No. 870,876. PATENTED NOV. 12, 1907.

A. H. FLEMING.

SHADE ROLLER.

APPLICATION FILED JUNE 14, 1907.

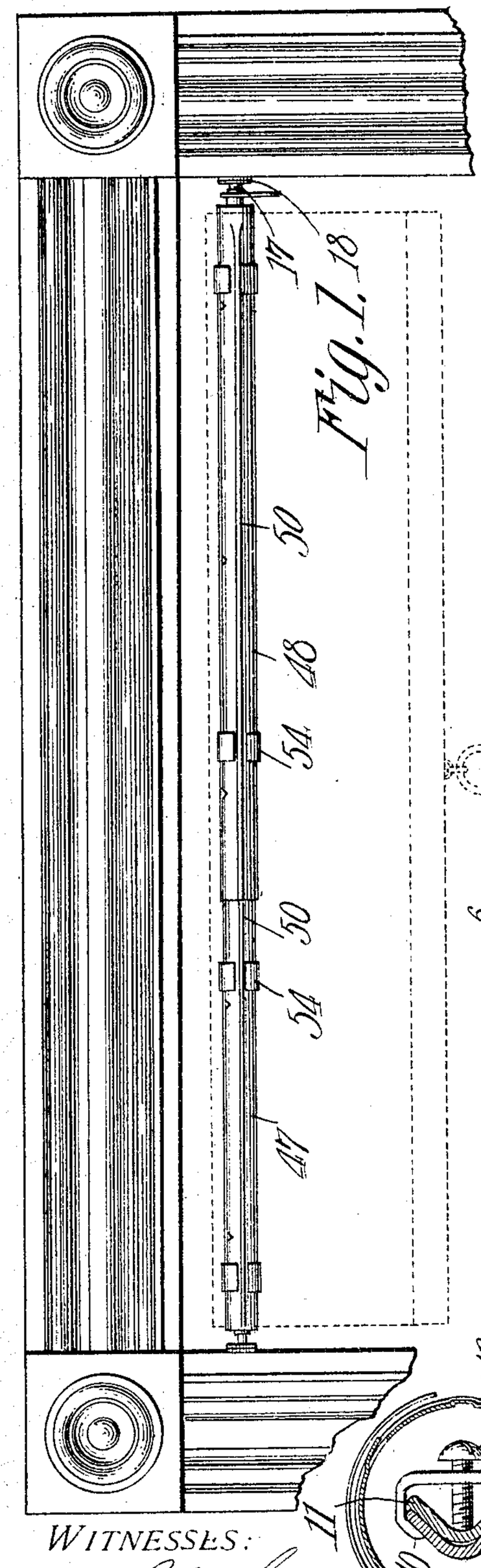

Fig. 1.

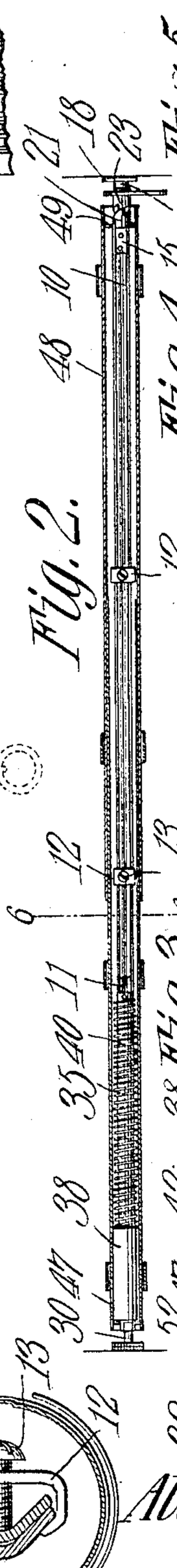

Fig. 2.

Fig. 3.

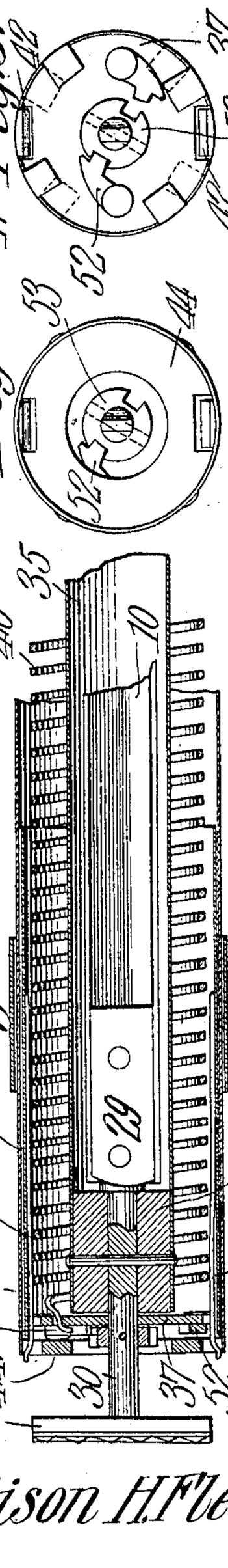

Fig. 4.

Fig. 5.

Fig. 6.

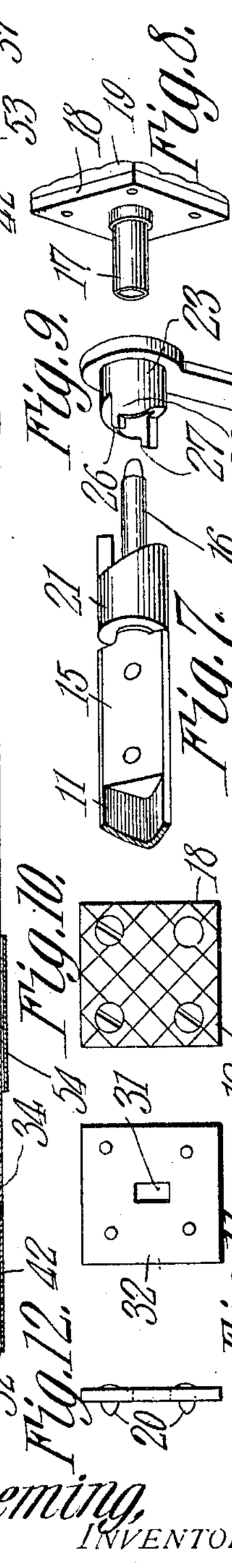

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

WITNESSES:

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SHADE-ROLLER.

No. 870,876. Specification of Letters Patent. Patented Nov. 12, 1907.

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To all whom it may concern:

Be it known that I, ALLISON H. FLEMING, a citizen of the United States, residing at Fairmont, in the county of Marion and State of West Virginia, have invented a new and useful Shade-Roller, of which the following is a specification.

This invention relates to shade rollers, and has for its principal object to provide a novel form of roller which may be adjusted to any width of shade and any width of window frame.

A further object of the invention is to provide a shade roller having an adjustable rod and an adjustable sheath, the winding spring serving to connect the rod to the sheath, and the latter acting as a cover for the rod and spring, and, also, as a support for the shade.

A still further object of the invention is to provide a roller shade having supporting brackets for the rod, the brackets being movable outward into engagement with the inner walls of the window frame or other support and serving to firmly hold the roller without interfering with its rotative movement.

A still further object of the invention is to provide a bracket clamping and holding means of simple construction, and which will be automatically locked in supporting position.

A still further object of the invention is to provide a novel construction of roller in which the shade supporting member may be readily taken apart, so that access may be had to the rod for the purpose of adjusting the length of the latter.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is an elevation of a shade roller constructed in accordance with the invention. Fig. 2 is a longitudinal section view of the same. Fig. 3 is a detail sectional view of one end of the roller drawn to an enlarged scale. Fig. 4 is an end elevation of the roller complete. Fig. 5 is a similar view with the outer sheath or shade support detached. Fig. 6 is a transverse sectional view on an enlarged scale on the line 6—6 of Fig. 2. Fig. 7 is a detail perspective view of one end of the rod detached. Fig. 8 is a similar view of one of the brackets. Fig. 9 is a detail perspective view of the clamping means for forcing the brackets to position. Fig. 10 is a face view of one form of bracket. Fig. 11 is a view looking from the opposite side of the bracket. Fig. 12 is a side elevation showing a modified form of bracket.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The main portion of the rod is formed of two angle iron strips 10 and 11 which may be slid one on the other for the purpose of adjusting the rod to suit any width of shade or any width of window frame. These strips are locked together by yoke-like clamps 12 carrying locking screws 13, the construction of the clamps being best shown in Fig. 6. To one end of the section 11 is secured a block 15 of triangular form in cross section, and from this block projects a bearing or pivot pin 16 that is arranged to enter a supporting sleeve 17 that extends from a bracket plate 18. The bracket may be in the form of a rectangular piece of metal having its wood engaging surface covered by a layer of rubber or the like, as indicated at 19, or suitable supports or prongs 20 may be arranged to project from the plate and enter the sides of the window frame. Surrounding the pin 16 and rigidly secured thereto is a cam sleeve 21 having at one end a double helical cam that is arranged to be engaged by a similar cam 22 formed at the end of a handled sleeve 23 that is revolubly mounted on the sleeve 17, and when the cam sleeve 23 is turned in one direction its tendency will be to move the sleeve 21 away from the bracket member 18, so that the bracket members at both ends of the roller will be forced tightly into engagement with the end faces of the window frame. The cams are provided with small stop shoulders 26 and immediately in advance of these shoulders are small recesses 27 into which the shoulders may enter for the purpose of firmly locking the cam sleeve from reverse movement and holding the parts rigidly in place.

Secured to one end of the strip 10 is a triangular block 29 and from which projects a pin 30 having a non-circular end that enters a non-circular recess 31 formed in a bracket 32 that is adapted to be forced into engagement with the window frame. In adjusting this portion of the device for use the distance between the inner faces of the window frame is first taken into consideration and the screws 13 are locked, so that the members 10 and 11 may be slid one on the other until the pins 16 and 30 are at the proper distance from each other. When the cam sleeve 23 is turned, the bracket 18 will be forced in one direction, while the rod as a whole will be forced in the opposite direction and the pin 30 at the opposite end of such rod will be pressed firmly into engagement with the bracket 32, and the latter will be forced into contact with the window frame, so that the device will be rigidly supported.

Secured to the pin 30 is a cylindrical block 34 carrying a cylindrical sleeve 35 of such diameter as to rotate freely around the rod, and mounted loosely on the pin 30 is a disk 37 which carries a cylindrical sleeve 38

of a diameter greater than that of the sleeve 35. Between these two sleeves is arranged a roller winding spring 40 which is preferably of the helical type, one end of the spring being secured to the sleeve 35, and the opposite or outer end thereof being secured to the disk 37. Secured to the inner face of the sleeve 38 are tongues 42 that are preferably arranged diametrically opposite each other, and these tongues are arranged to extend through openings formed near the periphery of a ring 44, the tongue serving as a means for firmly locking the sleeve 38 to the ring.

Secured at one end to the ring 44 is a cylindrical sheath 47 that forms one part of the curtain attaching and supporting means, and this sheath 47 is supported by the revoluble sleeve 38. The sheath 47 is of a length approximately equal to the length of the strip 10 and telescopes within the second sheath member 48 that is provided near its outer end with an inwardly extending annular flange 49 that finds a bearing on the cam sleeve 21.

The two sheath members rotate in unison, and are held from independent rotative movement by interfitting ribbed and grooved portions 50 which are preferably formed by striking up the sheet metal of which the sheath sections are made.

The two sheath members are arranged for the support of the shade and are adjustable in order to accommodate a shade of any width. During movement of the sheath in one direction the dogs 52 carried by the disk 37 will click over the ratchet disk 53 that is secured to the pin 30 in the usual manner, the operation of this portion of the mechanism being similar to that ordinarily employed in shade rollers.

In order to hold the end of the shade in place without the employment of tacks or similar fastening means, the shades are provided with slidable clips 54 each in the form of a partial ring that is arranged to extend around a portion of a turn of the shade, and thus hold the same in place on the roller.

It will be seen that the rod section may be adjusted to accommodate any ordinary window frame, while the sheath members serve as a covering for the rod and the spring and act, also, as the roller support to which the shade is attached.

I claim;—

1. In a spring shade roller, a rod formed of extensibly related sections, means for rigidly clamping said sections in adjusted position, a winding spring, and a sheath formed of telescopic sections covering the spring and rod and forming a support on which the shade may be wound.

2. In a spring shade roller, an extensible rod, a sleeve rigidly secured to the rod, a disk revoluble on the rod, a sleeve secured to the disk, a winding spring arranged between the two sheaves and connected at one end to the inner sleeve and at the outer end to the disk, and a pair of cylindrical telescopic sheaths extending over the sleeves, the rod and the spring and forming a winding surface for the shade.

3. In a spring shade roller, an extensible rod, a sleeve secured to one end of the rod, a disk revolubly mounted on the rod, an outer sleeve secured to the disk, a winding spring having one end secured to the inner sleeve and its opposite end to said disk, a pair of cylindrical telescopic sheath members fitting over the sleeves, the spring and the rod and forming a winding surface for the shade, means for locking the sheath members together for simultaneous rotative movement, and means for locking one of said sheath members to the outer sleeve.

4. In a spring shade roller, an extensible rod, a spring, a sleeve encircling the spring, an end disk carrying said sleeve and to which one end of the spring is secured, a ratchet wheel on the rod, ratchet dogs carried by the disk and engaging said wheel, a pair of tongues projecting from the sleeve, a pair of cylindrical sheath members extending over the rod and the spring and provided with interlocking ribs, a ring or flange carried by one of the sheath members and provided with notches or recesses for the reception of the tongues, and an inwardly extending annular flange carried by the other sheath member and supported by the rod.

5. In combination, a stationary rod, an outer sleeve revolubly mounted thereon, a second sleeve secured to the rod, a spring between the two sleeves, a sheath supported by the outer sleeve, end pins projecting from the rod, brackets arranged for the reception of said pins, and interengaging cams arranged between one of the brackets and the rod and tending to separate the same to thereby clamp the brackets in place.

6. In combination, a stationary rod, a pair of spaced sleeves, one secured to the rod and the other revoluble thereon, a spring between the sleeves, a sheath carried by the outer sleeve, end pins projecting from the rod, a pair of bracket members arranged for the reception of the pins, a cam journaled on one of the bracket members, and a second cam carried by the adjacent end of the rod and with which the journaled cam engages to thereby clamp the brackets in supporting position.

7. A window shade roller having a rod, a pair of brackets for the support of the ends of the rod, one of said brackets having an elongated sleeve, a cam sleeve mounted thereon, a cam carried by one end of the rod and engaging the cam sleeve, both cam members having end shoulders and each provided with a recess for the reception of the shoulder of the other, and an operating handle carried by the cam sleeve.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ALLISON H. FLEMING.

Witnesses:
E. HUME TALBERT,
JAS. M. WALKER.