

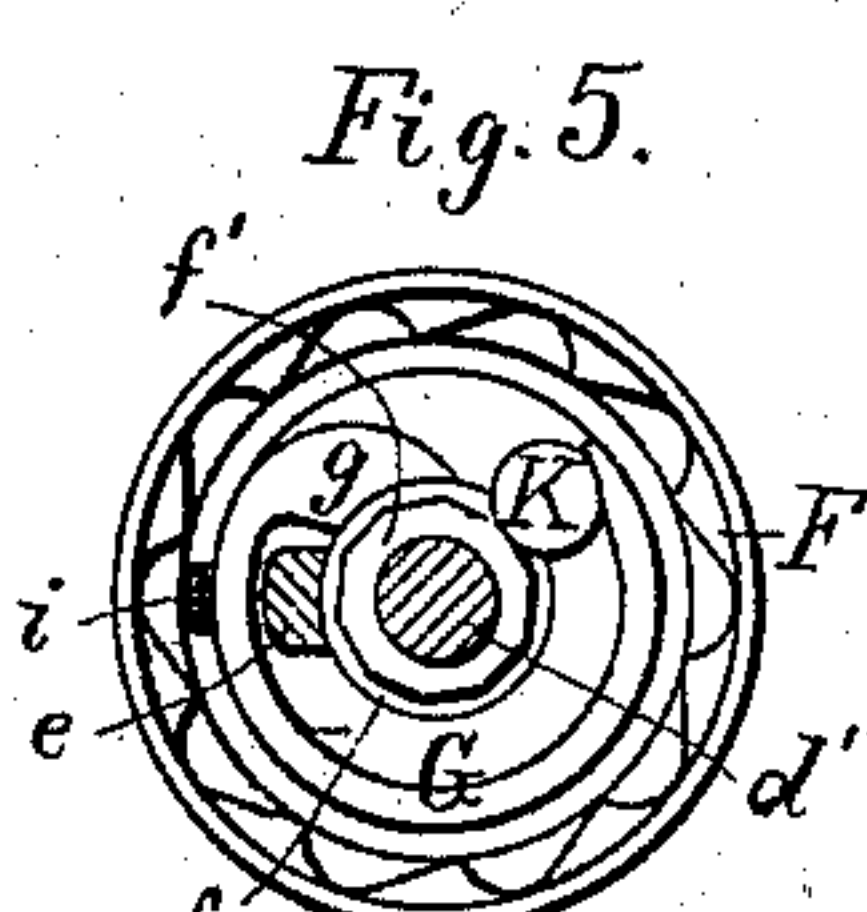
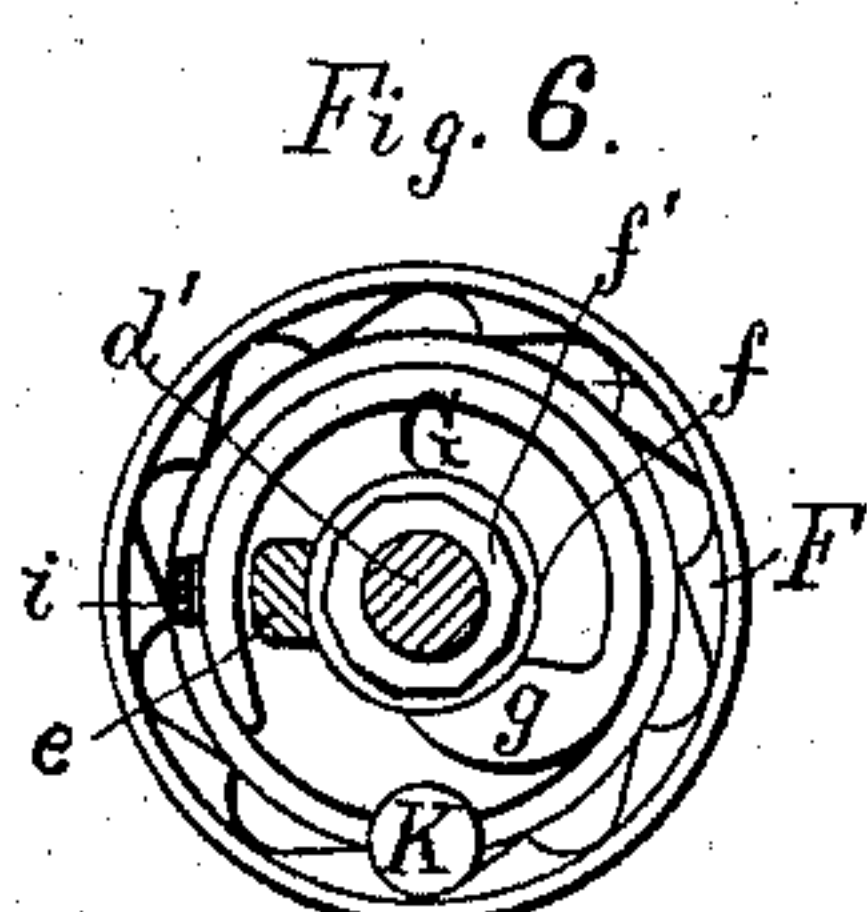
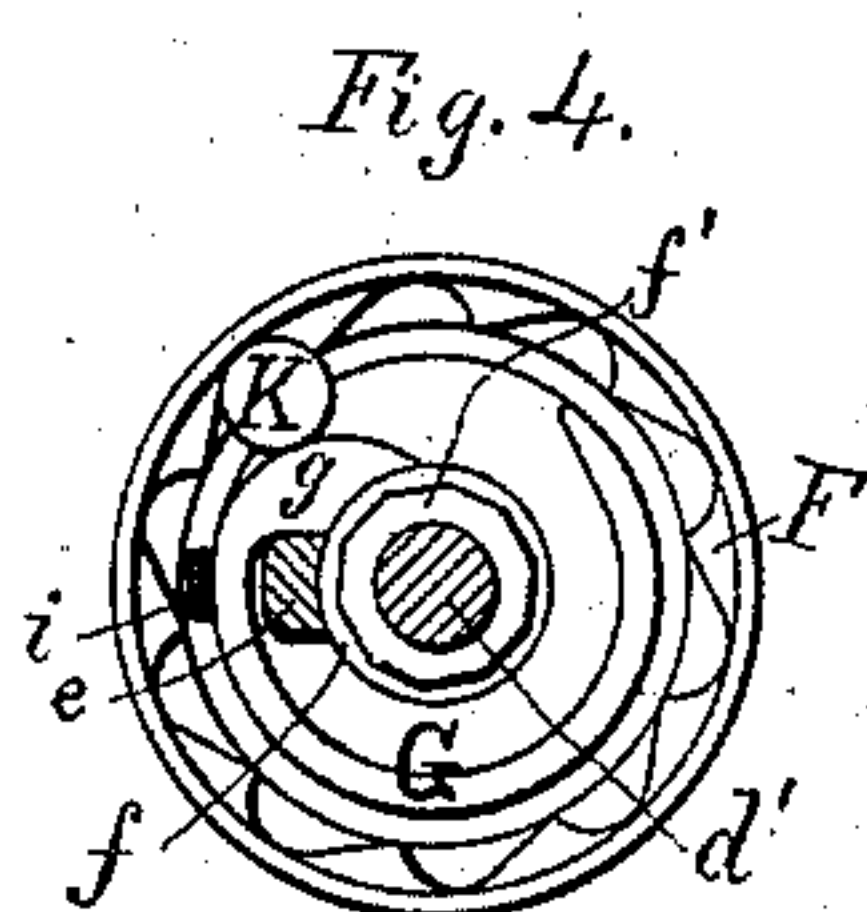
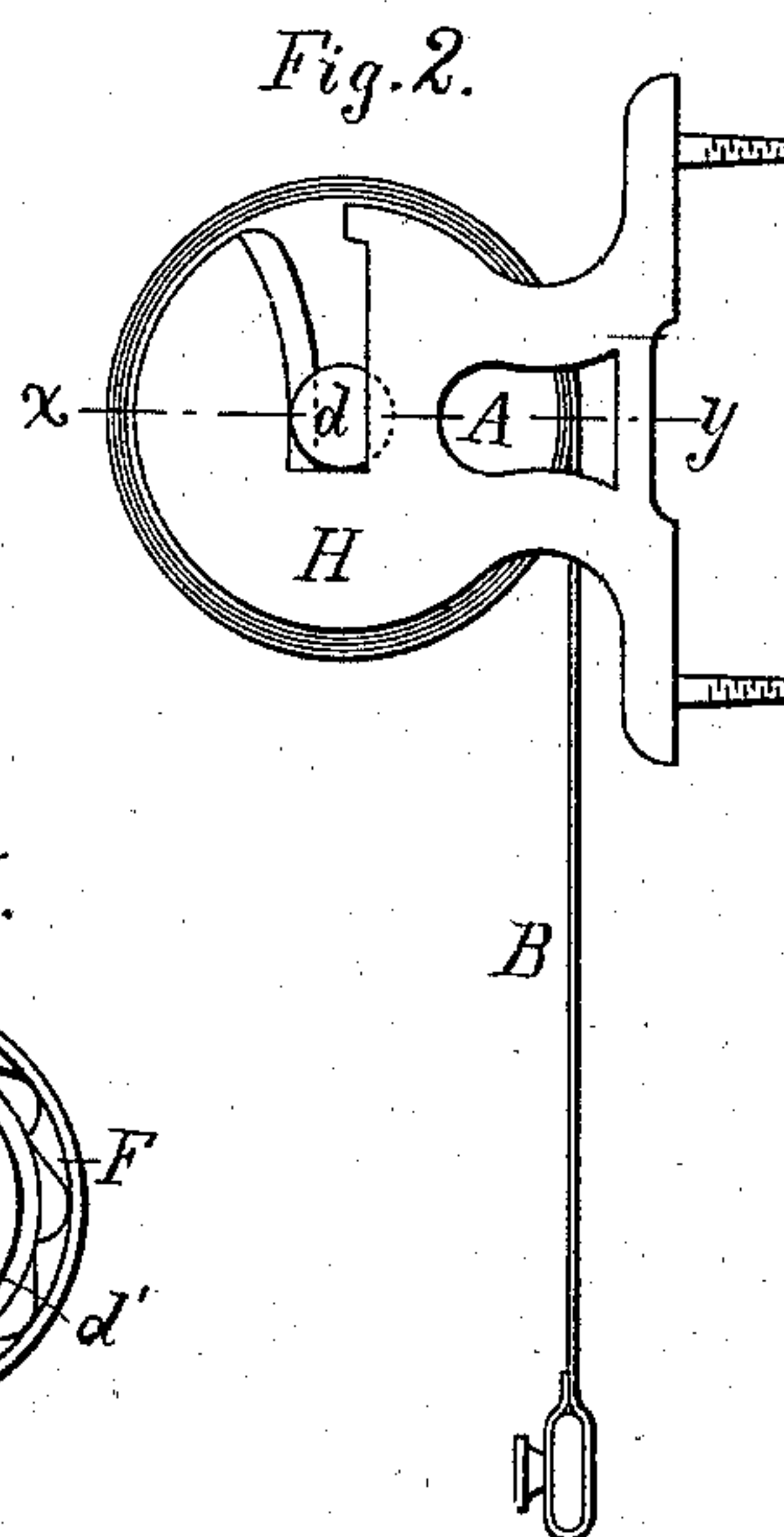
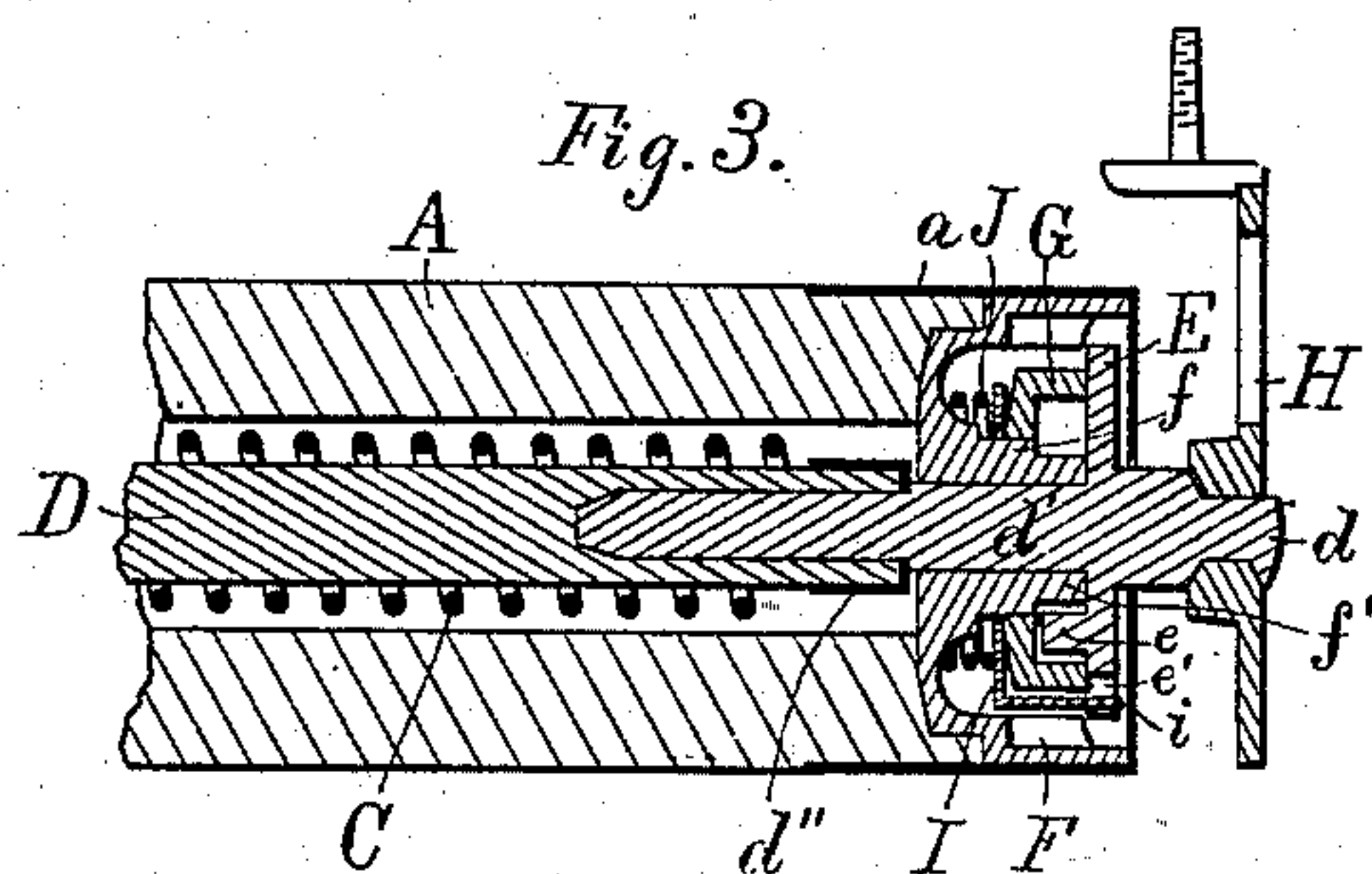
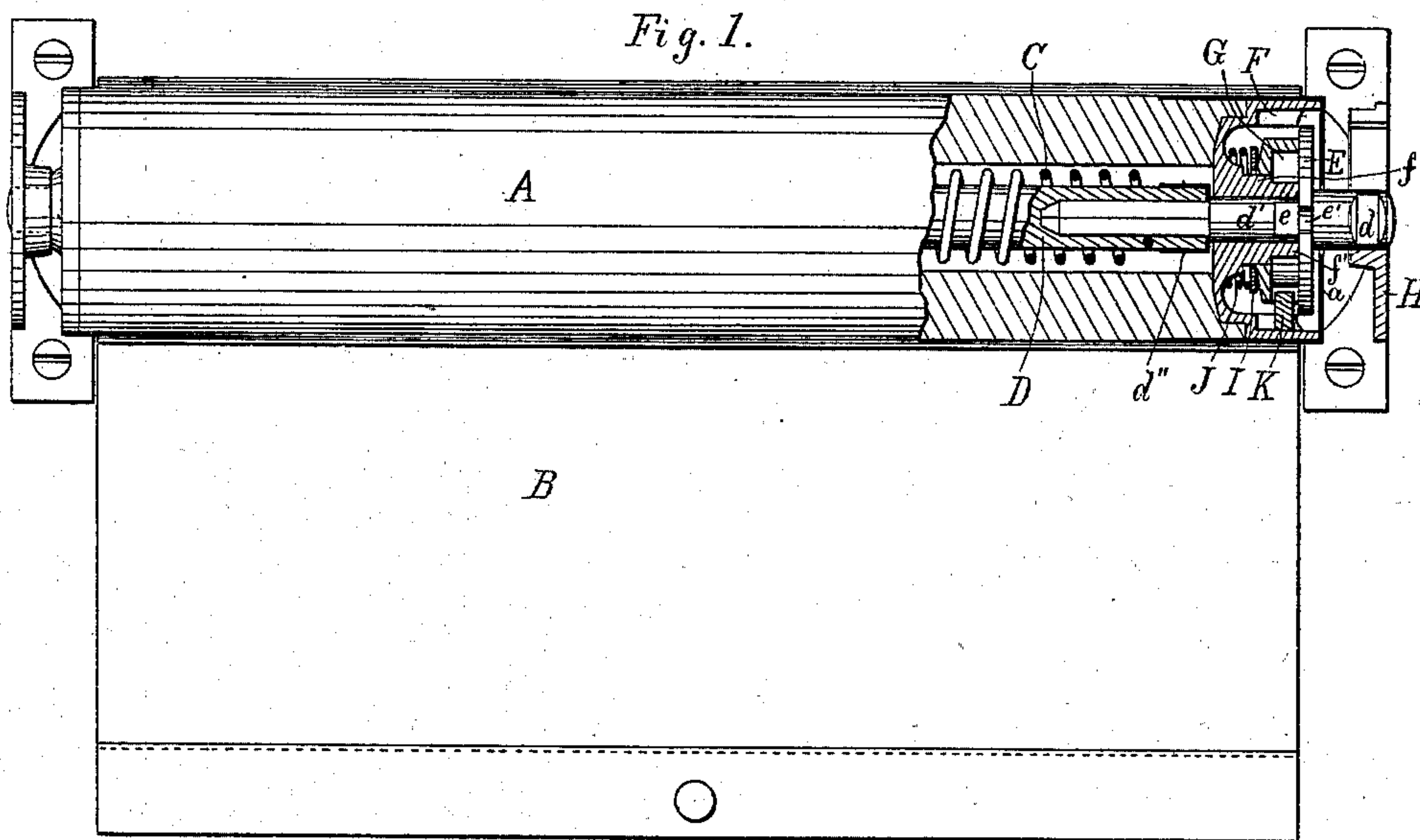
(No Model.)

G. T. BETTENCURT.

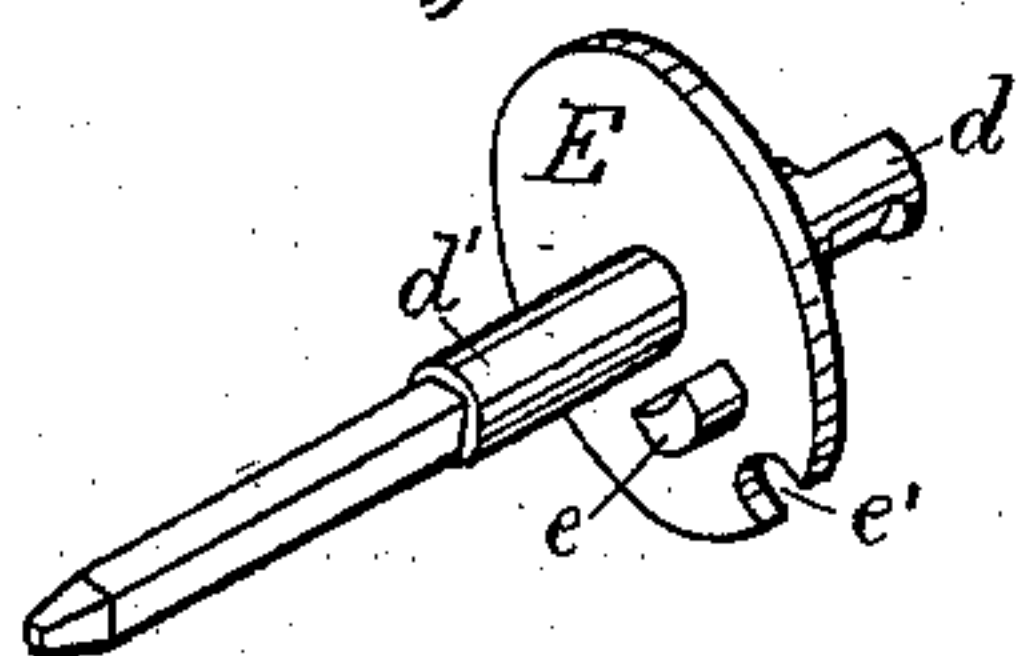
SPRING CURTAIN ROLLER.

No. 255,571.

Patented Mar. 28, 1882.



*Fig. 7.*



Witnesses:

Frederic Wright  
J. W. Loggins

Inventor:

George T. Bettencourt



# UNITED STATES PATENT OFFICE.

GEORGE T. BETTENCURT, OF PROVIDENCE, RHODE ISLAND.

## SPRING CURTAIN-ROLLER.

SPECIFICATION forming part of Letters Patent No. 255,571, dated March 28, 1882.

Application filed January 20, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE T. BETTENCURT, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Spring Curtain-Rollers; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

My invention relates to shade rollers of that class which are provided with a spiral spring for automatically winding up the shade and a pawl and ratchet or locking device so applied to the roller that the locking device will hold the roller against turning under the action of the spring, but allow the roller to be turned against the action of the spring. Upon drawing the shade down the operation is the same as the old and well-known coach-fixture, in which the ratchet lifts or disengages the pawl or lock, and upon releasing the shade the pawl or lock automatically engages the ratchet and forms a positive lock without any possibility of the rapid flying or winding up of the shade.

My invention has for its object to provide a device to release the pawl or lock from engagement with the ratchet when it is desired to raise the shade and to release it without varying the speed of the revolution of the roller, also without the aid of any side cord, as is used on the aforesaid coach-fixture, and yet release it in a similar manner—that is, so the shade can be raised to any height at any desired rate of speed, fast or slow, without the engagement of the locking device taking place; and my improvements consist in the peculiar construction and combination of parts making up such device, as hereinafter described and claimed.

On the accompanying drawings, Figure 1 is a sectional front view. Fig. 2 is an end view. Fig. 3 is a section on the line *x* and *y* in Fig. 2. Figs. 4, 5, and 6 are sectional end views, showing different positions of the oscillating annular scrolled band-disk and the locking-roll, and also shows the position the stop *e* on the inside of the spindle-disk *E* would be in when the several parts are secured in working order to the end of the roller. Fig. 7 represents the spindle *d'* in perspective.

Referring to the accompanying drawings,

*A* designates a roller; *a*, its metallic cap; *B*, the shade; *C*, the spring, and *D* the shaft or spindle. Said shaft has an angular end, *d*, with a lip on one side of the same, by which it is fitted right side up in the bracket *H*, so that the roller *A* will revolve around it under the influence of the spring *C*, the ends of the latter being secured, one end to the roller and the other to the shaft. Said shaft is preferably made in two sections, *D* and *d'*, the section *D* being of wood, having a socket in its outer end, in which the squared inner end of the section *d'* fits, said socket being protected by a metallic cap, *d''*.

The construction thus far described is common to spring shade-rollers, and forms no part of my present invention. The section *d'* is of metal, and is formed with a disk, *E*. Said disk has on its inner face a projection or stop, *e*, and has also a pocket, *e'*, extending from the stop *e* outward.

The stop *e* and pocket *e'* are located on the same side of the spindle as the lip on the angular end *d*. *F* is an internal annular ratchet, secured to and moving with the roller *A* inside its metallic cap *a*. Said ratchet has an inner projecting hub, *f*, formed round, with the exception of the outer end, *f'*, which is flat-sided or polygonal-shaped.

*G* is a peculiar-formed annular scrolled band or ring-disk, having a hole through its center of the proper size to oscillate freely on the round hub *f*, and is made so as to form a stop or projection, *g*, extending from its central hole to its outer edge, and when in position on the hub *f* the face of the annular scrolled band is flush with the end of the hub *f'*, and both come up to and in contact with the inner face of the spindle-disk *E*, the projection or stop *e* on spindle-disk *E* entering the cavity between the polygonal hub *f'* and annular scrolled band *G*.

*I* is a washer, formed with an extended portion on one side, said extended part being bent at right angle to the main body of the washer and sufficiently far from the center of the same to admit the scrolled disk *G* to freely oscillate inside of it.

*J* is a short spiral spring surrounding the hub *f* and bearing against the under face of the annular ratchet *F* and the washer *I*, thereby creating friction between the washer *I* and



scrolled disk G and inner face of spindle-disk E. The extended and offset portion *i* of the washer I stands outward, and its end enters the pocket *e'* in the spindle-disk E, as shown in Fig. 3, thus securely preventing its turning by the frictional contact of the spring J when the roller A is revolved.

K is the locking roller or ball.

The operation is substantially as follows:

10 The parts described occupying the relative position shown in Fig. 4, the shade-roller will be locked. As shown, the locking-roller K engages with the annular ratchet F on one side and the annular scrolled disk G on the other, said disk G being swung around on the hub *f* until the projection *g* on the former engages with the projection or stop *e* on the spindle-disk E, thus forming a lock. To unlock the shade-roller and allow the shade to ascend, the shade is drawn down sufficiently to release the roller K, when it drops by its own gravity into the position shown in Fig. 5. The shade may now be allowed to ascend at any speed desired, as the locking-roller K is prevented from engagement with the annular ratchet F by the surrounding annular flange on the scrolled disk G. To lock the shade-roller upon or after the ascent of the shade, the latter is drawn down three inches or more. As the shade starts to descend one of the sides on the polygonal hub *f'* wedges the locking-roller K against the annular flanged disk G, overcoming the friction of the stationary washer I, which is pressed against the disk G by the spring J, and causing it to revolve around on the hub *f* until the projection or spindle-stop *e* comes in contact with the locking-roller K, thereby tripping or throwing it out of engagement with the hub *f'* and flanged disk G, when it drops by gravitation into the position shown in Fig. 6. When the shade is simply let go the spring C within the shade-roller instantly reverses the motion of the latter and causes the annular ratchet F to carry the locking-roller K by its centrifugal force against the cammed projection *g* on the annular scrolled disk G, and causing it to revolve around on the hub *f* into the position shown in Fig. 4, thus forming a lock, as previously described.

50 The advantage of this peculiar locking device and manner of engaging and disengaging the same is, first, on drawing down the shade, dispensing with the necessity of any manipulation, such as varying the speed of the revolution of the shade-roller or otherwise manipulating the same to effect its locking; and, second, the shade-roller is unlocked by the usual short downward pull of the shade, but yet may be allowed to ascend at any speed desired without any engagement of the locking device taking place.

65 I am aware that the United States patent granted March 21, 1876, and numbered 174,910, contains therein a band or ring, or, as therein termed, an "annular flange with one or more radial openings," through which the pawl or locking-roll gravitates and engages with an

outer ratchet or plate with cammed locking-recesses; also, that the said revolving annular flange or band is arranged for the purpose of lifting the pawl or locking-roll out of the said engagement by passing under and between the pawl or locking-roll and the outer ratchet or plate with cammed locking-recesses, and therefore I do not claim broadly the application to a spring shade-roller of a band, ring, or annular flange with radial openings for causing the engagement or disengagement of the locking device.

Having thus described my invention, what I claim is—

1. In a spring shade-roller, the fixed spindle-disk E, provided with the stop *e* and pocket *e'*, the annular scrolled band G, stationary friction-washer I, spring J, locking-roll K, and the polygonal hubbed annular ratchet F, all combined and operating substantially as described.
2. In combination with a spring shade-roller, an oscillating scrolled disk, G, frictionally associated with the roller and having a limited motion therewith, a ratchet, and locking roll or ball K, all arranged to operate substantially as described and set forth.
3. In a spring shade-roller having a locking roll or ball and an internal ratchet, the combination therewith of an oscillating annular scrolled disk, operating substantially as described, to prevent engagement between said locking-roll and ratchet when the shade is ascending at any speed, as set forth.
4. In combination with a shade-roller provided with a spiral spring for rolling up the shade, a locking-roll, an annular internal ratchet, and an annular scrolled disk adapted to change its position with relation to the spindle and ratchet, all so arranged that in one operation the roll will engage with the ratchet on drawing down and releasing the shade and in another operation the roll will not so engage the ratchet when the shade is ascending at any speed, substantially as described.
5. In combination with a shade-roller provided with a spiral spring for winding up the shade, a ratchet, a locking-roll, and an oscillating scrolled disk hung upon the circular portion of the polygonal hubbed annular ratchet, which is secured to the shade-roller and moves therewith, said parts being arranged substantially as described, so that in one operation the locking-roll, on the descent of the shade at any speed, will automatically assume such position that it will engage with the ratchet and lock the shade-roller, on letting go of the shade, without any manipulation, and in another operation, when the shade is caused to ascend at any speed, will not engage with said ratchet, as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEORGE T. BETTENCURT.

Witnesses:

FREDERIC WRIGHT,  
J. W. LOGNEN.