March 12, 1946. J. L. HUNTER 2,396,425

TAPE HOLDER FOR VENETIAN BLINDS

Filed March 24, 1945

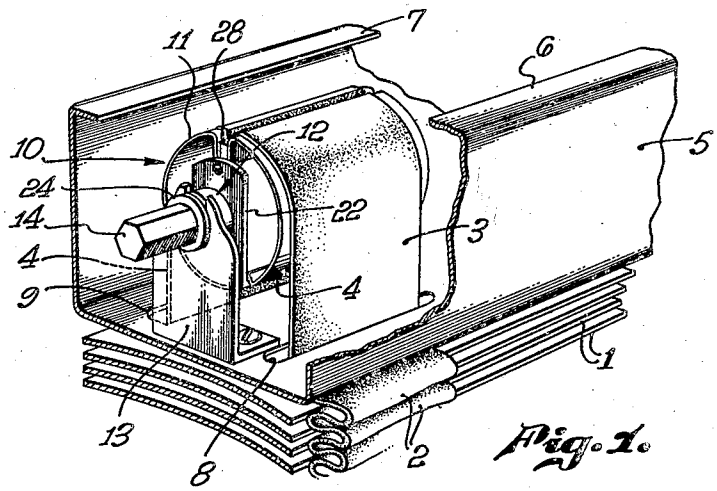


Fig. 1.

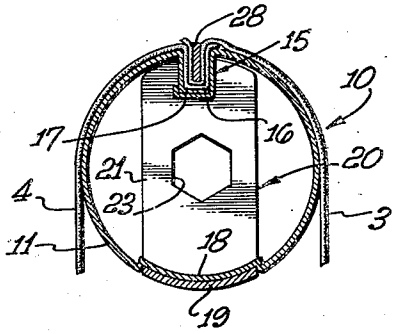


Fig. 2.

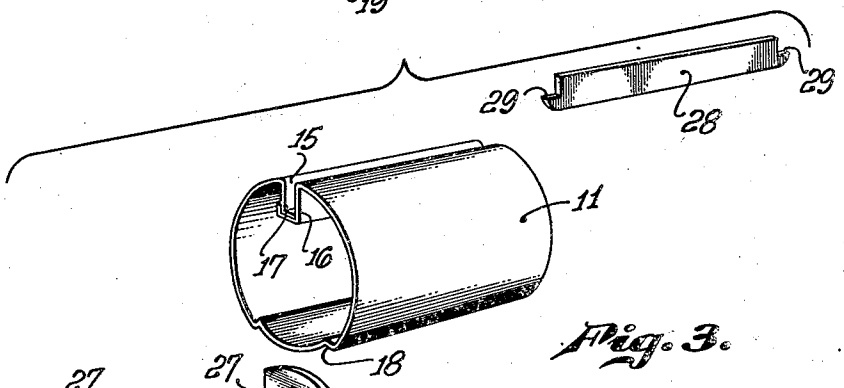
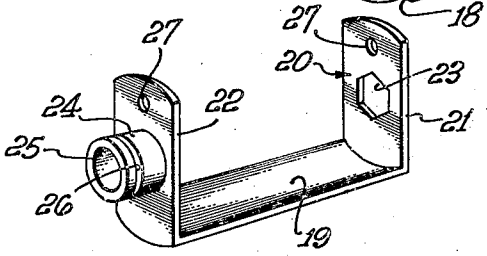


Fig. 3.



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2,396,425

TAPE HOLDER FOR VENETIAN BLINDS

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Application March 24, 1945, Serial No. 584,657

7 Claims. (Cl. 160—177)

My invention relates to tape holders for Venetian blinds and has particular reference to a holder for securing the upper ends of the tape ladders to tilting mechanism employed in Venetian blind structures.

In the construction of Venetian blinds, it is desirable that the upper ends of the tape ladders be secured to a slat tilting mechanism which, upon being given a partial rotation, will tilt the slats to a desired angle relative to each other and it has been found desirable to make such tape securing devices in the form of short rollers over which the ends of the tape extend and to which the tape ends are secured.

It is an object of my invention to provide a tape securing device in the form of a roller which can be readily and inexpensively manufactured.

Another object of my invention is to provide a tape roller of the character described wherein the roller is formed from a piece of sheet metal rolled into a substantially tubular form, the abutting edges of the cylinder being held together by a bar extending over the tape ends and securing the tape ends to the roller.

Another object of my invention is to provide a structure of the character set forth in which the bar employed to hold the abutting edges of the cylinder together is also employed to secure the roller to a bearing member.

Other objects and advantages of my invention will be apparent from a study of the following specifications, read in connection with the accompanying drawing, wherein:

Fig. 1 is a fragmentary perspective view of a portion of a Venetian blind illustrating my new tape holding means;

Fig. 2 is a transverse sectional view through the tape roller illustrated in Fig. 1; and

Fig. 3 is an exploded view of the three elements employed in the assembly of the tape roller shown in Fig. 1.

Referring to the drawing, I have illustrated in Fig. 1 a portion of Venetian blind including a plurality of slats 1 suitably supported upon tape ladders indicated generally at 2, each of the tape ladders comprising a pair of vertically extending tapes 3 and 4, between which extend a plurality of cross bars upon which the slats 1 rest, as is the construction of Venetian blinds. The upper end of the tapes 3 and 4 extend upwardly to a slat rail 5 which, as illustrated herein, is formed as a channel member formed of metal, the upper ends of the side flanges of the channel being turned inwardly as indicated at 6 and 7 to form a substantially box-like structure in which the tilting mechanism, pulleys, cord locks and other apparatus required for the manipulation of the blind may be housed. The tapes 3 and 4 extend through openings 8 and 9, respectively, in the bottom of the head rail 5 and over the exterior surface of a tape securing device indicated generally at 10 as comprising a roller 11 mounted upon a bearing member 12 which is in turn supported in a bracket 13 for rotation by any suitable means such as a shaft 14 extending to a tilting device which may be manipulated to produce a partial rotation of the shaft 14 and the roller 11 to raise one of the tape ends and lower the other of the tape ends to adjustably position the slats at any desired angle to each other. The tilting mechanism is not illustrated in detail herein but one form of tilting device which may be employed is described and claimed in my copending application Serial No. 584,654, filed March 24, 1945.

The construction of the tape roller and its bearing comprises forming the roller 11 from a strip of sheet metal bent transversely into a general cylindrical shape, as indicated particularly in Fig. 2, the ends of the strip which abut each other to form th ecylinder being bent inwardly of the cylindrical surface to define between them a channel 15. This construction is preferably achieved by bending one end of the strip into a substantially J-shape as indicated at 16 in Figs. 2 and 3 while the opposite end is bent into a substantially L-shape as indicated at 17 in Fig. 2, the length of the horizontal leg of the L-shape being just sufficient to fit into the interior of the base of the J-shape formed on the end 16. Thus the finished shape will be that illustrated in Fig. 3.

The side of the cylinder formed by the roller 11 diametrically opposite to the inter-fitted ends 16 and 17 is struck inwardly as indicated at 18 to form a shallow recess extending the length of the roller 11, in which may be received the cross bar 19 of a bearing member indicated generally at 20, the bearing member having a pair of arms 21 and 22 adapted to extend across the ends of the cylinder defined by the roller 11. The arm 20 has an opening 23 formed therein of suitable shape to permit the passage of the shaft 14 and preferably having a shape which conforms with a non-circular external shape given to the shaft 14.

On the opposite arm 22 I secure a bushing 24 adapted to extend outwardly with respect to the cylinder 11, the bushing 24 being formed with a central bore 25, through which the shaft 14 extends, and with an annular groove 26 adapted to receive the bifurcated end of the bearing bracket 13. The bushing 24 with the bearing bracket 13

then comprises the bearing mounting upon which the roller 11 may rotate.

To hold the roller 11 assembled upon the bearing member 19, I form a pair of small openings 27 near their outer ends at such positions as will align these holes with the channel 15 formed in the roller 11 so that the insertion in the channel of a bar 28 with a projecting finger 29 formed upon each of its ends engaged in the openings 27 will hold the bar, roller and bearing in assembled relation.

The bar 28 when inserted in the channel 15 is also adapted to bind the ends 3 and 4 of the ladder tapes to the roller as by disposing the ends of the tapes across each other and across the channel 15 prior to the insertion of the bar 28, the bar 28 when inserted in the channel then bending the ends of the tapes into binding relation with each other between the channel and the bar, as is illustrated in Fig. 2.

It will be apparent from the foregoing that once the roller, bearing member and bar are assembled with the tapes bound as described, rotation of the shaft 14 will rotate the roller, elevating one of the tape ends while lowering the other of the tape ends to produce the slat tilting action desired in a Venetian blind assembly.

It will also be noted that by employing the construction for the roller, bearing member and bar as described herein, these members may be readily and inexpensively manufactured from stampings of sheet metal at a minimum of expense for materials and labor, in addition to the ease with which the assembly of the parts may be made at the time it is desired to assemble the roller and tapes in place upon the blind.

While I have shown and described the preferred embodiment of my invention, I do not desire to be limited to any of the details of construction shown and described herein, except as defined in the appended claims.

I claim:

1. In a tape roller for tilting mechanisms of Venetian blinds, a roller cylinder having a longitudinally extending channel formed throughout its length for receiving the adjacent ends of a tape ladder in overlapped relation, a bar insertable in said channel to overlie said tape ends and clamp them to the roller cylinder, and means for holding said bar in said channel.

2. In a tape roller for tilting mechanisms of Venetian blinds, a roller cylinder having a longitudinally extending channel formed throughout its length for receiving the adjacent ends of a tape ladder in overlapped relation, a bar insertable in said channel to overlie said tape ends and clamp them to the roller cylinder, means for holding said bar in said channel, and a bearing member comprising a plate extending along said cylinder with an arm at each end extending diametrically across the cylinder ends, said arms having apertures aligned with the longitudinal axis of the cylinder for engagement with a rotatable cylinder shaft.

3. In a tape roller for tilting mechanisms of Venetian blinds, a roller cylinder having a longitudinally extending channel formed throughout its length for receiving the adjacent ends of a tape ladder in overlapped relation, a bar insertable in said channel to overlie said tape ends and clamp them to the roller cylinder, a bearing member comprising a plate extending along said cylinder with an arm at each end extending diametrically across the cylinder ends, said arms having apertures aligned with the longitudinal axis of the cylinder for engagement with a rotatable tilting shaft, a longitudinal recess formed in the side of said cylinder diametrically opposite to said channel for receiving said bearing member plate, and means in the ends of said arms for securing said bar in said channel and for holding said plate in said recess.

4. In a tape roller for tilting mechanisms of Venetian blinds, a roller cylinder formed of a strip of sheet material rolled to dispose the ends of the strip in abutting relation with each other, the ends of said strip being deformed inwardly of the cylinder surface to interlock with each other and to define between them a channel extending longitudinally throughout the length of said cylinder to receive the adjacent ends of a tape ladder in overlapped relation, a bar insertable into said channel to overlie the tape ends and clamp them to the roller cylinder, and means for holding said bar in said channel.

5. In a tape roller for tilting mechanisms of Venetian blinds, a roller cylinder formed of a strip of sheet material rolled to dispose the ends of the strip in abutting relation with each other, the ends of said strip being deformed inwardly of the cylinder surface to interlock with each other and to define between them a channel extending longitudinally throughout the length of said cylinder to receive the adjacent ends of a tape ladder in overlapped relation, a bar insertable into said channel to overlie the tape ends and clamp them to the roller cylinder, means for holding said bar in said channel, and a bearing member comprising a plate extending along said cylinder with an arm at each end extending diametrically across the cylinder ends, said arms having apertures aligned with the longitudinal axis of said cylinder for engagement with a rotatable tilting shaft.

6. In a tape roller for tilting mechanisms of Venetian blinds, a roller cylinder formed of a strip of sheet material rolled to dispose the ends of the strip in abutting relation with each other, the ends of said strip being deformed inwardly of the cylinder surface to interlock with each other and to define between them a channel extending longitudinally throughout the length of said cylinder to receive the adjacent ends of a tape ladder in overlapped relation, a bar insertable into said channel to overlie the tape ends and clamp them to the roller cylinder, the metal of said cylinder being deformed inwardly of the cylinder at the side thereof diametrically opposite said channel to define a longitudinally extending recess, a bearing member comprising a plate extending along said cylinder and disposed in said recess and having an arm at each of its ends extending diametrically across the cylinder ends, said arms having apertures aligned with the longitudinal axis of said cylinder for engagement with a rotatable tilting shaft, and said arms having apertures adjacent their ends for receiving the ends of said bar to hold said bar in said channel and to hold said bearing member plate in said recess.

7. In a tape holder for tilting mechanisms of Venetian blinds, a holder member having a longitudinally extending channel formed throughout its length for receiving the adjacent ends of a tape ladder in overlapped relatin, a bar insertable in said channel to overlie said tape ends and clamp them to said holder member, and means for holding said bar in said channel.

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