

J. SHOREY.
WINDOW-SHADE ROLLER.

No. 179,735.

Patented July 11, 1876.

Fig. 2.



Fig. 3.

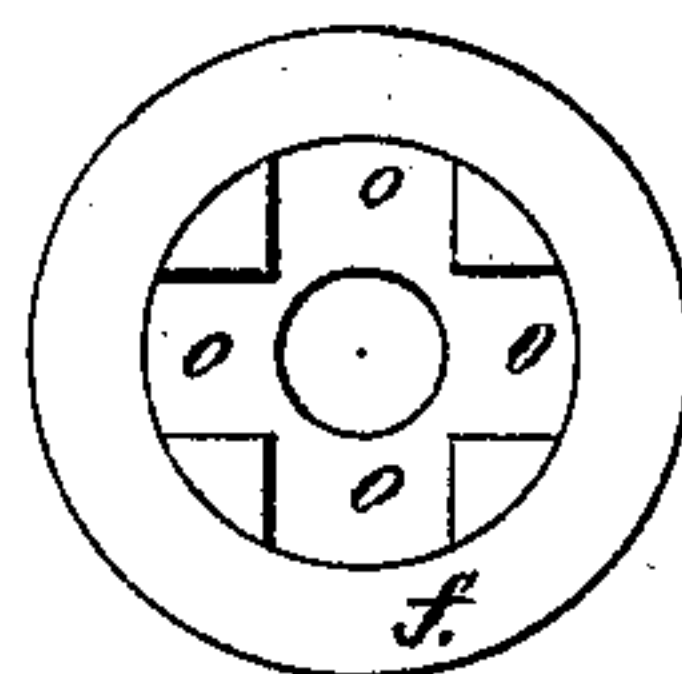


Fig. 1.

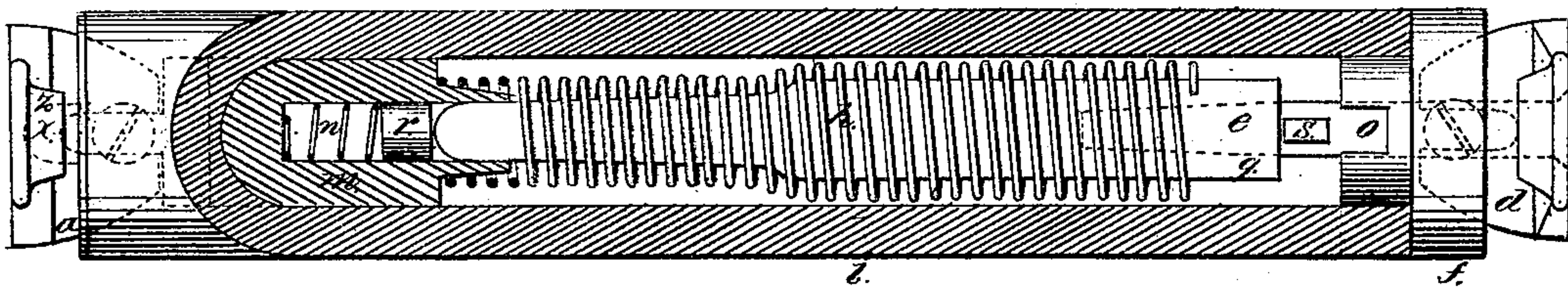


Fig. 4.

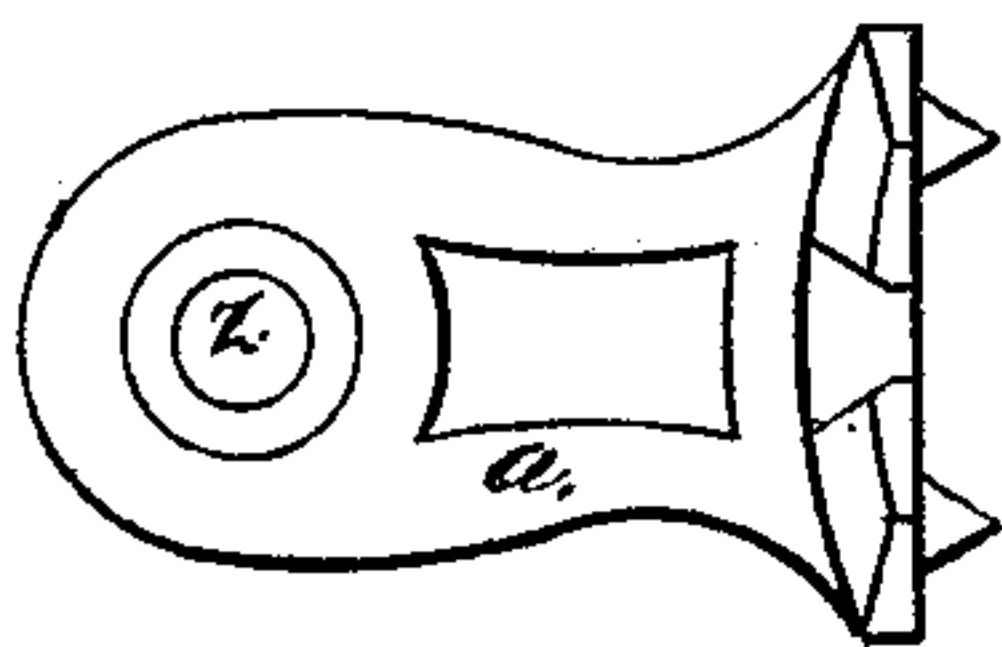
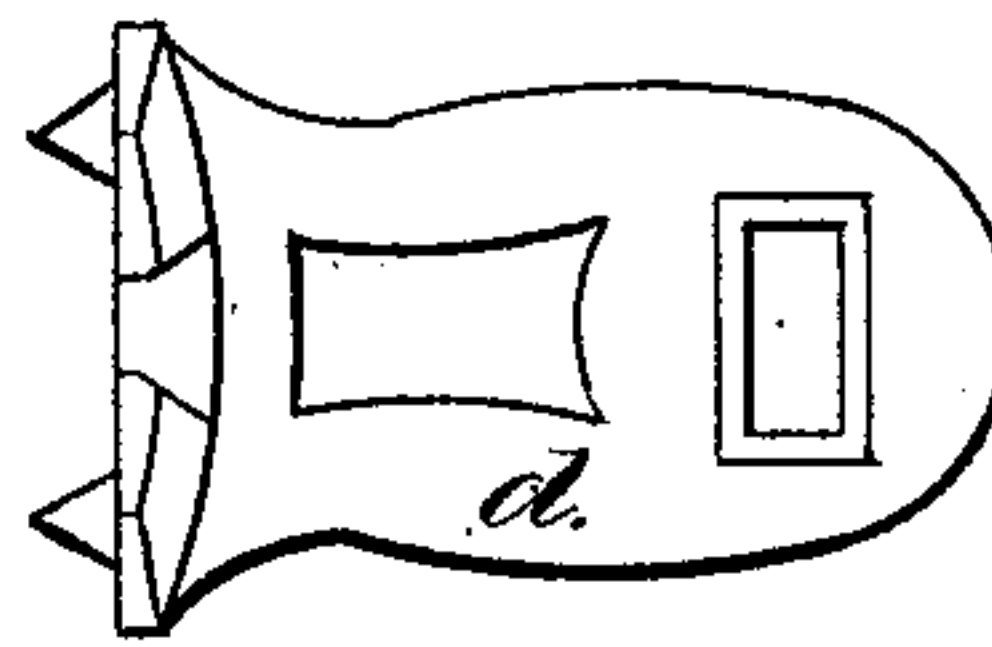


Fig. 5.



Witnesses:
George W. Huntton
Le Roy S. Kimball.

Inventor:
John Shorey.

UNITED STATES PATENT OFFICE.

JOHN SHOREY, OF LOWELL, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO OLIVER C. SHOREY, OF SAME PLACE.

IMPROVEMENT IN WINDOW-SHADE ROLLERS.

Specification forming part of Letters Patent No. **179,735**, dated July 11, 1876; application filed December 18, 1872.

To all whom it may concern:

Be it known that I, JOHN SHOREY, of Lowell, in the county of Middlesex and State of Massachusetts, have invented an Improved Window-Shade Roller; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a view of the roller in its brackets, the roller being cut away to show the inside construction thereof; Fig. 2, a view of the metallic spindle in the roller; Fig. 3, an end view of the hub or solid part of the roller, having notches therein, for the purpose herein specified; Fig. 4, a view of the left-hand bracket; Fig. 5, a view of the right-hand bracket.

Like letters designate corresponding parts in all of the figures.

The nature of my invention consists, first, in an improved torsion-spring for window-shade rollers, being constructed with its coils of different diameters, whereby the tension of the spring is strengthened through a portion of its length, substantially as herein set forth; second, in a notched head or hub of the roller, in combination with the spindle, provided with an arm or projection to take into said notches when the roller is removed from the brackets, and with a spring to force the arm into the notches when the roller is removed from the brackets, the connecting parts being constructed and arranged substantially as hereinafter set forth, and for the purpose specified.

The improved spiral spring *h*, which constitutes the first feature of my invention, and is shown in Fig. 1, has about one-third of its length smaller in diameter than the remaining two-thirds of the spring, its smaller end being fastened to a socket, *m*, placed within the roller *i*, and its larger end being fastened to the spindle, or to a wooden attachment, *g*, of the metallic spindle *e*. One end of this spindle is made flat, so that it will be held without revolving in a notch of the bracket *d*. The other end of the roller *i* has a pivot, *x*, which turns in a socket, *z*, of the bracket *a*, Fig. 4. When the roller *i* is placed in its brackets *a d*, Figs. 4 and 5, and the shade is

pulled down, the spring *h* begins to wind at the small end, and that part having coils of less diameter has more power than the other part of the spring; and this greater power is exerted when the shade begins to unwind, and its folds or coils are of larger diameter, and require more force of spring to sustain their weight; but as the shade becomes further unwound, and its coils become smaller and lighter, the larger part of the spring comes into action and exerts less power; consequently the spring is self-compensating to the varying rate of the uncoiling of the window-shade.

The same, or nearly the same, result as above may be accomplished by using two sizes of wire in different parts of the spring, while the coils remain of the same diameter, instead of the smaller coils, as above set forth, using correspondingly larger wire, and vice versa, the two wires being, of course, secured together, so as to act as one spring; or, as a further modification, the diameter of the spring may be regularly smaller from one end to the other, the degree being proportioned to the variation in the rate of the unwinding of the shade with a given number of coils.

The shaft *e*, Fig. 2, has an arm or projection, *s*, thereon, and this shaft passes through the head or hub *f* of the roller, which head or hub has one or more notches, *o o*, into which the arm *s* can enter. The socket *m* contains a spiral spring, *n*, the end of which has a short plug, *r*, to keep the pivot end of the spindle *g* from contact with the said spring. Thus, when the roller *i* is out of the brackets the spring *n* forces the shaft *e* endwise, and causes the arm *s* to enter one of the notches *o o* in the hub *f* of the roller, and thus holds the spring *h* from uncoiling; but when the roller *i* is again placed in its brackets *a d* the shaft *e* is, by the brackets, forced back endwise against the force of the spring *n*, thereby disengaging the arm or projection *s* from its notch *o*, and allowing the roller *i* to freely turn, as desired. The whole device acts automatically, and is sure in its action.

I disclaim an automatic spring-clutch attached to a curtain-roller to prevent the uncoiling of the spring when the roller is detached from its brackets; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A torsion-spring for window-shade rollers, constructed with its coils of different diameters, as described, whereby the tension of the spring is strengthened through a portion of its length, substantially as and for the purpose herein specified.

2. In a spring curtain-fixture, the combina-

tion, with a hub or head, *f*, provided with notches *o o*, of the spindle *g*, spring *n*, socket *m*, and shaft *e*, provided with an arm or projection, *s*, substantially as and for the purpose herein specified.

JOHN SHOREY.

Witnesses:

GEORGE W. HUNTOON,
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