, and rigid side members producing a rectangular frame structure, the rigid side members of which move through said guideways, means associated with said shade support for operably supporting a window shade, and friction means co-operating with said guideways for maintaining said shade support in different positions relative to the guideways to which it may be adjusted.

4. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, and means associated with said shade support for operably supporting a window shade, said shade support including side members movably disposed in said guideways, and a lower member connecting the lower end portions of said side members, said lower member being arranged for expansion whereby said side members may be caused to frictionally engage the guideways so as to maintain the shade support in positions to which it has been adjusted, and being contractible to relieve such frictional engagement and permit the shade support to be moved to adjusted positions.

5. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, and means associated with said shade support for operably supporting a window shade, said shade support including side members movably disposed in said guideways, an upper member connecting the upper end portions of said side members, and a lower member connecting the lower end portions of said side members, said lower member being arranged for expansion whereby said side members may be caused to frictionally engage the guideways so as to maintain the shade support in positions to which it has been adjusted, and being contractible to relieve such frictional engagement and permit the shade support to be moved to adjusted positions.

6. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, and means associated with said shade support for operably supporting a window shade, said shade support including side members movably disposed in said guideways, and a lower member connecting the lower end portions of said side members, said lower member including elements fixed to the side members and movable toward and from each other, a coil spring for moving said elements away from each other so as to cause the side members to frictionally engage the guideways whereby the shade support may be maintained in positions to which it has been adjusted, and means for moving said elements toward each other against the action of the coil spring to relieve such frictional engagement and permit adjustment of the shade support.

7. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, and means associated with said shade support for operably supporting a window shade, said shade support including side members movably disposed in said guideways, an upper member connecting the upper end portions of said side members, and a lower member connecting the lower end portions of said side members, said lower member including elements fixed to the side members and movable toward and from each other, a coil spring for moving said elements away from each other so as to cause the side members to frictionally engage the guideways whereby the shade support may be maintained in positions to which it has been adjusted, and means for moving said elements toward each other against the action of the coil spring to relieve such frictional engagement and permit adjustment of the shade support.

8. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, and means associated with said shade support for operably supporting a window shade, said shade support including side members movably disposed in said guideways, an upper, longitudinally adjustable member connecting the upper end portions of said side members, and a lower member connecting the lower end portions of said side members, said lower member being expansible whereby said side members may frictionally engage the guideways so as to maintain the shade support in positions to which it has been adjusted, and being contractible to relieve such frictional engagement and permit the shade support to be moved to adjusted positions.

9. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, and means associated with said shade support for operably supporting a window shade in said guideways, an upper, longitudinally adjustable member connecting the upper end portions of said side members, and a lower member connecting the lower end portions of said side members, said lower member including elements fixed to the side members and movable toward and from each other, a coil spring for moving said elements away from each other so as to cause the side members to frictionally engage the guideways whereby the shade support may be maintained in positions to which it has been adjusted, and means for moving said elements toward each other against the action of the coil spring to relieve such frictional engagement and permit adjustment of the shade support.

10. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, and means adjustably associated with said shade support for

operably supporting a window shade, said shade support including side members movably disposed in said guideways, and a lower member connecting the lower end portions of said side members, said lower member being expansible whereby said side members may frictionally engage the guideways so as to maintain the shade support in positions to which it has been adjusted, and being contractible to relieve such frictional engagement and permit the shade support to be moved to adjusted positions.

11. An adjustable shade-supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, means associated with said shade support for operably supporting a window shade, said shade support including side members movably disposed in said guideways, and a lower member connecting the lower end portions of said side members, said lower member being expansible whereby said side members may frictionally engage the guideways so as to maintain the shade support in positions to which it has been adjusted, and being contractible to relieve such frictional engagement and permit the shade support to be moved to adjusted positions, and means for counterbalancing said shade support.

12. An adjustable shade supporting structure comprising guideways adapted for fixed support by a window structure, a shade support guided for movement by said guideways, and means associated with said shade support for operably supporting a window shade, said shade support including a top member, rigid side members movably disposed in said guideways, and a lower member connecting the lower end portions of said side members, said lower member being arranged for expansion whereby said shade support may be caused to engage the guideways so as to maintain the shade support in positions to which it has been adjusted, and being contractible to release such engagement and permit the shade support to be moved to adjusted positions.

CHARLES H. HUCKE.