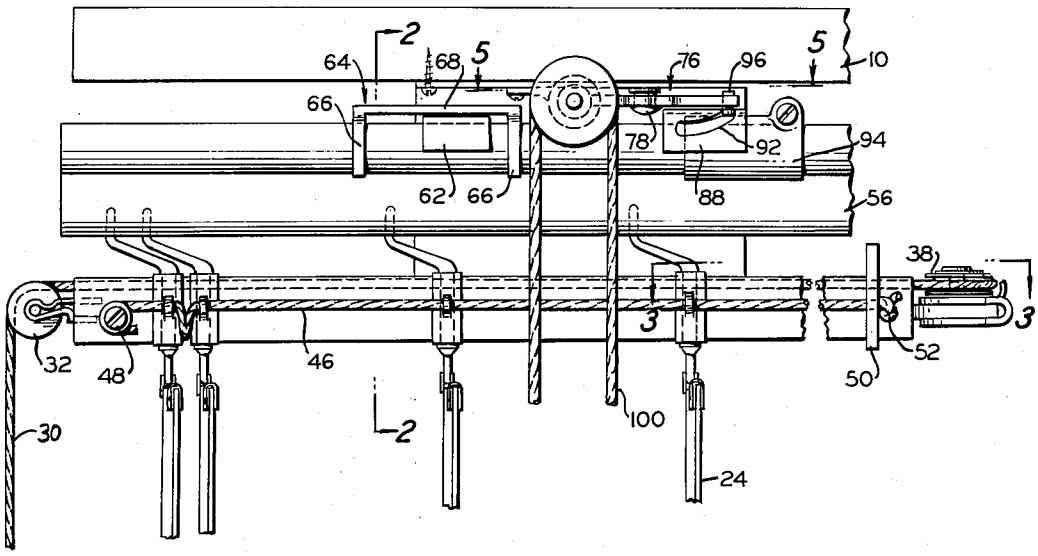
June 5, 1956 C. E. BECK 2,748,853

VERTICAL SLAT VENETIAN DRAW DRAPES

Filed Sept. 13, 1954 2 Sheets-Sheet 1

FIG_1



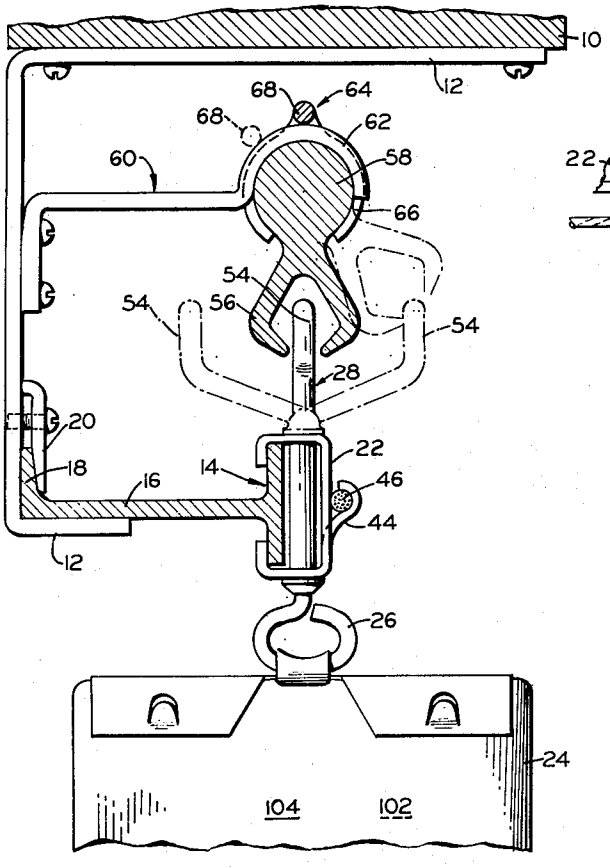


FIG_2

FIG_3

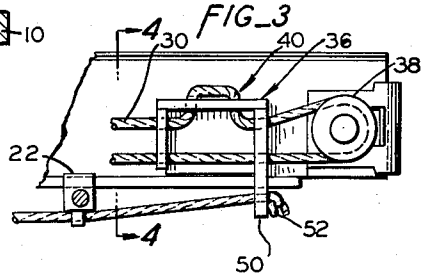
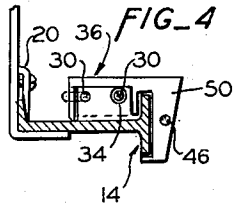


FIG_4



INVENTOR.
CARL E. BECK

BY Naylor and Lassagne

ATTORNEYS

June 5, 1956 C. E. BECK 2,748,853

VERTICAL SLAT VENETIAN DRAW DRAPES

Filed Sept. 13, 1954 2 Sheets-Sheet 2

FIG_5

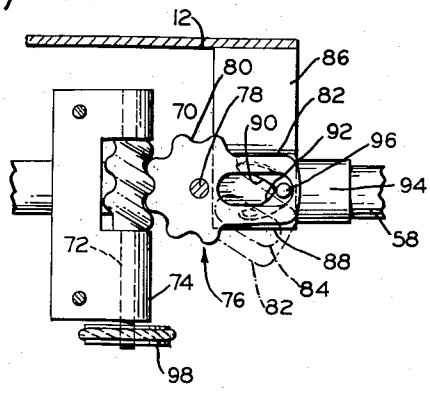
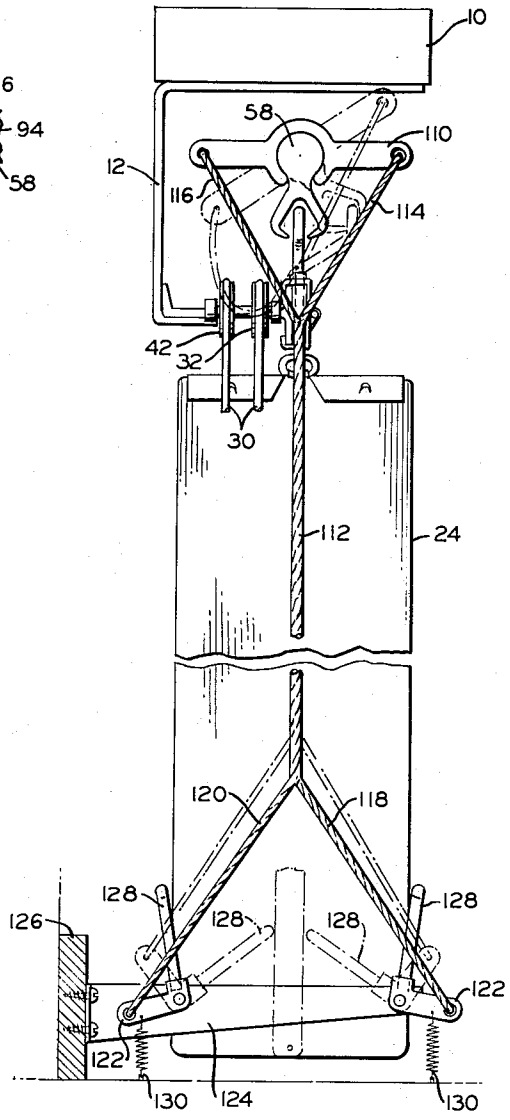


FIG_6



INVENTOR.
CARL E. BECK
BY
Naylor and Lasagne
ATTORNEYS

United States Patent Office 2,748,853 Patented June 5, 1956

2,748,853

VERTICAL SLAT VENETIAN DRAW DRAPES

Carl E. Beck, San Mateo, Calif.

Application September 13, 1954, Serial No. 455,690

3 Claims. (Cl. 160—172)

This invention relates to blinds, and more particularly to improvements in draw drapes of the vertical slat Venetian blind type.

An object of the invention is to provide a draw drape arrangement of the mentioned type whereby the vertically disposed and pivotally mounted slat elements may be opened or closed in any desired position of draw of the drapes.

A further object of the invention is to provide a draw drape arrangement of the mentioned type embodying bell crank levers carried by the individual slat elements for the turning of the same and a horizontally disposed control rail therefor which is both pivotally and slidably mounted in association with the bell crank levers to prevent any binding action between the levers and the control rail.

Other objects and advantages of the invention will be apparent from the following description taken in conjunction with the drawings forming part of the specification, and in which:

Figure 1 is a partial view in side elevation of a draw drape assembly embodying the invention;

Figure 2 is an enlarged detail view in section taken along lines 2—2 of Figure 1;

Figure 3 is a detail view taken along lines 3—3 of Figure 1;

Figure 4 is a further detail view in section taken along lines 4—4 of Figure 3;

Figure 5 is a further detail view taken along lines 5—5 of Figure 1; and

Figure 6 is a view in end elevation of the draw drape assembly of the invention embodying means for clamping the lower ends of the vertical slat elements together in closed position.

With reference to the drawings, the draw drape assembly comprises a head board support 10, one or more brackets 12 fixedly secured thereto, a carrier rail 14 having web and flange portions 16 and 18 supported by bracket 12 and secured thereto, as by clamp means 20, a plurality of clip members 22 slidably disposed on rail 14, and a plurality of slats 24 supported by the looped ends 26 of bell crank levers 28 rotatably carried by clip members 22.

The means provided for drawing the slats 24 comprise a draw cord 30 which passes over sheave 32, through aligned over-sized apertures 34 formed in carriage member indicated generally at 36 slidably disposed on rail 14, around sheave 38, through and in secured relation with carriage 36, as indicated generally at 40, and over sheave 42. The clip members 22 are provided with tongue portions 44 which are clampingly engaged with a cord 46, said cord being fixed at one end by anchoring means 48 carried by rail 14 and having its other end extending through extension member 50 forming a part of carriage 36 and disposed in secured relation therewith by means of a knot 52.

It will be appreciated that the pulling of cord 30 downwardly over sheave 32 causes carriage 36 to be moved to the right, with reference to Figures 1 and 3, thereby causing cord 46 to be extended and the slats 24 to be moved to a drape-closed position, while the pulling of the cord 30 downwardly over sheave 42 causes the carriage 36 to be moved to the left and thereby scavenge the slats to a drape-open position by means of extension portion 50 of the carriage.

The vertically disposed end portions 54 of the bell crank levers 28 extend into the channel-shaped skirt portion 56 of a slat-turning control rod 58 which is supported for pivotal and for end-wise movement by means comprising support brackets 60 secured to brackets 12, semi-cylindrical bearing elements 62 forming an integral part of brackets 60, and by hangers indicated generally at 64 and comprising yoke-shaped end portions 66 fixedly secured to rod 58 and cross member portion 68 supported on the guide ends 62 of brackets 60.

Means for imparting pivotal and sliding movement of control rail 58 comprise a worm 70 carried by shaft 72 supported for rotation in shaft housing 74 secured to a bracket 12, a lever indicated generally at 76 pivotally carried on mounting pin 78 and having a gear portion 80 in engagement with worm 70 and an arm portion 82 provided with an elongated slot 84, a bracket 86 secured to bracket 12 and having a semi-cylindrical end portion 88 provided with alike arcuately shaped intersecting cam slots 90 and 92, a bracket 94 fitted over rail 58 and fixedly secured thereto, said bracket having an upstanding pin 96 extending through cam slots 90 and 92 and through slots 84 of member 76, a sheave 98 secured to the end of shaft 72, and a cord 100 passing over sheave 98 in control relation therewith.

Movement of control cord 100 to impart a clockwise rotation, with reference to Figure 1, to sheave 98 and worm 70 causes control member 76 to be rotated about its mounting pin 78 in a counterclockwise direction, with reference to Figure 5, to thereby cause pin 96 to be moved along cam slot 90, thereby imparting counterclockwise rotation, with reference to Figure 2, of control rail 58 and sliding movement of said control rail to the left, with reference to Figures 1 and 5. This movement of the control rail 58 imparts a pivotal movement to the bell crank levers 28 to move them from the solid line position shown in Figure 2 to the right hand dotted line position shown in Figure 2, thereby imparting a pivotal movement to each of the slats 24 to bring the slats into a closed position with the surfaces 102 thereof disposed outwardly. Conversely, movement of control cord 100 to impart a counterclockwise rotation to sheave 98 and worm 70 causes pin 96 to be moved through cam slot 92, thereby imparting a clockwise rotation of rail 58, with reference to Figure 2, to move the bell crank levers 28 from the solid line position of Figure 2 to the left hand dotted line position of Figure 2. Such movement again serves to bring the slats 24 into a closed position, but here the surfaces 104 thereof are disposed outwardly.

It will be appreciated that the slats are brought into open position, as illustrated in Figures 1 and 2, by reversing the direction of movement of sheave 98 to bring control member 76 into the solid line position of Figure 5.

Means, as shown in Figure 6, may be embodied in the described draw drape Venetian blind system for mutually clamping the lower ends of the slats 24 together when the slats are disposed in closed position. As shown in Figure 6, such means comprise rocker arms 110 fixedly secured to control rail 58, control cords 112 having upper end portions 114 and 116 secured to the outer ends of rocker members 110 and having lower portions 118 and 120 secured to base board 126, elongated slat-clamping members 128 mutually secured to pairs of levers 122, and springs 130 yieldingly urging crank levers 122 to a posi-

tion where the slat-clamping members **128** are out of the path of pivotal movement of slats **24**.

When the control rail **58** is rocked in the manner above described to pivot the slats **24** to a closed position, either cord end **114** or cord end **116** will be pulled upwardly, thereby pulling cord ends **118** and **120** upwardly to rock crank levers **122** against the action of lever return springs **130** and to bring the slat-clamping members **128** into pressing engagement with the closed slats **24**, as indicated by the dotted line showing in Figure 6. The springs **130** are adapted to exert a pre-selected force on crank arms **122** sufficient to effect movement of the slat-clamping members **128** out of the path of movement of slats **24** when the control rail **58** is manually, through the control means described, returned to neutral, or slat-opened, position, but are not sufficiently strong to themselves to effect a return of the control rail to neutral position.

From the foregoing, it will be seen that the draw drape Venetian blind system of the invention is such as to enable the slats to be moved to open or closed positions regardless of their position of draw, and that the sliding movement of control rail **58** as it is being rocked to pivot the slats effectively prevents any binding action that would otherwise occur between the control rail and the crank levers **28** if the control rail were merely rocked.

While a preferred embodiment of the invention has been shown and described, it is to be understood that all substantial equivalents thereof are considered to be within the spirit and scope of the invention.

What is claimed is:

1. Apparatus of the type described comprising horizontally disposed rail means and bracket means supporting the same, a plurality of vertically disposed blind slats slidably and pivotally mounted on said rail means in depending relation thereto, control means interconnecting said slats for conjoint sliding movement with respect to said rail means whereby said slats may be moved from a drape open to a drape closed position and returned to a drape opened position, pivotally mounted crank levers fixedly connected to said slats extending above said rail means, a control rail having a channel formed in the underside thereof, means for both rockably and slidably supporting said control rail above said rail means with said channel of the control rail in receiving relation with said crank levers, and means in control relation with said rail adapted to impart rocking movement to said rail to pivot said crank levers to effect blind opening and closing of said slats and conjointly with such rocking movement to impart longitudinal sliding movement to said rail to prevent binding between said rail and crank levers while said levers are being pivoted.

2. Apparatus of the type described, as set forth in claim 1, including, further, means for clamping the lower ends of said slats together when said slats are in a blind closed position, said means comprising a cross arm fixedly connected to said control rail, a pair of oppositely disposed crank levers and means mounting the same adjacent the lower ends of said slats, said levers carrying slat clamping arms, and cord means interconnecting the ends of said cross arm and said oppositely disposed crank levers adapted upon rocking movement of said control rail, to pivot said slats to a blind closed position, to pivot said oppositely disposed crank levers and move said clamping arms into engagement with the side surfaces of said slats.

3. Apparatus of the type described comprising a horizontally disposed guide rail, a clip slidably disposed on said rail, a slat, means pivotally connecting said slat with said clip including a rod journaled in said clip, said rod having a crank lever portion extending above said clip, a control rail and bracket means supporting the same above said guide rail for both rocking and longitudinal sliding movement, said control rail having a recess in its underside into which the crank lever portion of said rod extends, and control means connected to said control rail operable to rock said rail and impart pivotal movement to said rod to pivotally move said slat, and, with said rocking movement, to simultaneously impart longitudinal sliding movement to said rail to prevent binding between said control rail and the crank lever portion of said rod.

References Cited in the file of this patent

UNITED STATES PATENTS

1,005,584	Trotter	Oct. 10, 1911
2,680,480	Harju et al.	June 8, 1954