J. A. JACKSON.

SHADE ROLLER.

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1,122,938.

Patented Dec. 29, 1914.

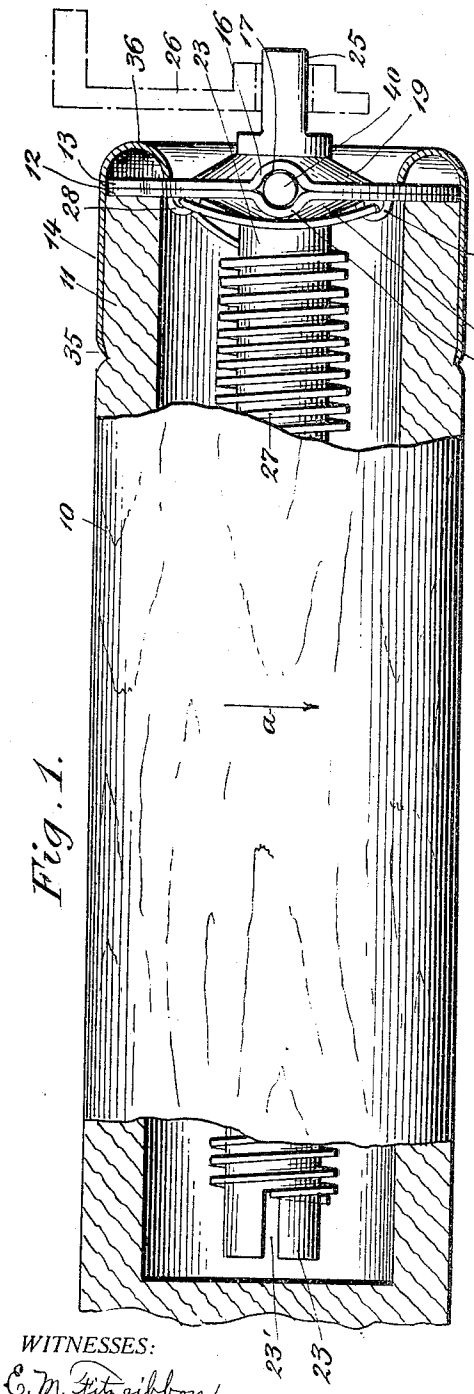


Fig. 1.

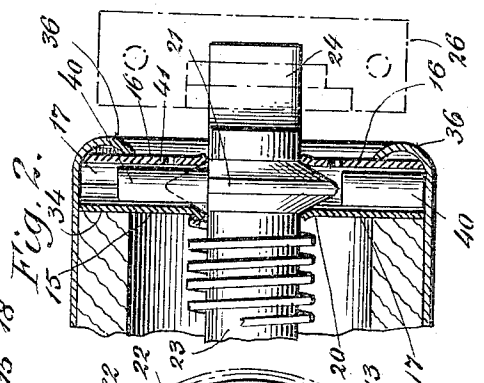


Fig. 2.

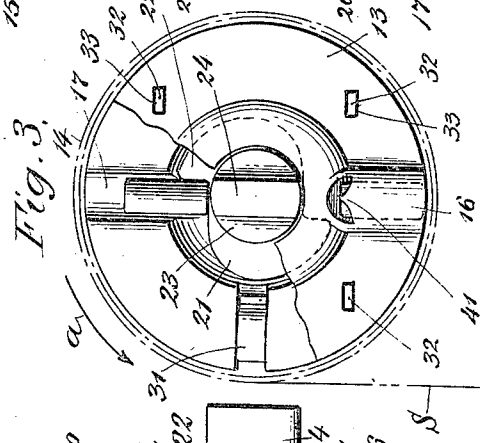


Fig. 3.

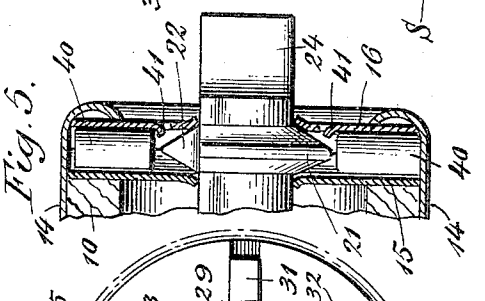


Fig. 5.

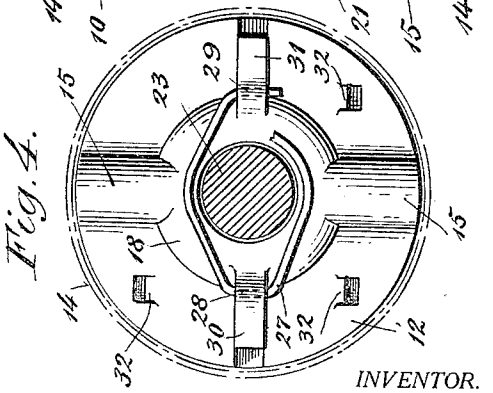


Fig. 4.

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SHADE-ROLLER.

1,122,938. Specification of Letters Patent. Patented Dec. 29, 1914.

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To all whom it may concern:

Be it known that I, JOHN A. JACKSON, a citizen of the United States, residing at Ithaca, in the county of Tompkins and State of New York, have invented certain new and useful Improvements in Shade-Rollers, of which the following is a specification.

This invention relates to shade-rollers, and more especially to that class thereof which are self-retracting and provided with locking means whereby the shade, after it has been pulled down, may be held against retrograde rotation, and it has for one of its objects the provision of a shade-roller comprising improved locking means to the exclusion of pivoted dogs or pawls such as are ordinarily employed in connection with devices of this character.

The invention has, furthermore, for its object the provision of a pair of plates between which the locking means are supported entirely out of sight, without the necessity of employing an inclosing cap other than for the purpose of holding the plates in position against the end of the roller.

The invention has also for its object the provision of means, in connection with said plate, whereby the locking devices may be held against active operation, so that then the roller may be used as a "bottom roller", in which instance the shade is pulled upward, and the spring tension of the roller will always maintain the shade itself in taut condition.

Further objects of the invention will hereinafter appear and be particularly defined in the claims.

The invention has been clearly illustrated in the accompanying drawings, in which similar figures denote similar parts, and in which—

Figure 1 represents a side or top view of a roller partly broken away and embodying my invention. Fig. 2 is a vertical cross-section of the plate-carrying end of the roller and illustrating the operation of the locking means. Fig. 3 is an outside end view thereof, the outer plate being broken away to disclose the locking means and also the inner plate. Fig. 4 is a back view of the plate, and Fig. 5 is a view similar to Fig. 2 but illustrates the locking devices maintained in inoperative positions.

Referring to the drawings, 10 denotes the roller or barrel which is bored out at one end thereof to form a recess 11 within which the return spring of the roller is disposed as usual. Inasmuch as the present invention deals only with the spring-holder of the roller, only a sufficient portion of the latter has been illustrated, it being understood that the other end thereof is provided with the usual bearing pintle journaled in a suitable bracket.

As before stated, the present invention comprises as one of its features an arbor support and spring-holder formed of a pair of coöperative plates indicated herein by 12, 13 respectively, and disposed against the end of the roller-shell 10 where they are held against end-wise movement by a cap 14. By referring to Figs. 1 and 2 it will be noted that the inner plate 12 is outwardly depressed, as at 15, while the plate 13 is similarly formed as at 16, these two depressed portions being coöperative in forming a radial pocket 17 in which the locking devices of the roller are disposed. In the present instance there are two of these pockets disposed diametrically opposite in the plates. The central portions of the plates 12, 13, are bulged outwardly as shown at 18, 19, respectively to form a chamber 20 within which the stationary abutments or cams 21, 22 of an arbor 23 are disposed in such a manner that the plates can rotate freely around said arbor and its cams. By referring to Fig. 3 it will be noted that the outer end of the arbor is formed with a flat vertical tang 24 adapted to be seated in the vertical slot 25 of a bracket 26 shown in dot and dash lines of Fig. 1, so that the arbor 23 will be held stationary as usual. The other end of the arbor may be slotted as shown at 23′ to receive one end of a spring 27 the other end of which is passed through a pair of loops 28, 29 formed by slitting the back plate 12 so as to form tongues 30, 31 which are subsequently crimped to form the loops just mentioned. In order to maintain the plates 12, 13 in proper relationship rotatively to each other, the back plate is punched to form a series of lips 32 adapted to enter perforations 33 punched out of the front plate 13 (see Fig. 3). Three of these connecting devices being used as shown, it follows that the plates cannot be put properly together except in their own certain operative positions. By virtue of the collar-like formation of the arbor cams 21, 22,

seated within the chamber 20, it is evident that the plates and the roller will be held against longitudinal movement on the arbor; while the plates and roller are caused to rotate together by virtue of the projections 15 of the rear plate being seated in depressions 34 provided therefor in the end of the roller-shell, and inasmuch as the cap 14 is pinched (as at 35) into the barrel, and at its outer face is curled at 36 to overlap the marginal edge of the outer plate 13 as shown in Figs. 1 and 2, it follows that no rotative movement of the plates relatively to the barrel-shell can take place, this action being furthermore prevented by the curl 36 being cut out at those points where it goes around the projection 16 of the outer plate 13.

Mounted in the pockets 17 for longitudinal movement and radially relatively to the arbor axis 23, are a pair of locking devices 40 shown herein as pins adapted to gravitate so that the upper pin may fall in front of the cam abutment 22 as shown in Fig. 3 while the opposite pin naturally will rest on the bottom against the inner face of the cap 14, in which latter position it is of course clear of the cams. When now the roller is rotated in the direction of arrow *a* by a downward pull on the shade S, the upper pin 40 will travel along the stationary cam-face 21 thereby moving outwardly and consequently beyond the zone of the abutment faces of the cams, while at the same time the spring 27 will be wound or tightened. When the pull on the shade S is released and the roller can be rapidly rotated backward by the spring, the centrifugal force will tend to maintain both pins 40 in their outward position, but these pins will of course drop when the movement of the roller in either direction is slow enough to permit either pin to gravitate against the arbor.

As above stated the present device is adapted to have its locking members prevented from performing their intended functions so that the roller may be transformed into a "bottom roller," and for this purpose each of the projections 16 is punched out in its front face to form a small lip 41 which may be bent inwardly to project over the inner end of each pin 40 as clearly shown in Fig. 5. In this case it is obvious that the pins cannot move toward the arbor, no matter what their positions may be, and the roller is therefore free to be rotated either forward by hand or backward by the spring free from all hindrance.

Many changes may be made in the particular construction and organization of some of the component elements of my improved device without departing from the spirit of the invention, particularly in the manner in which the two coöperative plates are united and held against rotation relatively to each other so that the pockets 17 for the lock-members will always be able to retain the lock-members in perfectly free sliding condition.

I claim:—

1. The combination of a rotatable roller, a stationary arbor carried thereby and having a cam-collar, a spring attached with its ends to said arbor and the roller respectively, a pair of similar plates faced together and having their center portions outwardly extended to form a chamber for said cam-collar and having projections cojointly forming a radial pocket, one plate having a plurality of perforations, and the other plate having devices loosely extending into said perforations for locking said plates together, means for connecting said plates to the roller, and a clutch member movable in said pocket and adapted to engage said cam-collar.

2. A check plate for a shade roller, comprising a pair of similar coöperative members having projecting portions which cojointly form cylindrical radial pockets, the pocket walls of the outer plate being punched to form lips adapted to be bent inwardly to project into the pockets, and slidable pins loosely supported in each pocket and adapted to be maintained in its outward position when the said lip is bent inwardly.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. JACKSON

Witnesses:
H. J. Bool,
Alfred Bool.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."