

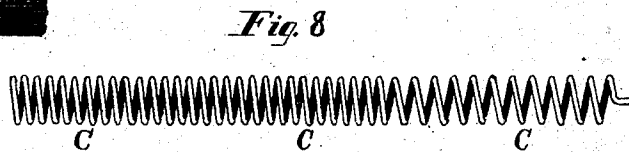
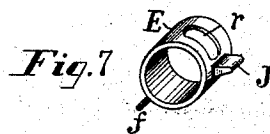
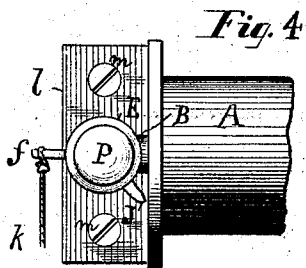
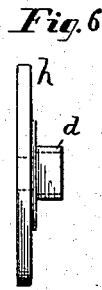
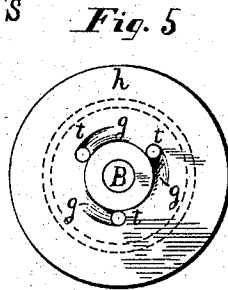
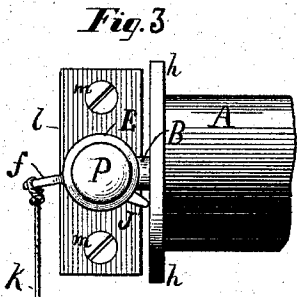
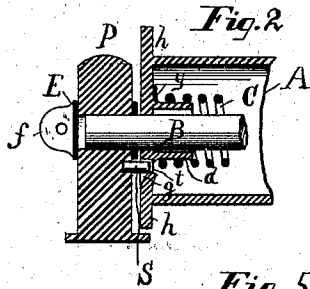
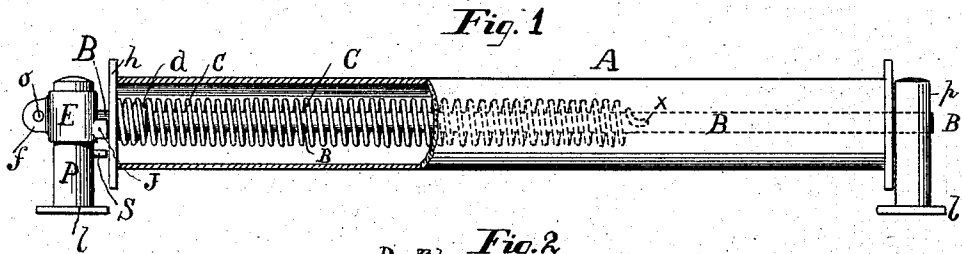
(No Model.)

E. R. CAREY.

SPRING ROLLER CURTAIN FIXTURE.

No. 322,347.

Patented July 14, 1885.



WITNESSES:

John W. Art.  
John Nolan.

INVENTOR

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# UNITED STATES PATENT OFFICE.

ELIAS RIGGS CAREY, OF PHILADELPHIA, PENNSYLVANIA.

## SPRING-ROLLER CURTAIN-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 322,347, dated July 14, 1885

Application filed August 19, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ELIAS R. CAREY, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Spring-Roller Curtain-Fixtures, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

10 Figure 1 is an elevation with a part of the barrel or roller broken away, the same being pressed back endwise from its most usual position in order to show clearly the engaging stud, hereinafter referred to. Fig. 2 is a central section through the post and roller, the latter being in its usual position with the stud in engagement. Fig. 3 is an elevation of the invention as secured in position to the window-frame, the roller being pressed back, as in Fig. 20 1. Fig. 4 is a similar view with the parts in normal position or at rest, as in Fig. 2. Fig. 5 is an end view of the barrel-head detached. Fig. 6 is a side or edge view of the same. Fig. 7 is a perspective view of the shifting sleeve detached, and Fig. 8 represents the actuating-spring detached.

My invention relates to improvements in the well-known class of curtain-fixtures in which the spring-roller to which the curtain is secured is wound up by the act of drawing down the latter, and is held at and released from certain adjustments by means of a catch or ratchet device.

Its object is to provide a more durable and convenient device than any other known to me for a like purpose; and it consists in mounting the roller upon a central rod, whose ends project beyond the ends of the roller into sockets or bearings in the supporting-posts, in combination with a spiral winding spring or springs arranged so as to force the roller endwise on said rod, the face of the end of the roller being provided with ratchet teeth or holes with which a stud upon the post engages, the disengagement of the ratchet from the stud being effected by means of an arm or pawl adapted to be forced against the end of the roller, and thereby press the latter endwise sufficiently to free the ratchet-teeth from the said stud. The friction of the pawl against the roller, which may be regulated at will,

controls the speed of rotation of the latter, whereby the height to which the curtain is raised may be readily regulated as desired, as hereinafter particularly described.

Referring to the annexed drawings, A is the barrel or roller, which is adapted to turn freely upon a central rod, B. C is a spiral spring, of any suitable length, through which rod B also passes. One end is secured to the rod at *x*, Fig. 1, and the other or forward end is fastened to the head *h* of the roller at *y*, Fig. 2. One means which I have used for securing the spring to the barrel is to solder its end on the inside of the head *h*. As the heat in soldering takes the temper out of the adjacent coils it advantageous to support the several coils liable to be so affected by means of an inwardly-projecting flange, *d*, cast upon the head of the roller, as seen in Figs. 1, 2, and 6. The spring or a portion of it is wound open—that is, with the coils not in contact. These are closed up to the desired extent when the spring is secured to the roller-head, as described, whereby, while at the same time serving to rotate the roller when wound up, it performs the function of continually forcing the roller endwise toward the post P, which is provided with the stud *s*, as hereinafter described. I sometimes substitute for this double-acting spring two separate springs, one giving the winding or torsional movement and the other arranged to press the barrel endwise; but I prefer the construction shown as being simpler and cheaper.

The face of the roller-head *h* is provided with any suitable number—three in the present instance—of ratchet teeth or holes *t*, the spaces between which are usually provided with inclined grooves or channels *g*, deepening gradually toward the edges of said holes, as seen in Figs. 2 and 5. From the side of the contiguous post P, which, as also the post *p* at the opposite end, is secured to the window-frame by means of screws *m* passing through the base-plate *l*, projects a stud, *s*, in a position to engage with the aforesaid teeth or holes *t* on the end of the roller. The inclined grooves operate as cams to force the roller endwise against the stress of the spring when the latter is being wound up—that is to say, when the

curtain is pulled down. Thus the roller is free to turn in the one direction, but obviously is prevented by the stud entering one of the holes from rotating in the opposite direction. Without these cam-grooves it would be necessary to shift the barrel endwise in order to cause the disengagement of the stud from the holes.

It is not essential that the stops *t* shall extend entirely through the barrel-head; but the latter is preferable, for the reason that when the edges of the holes become worn or beveled off from the frequent striking of the stud *s* they may be readily squared up by means of a rat-tail file.

In order to disengage the parts so that the torsion of the spring is permitted to turn the barrel, and thereby retain the curtain, I provide the releasing device shown in the drawings. This consists of a sleeve, *E*, freely rotatable within certain limits upon the post *P*, having a projection, *f*, with an eye, *o*, for the ready attachment of a cord, *k*, Figs. 3 and 4, which hangs within convenient reach. It (the said sleeve) is also provided with a short arm, *J*, projecting against or close to the face of the roller-head.

When it is desired to raise the curtain, the cord *k* is pulled downward, which causes the sleeve to rotate, and the projection *J*, impinging against the end of the roller, forces back the latter endwise, as in Figs. 1 and 3. This effects the disengagement of the stud *s* and the roller is free to turn through the action of the spiral spring *C*. Upon releasing the pull upon the cord the spring returns the roller to its normal position, and stud *s*, entering one of the holes *t*, as in Fig. 2, arrests the rotation of the roller. From the friction of the end of the arm *J* against the face of the roller-head (which friction may be increased or diminished at pleasure by pulling with greater or less force upon the cord) the operator is thereby enabled to control the extent of the rise of the

curtain and stop the same at the desired point and without the objectionable clicking noise incidental to ordinary pawl-and-ratchet spring-rollers.

In the preferred construction the sleeve *E* has a circumferential slot, *r*, Fig. 7, through which the rod *B* is passed, and is firmly secured to the post *P*. The other end of the rod is not, or need not be, firmly fastened to the post *p*, but is simply supported by the latter. The sides of the slot *r*, striking against the rod, limit the movement of the sleeve, so as to also retain the arm *J* in suitable position with relation to the roller-head.

Having thus described my invention, so that those skilled in the art to which it appertains will understand the construction and operation of the same, I claim as new and wish to secure by Letters Patent—

1. The combination of the roller or barrel provided with inclined recesses, the rod upon which the same is mounted, the longitudinal and rotary actuating-spring, the teeth or holes on the end of the roller, the engaging stud, the mounted lever adapted to bear against the face of the roller-head, and a cord attached to the other end of said lever, together with the end supporting-posts, all constructed and adapted to operate substantially in the manner and for the purposes set forth.

2. The combination of the rotatable barrel, the fixed rod *B*, posts *P* *p*, spring *C*, recesses *t*, cams *g*, stud *s* on one of the posts *p*, and the rotatable slotted sleeve provided with the arms *J* and *f*, all constructed and adapted to operate substantially as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature this 16th day of August, A. D. 1884.

ELIAS RIGGS CAREY.

Witnesses:

JOHN NOLAN,  
JAMES S. PHILLIPS.