Jan. 17, 1950 C. HIRSCHY 2,494,759

CORD LOCK

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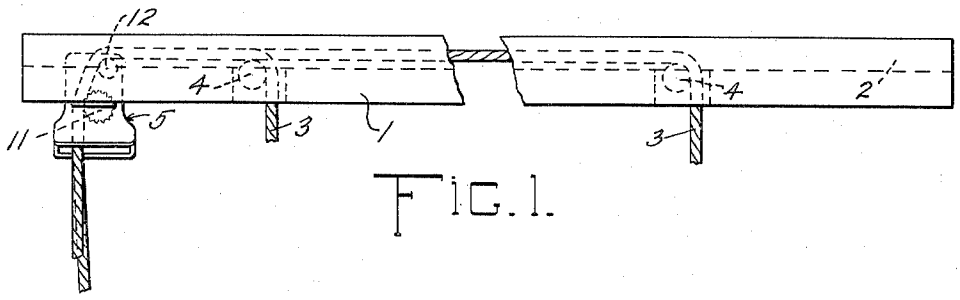


FIG. 1.

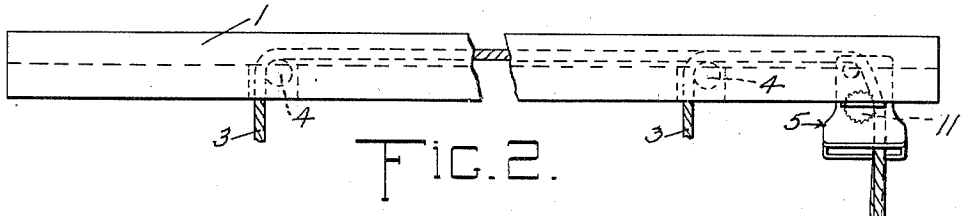


FIG. 2.

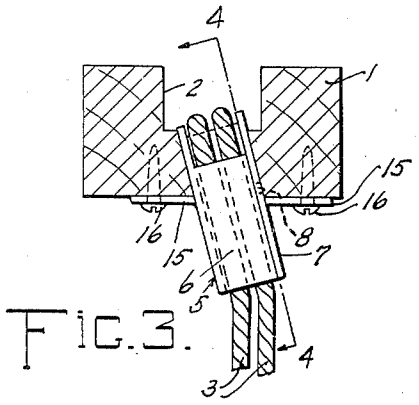


FIG. 3.

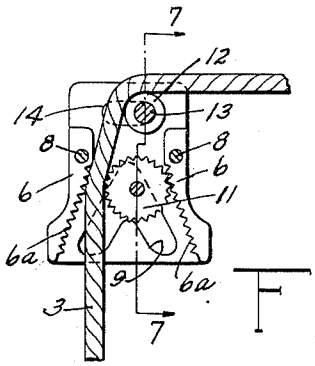


FIG. 4.

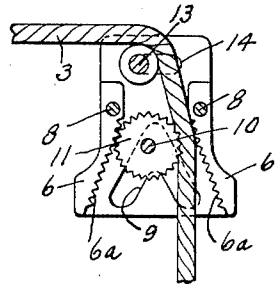


FIG. 6.

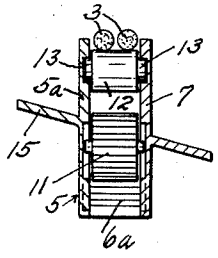


FIG. 7.

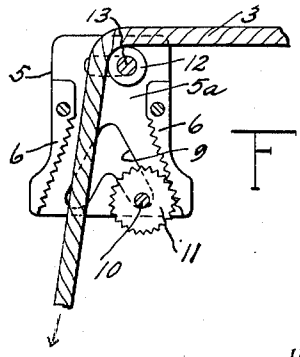


FIG. 5.

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CORD LOCK

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4 Claims. (Cl. 24—136)

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My present invention relates to certain novel improvements in Venetian blind hardware, and particularly involves a special construction of device known in this art as a cord lock.

Cord locks for Venetian blinds are utilized for the pull cords by which the blind is raised and lowered. By proper manipulation of the pull cords, the cord lock may be incapacitated in respect to its locking or holding function, so that the blind slats may be freely raised or lowered, other manipulation of the pull cords enabling the holding or locking means to go into automatic action for maintaining the Venetian blind in the position desired, closed or more or less open, after the manner well known to those versed in this art.

My invention primarily involves the provision of a cord lock of the type in which a clutching or holding roller cooperates with the bracket means supporting the same and through which the pull cords of the blind are guided to extend in their downward direction, the special objective achieved by my invention being to provide a construction of device of the character set forth which may be interchangeably used at either end of the head bar or rail of the blind to which it is attached.

The novel details of construction of my device will be more fully perceived upon reference to the following description, in conjunction with the annexed drawing, and in the latter:

Figure 1 is a front elevation view of a Venetian blind head rail such as commonly used today, broken away at the central portion thereof and showing a cord lock of my improved invention as when emplaced on the head rail and secured thereto at the left end portion of the latter.

Figure 2 is a view similar to Figure 1, but showing the application of the cord lock to the right hand end of the head rail when properly installed upon the latter.

Figure 3 is a transverse sectional view through the head rail, showing more clearly the manner of mounting my cord lock thereon.

Figure 4 is a sectional view through my cord lock approximately on the line 4—4 of Figure 3, or a line between the outer housing plate and the body of the housing or casing of the lock, the pull cords being trained through the lock device in the manner of the illustration of these cords when arranged as in Figure 1, and the clutch roller being shown engaged with the cord for holding the blind in a predetermined adjusted position.

Figure 5 is a view somewhat similar to Figure

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4 but illustrating the pull cord under tension in the direction of the arrow downwardly, the pull cords arranged in their operating position for movement to raise and lower the blind and the clutch roller being under such conditions inactive.

Figure 6 is a view similar to Figure 4, but illustrating the mode of training the pull cord through the cord lock device when the latter is disposed on the right hand end of the head rail as shown in Figure 2, the action of the clutch roll being illustrated as reverse to that shown in Figure 4 for the cord lock as when the latter would be arranged at the left hand end of the head rail.

Figure 7 is a vertical sectional view taken through the parts of my cord lock, alone, the section being approximately on the line 7—7 of Figure 4.

In Figures 1, 2, and 3 of the drawings there is shown a common type of head rail 1 formed with the usual cord receiving recess 2 in its upper side. This head rail is secured to the top of a window or the like in the customary manner, with rigid mounting thereof. The pull cords 3 lead upwardly through openings in the head rail leading from the recess 2 to the underside of said rail, the cords being guided at the top of each opening by suitable guide wheels or pulleys designated 4 and shown in dotted lines in Figures 1 and 2.

The cord lock of my invention is mounted in the usual place on the head rail, and located adjacent to one end or the other of the head rail, dependent upon which end has the lift cords 3 pendant therefrom. My cord lock comprises a bracket which consists largely of a casing comprising the hollow body portion 5 preferably formed with the integral end members 6 and embodying a plate structure that carries the end members 6, the plate structure being designated 5a. The casing involves also the attached side plate 7, and the hollow space of the casing runs vertically therethrough from top to bottom, intermediate the parts 5a and 7 and the end members 6. If casting is resorted to for making the casing, and such is common practice, the end members 6 are formed with laterally projecting pins 8 which pass through openings in the plate 7 and are thereafter upset to connect the body of the casing with said plate, after the interior parts now to be described have been placed in position.

The casing side 5a and the closing plate 7 are provided on the inner faces thereof with inverted V-shaped guide grooves generally designated at 9, said grooves receiving therein in a

loose manner the trunnion pins 10 of a clutch roller designated 11, the periphery of said clutch roller being serrated or toothed as shown. The V-shaped grooves 9 extend from near the lower end of the casing parts in which they are formed to points upwardly, terminating approximately at the middle of the casing body.

For cooperation with the toothed portion of the clutch roller 11, each of the end members 6 of the casing 5 is provided with similar teeth 6a to those of the roller 11. The teeth of the roller and those of the end members 6 are adapted to intermesh under certain conditions of operation of the cord lock device of my invention.

Near the top portion of the bracket body or casing 5 I provide a guide roller 12 of a length suitable to receive thereover the adjacent pull cords 3 that lead from the guide pulleys 4 on the head rail 1, such pull cords passing downwardly from the pulleys 4 to the points of attachment to the bottom bar of the Venetian blind through the usual openings in the slats of the blind. The guide roller 12 on the cord lock bracket has end trunnions 13 which extend into horizontal slots provided on the inner faces of the parts 5a and 7 of the casing 5 and the said roller 12 is therefore adapted for movement longitudinally in the slots 14 which vertically are of a width substantially slightly greater than the diameter of the trunnions 13. The slots are considerably elongated a distance about two times or slightly more of the diameter dimension of the trunnions 13 for the roller 12.

As previously indicated herein, the cord lock device of my invention is largely mounted in the customary manner on the head rail 1. Figure 3 shows how the attachment flanges 15 are formed with the parts 5a and 7 of the bracket body or casing and extending outwardly therefrom in opposite directions so as to underlie the head rail 1 when attached thereto. The casing 5 extends upwardly from the flanges 15 through an opening leading from the underside of the head rail to the face of the recess 2, and when the casing is thus positioned it has a normal inclination inwardly and downwardly from the head rail as customarily desired and required under practical conditions of service. Any suitable attaching screws 16 may be employed for securing the flanges of the casing 5 to the bottom of the head rail 1.

My drawings depict quite clearly the manner of using my novel cord lock and its adaptability to be mounted in a position at either end of the head rail 1 so that the pull cord may be led downwardly from the head rail at either of selected ends thereof, in the usual manner. The pull cords 3 when my device is mounted on the left end of the head rail, are raised to pass downwardly through the hollow space of the casing 5 from its upper end to its lower end; according to the arrangement in Figures 4 and 1, the pull cords pass over the guide roller 12 outwardly thereof and thence extend downwardly between the clutch roller 11 and the left hand end member 6 of the cord lock casing. When it is desired to raise and lower the slats of the Venetion blind, a downward pull on the pendant ends of the cords 3, as they are held slightly leftward in the manner shown in Figure 5, will cause the clutch roller 11 to be displaced rightwardly from the cords engaged therewith according to Figure 4, enabling the clutch roller to drop into the right hand legs of the V-slot 9. Under these conditions, as seen in Figure 5, the pull cords may be pulled on or released and while the relation of the parts is maintained as in Figure 5, there will be no clutching action on the cord. However, by swinging the pendant ends of the pull cords 3 slightly to the right as seen in Figure 5 to engage the clutch roller 11 and thereupon releasing the hold or pull on the pull cord, the latter will cause the clutch roller 11 to roll upwardly along the right legs of the V-slots or grooves 9 and thus the clutch roller will be brought into clutching engagement with the inner sides of the pull cord, whilst their outer sides are caused to be wedged against the left hand end member 6 as in Figure 4, by the wedging action leftward of the clutch roller 11 incident to the trunnions 10 moving against the outer walls of the right hand legs of the slot 9 with a camming action.

It will be evident from the illustration in Figure 6 that my cord lock device can be arranged on the right hand end of the head rail 1, and the arrangement of the pull cords reversed from that as shown in Figures 4 and 5, the pull cords under such condition operating between the clutch roller 11 and the right hand end member 6 with its teeth 6a. The operation of the device with the pull cords readjusted as seen in Figures 2 and 6 will be self-evident from the description of operation previously given. Figures 4 and 6 depict clearly the manner in which the guide roller 12 shifts to the right or to the left, respectively, when the pull cords are arranged to depend from the left or right ends, respectively, of the head rail.

The device as shown is made by die casting but its parts may comprise metal stampings if desired.

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

1. A cord lock for Venetian blinds comprising a casing having spaced sides and ends and open at top and bottom so pull cords may pass therethrough, a guide roller rotatively mounted between and on the sides adjacent the top of the casing, a pull cord clutch roller mounted between and on the two sides below the guide roller and having trunnions, the ends of the casing having cord engaging portions on their inner faces, and the sides of the casing having inverted V-shaped slots therein approximately parallel to the casing end cord engaging portions, receiving said trunnions of the clutch roller, said pull cord being laterally swingable in one direction about its guide roller as a pivot out of engagement with said clutch roller for freely raising and lowering said blind and in the opposite direction into engagement with said clutch roller to cause the latter to be cammed to lock said pull cord against the cord engaging portions of the inner faces of said casing.

2. A cord lock as claimed in claim 3, in which the sides of the casing have relatively horizontal slots engaging the guide roller and in which the latter may bodily shift horizontally.

3. A cord lock for Venetian blinds reversely mountable on either end of a head rail, comprising a casing having spaced sides and ends and open at top and bottom so pull cords may pass therethrough, a guide roller rotatively mounted between and on sides adjacent the top of the casing, a pull cord clutch roller mounted between and on the two sides below the guide roller and having trunnions, the ends of the casing having cord engaging portions on their inner faces, and the sides of the casing having inverted V-shaped

camming slots therein, corresponding inclined sides of which are approximately parallel to an adjacent casing end cord engaging portion, said trunnions of the clutch roller being movable to enter either set of corresponding sides of said V-shaped slots.

4. A cord lock for Venetian blinds reversely mountable on either end of a head rail, comprising a casing having spaced sides and ends open at top and bottom so pull cords may pass therethrough, a guide roller rotatively mounted between and on the sides adjacent the top of the casing, the sides of the casing having horizontal slot mounting means for end portions of the guide roller enabling horizontal shifting of the latter to positions of operating rotations at either of opposite ends of the slot mounting means, a peripherally toothed cord clutch roller having trunnions and mounted between the sides of the casing, the sides of the casing each having an inverted V-shaped slot formed therein, said V-slots arranged opposite one another and each receiving a trunnion of the cord clutch roller, the trunnions of the clutch roller being movable downwardly and upwardly in either set of corresponding inclined sides of the V-slots for camming and uncamming actions

relative to the portions of the V-slots engaged thereby, and each end of the casing having an inner toothed camming portion, parallel with the inclinations of the adjacent sides of the V-slots, for engaging the clutch roller teeth on movement of roller in the direction of and adjacent to such end.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
109,412	Huson	Nov. 22, 1870
225,923	Fenton	Mar. 30, 1880
644,633	Penticoff	Mar. 6, 1900
923,276	King	June 1, 1909
1,427,284	Gierymski et al.	Aug. 29, 1922
1,674,581	Webb	June 19, 1928
1,903,032	Jannopoulo	Aug. 24, 1937
2,091,032	Dodge	Aug. 24, 1937
2,141,502	Ajouelo	Dec. 27, 1938
2,172,657	Haase	Sept. 12, 1939
2,318,213	Fox	May 4, 1943