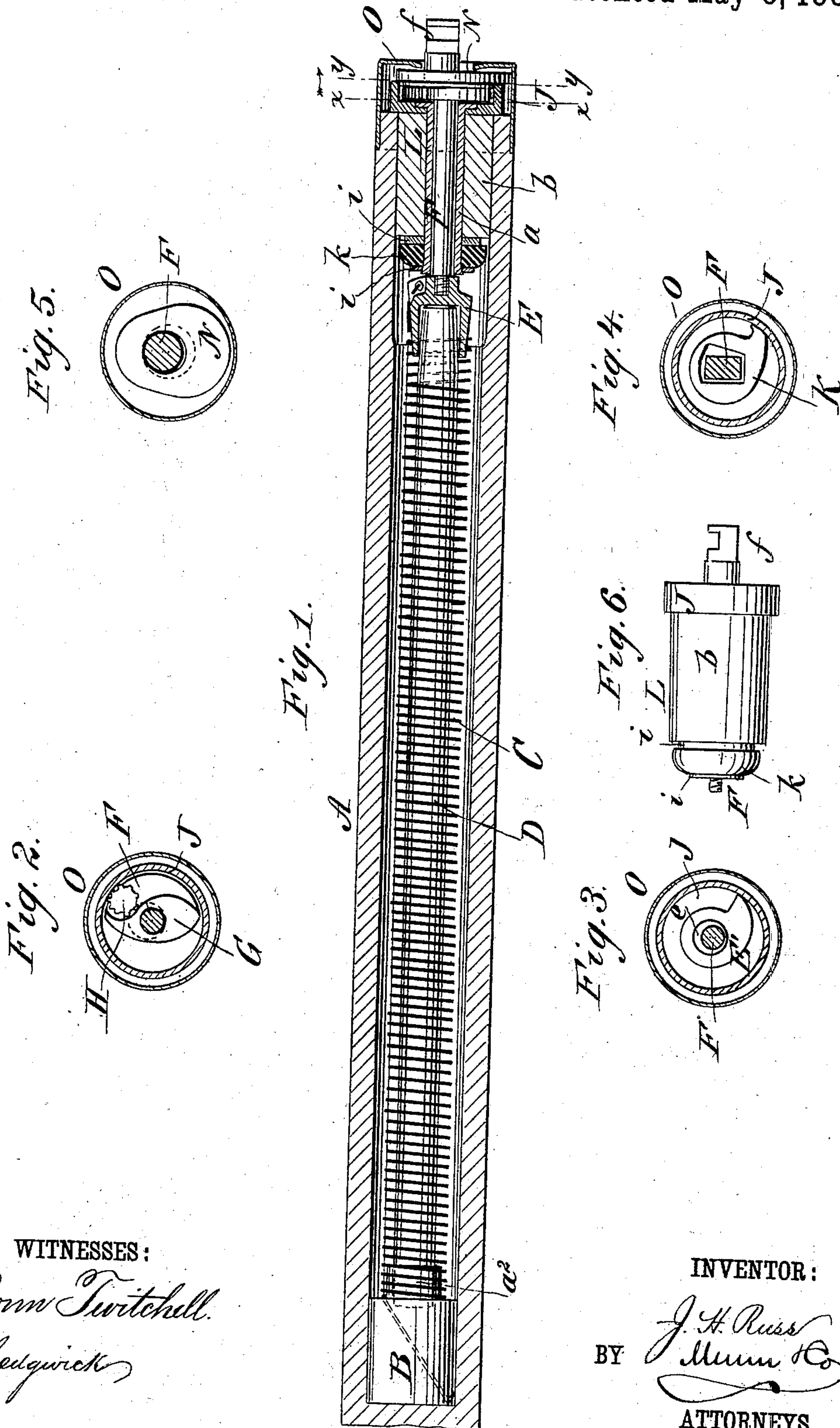


(No Model.)

J. H. RUSS.
BALANCED SPRING ROLLER.

No. 277,429.

Patented May 8, 1883.



WITNESSES:

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JAMES H. RUSS, OF PROVIDENCE, RHODE ISLAND.

BALANCED SPRING-ROLLER.

SPECIFICATION forming part of Letters Patent No. 277,429, dated May 8, 1883.

Application filed January 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. RUSS, of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Balanced Shade-Rollers, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional elevation of my new and improved balanced shade-roller. Fig. 2 is a transverse sectional elevation, taken on the line $x x$ of Fig. 1, looking in the direction of the arrows, showing the preferred form of lock for causing the necessary friction in drawing down the shade. Figs. 3 and 4 show modified forms of the lock; and Fig. 5 is a transverse sectional elevation taken on the line $y y$ of Fig. 1, looking in the direction of the arrows, showing the lock I prefer to use for preventing the running down of the spring when the roller is removed from its brackets or stays at the top of the window or other casing where the shade may be put up. Fig. 6 is a plan view of the friction or spindle head removed from the shell.

A represents the hollow wood shell, and B represents the wooden plug placed in the shell, to which the inner end of the spring C is attached. This plug is formed with the reduced portion a^2 , over which the inner end of the spring C fits in the ordinary way, and this reduced portion is socketed for the reception of the inner end of the wooden spindle D. The outer end of the spindle D runs in the cup E, to which the outer end of the spring C is attached. In this manner the spindle D is left entirely loose and free within the spring, so that any gripping of the spring upon the spindle in the act of winding up the spring will simply cause the spindle to turn with the spring, which will permit the full winding up of the spring and the utilization of its full force upon the shell A, which cannot be accomplished when the spring is attached to the spindle in the way now practiced. The cup E is secured to the inner end of the rod F. The outer end of this rod is formed with the squared and notched portion f , which is adapted to fit in a corresponding recess made in a bracket at-

tached to the window in the ordinary manner, for holding the rod from turning, thus keeping the tension on the spring and causing it to be applied to the shell A. The shell at one end (the end opposite the rod F) turns upon an ordinary pivot (not shown) held in an ordinary bracket, and at the other end it turns upon the rod F, which rod passes through the sleeve or eyelet a of the friction or spindle head L, upon which sleeve is placed the wooden spool b , which fits snugly in the winding-shell A, as shown in Fig. 1. The said friction or spindle head L acts as a brake, producing sufficient friction, when the shell A is turned back by the drawing down of the shade, to counteract the tension of the spring C and weight in the shade, so that the shade may be stopped and will stand at any desired point, and this head, as a whole, is composed of the said spool b and sleeve or eyelet a , cup J, rubber spring k , washers $i i$, and the cup E. The sleeve or eyelet a is headed at its outer end, and the rubber spring, washers, and cup J are all held together in place by the slight upsetting of the inner end of the said sleeve or eyelet, as shown in Fig. 1, and the outer end of the spool b and the back of the cup J constitute the friction-surfaces, the spring k serving to force and draw these two surfaces snugly together for that purpose. The cup J turns with the spool b when the shell A is turned by the spring C for winding up the shade, so that the shell will at all times run perfectly free in winding up the shade; but when the shell A is turned back in the act of drawing down the shade the cup J and rod F will be locked together, so that the outer end of the spool b will turn in contact with the inner face of the cup J, and thus produce the necessary friction above mentioned.

The means I prefer to use for locking the rod F and cup J together is shown clearly in Fig. 2, consisting of the loose dog H, placed in the recess g , formed in the inner face of the head G, which head is secured to or formed upon the rod F, and when the parts are in place rests in and is surrounded by the flange of the cup J, as shown in Figs. 1 and 2. The form of the recess g is such that it causes the loose dog to engage with the inner periphery of the flange of the cup J upon the backward movement of the shell A, thus locking the cup

and rod F together, and releasing the cup upon the reverse or winding-up movement of the shell, leaving the shell perfectly free to be turned by the action of the spring C. Instead of using this means for locking the cup J to the rod F upon the backward movement of the shell, I may form on the rod F, in place of the head G, the small eccentric *e*, Fig. 3, on which may be placed loosely the large eccentric plate E', the toe of which will engage the inner periphery of the cup J upon the backward movement of the shell, as will be clearly understood from Fig. 3; or I may use the slotted eccentric plate K, (shown in Fig 4,) the rod F being made oblong where plate K is placed upon it, as shown in said figure.

N, Fig. 5, is an eccentric plate placed loosely on the rod F next to and outside of the head G, or the plate E' or plate K, as the case may be, and serves, in connection with the ferrule O and the rod F, to automatically lock the rod F when the roller is removed from its bracket, thus preventing the running down of the spring C. In order that the plate N shall have this action, the outer end of the rod F is made slightly eccentric, as shown in Fig. 1, and is so notched at *f* that it will enter the bracket only in one position, which position will hold the plate N in the position shown in Fig. 5, where it will permit the roller to turn freely without the ferrule and plate coming in contact with each other; but upon removing the roller from the brackets the uncoiling of the spring and the consequent revolution of the rod F cause the eccentric portion thereof to throw the plate N down against the ferrule O, binding the eccentric portion of the rod, and thus securely locking the rod and preventing the unwinding of the spring.

Thus constructed, it will be seen that the roller is very complete, durable, cheap, and reliable, and that the full force of the spring C may always be utilized.

It will be understood that instead of the rubber spring *k* a coiled spring might be used and not depart from the spirit of my invention.

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

1. In a balanced shade-roller, the spindle D, placed loosely in the spring C, whereby it will not interfere with the full winding up of the spring, as set forth.

2. The combination, with the shell A, spring C, and loose spindle D, of the rod F, provided with the cup E, in which the outer end of the spindle runs, and to which the outer end of the spring C is attached, as and for the purposes set forth.

3. The spool *b*, placed upon the sleeve *a*, in combination with the spring *k* and cup J, whereby the necessary friction is produced between the end of the spool, and cup J, as set forth.

4. The combination, with a shade having a weight and spring, of the rod F, the sleeve *a*, carrying spool *b*, the cup J, the spring *k*, the washers *i*, and the cup E, whereby there is formed a brake adapted to overcome the tension of the shade spring and weight as the shell is turned back.

5. The combination, with the spool *b* and cup J, of the rod F, having the recessed head G and loose dog H, as and for the purposes set forth.

6. The rod F, having the cup E attached to its inner end, and made slightly eccentric at its outer end, in combination with the spring C, attached to the cup, the loose spindle D, the eccentric plate N, placed loosely upon the eccentric portion of the rod, and the ferrule O for preventing the running down of the spring, substantially as described.

JAMES H. RUSS.

Witnesses:

AI CRAM,
THOMAS BRODY.