

E. B. LAKE.
CURTAIN-FIXTURES.

No. 185,550.

Patented Dec. 19, 1876.

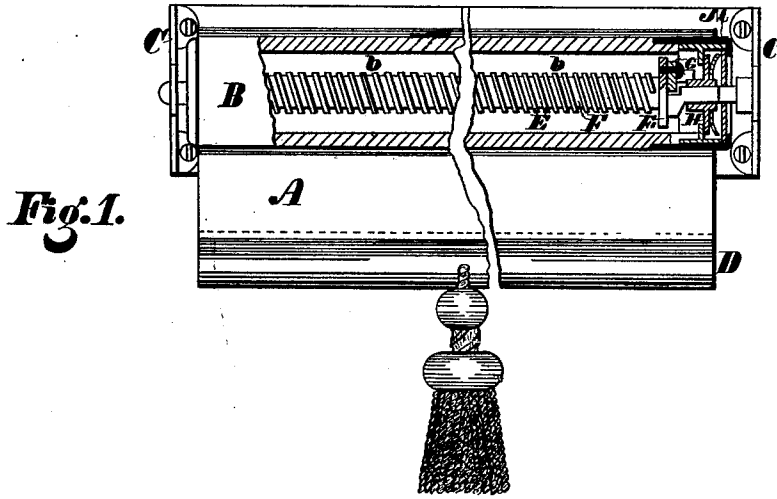
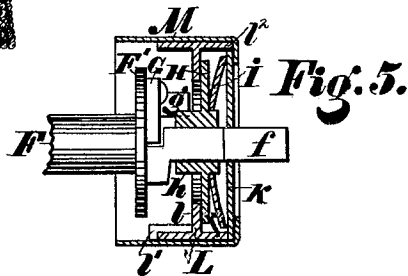
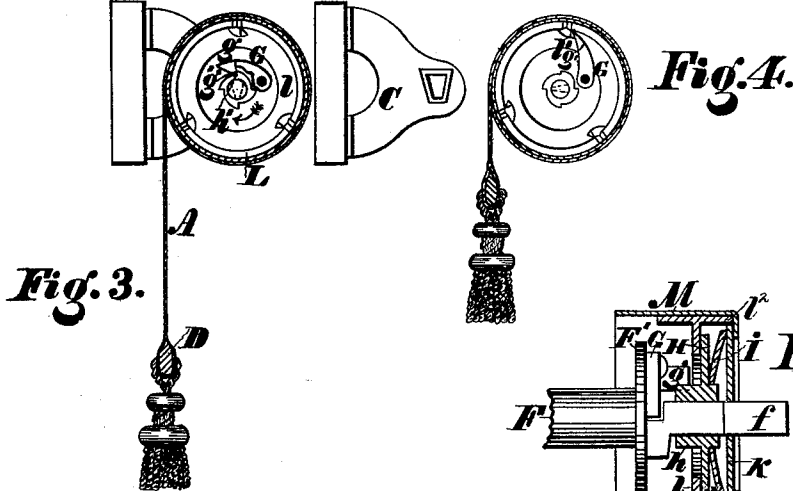
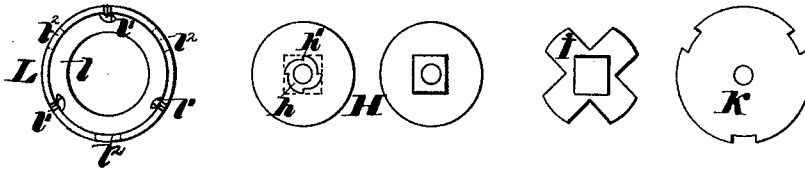


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

EZRA B. LAKE, OF BRICKSBURG, NEW JERSEY, ASSIGNOR TO SALEM SHADE ROLLER MANUFACTURING COMPANY, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN CURTAIN-FIXTURES.

Specification forming part of Letters Patent No. **185,550**, dated December 19, 1876; application filed October 27, 1875.

To all whom it may concern:

Be it known that I, EZRA B. LAKE, of Bricksburg, in the county of Ocean and State of New Jersey, have invented certain new and useful Improvements in Curtain-Fixtures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a longitudinal vertical section; Fig. 2, detail view. Figs. 3 and 4 are transverse vertical sections. Fig. 5 is an enlarged view of the devices which constitute my invention.

The principal object of my invention is to provide a balance-spring roller, which locks against frictional resistance, with means for locking the spring, to prevent its unwinding when the roller is removed from the brackets. A further object of my invention is to provide an arrangement of frictional devices for upholding the weight in a balance-spring roller, so that the spring will only be required to wind up the shade when the incubus of the weight is removed.

My invention accordingly consists, first, in the combination, with a balance-shade which locks against frictional resistance, means for locking the spring when removed from the bracket; secondly, in the special construction and arrangement of devices for effecting this result; thirdly, in the novel construction and combination of parts, as hereinafter more fully set forth.

Referring to the accompanying drawing, A shows a curtain hung upon a roller, B, sustained in brackets C C, and provided with a weight, D. The end of the roller B is recessed to form a socket, *b*, for the reception of a spiral spring, E, and shaft F, the latter having a collar, F', to which is pivoted a pawl, G. H represents a disk, which fits loosely on the shaft F, having a ratchet-barrel, *h*, which slides under the laterally-projecting tail-piece *g* of the pawl G. When the disk H is revolved in the direction indicated by the arrow,

it meets with no impediment from the pawl, but lifts the latter four times for each revolution, or once for each shoulder on the barrel *h*; but when the disk H begins to move in the opposite direction, it is at once arrested by the impingement of the inner shoulder *g'* of the pawl G against one of the shoulders or teeth of the ratchet-barrel *h*. I represents a concave spring-washer located on the shaft F, and between the disk H and another washer, K, which forms a cap or head for a ring or band, L. The band L has a central annular projection or flange, *l*, through a central opening in which the barrel *h* projects, the disk H resting flush against such flange. The band L is formed with projections *l'*, which enter the roller B, and with lugs *l''*, which fit in corresponding notches in the head K. M represents a tap or shield fitting over the band L and end of the roller B, holding the various parts in their proper position and relation. The ends of the spiral spring E are attached, respectively, to the roller B and collar F'. The shaft F is formed with an angular end, *f*, fitting in a corresponding opening in the bracket C, so as to prevent the rotation of said shaft in its bearings.

The operation and functions of the parts are as follows: Before placing the curtain in position in the brackets it should be rolled up or wound upon the roller, so that when drawn down the requisite tension of the spring will be produced. When the curtain is drawn down the roller revolves, carrying with it the cap M, band L, and head K, the shaft F remaining stationary. The disk H, with its barrel *h*, is prevented from revolving by reason of the engagement of the pawl G with one of the shoulders *h'*. The washer I, which is formed with a square opening, fitting on a similarly-shaped projection on the disk H, also remains stationary with the latter, the outer edge of said washer presenting a frictional resistance to the rotation of the head L. This frictional resistance may be easily overcome by a slight downward draw upon the curtain, but is sufficiently strong to resist the gravity of the weight D. From this it follows that as soon as the drawing motion

of the curtain or downward pull thereon is discontinued the curtain will hang motionless, the spring being powerless to raise the weight, and the latter not being heavy enough to overcome the frictional resistance between the washer I and head K. As soon, however, as the weight is raised, the spring will begin to wind up the curtain, the roller B turning, and with it the cap M, band L, head K, washer I, and disk H, the barrel *h* turning under the pawl G in the direction of the arrow without meeting with any impediment from the said pawl. Upon removing the roller from its bearings in the brackets the spring will cause the shaft to begin to revolve. Before, however, the shaft can effect a complete revolution, the outer extremity of the pawl G will engage with one of the studs *h'* on the inner surface of the band L, thus forming a complete lock, and preventing the spring from running down when the curtain and roller are moved out of the brackets C C'.

I claim—

1. In a balance-spring curtain or shade, hav-

ing automatic means for releasing it from the resistance of a frictional brake when in the brackets, an automatic device for locking the spring and preventing its unwinding when the roller is removed from the brackets, substantially as described.

2. In a spring-balance curtain-roller, having a friction-brake to regulate the descent of the curtain, an automatic device to relieve the roller of frictional resistance during the ascent of the curtain, substantially as described.

3. The combination of the curtain A, roller B, weight D, spring E, shaft F, pawl G, disk H, having ratchet-barrel *h*, spring-washer I, head K, band L, and cap M, the several parts being constructed and combined for operation substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of October, 1875.

EZRA B. LAKE.

Witnesses:

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M. DANL. CONNOLLY.