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O. S. BROWN.

SHADE ROLLER AND SUPPORT THEREFOR.

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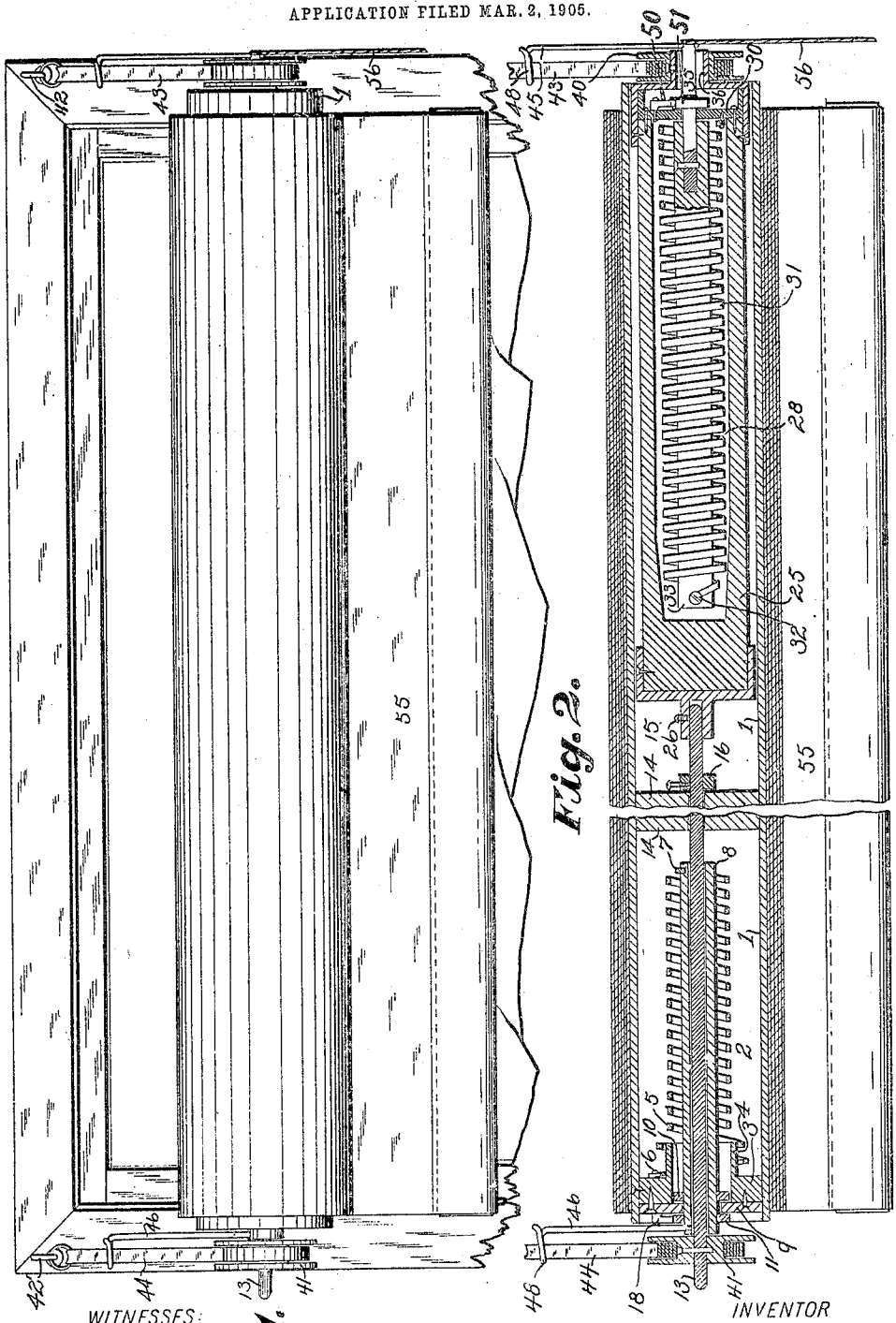

Fig. 1.

Fig. 2.

WITNESSES:

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SHADE-ROLLER AND SUPPORT THEREFOR.

No. 818,516. Specification of Letters Patent. Patented April 24, 1906.

Application filed March 2, 1905. Serial No. 248,050.

To all whom it may concern:

Be it known that I, ORESTES S. BROWN, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Shade-Rollers and Supports Therefor, of which the following is a specification.

My invention relates to improvements in shade-rollers and supports therefor, and pertains especially to that class of such devices in which the roller may be raised or lowered along the window-frame, the roller being hung from the upper portion of the frame on flexible supporting-bands, which are wound up and unwound as the roller is raised or lowered.

Heretofore attempts have been made to produce a practical device of this character; but a difficulty has been found in securing the desired tension of the winding-springs and in arranging the parts so that either the shade or the roller may be adjusted without affecting the operation of the other.

The object of my invention is to provide a form of construction which may be easily controlled and in which the desired adjustment may be readily secured in either the position of the roller or of the shade thereon and in which the tension of the winding-springs may be nicely adjusted or readjusted at any time.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a front elevation showing the upper portion of a window equipped with my invention. Fig. 2 is a detail showing a portion of the flexible supports and showing the roller in longitudinal section with a central portion broken away.

Like parts are identified by the same reference characters in both views.

1 is a shade-roller provided with a tubular socket 2 at one end, which is filled at the end of the roller by a cylindrical block 3, provided with a hub 4, to which one end of a winding-spring 5 is attached, as indicated at 6. The other end of the spring 5 is secured at 7 to a stationary sleeve 8, which sleeve extends through an aperture in the block 3 and in an end disk 9, which is secured to the block. The sleeve 8 is provided with stop-collars 10 and 11 in each side of the disk 9, which hold the sleeve 8 and roller 1 against relative longitudinal movement. A rod 13 extends through the sleeve 8 and through the solid portion 14 of the roller into a tubular recess 15 at the other end of the roller, and a stop-collar 16 is secured on the rod 13 in this recess to prevent the rod from slipping out through the sleeve 8. The disk 9 is provided with a dog 18, adapted to engage in a suitable recess in the stop-collar 11 and which when so engaged prevents the spring 5 from winding up the shade. The operation of the dog 18, as well as that of the spring 5, are the same as in any ordinary shade-roller in common use. At the other end of the roller from that occupied by the spring 5 I have provided a cylinder 25, which is located in the recess 15 and is secured by set-screw 26 to the rod 13. The cylinder 25 is provided with a tubular socket 28, leading inwardly from the outer end of the cylinder and closed by an end disk 30. A spring 31 within the socket is connected at one end with the disk 30, and the other end of the spring is connected at 32 with a stationary rod 33. A pin 35 is rigidly secured to the end of the rod 33 and projects outwardly through a central aperture in the disk 30 and through an aperture in a cylinder-head 36.

A winding-drum 40 is mounted upon and rigidly secured to a hub portion of the cylinder-head 36, the drum and cylinder 25 being thus rotated in unison and in connection with a similar drum 41, mounted upon and rigidly secured to the projecting end of the rod 13. Flexible supporting-bands 43 and 44 are connected with hooks 42 at the upper portion of the window-casing and are wound upon the drums 40 and 41, respectively. Guiding-arms 45 and 46 are rigidly secured to the pin 35 and sleeve 8, respectively, and are provided with loops at 48, which loosely engage the supporting-bands. These arms 45 and 46 prevent the pin 35 and sleeve 8 from rotating and also regulate the winding of the bands upon their respective drums.

The spring 31 tends to rotate the drums through the medium of the cylinder 25 and rod 13 in a manner to cause the supporting-bands 43 and 44 to wind upon the drums, and thus raise the shade-roller. A dog 50, pivotally secured to the disk 30, is adapted to engage a suitable notch in a collar 51 on the pin 35 and when so engaged limits the rotation of the cylinder 25 and the drums, the operation of this dog being similar to that of the dog 18.

The springs 5 and 31 are of different ten-

sions, the spring 31 being preferably stronger than the spring 5, so that by pulling the shade 55 the roller 1 will turn to permit the shade to unwind, as in the case of the shades in ordinary use. By releasing this shade suddenly the reaction of spring 5 rotates the roller with such rapidity that the dog 18 is thrown out by centrifugal action and permits the shade to wind up.

The operation of adjusting the shade is precisely the same as if the roller were mounted on a fixed support. When it is desired to adjust the roller, the latter is drawn downwardly by means of a cord 56, the supporting-bands 43 and 44 being unwound from the drums to permit the downward movement of the roller. When it is desired to raise the roller, the cord is pulled down sufficiently to cause the release of the dog 50, when by releasing the cord quickly the reaction of the spring 31 rotates the cylinder 25 with sufficient rapidity to prevent the reëngagement of the dog 50, and the shade-roller will therefore be lifted by the action of the drums in winding the bands 43 and 44 thereon. The tension of either of the springs may be increased by releasing the corresponding guiding-arm 45 (or 46) from the band and using the arm as a lever to rotate the otherwise stationary rod 33 (or sleeve 8) until the spring is at the desired tension.

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

1. In a device of the described class; the combination of a shade-roller, provided with tubular sockets in each end; an axial support for said roller, provided with winding-drums at each end of the roller; flexible supporting-bands arranged to wind upon the said drums; a spring in one of said sockets and arranged to actuate the roller; another spring in the other socket arranged to actuate the drums; suitable catches normally controlling the reaction of the respective springs; and non-rotatable elements in said roller, each connected with one of the springs and provided with arms loosely engaging the bands above the drums.

2. In a device of the described class; the combination of a shade-roller provided with a tubular socket in one end; a hollow cylinder located in said socket and projecting axially therefrom; a drum mounted upon the projecting end of said cylinder; a supporting-band wound upon said drum; a journal-pin loosely connected with the supporting-band and constituting a non-rotatable element mounted in said cylinder; and a catch on said cylinder adapted to engage said non-rotatable element; together with a spring connected with said non-rotatable element, and also connected to rotate said cylinder.

3. In a device of the described class; the combination of a shade-roller, provided with tubular sockets in each end; a rod extending axially through one of said sockets; a drum mounted on said rod; a non-rotatable sleeve encircling said rod and provided with a bearing for the shade-roller; a coiled spring connected with said sleeve and shade-roller to actuate the latter; a cylinder located in the other socket; a spring for actuating said cylinder; a non-rotatable bar located in said cylinder, having an axial projection extending outwardly therefrom; said spring being located within the cylinder and connected with the non-rotatable bar and cylinder respectively; a winding-drum mounted on said cylinder; flexible supporting-bands wound upon the winding-drums of said cylinder and rod; and catches located in operative relation to the non-rotatable sleeve and bar and arranged to prevent the reaction of said springs; together with means for holding said sleeve and bar from rotating.

4. In a device of the described class; the combination of a cylinder; a rod extending axially from one end thereof; a winding-drum mounted on said cylinder, and another winding-drum mounted on said rod; flexible supporting-bands wound upon said drums and connected with suitable fixed points of support; a shade-roller journaled on said cylinder and rod; a spring for actuating said shade-roller; and non-rotatable elements within said shade-roller, having arms extending upwardly and loosely engaging the supporting-bands above the drums; said actuating-springs for the cylinder and shade-roller being connected with said non-rotatable elements.

5. In a device of the described class, the combination of a traveling support provided with an intermediate cylinder and having winding-drums at each end; flexible hanger connections wound upon said winding-drums and connected with fixed points of support; non-rotatable elements carried by said traveling support a shade-roller mounted upon said traveling support; and springs each having one end connected with one of the non-rotatable elements one of said springs being located in the cylinder, and operatively connected with the traveling support, and the other spring being operatively connected with the shade-roller.

6. In a device of the described class; the combination of a shade-roller; a cylinder independently rotatable therein; a fixed bar located in said cylinder; a spring coiled upon the bar and connected with the bar and cylinder at its respective ends; and a winding-drum connected with said cylinder.

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

ORESTES S. BROWN.

Witnesses:

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