G. E. MILLARD.

SHADE ROLLER.

APPLICATION FILED FEB. 21, 1907.

906,542. Patented Dec. 15, 1908.

Fig. 1.

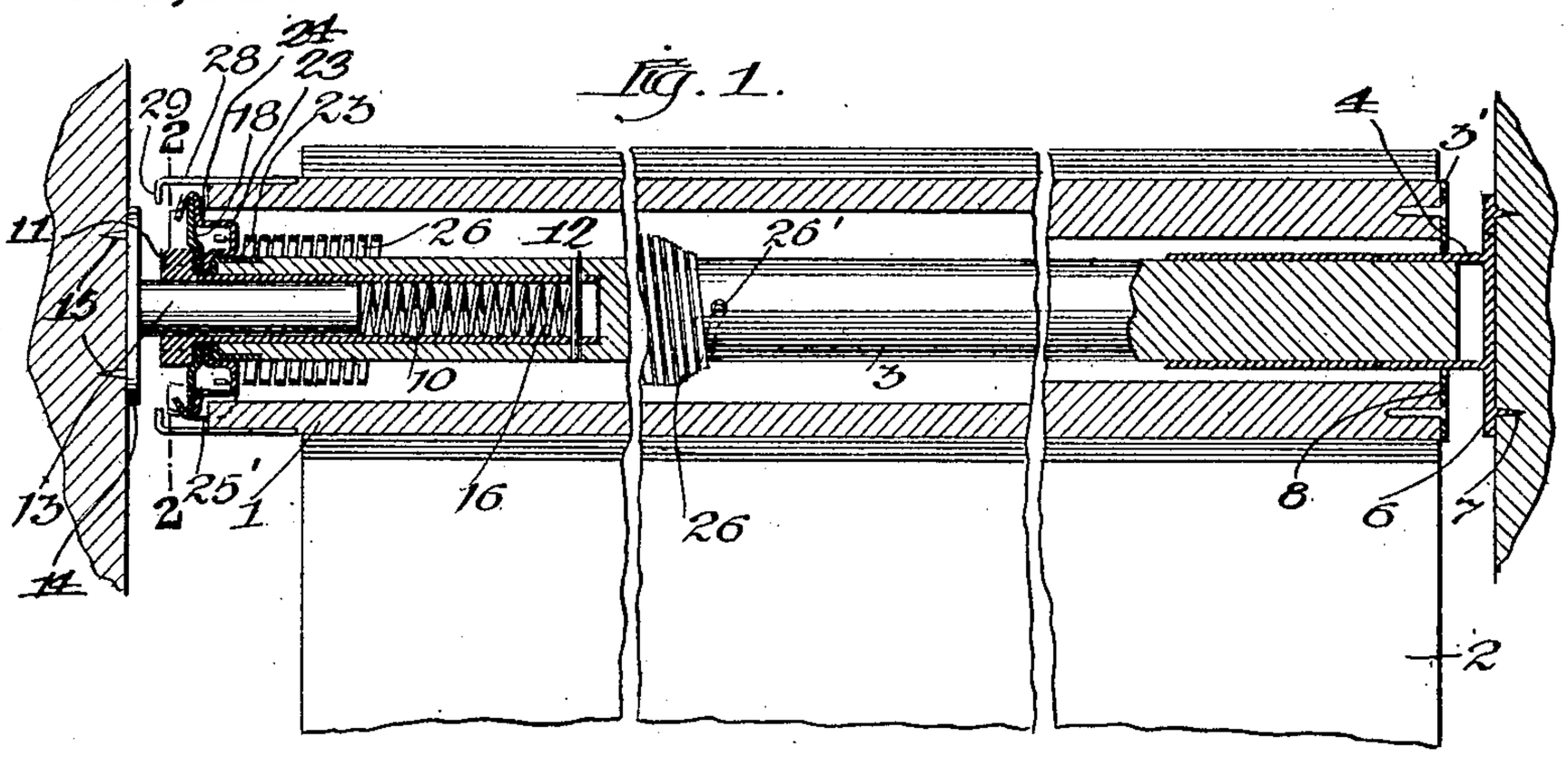


Fig. 2.

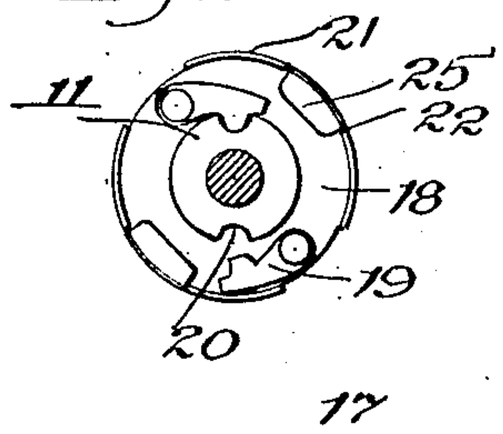
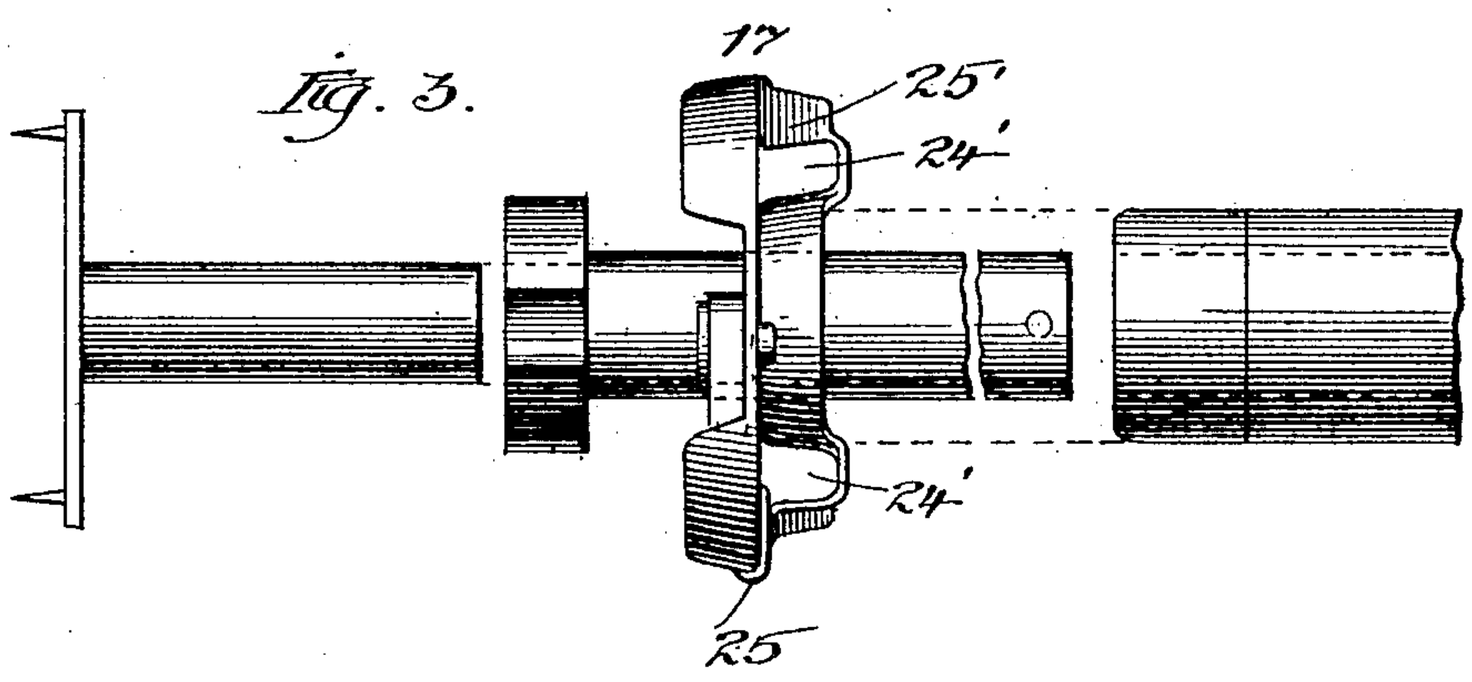


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE E. MILLARD, OF CHICAGO, ILLINOIS.

SHADE-ROLLER.

No. 906,542. Specification of Letters Patent. Patented Dec. 15, 1908.

Application filed February 21, 1907. Serial No. 358,635.

To all whom it may concern:

Be it known that I, GEORGE E. MILLARD, a citizen of the United States, residing at Chicago, Cook county, State of Illinois, have invented certain new and useful Improvements in Shade-Rollers, of which the following is a specification.

This invention relates to improvements in shade rollers of the spring roll type, and has among its salient objects to provide a construction which dispenses with the necessity of any supporting brackets or rods other than the roller itself; to provide a construction in which the actuating mechanism is practically concealed within the shade roller; to provide a construction in which substantially all the parts are assembled without the aid of screws, bolts, or the other retaining devices; to provide an improved construction in which spring pressed prongs are used to secure the device within a window casing; and in general to provide a simple and economical construction of the character referred to.

I am aware that heretofore one or more shade roller mechanisms have been patented in which a supporting bar provided with spring pressed prongs was used as a means of supporting the shade roller proper and its brackets, but in my invention the shade roller becomes its own support and both supporting bars and brackets are dispensed with.

The invention will be readily understood from the following description, reference being had to the accompanying drawings in which—

Figure 1 is a longitudinal vertical section of the assembled device; Fig. 2 is a cross-sectional view on line 2—2 of Fig. 1, showing one head of the roll having retaining pawls of a well known type; Fig. 3 is an enlarged detailed view of the movable rod and confining head, the parts being shown separated.

Referring to the drawings, 1 designates as a whole a hollow wooden shade roller, upon which is secured a shade 2.

Extending longitudinally through the roller, is rod 3, the external diameter of which is somewhat less than the internal diameter of the roller. This rod serves as an axis or support on which the roller rotates, as will appear hereafter. At one end of the rod 3 a metal reinforcing sheath 4 slips over and is frictionally secured to the rod. The outer end of this sheath is provided with a flat shoe 6 carrying a pair of sharp pointed prongs 7. The opening between the interior of the roller and the metal sheath is closed at this end of the roller by a washer disk 8 fastened by suitable pins to the roller 1. This disk serves as a journal support for the roller and the sheath serves as a bearing on which the roller rotates at that end.

Describing now the actuating end of the device, the rod 3 is axially bored for a considerable distance for the insertion of a metal tube 10 secured within the rod by a through pin 12 and this tube terminates at its outer extremity in a ratchet head 11. The tube 10 not only strengthens the rod but also serves as a housing and bearing for a spring pressed journal rod 13. This latter rod terminates at its outer end in a shoe 14 similar to the shoe on the sheath 4 and has similar prongs 15. The inner end of the rod 13 abuts against a spiral spring 16 seated within the tube 10; the inner end of the spring 16 being secured to the through pin 12. This spring is so arranged that it normally tends to force the rod 13 outwardly. To close this end of the roller and to furnish a bearing for the roller to ride upon the rod, I provide a head 17 of two part construction. Describing this head, a disk 18 fits over and closes the opening in the end of the roller and is provided centrally with a circular aperture through which the tube 10 extends. To this disk are pivotally secured pawls 19 which are adapted to engage notches 20 cut in the enlarged extension of the tube 10, in a well known manner. The rim of the disk 18 is struck up to form a circular flange 21 which serves as a stop for the pawls 19 when the latter are out of their respective notches; part of this flange however is cut away at 22 in order that the other part of the head 17 may be secured thereto. To this end I provide a cap like member 23 which when united with the disk 18 forms a hub for the end of the roller. In order that this end of the rod 3 may form a more perfect bearing for the roller it is provided with a metal cap 23′ on which the member 23 rides. From the inner rim of the cap 23 extend two lips 24 which are bent first to form two eyes 24′ and then further bent to form extensions 25. These latter extensions are crimped over the openings 22 in the flange of the disk 18 to securely unite the two members. In order that the head as

a whole may rotate with this roller, I provide the cap 23 with right angled ears 25′ which are forced edgewise into the wooden end of the roller.

From the foregoing it will be seen that the head 17 serves as a hub for the roller and is itself prevented from slipping off by being seated between the enlarged outer end of the tube 10 and the cap.

In order to automatically wind up the shade after it is pulled down, I provide a spiral spring 26, one end of which is secured to the exterior of the rod 3 as indicated at 26′ and the other end threaded through the eyes 24′. This spring is wound up as the shade is drawn downwardly in a well known manner. In order to conceal this head and interior parts and to give the whole a finished appearance I provide a brass ferrule 28 bent inwardly at its outer end to form a flange 29 and firmly seated upon the end of the roller.

The operation of the device is obvious from the foregoing description but may be briefly described as follows: The rod 13 is manually forced back against the action of its spring, the roller is adjusted to position between the window jambs, the prongs 7 and 15 forced into the respective jambs and the spring 16 released. The device is now in operative position. The spring 16 of course serves to keep the respective sets of prongs projected into the window jambs. As the shade is pulled downwardly, the spring 26 is wound up and when the shade is drawn to the desired position it is allowed to wind back slowly to allow the pawls to engage their respective notches in the ratchet head 11. When it is desired to raise the shade the roller is pulled downwardly a little and then suddenly released to throw the pawls out, whereupon the shade winds up in a well known manner.

It is to be noted that both spring and the shade roller may be readily cut down to any desired length, by simply slipping off the frictionally held shoe upon the solid end of the supporting rod and shortening the same end of the shade roller and replacing the journal washer at that end.

I claim as my invention:

1. In a shade roller mechanism, the combination with a hollow roller, of a supporting rod extending axially therethrough, journal connections between the shade roller and supporting rod at each end, an attaching shoe having two or more prongs secured to one end of said supporting rod, a tubular member seated in a bore formed in one end of said supporting rod, and terminating at its outer end in an enlarged head portion, a ratchet head fixed upon one end of said supporting rod and confined in position by said enlarged head portion of the tubular member, coöperating pawls mounted upon the corresponding ends of the shade roller proper, a second attaching shoe having two or more prongs and provided with a shank having telescopic engagement within said tubular member, an extension spring arranged within said tubular member and tending to hold said second shoe projected, and a main winding spring having one end connected with the shade roller proper and its opposite end connected with an intermediate part of the supporting rod.

2. In a shade roller mechanism, the combination of a hollow roller, of a supporting rod extending axially therethrough, a shoe rigidly secured to one end of said roller and provided with two or more outwardly projecting prongs, a second shoe having two or more similar prongs and provided with a shank portion having telescopic engagement with a bore in the end of said supporting rod, an extension spring arranged within said bore and tending to hold said shoe projected, a winding spring arranged in the shade roller and connected at one end to said rod and at the other to said roller.

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