Feb. 5, 1952 M. J. NARDULLI 2,584,607

VENETIAN BLIND

Filed May 13, 1950

Fig. 1

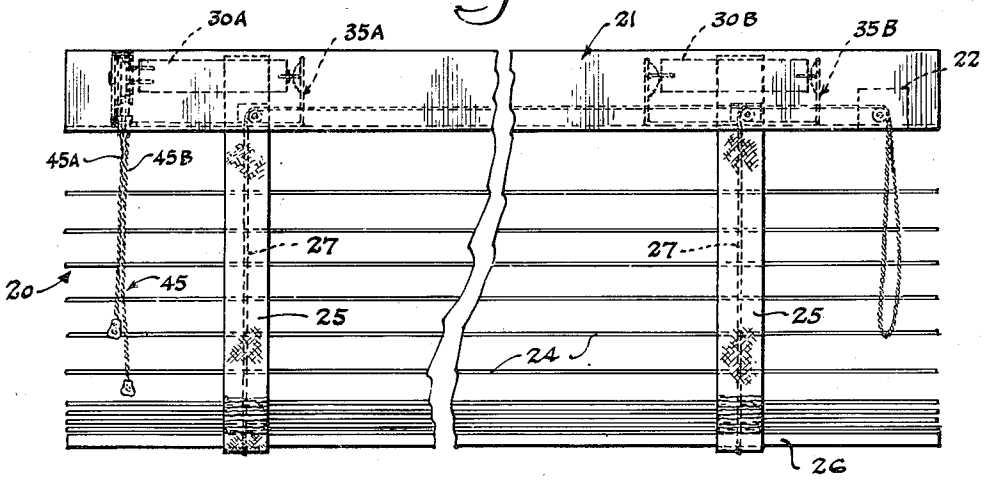


Fig. 2

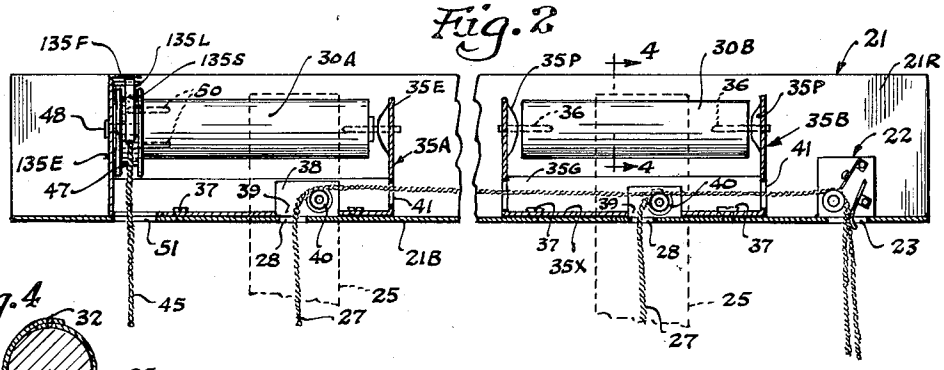


Fig. 4

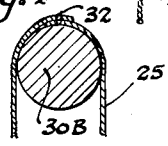


Fig. 3

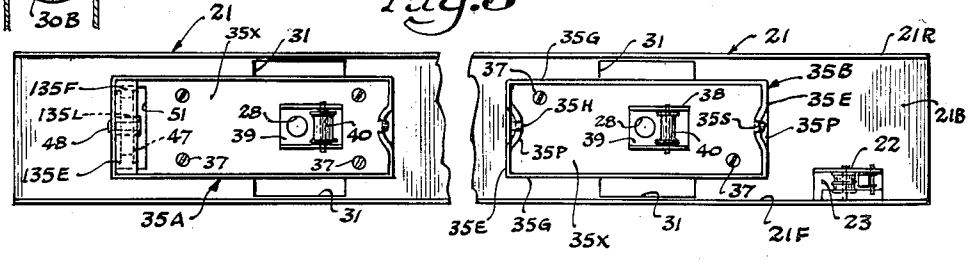
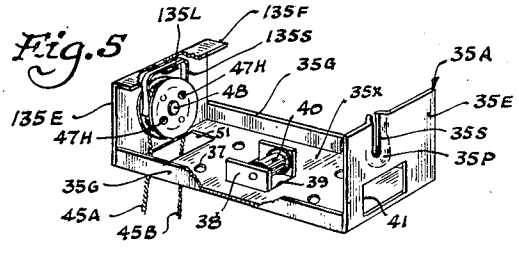


Fig. 5



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UNITED STATES PATENT OFFICE

2,584,607

VENETIAN BLIND

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Application May 13, 1950, Serial No. 161,875

1 Claim. (Cl. 160—176)

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This invention relates to Venetian blinds, and particularly to such blinds of the type wherein independent tilting and elevating cords are employed.

In Venetian blinds of the above type, it is well known that where the length of the blind is relatively great, the provision of conventional tilting structure is relatively costly, and it is the primary object of the present invention to simplify the production and structure of such blinds.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, show a preferred embodiment of the present invention and the principle thereof and what I now consider to be the best mode in which I have contemplated applying that principle. Other embodiments of the invention embodying the same or equivalent principle may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

Fig. 1 is a front elevational view of a Venetian blind embodying the invention;

Fig. 2 is an enlarged longitudinal vertical sectional view of the head rail and operating structure of the blind;

Fig. 3 is a plan view of the head rail with the cords and supporting rollers removed;

Fig. 4 is a section taken along the line 4—4 of Fig. 2; and

Fig. 5 is a perspective view of one of the roller supporting brackets.

For purposes of disclosure the invention is herein illustrated as embodied in a Venetian blind 20 having a hollow channel-like head rail 21 adapted to be supported in conventional mounting brackets. The head rail has front and rear walls 21F and 21R and a bottom wall 21B and is provided with a conventional cord lock 22 disposed over an opening 23 near one end of the bottom wall 21B. The blind 20 has the usual slats 24, ladder tapes 25 and toe rail 26 associated with each other in the usual manner, and elevating cords 27 are extended upwardly from the toe rail 26 through the usual holes in the slats 24 and are extended through openings 28 in the bottom wall 21B and to the cord lock 22, as will be described in greater detail hereinafter.

In accordance with the present invention, the means within the head rail 21 for supporting the upper ends of the tapes 25 and for imparting tilting movements to the tapes is materially simplified, and, as will be evident in Figs. 1 and 2, each such tape is supported on an independent horizontal roller, two of which are required in the present embodiment, and are identified as rollers 30A and 30B. The rollers 30A and 30B are supported in and longitudinally of the head rail 21, as will hereinafter be described, and the inner and outer bands of the ladder tapes 26 are extended upwardly through openings 31 in the bottom wall 21B and are connected together over the respective rollers as by sewing or stapling at 32. Thus, the tapes 25 have supporting loops that rest frictionally on the respective rollers 30A and 30B.

The rollers 30A and 30B are respectively supported by sheet metal brackets 35A and 35B that are generally similar in construction and mounting, as will hereinafter be described. The bracket 35B has a base 35X and upstanding end walls 35E at its opposite ends, and in the end walls 35E, embossures 35P are formed. One such embossure has a central hole 35H formed therein, while the other has an upwardly opening slot 35S therein, and pins 36 projecting axially from opposite ends of the roller 30B are supported in these openings 35H and 35S which serve as bearings for such pins. Along opposite edge of the base 35X, upstanding guide flanges 35G are formed along which the bands of the tapes 25 may move, it being noted that these flanges are disposed just inwardly of the adjacent edges of the openings 31 through which such bands extend. The bottom wall 35X is secured to the wall 21B by any suitable means such as screws 37, and at the point directly over the opening 28, the metal of the wall 35X is struck upwardly to form a pair of upstanding ears 38 disposed on opposite sides of a relatively large opening 39, and between the ears 38 a cord guide roller 40 is rotatably mounted. Thus, one of the elevating cords 27 extends through the openings 28 and 39 and over the roller 40, and openings 41 are formed in both ends 35E to provide clearance for such cords 27.

The bracket 35A that supports the other roller 30A is somewhat different than the bracket 35B in order to enable a tilt cord 45 to be operatively associated with the roller 30A. Thus, for supporting the right-hand end of the roller 30A, the bracket 35A has its right-hand end wall 35E formed in the same manner as the bracket 35B, while the left-hand upstanding end 35E is modified, as will be hereinafter described. A cord guide roller 40 is also afforded as in the bracket 35B.

At its left-hand end, the bracket 35A has an actuating or tilt means mounted on an upstand-

ing end wall for association with the roller 30A, whereby operation of the cord 45 may impart rotating movements to the roller 30A, and in the present case such means are afforded by a pulley 47 rotatably mounted by a bearing pin 48 on the adjacent face of the other upstanding end wall 135E. The pulley 47 has openings 47H therein which receive pins 50 fixed in the left-hand end of the roller 30A, thus to support the roller 30A in a non-rotative relation on the pulley 47. The bracket 35A is similarly fixed in position in the head rail 21 by screws 37. The cord 45 extends through clearance openings 51 in the bracket 35A and the wall 21B so that the ends 45A and 45B of the cord 45 depend from the rail 21.

The end wall 135E has a flange 135F along its upper edge, and also has a projecting lug 135L spaced downwardly from the flange 135F, and a U-shaped spring 135S has its cross bar disposed beneath the flange 135F and on top of the lug 135L. The arms of the spring 135S extend downwardly and into the groove on opposite sides of the pulley 47, and in this position the spring bears against the cord 45 and affords a frictional retarding force for holding the blind in any desired position of adjustment.

With the simple structure thus afforded, I have found that regardless of size, a Venetian blind may be readily tilted despite the fact that no provision is made for actuating or rotating the roller 30B directly from the tilt cord 45. Thus, when the roller 30A is rocked or rotated, it operates to impart tilting forces to the associated tape 25, and these tilting forces are effective to cause tilting movement of the slats and the toe rail throughout their entire length, it being noted that the roller 30B is freely rotatable and supports the related portions of the slats and toe rail in a balanced condition whereby such tilting of the entire blind is rendered possible.

In this regard it should be observed that because of the frictional association of the roller 30A with its tape, and by reason of the provision of elevating means that are independent of such roller, the relative lengths of the cord ends 45A and 45B may be freely adjusted, as described and claimed in my copending application, Serial No. 161,876, filed May 13, 1950.

Thus, while I have illustrated and described

the preferred embodiment of my invention, it is to be understood that this is capable of variation and modification, and I therefore do not wish to be limited to the precise details set forth, but desire to avail myself of such changes and alterations as fall within the purview of the following claim.

I claim:

In a Venetian blind having an elongated upper supporting frame, a plurality of slats, a toe rail, elevating cords and ladder tapes conventionally associated with said slats, toe rail and elevating cords, said tapes having inner and outer bands connected together at their upper ends to afford supporting loops, means for supporting said loops comprising aligned rotatable members having cylindrical surfaces and mounted on said supporting frame longitudinally thereof for independent rotation, means including a pulley operatively connected to one of said rotatable members for rotating the same through successive complete revolutions in either direction, a tilting cord extended over and depending as a pair of actuating ends from said pulley, said cylindrical surfaces being extended through said supporting loops and frictionally engaged thereby so that rotation of said one of said rotatable members imparts tilting movements to said one of said tapes and tilting movement of said one of said tapes serving through said slats to impart corresponding tilting movements to the other of said tapes, and slipping of said one of said rotatable members relative to the related one of said tapes at the limits of tilting movement enables adjustment of the relative lengths of the actuating ends of the tilting cord to be attained.

MICHAEL J. NARDULLI.

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