(No Model.)

J. M. OSGOOD.

SPRING CURTAIN ROLLER.

No. 260,044. Patented June 27, 1882.

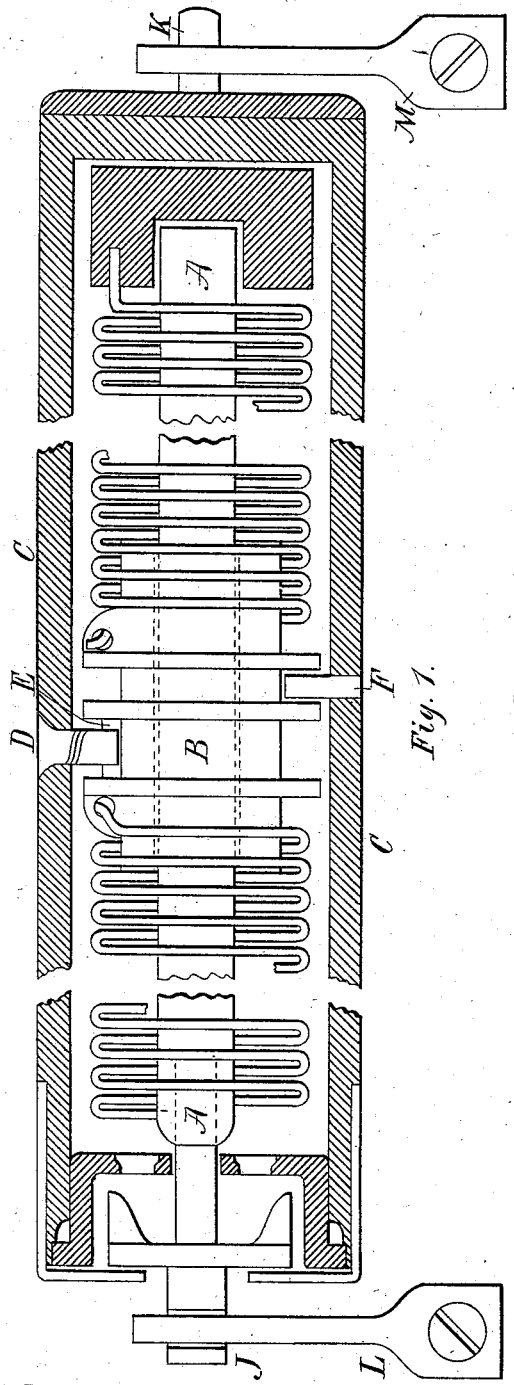

Fig. 1.

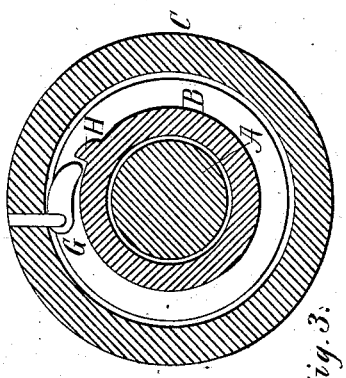

Fig. 3.

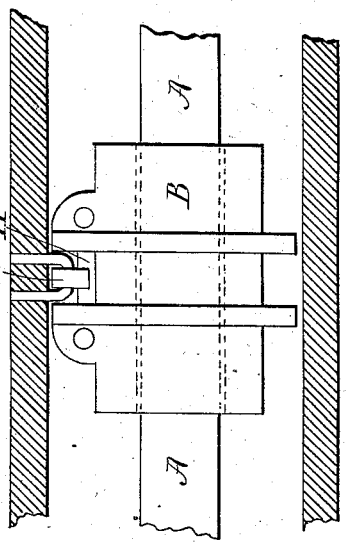

Fig. 4.

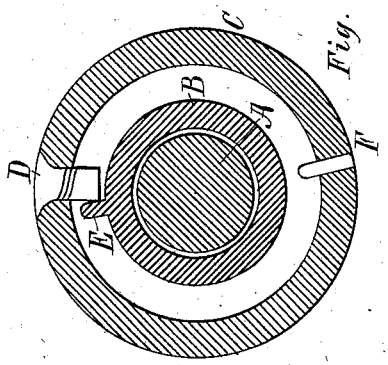

Fig. 2.

Witnesses.
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JAMES M. OSGOOD, OF SOMERVILLE, MASSACHUSETTS.

SPRING CURTAIN-ROLLER.

SPECIFICATION forming part of Letters Patent No. 260,044, dated June 27, 1882.

Application filed August 8, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. OSGOOD, a citizen of the United States, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Spring-Balance Curtain-Rollers, of which the following is a specification.

My invention relates to an improvement in spring-balance curtain-rollers in which a coupling or center ring is used in or near the middle of the spring; and the objects of my improvements are, first, to provide a balance-roller that will operate a light and heavy shade without destroying the force of the spring by the use of friction; second, to facilitate the adjustment of two springs, or the use of one spring with center ring or coupling. I attain these objects by the mechanism illustrated in the accompanying drawings.

Figure I is a section of roller, showing springs with center ring or coupling connection, also brackets holding roller into position. Fig. II is a transverse section, showing roller, coupling, and spindle, also projection E, screw D, and pin F. Fig. III is a transverse section, showing a pawl and catch by which the coupling may be prevented from turning while winding the spring. Fig. IV is a longitudinal section, showing a pawl and coupling, with spindle passing through the coupling.

Similar letters refer to similar parts throughout the several views.

In Fig. I, A is the spindle, passing through the coiled spring and coupling and connecting with step at the end of the bore in the roller. B is the coupling or center ring, to which is attached one end of each spring. The drawing shows two springs. The inner end of the first spring is attached to a step in the ordinary manner, the outer end to the coupling or center ring. The second spring is also attached at one end to the coupling, and the other end to the spindle, which makes a continuous spring with a ring-center, as shown in the drawings. C is the roller, showing the spring and coupling as placed in position within the roller. D is a screw put in from the outside of the roller, to prevent the coupling from turning when but one spring is in operation. E is a projection upon the coupling to engage with screw D, as shown in Fig. II. F is a pin inserted from the outside of the roller, the object of which is to pass between two flanges of coupling B to prevent a lateral movement of the coupling when the roller is in motion. J and K are metallic tips of the spindle. L and M are the brackets which hold the roller.

Fig. II is a transverse section, showing the position of screw D when sufficiently lowered in the roller to connect with projection E of the coupling B. F is the pin passing through roller C between the flanges of coupling B, as shown in Fig. I.

Fig. III is a transverse section, showing pawl G and catch H, which may be used to prevent the coupling from turning instead of screw D and projection E, as shown in Fig. II, if desired.

Fig. IV is a longitudinal view of roller, pawl G, and catch H, showing coupling B and spindle A passing through it.

The operation of the invention is as follows:

First. When the spring-roller is completed, as herein described, and shown in the drawings, with the coupling or ring center connected with the springs, so that the springs and coupling will revolve freely upon the spindle, a light shade is attached to the roller, which is now placed in the bracket, as shown in the drawings, Fig. I, the spring having been wound to give it sufficient force to balance the shade at the start. The downward movement of the shade increases the force of the spring in proportion to the weight of the curtain. In the turning of the roller the coupling gives a uniform force to both springs, so that the power of the springs is not greater than the opposing weight of the shade.

Second. In the use of a heavy or opaque shade but one spring is necessary. The coupling or center ring is prevented from revolving with the outer spring by means of screw D or pawl G, leaving the inner spring inoperative, as shown in drawings, Figs. II and III. The outer spring, being short, winds rapidly in the rotation of the roller, which increases its force, so that the power of the spring is in proportion to the weight of the heavy or opaque shade. Thus it will be seen that by the use of this invention one or two springs can be used on the same spindle. Two springs with coupling-center make but one continuous spring, which winds slowly in the revolving of the roller and

balances a light shade. A short spring, which is made by confining the coupling to the roller, winds rapidly in the turning of the roller, which increases its force sufficiently to operate a heavy shade, so that either a light or heavy shade can be used upon the same roller and balanced at all points of the window without the use of friction.

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

1. The method of adjusting the spring-power of a balance shade-roller to the weight of the shade, which consists in modifying the increase of tension of the primary spring as it is wound by the coupling therewith, at will, of one or more additional springs, as set forth.

2. In a spring-balance roller, the combination, with the springs, of a coupling or center ring with flanges and notch or projection, and a detent upon the roller, in such a manner that the inner spring upon the spindle becomes inoperative in the movement of the heavy or opaque shade, substantially as set forth and described.

3. In combination with the spindle and roller, a coupling or center ring having flanges and notch, and a pin inserted from the outside of the roller, for holding the coupling and preventing an endwise movement of the spring in the roller, substantially as described.

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Witnesses:
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