

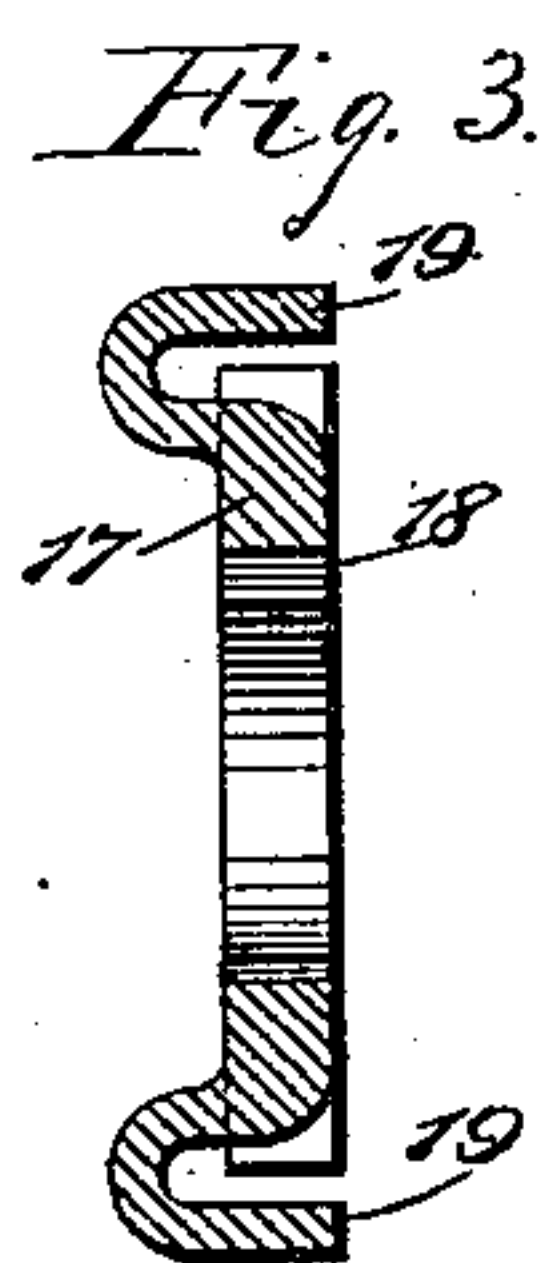
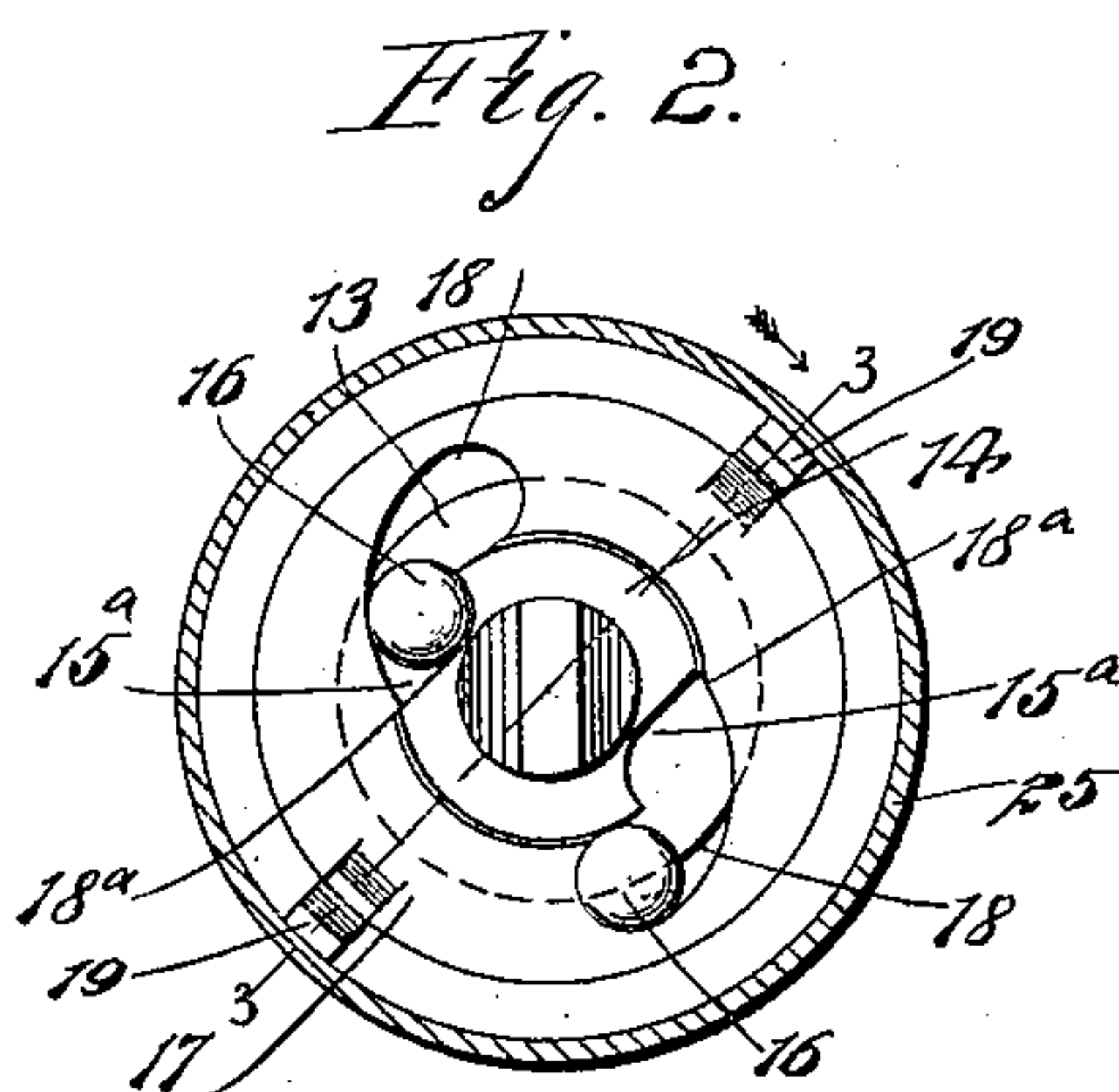
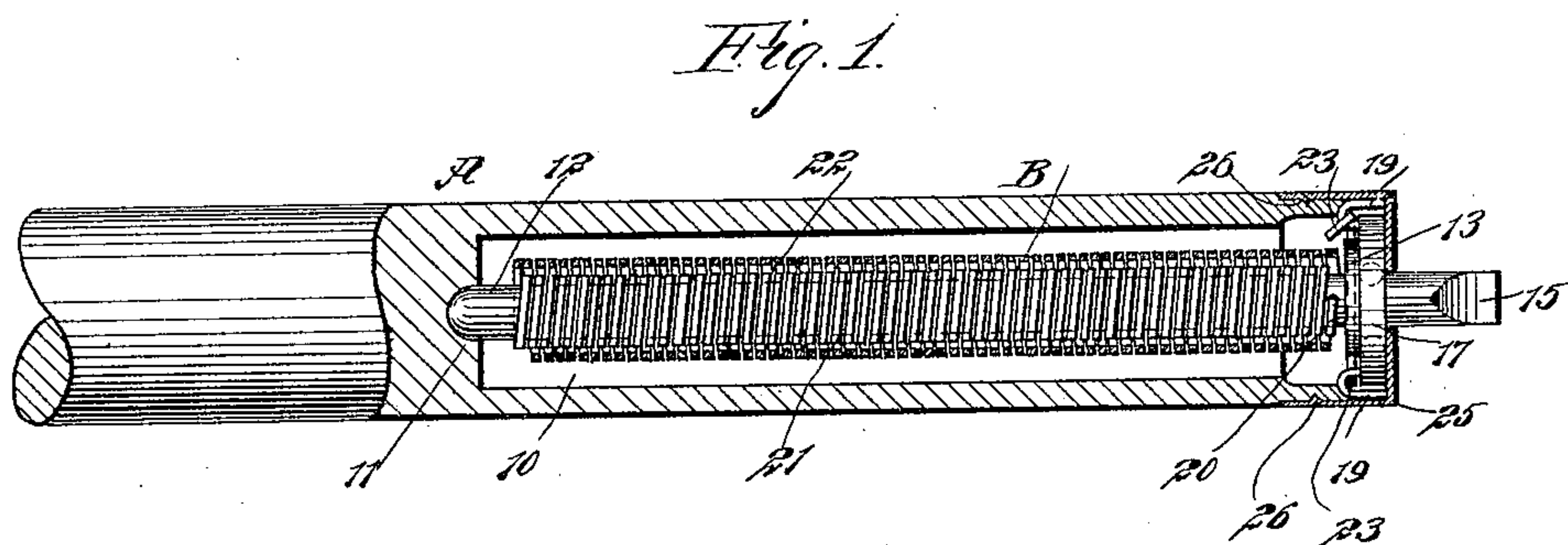
No. 659,584.

Patented Oct. 9, 1900.

E. C. CORDES.
SPRING SHADE ROLLER.

(Application filed May 29, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

EDWARD CHRISTIAN CORDES, OF CARTHAGE, OHIO.

SPRING SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 659,584, dated October 9, 1900.

Application filed May 29, 1899. Serial No. 718,689. (No model.)

To all whom it may concern:

Be it known that I, EDWARD CHRISTIAN CORDES, of Carthage, in the county of Hamilton and State of Ohio, have invented a new and Improved Spring Shade-Roller, of which the following is a full, clear, and exact description.

One object of my invention is to so construct the spring attachment for shade-rollers that simplicity, durability, and economy will be combined and whereby when the roller revolves wobbling will be prevented and the dogs ordinarily used may be dispensed with and simpler, quicker, and more positive acting checks be employed.

Another object of the invention is to so construct and attach the spring that it will be placed under tension by fewer revolutions of the roller than ordinarily, thereby deriving quicker action.

It is also an object of the invention to so construct the spring that it will cause the roller to run smoothly.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claim.

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.

Figure 1 is a longitudinal section through the spring end of a shade-roller, a portion of the spring attachment being likewise in section. Fig. 2 is an end view of that portion of the roller to which the spring attachment is applied, the ferrule or cap being in section; and Fig. 3 is a section through the disk that turns upon the spring-shaft, the section being on the line 3-3 of Fig. 2.

A represents a shade-roller which is provided at the end adapted to receive a spring attachment with the usual longitudinal chamber 10, and in the rear wall of the chamber a central recess 11 is provided adapted to receive the rounded inner end of a shaft 12, which shaft extends out beyond the end of the roller, and the said shaft is provided with a flange 13 near its outer end and a collar 14 close to said flange, the collar 14 being of less diameter than the flange, as illustrated in Fig. 2. The outer extremity 15 of the shaft

is flattened in order that it may enter a vertical slot in the bracket usually employed to receive the spring-shaft of spring-rollers. The collar 14 is provided with pockets 15^a, that are diametrically opposite, the pockets being produced in the peripheral portion of the said collar, as shown in Fig. 2. These pockets have one wall decidedly curved and the opposing wall more or less inclined, since the pockets 15^a are adapted to receive balls 16, and these balls 16 find a bearing against the decidedly-curved portions of the pockets and a ready exit at the inclined portions of said pockets, as is clearly shown in Fig. 2.

A disk 17 is mounted to turn loosely on the shaft 12, having bearing against the flange 13, and the said disk 17 is provided with a central opening that loosely receives the collar 14 on the said shaft. The disk 17 is provided with opposing recesses 18 at its inner margin, and these recesses are of greater length than the pockets 15^a in the collar 14, with which they are adapted to register. Each recess 18 is provided with a section adapted to receive the balls 16 when said balls are out of the pockets 15^a in the collar of the shaft. One wall of each recess 18 is adapted to register with the end of the inclined portion of a pocket 15^a in the collar 14, as is also shown in Fig. 2, and this wall, near where it joins the pocket, forms a shoulder 18^a. When a ball is in engagement with a shoulder 18^a in one of the recesses 18, it will be likewise in engagement with the curved portion of the corresponding or aligning pocket 15^a, as shown at the upper portion of Fig. 2, and in this manner this ball will hold the shaft against turning until the ball shall have been carried out from the said pocket 15^a of the collar 14.

It will be observed that the balls 16 are permanently in engagement with the collar 14 either at the cylindrical periphery or at the pockets 15^a thereof, so that the balls may quickly drop into and out of locking engagement.

Diametrically-outturned lugs 19 are formed upon the periphery of the disk 17, and said lugs extend below the inner face of the disk and beyond its edge, as shown in Fig. 3, for a purpose to be hereinafter described. The shaft 12, adjacent to the flange 13, is provided

with an opening that is adapted to receive one end 20 of a double coil-spring B. The end of this spring is first passed through the opening and then coiled around the shaft 12 to a point near its inner or rear end and then the wire is returned in another coil, and the terminal 23 of the wire forming the second coil is attached to the lugs 19, as shown in Fig. 1. Thus it will be observed that the spring comprises two concentric coils, an inner coil 21 and an outer coil 22, and that one coil is attached to the shaft at its outer end and the other coil to the disk 17, which turns on the shaft. Otherwise the coils are free of the shaft 12.

The disk 17 is held against turning by causing the projecting portions of the lugs 19 to enter recesses in the end of the chambered portion of the roller. All of the mechanism described is protected by a ferrule or cap 25, which is provided with an opening through which the outer end of the shaft 12 extends, and this cap or ferrule is held in engagement with the roller by clenches 26 or other approved means.

The roller when mounted in brackets in the usual manner, with the spring in its normal condition, rotates in a proper direction to wind up the spring. The spring when under tension is to be of sufficient strength to raise the shade when the working part of the roller is disengaged. The working part of the roller is so arranged that when it rotates at proper speed it will allow the balls to drop into the pockets 15^a, and thereby form a lock to hold the shade at any desired height. To disengage the ball from locking engagement with the wall of the pocket 15^a and a wall of a corresponding recess 18, the shade is pulled downward sufficiently to permit the ball to drop into the expanded or receiving portion of the recess 18, thus allowing the shade to rotate, and when the rotation is at proper speed the balls will pass over the pockets and the shade may turn as many times as desired. Whenever the shade is released, one of the balls will drop in locking engagement with the shaft 12 and with the disk 17.

It will be observed that the chamber 10 in

the shade-roller under the improved construction need not be as deep as customary and that the cavity 11 at the inner end of the chamber centers the shaft 12 and prevents wobbling of the roller when revolving. Furthermore, the shaft is in one piece, rendering it substantial, and there is no necessity of coupling with wood, as is usual with the majority of shade-rollers. Furthermore, the disk 17 and its receptacles or recesses 18 for the balls 16 obviate the necessity of riveting dogs to the disks, as is customary with the ordinary form of spring attachment to shade-rollers. The balls employed for locking the roller effect a perfect lock and are quicker in action than any form of dog that may be employed, the locking of the roller occurring at every half-revolution when desired. The spring B, constructed as described, can be placed under tension by a very few revolutions of the roller, thereby securing quicker action, and by reason of the spring being in two coils the roller runs very smoothly and the tension of the improved spring when taken off is much more gradual than when a single spring is used.

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

In a shade-roller attachment, the combination of the shaft, the collar secured thereon and provided with pockets at its periphery, the flange secured to the shaft laterally of the collar and projecting outwardly beyond the same, the disk mounted to turn upon the shaft and having a spring connection therewith, said disk surrounding the collar and being provided upon its inner side with recesses adapted to register with said pockets, the walls of said recesses curving inward from a point of greatest depth, and balls of a diameter substantially equal to said greatest depth, movably located in the said pockets and recesses and in guiding engagement with said flange, for the purpose set forth.

EDWARD CHRISTIAN CORDES.

Witnesses:

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