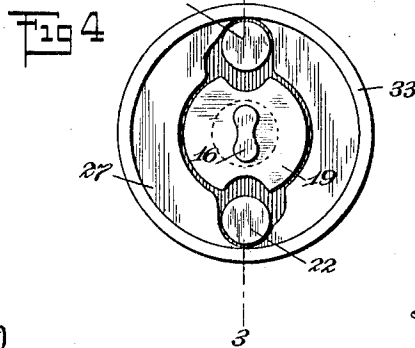
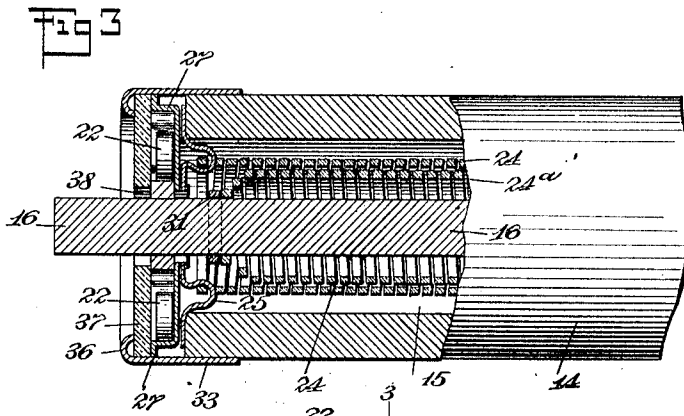
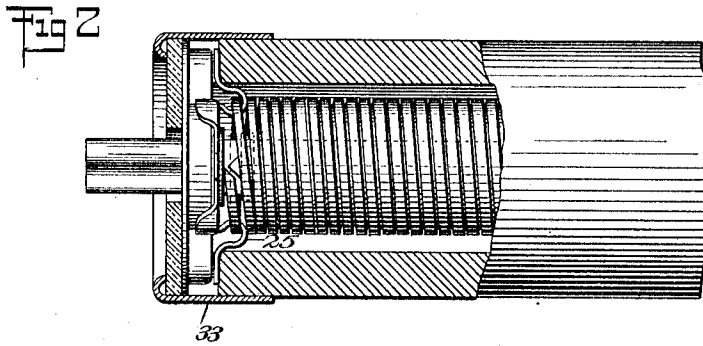
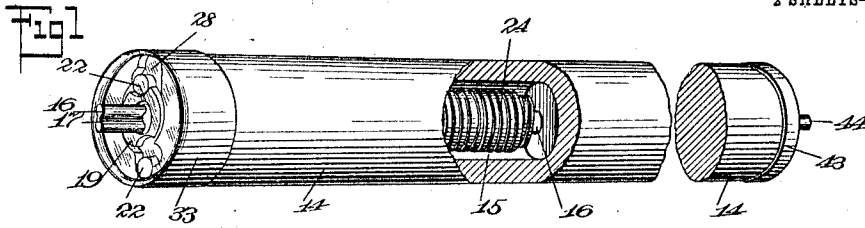


A. KAISERMAN.
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APPLICATION FILED MAR. 1, 1911.

1,019,653.

Patented Mar. 5, 1912.

2 SHEETS—SHEET 1.



WITNESSES
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2 SHEETS—SHEET 2.

Fig 7

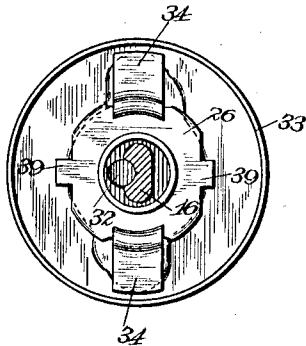


Fig 8

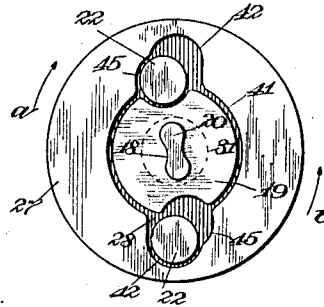


Fig 6

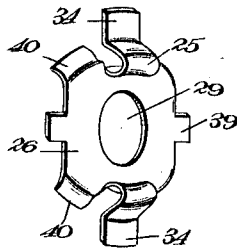


Fig 5

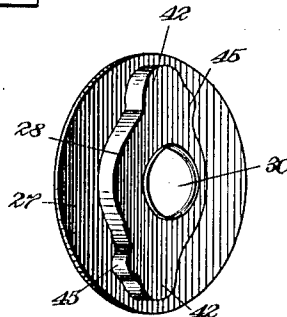


Fig 9

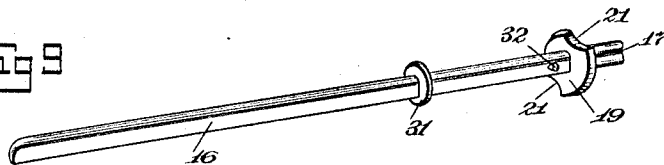


Fig 11

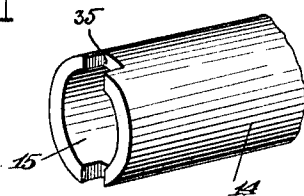
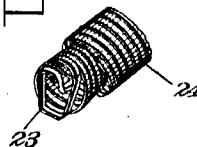


Fig 10



WITNESSES

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UNITED STATES PATENT OFFICE.

ACHILLE KAISERMAN, OF KANKAKEE, ILLINOIS.

WINDOW-SHADE ROLLER.

1,019,653.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed March 1, 1911. Serial No. 611,548.

To all whom it may concern:

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

Among the principal objects which the present invention has in view are: to provide a roller of the character mentioned constructed and arranged to simplify the details of construction, to cheapen the cost of construction while improving the action, and to form the parts for automatically holding the spring of a self-winding roller; to provide a spring for the roller arranged to occupy less space than that occupied by the roller of usual construction, and to simplify the attachment of the spring to the holding member for the roller; and to provide a simplified and more certain means for engaging the roller and hanging member thereof to arrest the roller at any desired point in its rotation.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a roller constructed and arranged in accordance with the present invention, the side of the roller being partially cut away and the roller being divided and contracted in length; Fig. 2 is a longitudinal section of an end fragment of a roller constructed and arranged in accordance with the present invention, the operating spring and disks being shown in side elevation; Fig. 3 is a longitudinal section taken on the line 3—3 in Fig. 4; Fig. 4 is an end view of a roller constructed and arranged in accordance with the present invention; Fig. 5 is a detail view in perspective of the roller end plate; Fig. 6 is a detail view in perspective showing the spring holding clip for said end plate; Fig. 7 is a detail view showing the clip mounted in position on the plate, and in conjunction therewith the supporting rod for the roller, the latter being shown in section; Fig. 8 is a face view of the end plate shown in conjunction with the supporting rod and loose tumblers for engaging the plate in holding relation with the rod; Fig. 9 is a detail view in perspective showing the supporting rod;

Fig. 10 is a detail view in perspective of the operating spring arranged in accordance with the present invention; and Fig. 11 is a perspective view of the receiving end of the wooden roller.

As shown in the accompanying drawings, the wooden roller 14 is provided with an end bore 15. By comparison with the so-called Hartshorne roller the dip of the bore 15 is shallow. Extended into the bore 15 is a short metal supporting rod 16. The rod 16, as best shown in Fig. 9 of the drawings, is preferably constructed from flat metal bar stock, and is provided at the outer end with grooves 17 formed on opposite sides of the rod 16. The grooves thus constructed form a guide for the lips 18 of a disk 19. The disk 19 is forced over the end 20 of the rod 16 and fixed rigidly in position thereon. The disk 19 is provided at opposite sides with recesses 21 to receive the tumblers 22 when the same are precipitated by gravity within the uppermost of the said recesses.

The rod 16 is threaded through a squarely bent holding section 23 of the spring 24. The spring 24 is doubled and coiled upon itself, an inner core 24^a being formed by the convolutions of the spring. The end of the core 24^a is bent to form the square holding section 23 to receive in holding relation the rod 16. The end of the outer coil of the spring is arranged to thread through eyelets 25 formed on a clip 26 to anchor the spring when wound by turning the roller 14.

The clip 26, as shown best in Fig. 7 of the drawings, is mounted in holding relation upon a plate 27 and disposed on the projected back portion of the pocket 28. The clip 26 is provided with a central opening 29 to aline with the central opening 30 formed in the plate 27. The openings 29 and 30 are of a dimension to fit the major dimension of the rod 16, to form thereby a bearing member for the roller upon the rod 16.

The spring 24 is held in position on the rod 16 by a small disk 31. The disk 31 is provided with a squared perforation to slide over the rod 16 until arrested by the projection 32 forced outward from the body of the rod 16 by any suitable means, such as the use of the punching tool. The disk 31 in this manner prevents the bearing of the end of the core 24^a against the face of the clip 26 or of the plate 27, and thus avoids friction which otherwise might be imparted

to retard the action of the said clip and plate.

The plate 27 is forced into the ferrule 33. The ferrule 33 fits snugly the end of the roller 14. The roller 14 is provided with recesses 35, as shown in Fig. 11, to receive the projection forming the pocket 28 and the tab ends 34 of the clip 26. The ferrule 33 serves to hold the plate 27 in fixed position within the recess 35, the ferrule being provided with an inwardly curled edge 36 to bear upon the cover 37, which cover bears upon the face of the plate 27.

In the preferred construction of the roller the cover 37 is formed of glass or celluloid. By reason of the transparency of the cover 37 one may at any time ascertain the working condition of the tumblers 22. The cover 37 is provided with a central opening 38 sufficiently large to receive freely the grooved end of the rod 16.

The roller 14 is equipped with the rewinding mechanism in the following manner:—The plate 27 is first provided with the clip 26. This is accomplished by turning the tab ends 39 and 40 over the back of the projection forming the pocket 28. The plate and clip are then threaded over the rod 16 until the disk 19 on the rod 16 rests in the circular portion 41 of the pocket 28. The disk 31 is now threaded over the rod 16 to rest upon the projection 32. This is followed by the spring 24 being threaded over the said rod 16, the squared holding section 23 fitting the rod and resting in its final position against the disk 31. The rod 16, plate 27, and parts connected therewith are now upturned in position where the pocket 28 and the extensions 42 thereof may receive the tumblers 22. The tumblers 22 being so disposed the cover 37 is rested on the base of the plate 27, thus securing within the pocket 28 the tumblers 22. The ferrule 33 is now forced down over the plate 27 and cover 37, holding the parts in said mutual relation. It will be noted that the opening 38 prevents the extension there-through of the disk 19. The rod 16 and spring carried thereby are now introduced in the bore 15 of the roller 14, the ends of the projected back forming the pocket 28 and the tab ends 34 extending within the recesses 35 of the roller 14. In this position the roller, when provided with the cap 43 which has the usual pintle 44, is in position for mounting in suitable brackets on the window frame.

In the operation of the rewinding mechanism it will be noticed that the free end of the outer coil of the spring 24 passes through the eyelets 25 to be therein anchored. The eyelets 25 and clip 26 connected therewith are fixedly mounted on the roller 14 and moved therewith. The squared end of the rod 16 resting in the squared pocketed

bracket of the usual type, the holding section of the spring 24 is immovably held while the spring is expanded by the unwinding movement of the end threaded through the eyelets 25. The rotation of the roller 14 is sufficiently fast to throw the tumblers 22 by centrifugal force to within the outer ends of the extensions 42 of the pocket 28. When the shade has been adjusted the operator moves the same slowly, when the centrifugal action no longer carrying the tumblers to the outer end of the extensions 42, the uppermost of the said tumblers rests naturally in the recess 21 which is uppermost on the rod 16. When now the shade is released the reaction of the spring 24 tends to move the roller in the direction indicated by the arrow *a* as shown in Fig. 8 of the drawings. At the initiation of this movement the recess 45 in the side of the extension 42 of the pocket 28 overrides the tumbler 22 which is seated in the recess 21, and binds the said tumbler to hold the said plate 27 and the disk 19 in engaged relation. When now it is desired to raise the shade the first action on the part of the operator is to pull the shade down moving the roller 14 and plate 27 in the direction shown by the arrow *b* in Fig. 8, which carries the recess 45 out of engagement with the tumbler 22. A quick release of the shade permits the rapid action of the rewinding spring 24, which effects the throwing of the disk 19 to the outer ends of the extension 42, thus avoiding the seating of the tumblers 22 in the recesses 21 and the consequent engagement of the plate 27 and disk 19.

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

1. In combination with a tubular ended window shade roller having a holding recess formed in the end thereof, a plate removably mounted on said roller having a circular central opening and a pocket outwardly extending therefrom; a short supporting shaft for said roller extending through said opening and into the tubular end of said roller, said shaft being oblong in cross section; a disk permanently secured on said shaft having peripheral recesses to register with said pocket; a circular locking disk laterally disposed in said pocket to holdingly engage said pocket and each of said recesses when same are registered therewith; a clip to operatively engage said plate and said roller, said clip having formed therein eyelets; a double wound double ended spiral spring both ends whereof are disposed adjacent said clip, one end having a hook-like extension for engagement with said eyelets the other end being returned on itself to form a rectangular opening for said shaft; and a covering cap for said roller

adapted to hold in position said plate and said locking disk.

2. In combination with a tubular ended window shade roller having a holding recess formed in the end thereof, a plate removably mounted on said roller having a circular central opening and a pocket outwardly extending therefrom; a short supporting shaft for said roller extending through said opening and into the tubular end of said roller, said shaft being oblong in cross section; a disk permanently secured on said shaft having peripheral recesses to register with said pocket; a circular locking disk laterally disposed in said pocket to holdingly engage said pocket and each of said recesses when same are registered therewith; a clip to operatively engage said plate and said roller, said clip having formed therein eyelets; a double wound double ended spiral spring both ends whereof are disposed adjacent said clip, one end having a hook-like extension for engagement with said eyelets and the other end being returned on itself to form a rectangular opening for

said shaft; a transparent plate to cover said pocket and recess to prevent the removal of said disk; and a covering cap for said roller adapted to hold in position said plate and said locking disk.

3. In a window shade roller of the character described, the combination with a supporting shaft for said roller, said shaft being oblong in cross section, of a rewinding spring, said spring being wound in part upon itself to form a double layer and to approximate the ends of said spring, one of said ends being provided with a hook to operatively engage the said roller and the other of said ends being bent upon itself to form a loop to engage the said shaft and through which said shaft may be slid.

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

ACHILLE KAISERMAN.

Witnesses:

GEORGE ERZINGER,
FRANK W. SHAW.

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