A. KAISERMAN.

SHADE ROLLER.

APPLICATION FILED MAY 18, 1909.

953,843.

Patented Apr. 5, 1910.

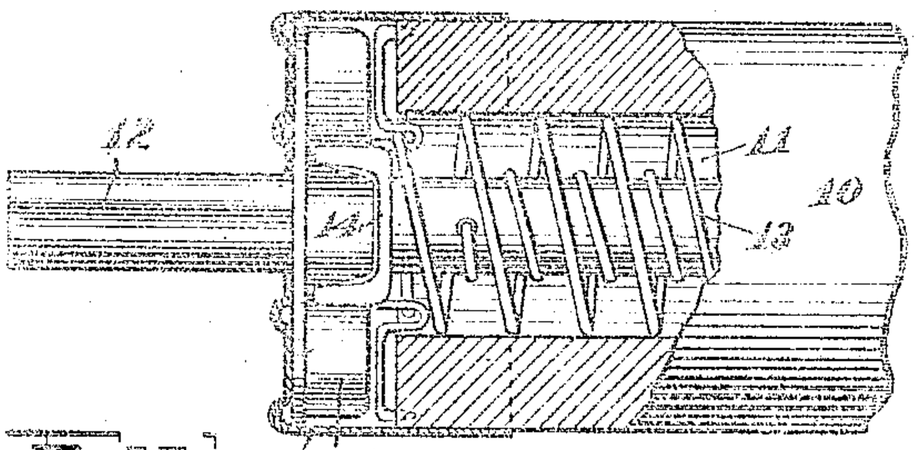

Fig. 1

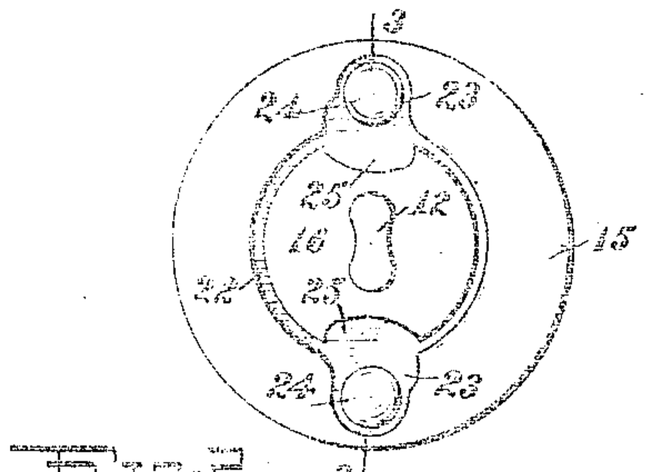

Fig. 2

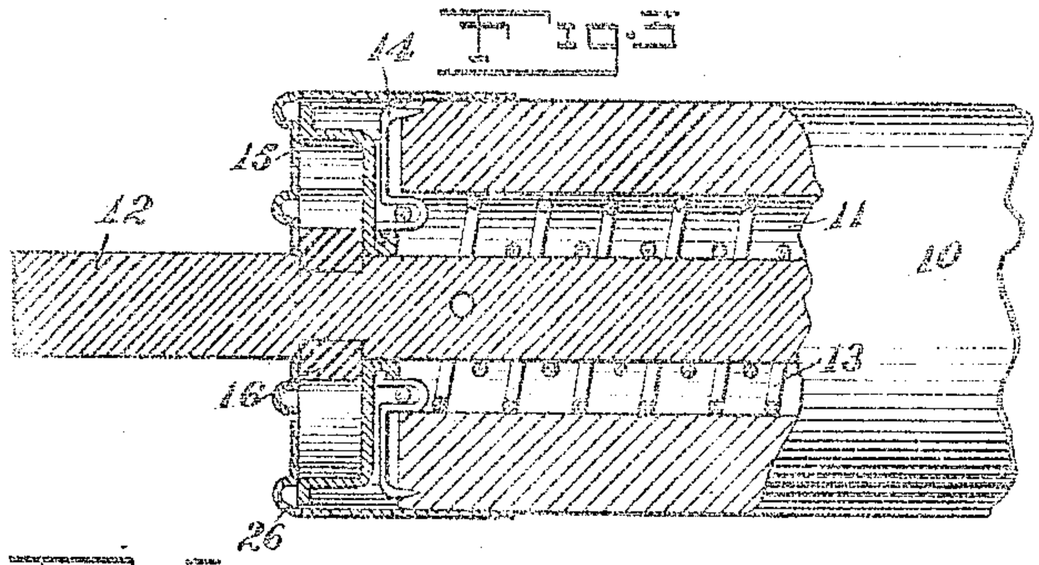

Fig. 3

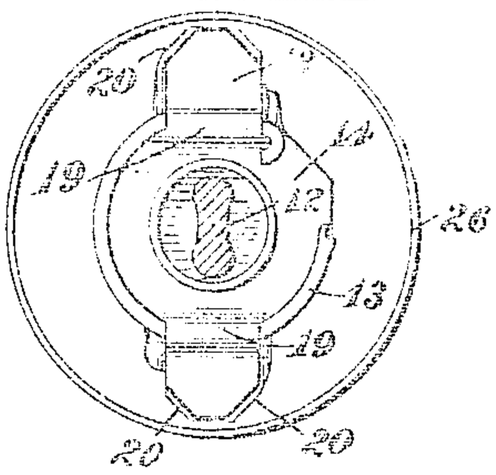

Fig. 4

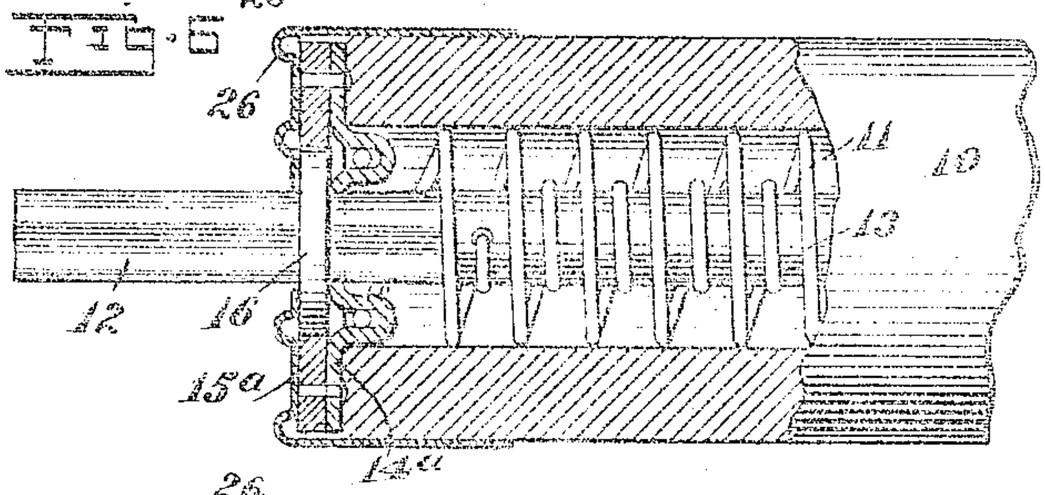

Fig. 6

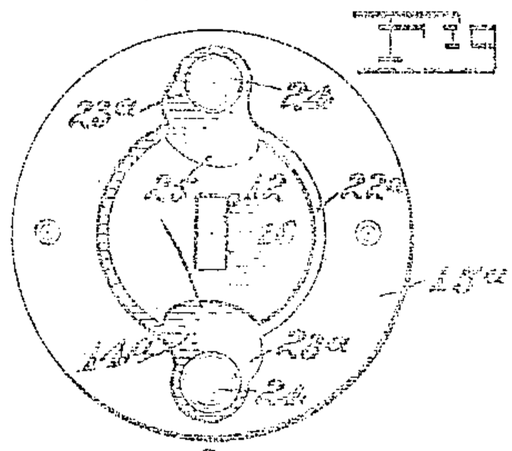

Fig. 7

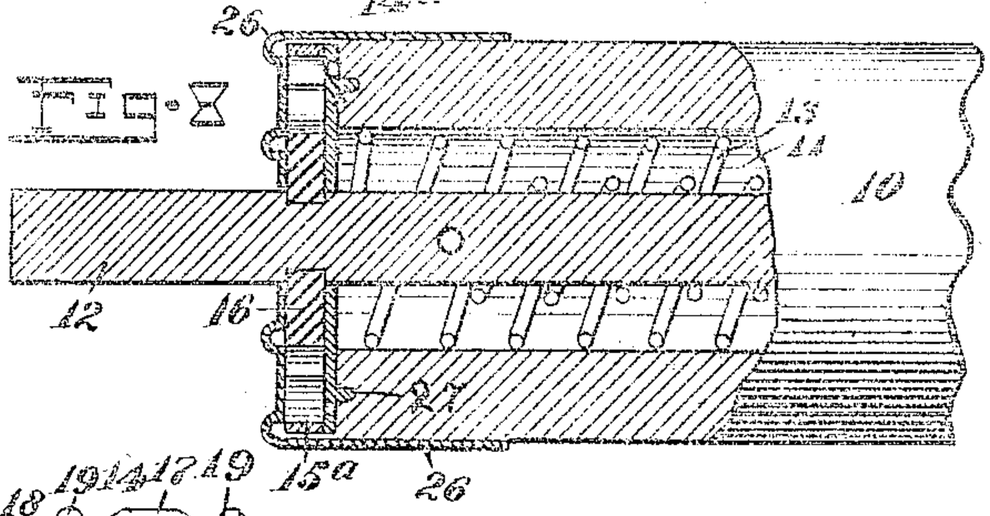

Fig. 8

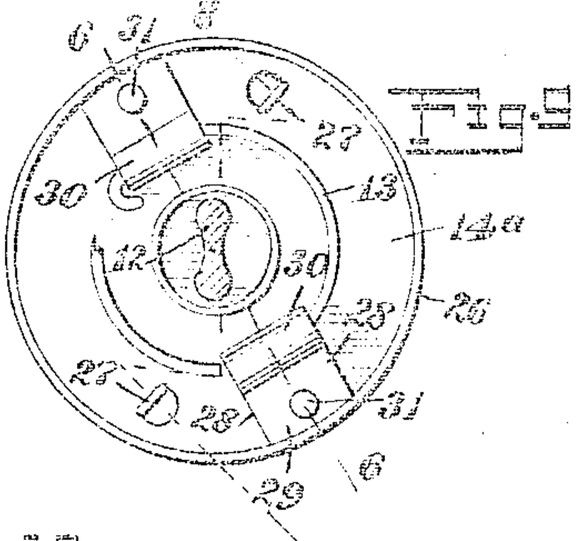

Fig. 9

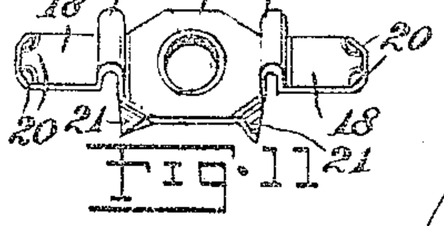

Fig. 11

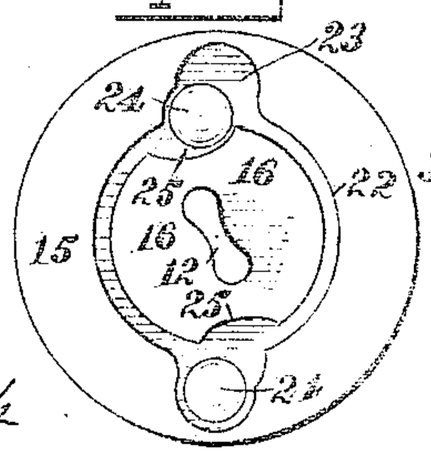

Fig. 5

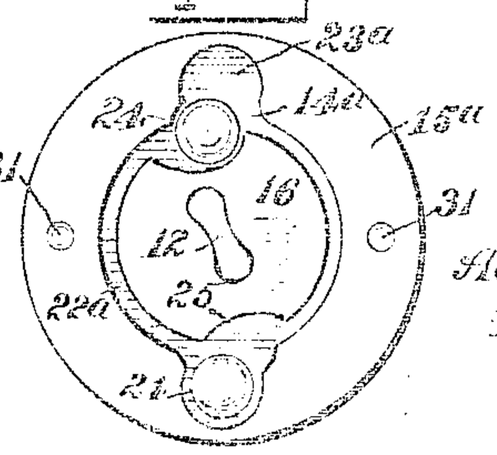

Fig. 10

WITNESSES

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ACHILLE KAISERMAN, OF ROCHELLE, ILLINOIS.

SHADE-ROLLER.

953,842. Specification of Letters Patent. Patented Apr. 5, 1910.

Application filed May 18, 1909. Serial No. 496,715.

To all whom it may concern:

Be it known that I, ACHILLE KAISERMAN, a citizen of the United States, and a resident of Rochelle, in the county of Ogle and State of Illinois, have invented a new and Improved Shade-Roller, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in shade rollers, and more particularly to means for supporting the end of the roller and controlling the spring within the roller.

In the type of roller to which my invention relates, there is employed a non-rotatable plate and a rotatable disk, the two having opposed recesses for the reception of balls or other movable members to lock the roller in the desired position.

The object of my invention is to so simplify the construction as to reduce the number of parts to the minimum, and to render the device readily attachable to or detachable from the roller.

Both ends of the spring in my improved shade roller extend to the same end of the roller, and two separate plates are provided non-rotatable in respect to each other, and one of which coacts with the disk on the spindle and the other of which serves the double purpose of holding the two plates against rotation in respect to the body of the roller, and of holding one end of the spring against rotation in respect to the spindle.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a side elevation of a shade roller constructed in accordance with my invention, a portion of the outer cap and a portion of the body of the roller being broken away; Fig. 2 is an end view of the roller shown in Fig. 1, the cap being removed; Fig. 3 is a longitudinal section through the roller, said section being taken on the line 3—3 of Fig. 2; Fig. 4 is an inner end view of the attachment of the shade roller, the body of the roller being removed and the spindle being shown in section; Fig. 5 is an end view similar to Fig. 2, but showing the parts in locked position; Fig. 6 is a longitudinal section through a second form which my invention may assume, said section being taken on the line 6—6 of Fig. 9; Fig. 7 is an end view of the roller shown in Fig. 6, the cap being removed; Fig. 8 is a longitudinal section of the roller shown in Fig. 6, said section being taken on the line 8—8 of Fig. 9; Fig. 9 is an inner end view of the roller shown in Fig. 6, the body of the roller being removed and the spindle being shown in section; Fig. 10 is an end view of the roller shown in Fig. 6, the cap being removed and the parts being in locked position; and Fig. 11 is a perspective view of the inner plate of the form shown in Figs. 1 to 5, inclusive.

In the specific form of shade roller illustrated in Figs. 1 to 5, inclusive, there is employed a body 10 of any suitable material, preferably of wood and provided with a central passage 11 extending into one end. Concentric with this passage is a spindle 12, non-cylindrical in cross section and projecting beyond the end of the roller to support the latter. Surrounding the spindle and within the passage 11, is a double helical spring 13, both ends of which are disposed adjacent the same end of the roller. The main features of my invention reside in the means for securing the ends of this spring and in controlling the relative movement of the spindle and the body. For accomplishing this, I provide two plates 14 and 15 and a disk 16. The two plates 14 and 15 are both formed of sheet metal cut and stamped to the desired form, while the disk 16 is formed of somewhat greater thickness than either plate and is held within a recess in the plate 15. The plate 14, shown in perspective in Fig. 11, serves three functions, namely; to hold the two plates against relative rotation, to prevent rotation of the two plates in respect to the body, and to hold one end of the spring. The plate 14 is provided with a central body portion 17, having two outwardly-extending arms 18, 18, at opposite sides thereof. Each arm, adjacent its inner end, is provided with a bead or corrugation 19, serving to receive one end of the spring 13, and the outer end of each arm is provided with lugs 20, adapted to enter recesses in the end of the wooden body to lock the plate against rotation in respect to the body. The central body portion 17 of the

plate is provided with flanges 21, extending outwardly from the plate in the opposite direction from the flanges and adapted to engage with the plate 15, to lock the two plates against relative rotation, as is indicated in Fig. 1. The plate 15, as previously stated, is formed of sheet metal and is stamped to form a central cavity or chamber 22 of a diameter and depth substantially equal to the diameter and thickness of the disk 16. At diametrically opposite points, the cavity or chamber is provided with extensions or pockets 23, adapted to receive small balls 24 constituting the locking means for the roller. The disk 16 is provided with recesses or pockets 25 in the periphery thereof, at diametrically opposite points, which coöperate with the balls 24 in the pockets 23. When the roller is rapidly rotated, the balls are thrown out into the pockets 23 and do not contact with the disk 16. When the roller is stopped, the ball at the upper side of the roller may drop down into one of the pockets 25, so that upon an attempted rotation of the body of the roller in one direction, a ball will enter the recess 25 and lock the roller against rotation, as is clearly indicated in Fig. 5. The two plates are held in engagement with the end of the body of the roller by a suitable metal cap 26, so that the lugs 20 cannot become disengaged from the end of the body of the roller. As will be noted particularly in Fig. 1, the lugs 20 hold the plate 14 against rotation in respect to the body, the lugs 21 hold the two plates against rotation in respect to each other, the plate 14 holds one end of the coil spring, while the opposite end is secured to the spindle. In this form, both of the plates are formed of sheet metal.

In Figs. 6 to 10, inclusive, I have illustrated a somewhat different form, in which the same body 10, spindle 12, spring 13, cap 26 and balls 24, are employed, but in place of the two plates 14 and 15, I employ two plates 14^a and 15^a of somewhat different construction. The plate 14^a is formed from sheet metal and serves the same three functions as the plate 14 above described. The plate is provided with downwardly-extending lugs 27, 27, cut and stamped up from the body of the plate and adapted to enter recesses in the end of the wooden body 10, to prevent rotation of the plate in respect to said body. At diametrically opposite sides, the plate is provided with two parallel slits 28, 28, extending inwardly from the edge, so as to form an arm or tongue 29 therebetween. This arm, intermediate its ends, is bent upwardly to form a bead or corrugation 30, to receive the end of the wire spring 13, as illustrated particularly in Fig. 9. The outer end portions of the tongues or arms are secured by rivets 31 to the second plate 15^a, which latter is cut from a plate of substantially the same thickness as the disk. The plate 15^a has a central aperture 22^a, to receive the disk 16, and pockets 23^a at the sides thereof to receive the balls 24. The plate 14^a forms a bottom for this central recess and side pockets, inasmuch as said recess and pockets are cut entirely through the plate 15^a. The two plates are held to the end of the body by the cap 26, and the general operation is substantially the same as that in the form first described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A shade roller, comprising a body, a spindle extending into said body, a spring within said body and encircling said spindle, a plate adjacent the ends of the body and having a portion stamped inwardly toward the body and adapted for engagement with one end of the spring, and having a portion stamped inwardly for engagement with the body to prevent relative rotation of the plate and body, a second plate held against rotation in respect to the first-mentioned plate and having a recess opening to the outer surface thereof, a disk carried by said spindle and disposed within said recess, balls in the plane of said disk and intermediate the periphery thereof and the wall of the said recess, and a cap inclosing the outer end of said body and said plate and retaining said balls in operative position.

2. A shade roller, comprising a body, a spindle extending into said body, a spring within said body and encircling said spindle, a plate adjacent the ends of the body and having a portion stamped inwardly toward the body and adapted for engagement with one end of the spring, a second plate held against rotation in respect to the first-mentioned plate and having a recess opening to the outer surface thereof, a disk carried by said spindle and disposed within said recess, balls in the plane of said disk and intermediate the periphery thereof and the wall of the said recess, and a cap inclosing the outer end of said body and said plate and retaining said balls in operative position.

3. A shade roller, comprising a body, a spindle extending into said body, a spring within said body and encircling said spindle, one end of said spring being secured to said spindle, a plate adjacent the end of the body and having portions thereof stamped out of the plane of the plate in opposite directions, one of said portions being secured to the spring, a second plate held against rotation in respect to the first-mentioned plate by means of another of said stamped portions, said last-mentioned plate having a recess opening to the outer surface thereof, a disk carried by said spindle and disposed within

said recess, balls in the plane of said disk and intermediate the periphery thereof and the wall of the said recess, and a cap inclosing the outer end of said body and said plate and retaining said balls in operative position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ACHILLE KAISERMAN.

Witnesses:
W. J. FURLONG,
J. W. EBERHART.