March 4, 1952 I. H. PALMISANO 2,587,756

CORD GUIDE FOR VENETIAN BLIND TILT RAILS

Filed March 28, 1950 2 SHEETS—SHEET 1

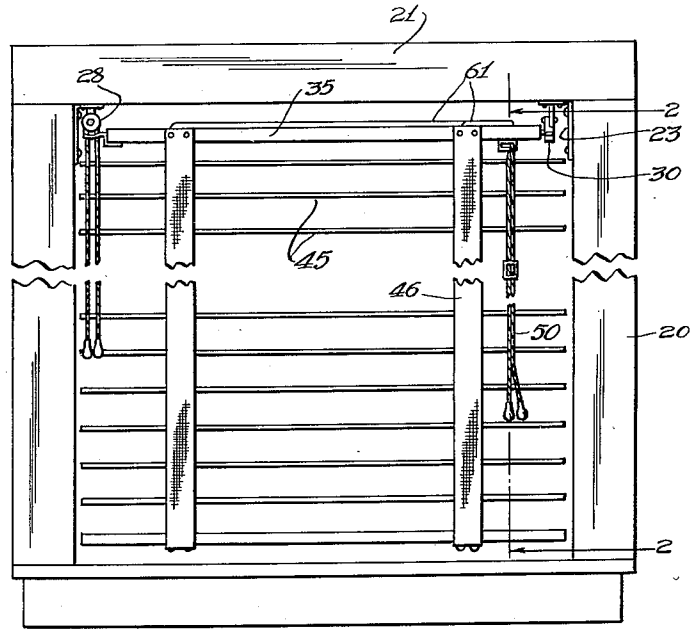


Fig. 1

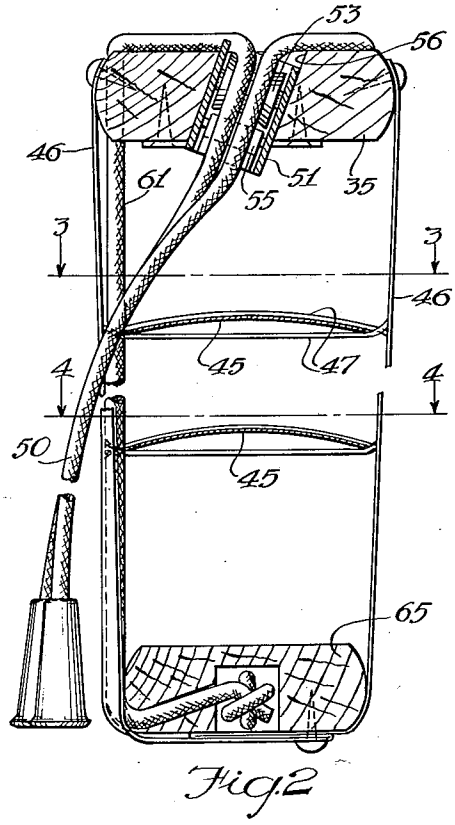


Fig. 2

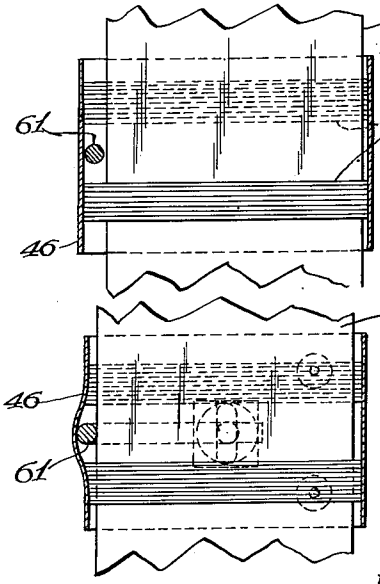


Fig. 3

Fig. 4

INVENTOR.
I. H. Palmisano
BY Miles B. Stevens & Co.
Attorneys.

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Fig. 5

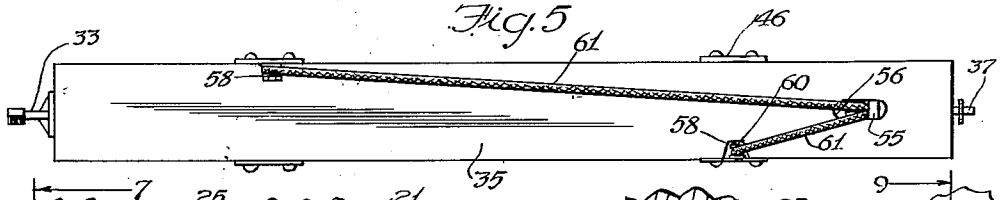


Fig. 6

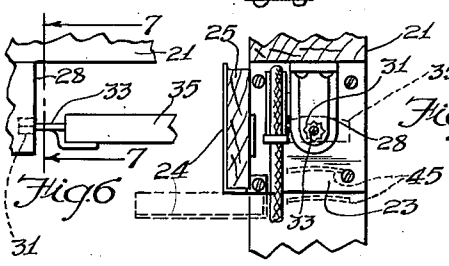


Fig. 7

Fig. 9

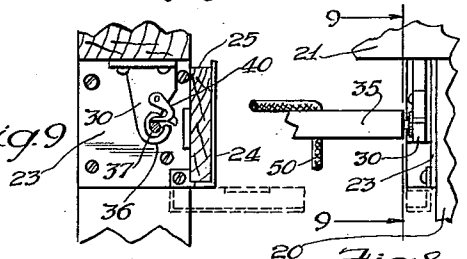
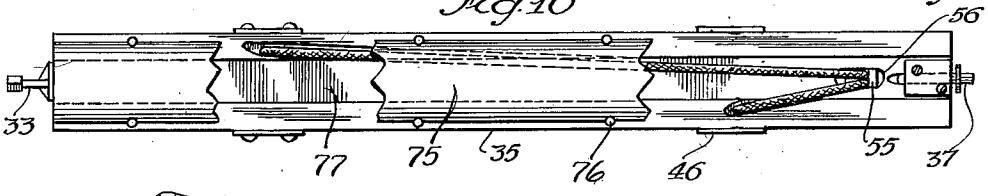


Fig. 8

Fig. 10



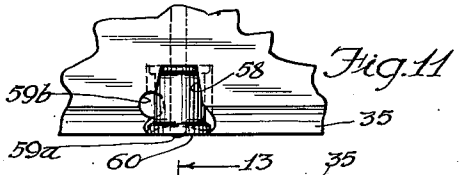


Fig. 11

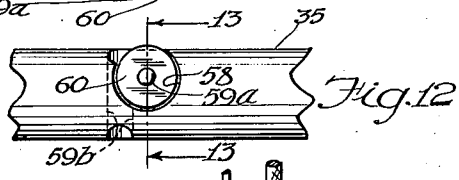


Fig. 12

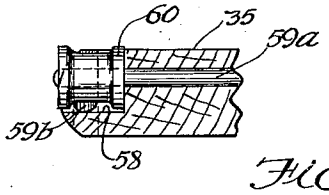


Fig. 13

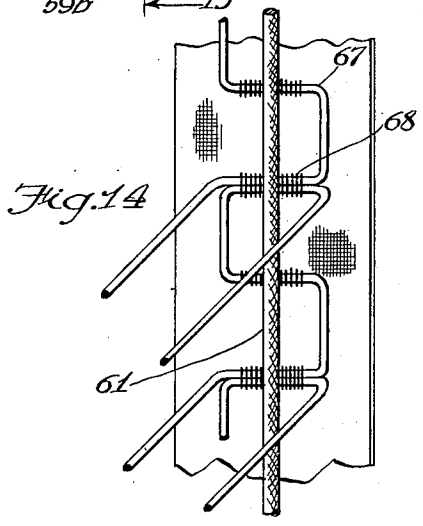


Fig. 14

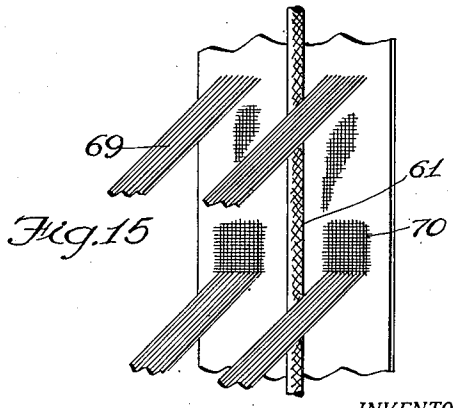


Fig. 15

INVENTOR:
I. H. Palmisano
BY Miles B. Stevens & Co.
Attorneys.

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2,587,756

CORD GUIDE FOR VENETIAN BLIND TILT RAILS

Ignazio H. Palmisano, Chicago, Ill.

Application March 28, 1950, Serial No. 152,403

1 Claim. (Cl. 160—168)

1

My invention relates to Venetian blind installations, and more particularly to the means for suspending and operating the blind. Usually, a head rail is employed as a base from which the blind is suspended; and the head rail forms a support for the attachment of hardware for the tilting and raising of the blind. Blinds constituted along the lines described are difficult to remove for cleaning, and some carry a mechanism when they are removed, so that the cleaning or washing operation may be detrimental to the mechanism and cause it to rust or bind when the blind is operated. It is therefore one object of the present invention to provide a Venetian blind which eliminates the head rail, and confines the control to the tilt rail and the hardware adjoining the same.

A further object is to devise a simple mechanism for the tilt rail for the lifting of the blind.

A still further object is to design supports for the tilting and retaining hardware which enable the tilt rail to be readily removed from the same when the blind is to be carried to a cleaning or washing location.

Another object is to make a connection between the blind and the accessory hardware whereby the blind may be tilted in the usual manner without affecting the lifting mechanism.

A still further object is to design a blind whose uppermost slat is at a height well above the bottom of the facia plate, so that no space intervenes to permit drafts or the entrance of light when the blind is closed.

An additional object is to design the lifting mechanism in a manner to be largely concealed and allow the blind to present a neat appearance.

An important object is to employ a minimum number of parts in the makeup of the improved blind, whereby to render its cost considerably less than that of a comparable standard blind.

With the above objects in view, and any others which may suggest themselves from the description to follow, a better understanding of the invention may be had by reference to the accompanying drawings, in which—

Fig. 1 is a front elevation of the improved blind, partly broken away;

Fig. 2 is a magnified section on the line 2—2 of Fig. 1;

Figs. 3 and 4 are, respectively, detail sections on the lines 3—3 and 4—4 of Fig. 2;

Fig. 5 is a top plan view of one form of the blind as removed from its frame;

Fig. 6 is an enlargement of a detail in the upper left-hand portion of Fig. 1;

Fig. 7 is a section on the line 7—7 of Fig. 6;

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Fig. 8 is an enlargement of a detail in the upper right-hand portion of Fig. 1;

Fig. 9 is a section on the line 9—9 of Fig. 8;

Fig. 10 is a view similar to Fig. 5, showing a modification;

Fig. 11 is a fragmental plan view, on an enlarged scale, showing the tilt rail and roller for guiding one of the lifting cords downwardly;

Fig. 12 is a front view of the showing in Fig. 11;

Fig. 13 is a section on the line 13—13 of Fig. 12;

Fig. 14 is a perspective view of a fragment of the blind, showing one form of ladder-tape rungs; and

Fig. 15 is a similar view, showing another form of such rungs.

In accordance with the foregoing, 20 denotes the sides and 21 the top of a conventional window frame designed to receive the improved Venetian blind. For this purpose, the sides 20 are provided with standard bracket plates 23 which are extended with frontal keepers 24 for the facia board 25. One of the bracket plates 23 carries a suitable tilt mechanism 28, while the other plate carries a standard retainer 30. The tilt mechanism 28 is extended with a receptacle 31 in which one spindle 33 of a tilt rail 35 is fitted; and the retainer 30 has a receptacle 36 designed to seat the other spindle 37 of the tilt rail. Thus, by opening the latch 40 of the retainer 30 as shown in Fig. 9, it is possible to remove the spindle 37 from the retainer 30; and the other spindle 33 may be withdrawn from the receptacle 31 by pulling action, so that the tilt rail and the blind depending therefrom become separated from the window frame and its mechanism in such event.

The blind is made with the usual series of slats 45, these being supported between conventional ladder-tapes 46. These have transverse rungs 47, and Fig. 3 shows that in each case one of the rungs 47 overlies the slat 45, while the companion rung underlies the same, this construction forming a retainer for the slat against wind or other disturbance.

The lifting mechanism for the blind comprises a pair of cords 50 which rise from a position in front of the blind to pass through an inclined tube 51 carried by the tilt rail 35 to positions over the same. The tube 51 has a freely journaled roller 53 for the guidance of the cords 50, as well as a conventional cord lock 55.

Fig. 5 shows that the cords 50 diverge after rising from the passage 56 in which the tube 51 is located. Thus, one of the cords extends to a position centrally of the proximate ladder-tape 46, while the other cord extends a farther distance to a position proximate to the remote

ladder-tape **46** on the opposite side of the blind. In both cases, the tilt rail is made with a cavity **58** and a guide roller **60** for training the cord sections **61** downwardly along the inner side of the related ladder-tapes **46**, and midway between the sides thereof, as shown in Figs. 11 to 13. Fig. 2 shows that the tilt rail **35** is made considerably wider than the bottom rail **65** of the blind; and Fig. 3 shows the position of one of the descending lifting cord sections as spaced both from the ladder-tape **46** and the related edges of the upper slats **45**.

It is noted that a pin **59***a* is embedded in the rail crosswise, the outer portion of the pin terminating somewhat beyond the edge of the rail. Such outer portion is free to receive the roller **60**, the training of the cord section **61** over the same in a downward direction—as indicated in Fig. 5—serving to retain the roller from sliding off the pin. The absence of any retaining element in the free end of the pin therefore facilitates the easy mounting or removal of the roller.

A vertical passage **59***b* is shown adjoining each cavity **58**. This passage serves as a clearance for the downward travel of the cord section **61**; and the position of the passage is calculated to lead the cord section to be spaced from the ladder-tape and upper slats as stated before and shown in Fig. 3. This arrangement prevents the cord from drawing on the edges of the slats or being frayed thereby; and the passage **59***b* also maintains the cord alined on the roller. When the ladder-tapes are fastened to the tilt rail, as shown in Fig. 2, they are kept by the outer ends of the pins **59***a* from frictionally engaging the rollers **60** or interfering with the rotation thereof. At the same time the tapes serve as guards relative to the pins to further insure the retention of the rollers thereon.

Fig. 14 shows cord-type ladder-tape rungs **67** secured to the tapes by stitching **68**; and Fig. 15 shows strand-type rungs **69** in groups forming part of strips **70** sewed to the ladder-tape.

A modification of the tilt rail **35** is shown in Fig. 10. A cover **75** is laid over the tilt rail and secured marginally by clips **76**. In order that the cover may not interfere with the free action of the cord sections **61**, the rail **35** is recessed along the middle as indicated at **77** to seat the cord sections **61** on the floor of the recess, the side walls of the latter being made with entrances **78** leading the cords to the perforations **58**. The lifting cord sections **61** are therefore protected from dust by the cover **75**; and the latter also conceals them from view.

It will be apparent that the novel Venetian blind construction has a number of advantageous features. First, the supporting and tilting hardware of the blind is carried entirely by the window frame brackets **23**, so that the removal of the blind in the manner previously described is easily accomplished, enabling the blind to be carried to the place where it may be cleaned or washed. Further, the instant construction eliminates the need for, and cost of, the conventional head rail by employing the top **21** of the window frame as the basic support of the blind. Further, the passage of the lifting cords in upward direction through the tilt rail **35** is guided by the tube **51**, whose inclined position affords a convenient entrance for the cords from the front of the blind to a position centrally of the tilt rail, the roller **53** facilitating the training of the cords to the horizontal position indicated in Figs. 1 and 5. Further, the training of the cord sections **61** to alternate sides of the

blind is simply accomplished by guiding the cords over the transversely-journaled rollers **60** in the side edges of the tilt rail; and the descent of the cords is directed inside the related ladder-tapes for the maximum concealment of the cords. Further, Fig. 7 shows that the uppermost slat of the blind is well above the bottom of the facia board **25**, so that no passage occurs between the same and the blind to admit drafts or light. Further, the spread of the ladder-tapes in upward direction by virtue of the greater width of the tilt rail **35** over that of the bottom rail **65**, plus the accurate position of the passages **59***b*, affords a space along the edges of the slats **45** for the passage of the lifting cords with clearance from the ladder-tapes and the related edges of the upper slats. Further, the arrangement of the rungs **47** on alternate sides of the slats at each point of passage anchors the slats against vibration or displacement due to wind or other disturbances. Further, the pins **59***a* are strongly embedded in the tilt rail and enable the rollers **60** to be mounted or removed with ease and to be retained on the pin without extra parts. Finally, the novel construction is accomplished by a minimum of simple and durable parts.

While I have described the invention along specific lines, various minor changes or refinements may be made therein without departing from its principle, and I reserve the right to employ all such changes and refinements as may come within the scope and spirit of the appended claim.

I claim:

A Venetian blind installation for window frames comprising supporting brackets attached in the top corners of the frame, a tilt mechanism carried by one supporting bracket, a bearing hanger carried by the other supporting bracket, a tilt rail suspended operatively between the tilt mechanism and the bearing hanger, a conventional Venetian blind suspended from the tilt rail, and a lifting mechanism associated with the tilt rail and including cords trained over the same, guide means near the side edges of the tilt rail for continuing said cords in downward direction to assume positions inwardly of the blind tapes, such guide means occurring opposite alternate tapes of the blind and including cavities in the edges of the rail, pins driven through said cavities transversely into the rail and with outer ends projecting slightly from the rail edges, and rollers slidable on the pins from the outside to positions guiding said cords where they assume the downward course, said tapes lying against the outer ends of the pins to normally clear the rollers but form guards for them in case they assume an outward sliding tendency.

IGNAZIO H. PALMISANO.

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