

C. H. EGELHOFF & J. M. HUCKINS.
SHADE ROLLER STRUCTURE.
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1,011,764.

Patented Dec. 12, 1911.

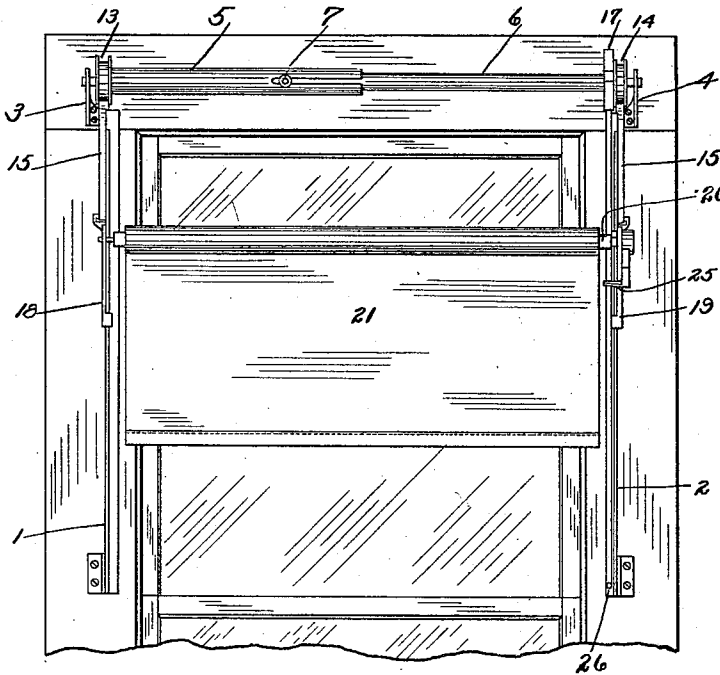


Fig. 1

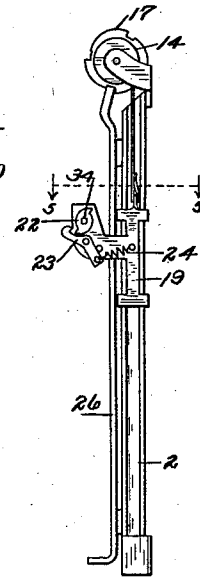


Fig. 2

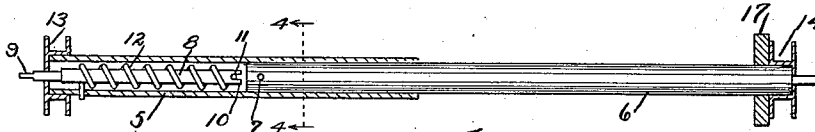


Fig. 3

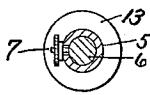


Fig. 4

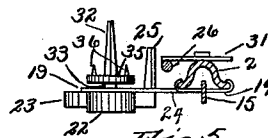


Fig. 5

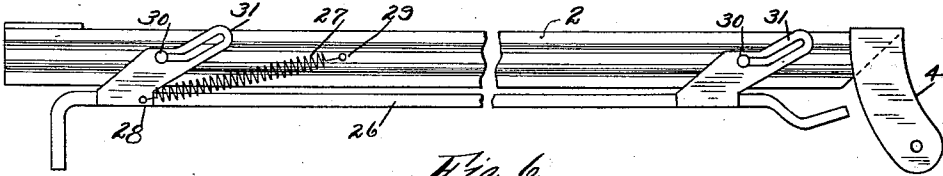


Fig. 6

Witnesses

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SHADE-ROLLER STRUCTURE.

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To all whom it may concern:

Be it known that we, CHARLES H. EGELHOFF and JAMES M. HUCKINS, citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Shade-Roller Structures, of which the following is a specification.

Our invention relates to improvements in shade roller structures and is particularly designed to provide an improved structure of shade roller which will be readily adjustable and in the course of such adjustment, will have an effectual means for preventing accidental displacement of the parts not intended to be adjusted.

More explicitly, our invention resides in the provision of a shade roller bracket adapted to carry a shade roller and capable of a vertical adjustment.

It further contemplates the provision of a means for locking the shade roller against rotation during the vertical adjustment of the bracket and, in fact, to provide an automatically operable device for locking such shade roller against rotation during and entirely throughout any vertical movement of the bracket. In the preferred adaptation of this idea to a mechanical structure, we preferably utilize a roller tension element which is connected to a shade roller bracket by a cape or any preferable connection adapted to be wound upon said roller tension element. The shade roller bracket is preferably vertically slidable upon guides mounted on the window frame and extending from brackets supporting the roller tension element to about half-way down the window frame.

The preferred embodiment of our invention is shown in the accompanying drawings, in which similar characters of reference designate corresponding parts, and in which:

Figure 1 is a front elevation of a window frame with our invention applied thereto, Fig. 2 is a side elevation of our shade roller structure detached, Fig. 3 is a view partially in section showing the tension element preferably used by us, Fig. 4 is a section taken on line 4—4 of Fig. 3, looking in the direction of the arrows, Fig. 5 is a section taken on line 5—5 of Fig. 2, looking in the direction of the arrows, and, Fig. 6 is a detail view showing the locking device for the

ratchet upon the tension roller and showing the cam slots and pins.

The structure desirably comprises guideways 1 and 2 having brackets 3 and 4 rigidly mounted upon the upper ends thereof and adapted to support a tension roller comprising a section 5 of tubular form, a section 6 of cylindrical form fitting in said tubular section and longitudinally adjustable therein by means of a screw and slot connection 7 which permits such longitudinal adjustment without relative rotation. The tubular portion is tensioned for movement in one direction by the provision of a shaft 8 having one end squared as at 9 and having the other end bifurcated as at 10 to fit over a diametrically disposed pin 11 within the tubular section 5. The said shaft 8 is rendered effective by the provision of a torsion spring 12. Rigidly mounted upon the outer ends of the sections 5 and 6 are reel spools 13 and 14 for the reception of tapes 15. There is also mounted, upon the section 6, a ratchet wheel 17 shown in somewhat enlarged form.

Shade roller brackets 18 and 19 are slidably mounted upon the guideways 1 and 2 respectively and are of suitable form to support the shade roller 20 carrying the shade 21. Upon one end of the shade roller 20 is mounted a lug or double lug 22 adapted for coaction with the latch hook 23, pivotally mounted upon the bracket and normally withheld from engagement with said lug 22 by a tension spring 24. This latch hook 23 is desirably provided with a lateral extension 25, the purposes of which will be hereinafter explained.

The vertically slidable locking device 26 is mounted upon one of the guideways and is desirably held in its operative position by means of a tension spring 27 connected thereto as at 28 and connected to the guideway as at 29. This locking device 26 is mounted upon the guideway through the medium of pins 30 and cam slots 31, which cam slots are of a form to deflect the locking device laterally upon downward movement thereof, which occurs upon the release of said locking device from the ratchet. The said locking device 26 is located in juxtaposition to the extension 25 of the latch hook 23 and the lateral deflection mentioned, serves to bring the said locking device into contact with the said lateral extension.

The aims and advantageous results of our invention, are still more enhanced by the utilization of a peculiar form of pin, serving as an axle for one end of the roller and as a support for the lug 22. It will be noted that this pin comprises a shank 32, preferably of squared form, an intermediate portion 33 of cylindrical form, and an outer extremity 34 of squared or angular contour. In this manner the pin is prevented from rotation within the end of the shade roller and the lug is prevented from rotation with relation to the pin, while the cylindrical portion of the pin presents an effectual axle fitting in the bracket 24. The use of the pin may be further rendered effective, by the provision of a flange 35 thereon having protruding lugs 36 adapted to be forced into the end of the roller.

In operation, the tension roller is released by a downward pull upon the locking device 26 and simultaneously the said locking device contacts with the extension 25 of the latch hook 23 and forces said latch hook into the path of the lug 22. Thus the tension roller is released and becomes effective, tending to draw the shade roller bracket upwardly. At the same time, the shade roller is automatically locked through the medium of the latch hook and lug, so that the vertical movement of the shade roller brackets may be controlled by an operator having the end of the curtain 21 within his grasp. When the proper position of vertical adjustment for the shade roller brackets is reached, the locking device 26 is released and permitted to move into operative position, whereupon the latch hook moves to ineffective position, again permitting the normal adjustment of the shade.

What we claim, is—

1. An automatic shade adjuster comprising a vertically adjustable bracket, a shade roller, and normally ineffective means for preventing rotation of said roller during adjustment of said bracket.

2. An automatic shade adjuster comprising a bracket, means for automatically moving said bracket vertically, a shade roller, and mechanism for releasing and rendering said means operative and simultaneously locking said roller against rotation.

3. An automatic shade adjuster comprising a vertically adjustable bracket, a tension element normally tending to move said bracket upwardly, a shade roller, and restraining mechanism for said element operative upon movement out of restraining relation to said element to render said roller non-rotatable.

4. An automatic shade adjuster comprising a vertically adjustable bracket, a tension element normally tending to move said

bracket upwardly, a shade roller, a ratchet movable with said element, and a pawl device normally rendering said ratchet immovable and consequently normally restraining said element from operation, said pawl device serving upon release to render said roller non-rotatable.

5. An automatic shade adjuster comprising a vertically adjustable bracket, a tension roller connected to said bracket and normally tending to move said bracket upwardly, a shade roller on said bracket, and means for simultaneously locking one roller and releasing the other.

6. An automatic shade adjuster comprising a vertically adjustable bracket, a tension roller connected to and normally tending to move said bracket upwardly, a ratchet wheel rigid with said roller, a shade roller carried by said bracket, means for locking said shade roller during movement of said bracket and a pawl device for locking said ratchet and simultaneously releasing said last named means.

7. An automatic shade adjuster comprising a vertically adjustable bracket, a tension roller connected to and normally tending to move said bracket upwardly, a ratchet wheel rigid with said roller, a shade roller, a lock on said shade roller, and means for locking said ratchet against rotation and simultaneously releasing said lock.

8. An automatic shade adjuster comprising a vertically adjustable bracket, a tension roller connected to and normally tending to move said bracket upwardly, a shade roller, a lug on said roller, a normally inoperative latch for coaction with said lug to lock said shade roller against rotation, and a locking device for said ratchet operating upon release to move said latch into operative position.

9. An automatic shade adjuster comprising a vertically adjustable bracket, a tension roller connected to and normally tending to move said bracket upwardly, a ratchet on said roller, a shade roller, a lug on said shade roller, a normally inoperative latch for coacting with said lug to lock said shade roller against rotation, a vertically movable rod for locking said ratchet against rotation, and a cam-slot and pin connection for moving said rod during its release movement into contact with said latch to render it operative.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES H. EGELHOFF.
JAMES M. HUCKINS.

Witnesses:

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