March 2, 1937. J. NISENSON 2,072,464

VENETIAN BLIND

Filed May 1, 1935

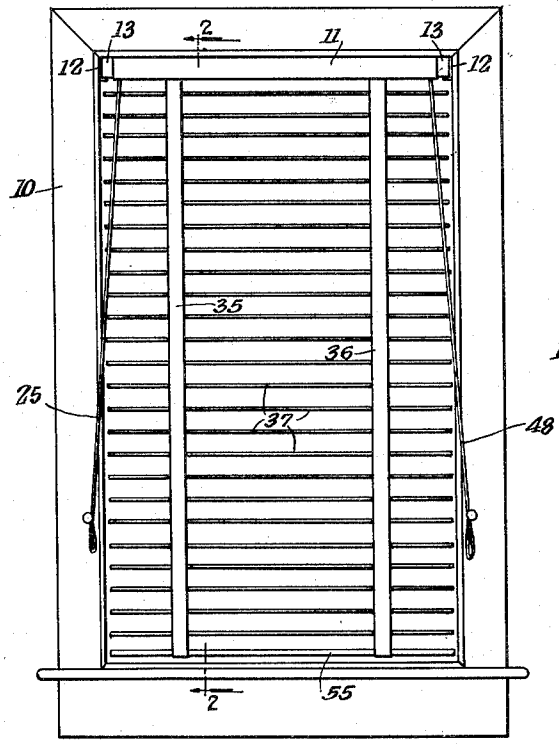


Fig. 1.

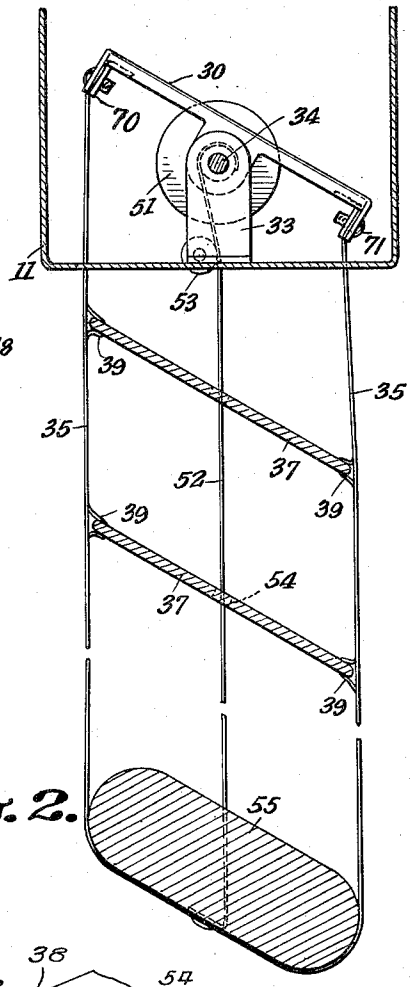


Fig. 2.

Fig. 4.

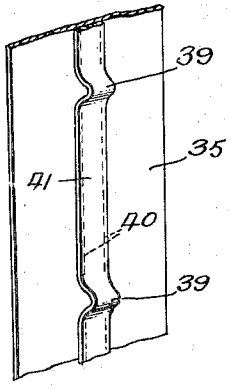
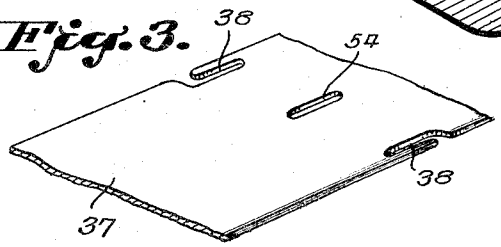


Fig. 3.



INVENTOR
Julius Nisenson
BY C. James Cottrell
ATTORNEY

Patented Mar. 2, 1937

2,072,464

UNITED STATES PATENT OFFICE

2,072,464

VENETIAN BLIND

Julius Nisenson, Brooklyn, N. Y., assignor to Master Venetian Blind Hardware Corporation, New York, N. Y.

Application May 1, 1935, Serial No. 19,184

12 Claims. (Cl. 156—17)

This invention relates generally to improvements in Venetian blinds and more particularly to slat supporting and tilting structure thereof.

It has been the usual practice, heretofore, to support the slats by relatively narrow strips of tape transverse of and woven into wide vertical tapes. Such a structure has been found to be expensive because of the cost of weaving the narrow transverse tapes to the wide tapes; and also, the structure is objectionable in that the slats are loosely supported by the transverse tapes so that in many instances proper tilting of the slats is not effected and the slats are not at all times parallel to each other.

It is an object of this invention to provide supporting means for the slats of a Venetian blind comprising tapes attached to the inner surface of wide vertical tilting tapes and having a plurality of vertically spaced loops positioned in open ended longitudinally directed slots adjacent the edges of the slats, the slots in the slats being arranged in alternate directions so that loops of the tape will remain in proper position at all times.

A further object is the provision of a novel means for attaching wide vertical tilting tapes to tilt plates to enable the tapes to be readily and conveniently detached or adjusted.

These and other objects are attained by the novel construction, combination and arrangement of parts hereinafter described and shown in the accompanying drawing, constituting a material part of this disclosure, and in which:

Fig. 1 is an elevational view of a Venetian blind embodying my invention.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a perspective view of a portion of a slat showing the alternate arrangement and position of slots for receiving tilting tape loops and tapes for raising or lowering the slats.

Fig. 4 is a perspective view of a portion of a vertical tilting tape showing the manner in which vertically spaced loops are formed thereon.

Referring to the drawing, in Fig. 1 there is shown a window frame 10, to which are attached angle supports 12, receiving extension members 13 at each end of a casing or head-piece 11, the latter having mounted therein mechanism for tilting and raising or lowering the slats 37, which are vertically spaced and supported between relatively wide tilting tapes 35 and 36. The tilting tapes 35 and 36 have their lower ends attached to a weight bar 55, (see Fig. 2) in a well known manner. At one end of the blind there is an endless cord 25 for tilting the slats, and at the other end is provided a similar endless cord 48 for raising or lowering the slats. Cord 25 serves to tilt the plates 30 by any means known in the art, while cord 48 actuates spools 51, one of which is shown in Figure 2. Spools 51 are adapted to wind up the elevating cord 52 which passes over guide roller 53 through the apertures 54 in the slats, to terminate in attachment to the bar 55.

Within the casing 11, there are provided tilting plates 30 having downturned ears at the outer ends thereof, one of the said plates being illustrated in Figure 2. It is to be understood that tilting plates 30 may be actuated so as to rotate about the shaft 34 upon which they are supported, in any suitable manner known in the art, or for example, as disclosed in my copending application Serial Number 50,122, filed November 16, 1935 (a division of this application). One tilt plate 30 will be required for each pair of tapes such as pairs of tapes 35 or 36. Shaft 34 extends substantially the length of the casing 11.

Attached to the ends of one of the plates 30 are tilting tapes 35, the attachment being made by means of clamp bars 70 receiving clamping screws 71, see Fig. 2. By means of this structure, the tapes 35 can be conveniently adjusted or removed when necessary. The tapes 36 are secured in the same manner, the structure of tapes 35 and 36 being identical.

Referring to Figs. 2 and 4, the tilting tapes have attached to the inner surface thereof by sewing or other inconspicuous means, a narrow tape 40, the stitching being shown at 41. At vertically spaced intervals, the tape 40 is looped as shown at 39, Fig. 4. Each loop 39 is positioned in a slot 38 in a slat 37. The slots 38 extend longitudinally of the slat, are formed near and communicated with the edges thereof. The slots on one side of the slat are directed in opposite directions; and the slots 38 at each end of the slat are also in opposite directions. By means of this arrangement the slats are readily detachable from the tapes, at the same time being securely held in proper positions at all times. The slats will be parallel to each other at all times, and tilt simultaneously in the same manner, there being a positive connection between each slat and the tilting tape 35. The slots 38 and loops 39 also facilitate the assembly of the device; and the cost of the tape is considerably less than the cost of tapes as heretofore used on Venetian blinds.

In operation, when it is desired to tilt the slats 37, the cord 25, which is endless, is pulled. This pulling, by means of structure not shown, actu-

ates the plates 30, in turn the tapes 35 and 36, and finally the slats 37.

From the above description it will be seen that I have provided a novel tilting mechanism which is positive in action and enables the use of tilting tapes which are relatively inexpensive compared to tilting tapes heretofore used on Venetian blinds.

The foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which obviously an embodiment may be constructed including modifications without departing from the general scope herein indicated and denoted in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a Venetian blind, a plurality of slats having longitudinally directed slots adjacent the edges thereof, tilt tapes between which said slats are arranged parallel to each other, relatively narrow tapes attached to the inner surfaces of said tilt tapes and forming a plurality of vertically spaced loops positioned in the slots in said slats, and means to move the tilt tapes to tilt the slats.

2. In a Venetian blind, a tilt plate having downturned flanges at each end thereof, each of said flanges having a bar engaging the inner surface thereof, tilt tapes positioned between the bars and flanges, and screw means engaging the flanges and bars to draw the bars to the flanges.

3. In a Venetian blind, a plurality of spaced slats having longitudinally directed slots adjacent the side edges thereof, said slots communicating with said edges so that entrance to adjacent slots at one end of the slat and entrance to slots on the same side of the slat is effected in opposite directions, tilting tapes having vertically spaced loops formed on the inner surface thereof, each slot receiving one of the loops, and means to move the tapes to tilt the slats.

4. In a Venetian blind, a tilt plate having downturned flanges at each end thereof, tilt tapes positioned on said flanges, and means engaging said flanges to clamp said tilt tapes adjustably on the flanges.

5. In a Venetian blind, a plurality of slats having longitudinally directed slots adjacent the edges thereof, tilt tapes between which said slats are arranged parallel to each other, relatively narrow tapes attached to the inner surfaces of said tilt tapes and forming a plurality of vertically spaced loops positioned in the slots of said slats.

6. In a Venetian blind, a plurality of slats having longitudinally directed open ended slots adjacent to and communicating with the edges thereof, tilt tapes between which said slats are arranged parallel to each other, relatively narrow tapes attached to the inner surfaces of said tilt tapes and forming a plurality of vertically spaced loops positioned in the slots of said slats.

7. In a Venetian blind, a plurality of slats having longitudinally directed open ended slots adjacent to and communicating with the edges thereof, tilt tapes between which said slats are arranged parallel to each other, relatively narrow tapes attached to the inner surfaces of said tilt tapes and forming a plurality of vertically spaced loops positioned in the slots of said slats and means to move the tilt tapes to tilt the slats.

8. In a Venetian blind: a slat having longitudinal side edges and provided with longitudinally directed slots adjacent one of said edges; each of said slots, at one end thereof, having an entrance communicating with the adjacent slat edge; said entrances being oppositely disposed whereby ingress or egress to said slots is effected in opposite directions.

9. In a Venetian blind: a slat having longitudinal side edges and provided with a longitudinally directed slot adjacent each of said side edges; said slots being adjacent each other and each having an entrance communicating with the nearest slat edge; said entrances being oppositely disposed whereby ingress or egress to said slots is effected in opposite directions.

10. In a Venetian blind, a slat having longitudinally directed slots adjacent the side edges thereof, said slots communicating with said edges so that entrance to adjacent slots at one end of the slat and entrance to slots on the same side of the slat is effected in opposite directions.

11. In a Venetian blind, a plurality of spaced slats having longitudinally directed slots adjacent the side edges thereof, said slots communicating with said edges so that entrance to adjacent slots at one end of the slat and entrance to slots on the same side of the slat is effected in opposite directions, and tilting tapes having vertically spaced loops formed on the inner surface thereof, each slot receiving one of the loops.

12. In a Venetian blind, the combination of a slat having an open ended longitudinally directed slot and a tilt tape having a loop on the inner surface thereof adapted for detachable engagement with said slot whereby the connection or disconnection of the parts requires a lateral shifting of the tape longitudinally of the slat.

JULIUS NISENSON.