

(No Model.)

J. H. RUSS.

FRICTION BALANCED SPRING ROLLER.

No. 304,456.

Patented Sept. 2, 1884.

Fig. 1.

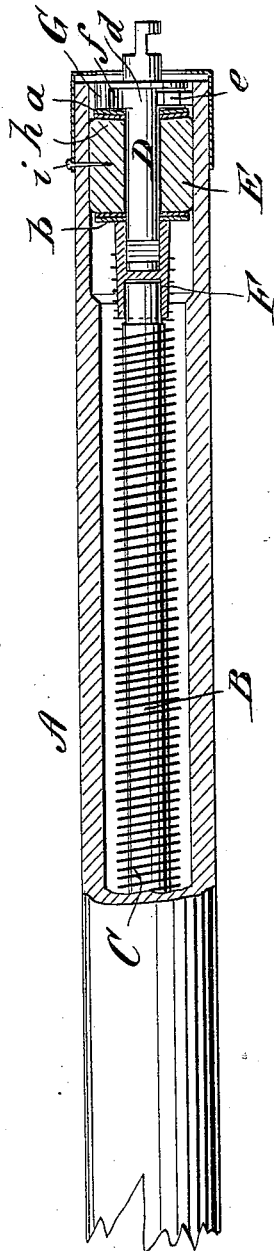


Fig. 4.

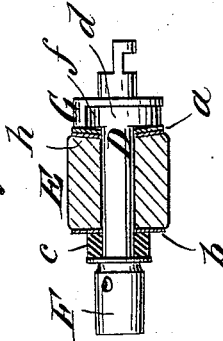


Fig. 3.

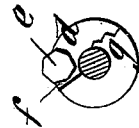
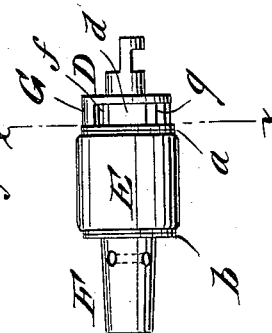


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES H. RUSS, OF PROVIDENCE, RHODE ISLAND.

FRICTION BALANCED-SPRING ROLLER.

SPECIFICATION forming part of Letters Patent No. 304,456, dated September 2, 1884.

Application filed June 18, 1884. (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 Improved Friction Balanced-Spring Roller, of which the following is a full, clear, and exact description.

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

Figure 1 is a sectional elevation of a spring-roller made in accordance with my present invention. Fig. 2 is a side elevation of the friction device removed from the tube or shell. Fig. 3 is a transverse sectional elevation taken on the line *x x* of Fig. 2. Fig. 4 shows in sectional elevation a modified form of friction device.

The tube or shell A, spindle B, and spring C, may be the same as shown and described in Letters Patent No. 277,429, which were granted to me May 8, 1883. The friction-head D passes through the wooden spool E, and has the cup F secured to its inner end, which forms a journal-bearing for the spindle B, and constitutes a shoulder for confining the friction-head D in the spool E. The cup F is, by preference, made of Babbitt metal, and secured to the friction-head D by casting it thereon—that is, by placing the inner end of the head D, after it has passed through the spool E and washers *a b*, (and rubber washer *c*, if used,) in a mold having a cavity the desired shape of the cup F, and then pouring the molten Babbitt metal into the mold. The outer end of the friction-head D is flattened and notched to adapt it to be held in a bracket in the ordinary way, and it has formed upon it or secured to it the flange G, which is recessed from its inner face to form a pocket, *d*, in which the loose locking-dog *e* is placed. At *f* the pocket *d* is formed of such size as to entirely inclose the dog *e*, so that it will not interfere with the free movement of the shell A when placed in the brackets in position for use. The opposite side of the pocket *d* slants gradually to the outer edge of the flange G, and is notched or roughened, as shown at *g*,

so that the dog *e* will bind between one or the other of the said notches and the inner surface of the shell or tube when the roller is removed from its brackets, and thus prevent the spring C from running down. The outer end of the spool E is slightly cupped, as shown at *h*, so that the friction of the flange G against the washers *a* will come near the circumference of the flange, as will be understood from Figs. 1 and 4, so that the friction will exert its effect upon the spring C to the best advantage. The washers *a* and *b* may be of cloth, metal, rubber, paper, or any other suitable material; but I prefer to use washers made from paraffine press-board, since they are very durable and are not affected by the atmosphere. The spool E, when the parts of the roller are put together, is secured within the shell or tube A by small nails *i*, driven through the shell into the spool, and these nails may be used also to hold the ferrule H as shown in Fig. 1 if desired. Constructed as described, the spool E revolves with the shell A as a part of it, and the friction is at the ends of the spool, so that no shrinkage or swelling of the spool E or the shell A will affect the action of the roller. Besides this advantage, the roller is cheap and durable and reliable. In some cases—as for very heavy window-shades—I shall employ the rubber washer *c*, placed upon the friction-head D, between the cup F and the washer *b*, as shown in Fig. 4, which increases the friction upon the spool E.

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

1. The friction-head D, formed with the recess *d*, inclined at *g*, in combination with the loose dog *e*, substantially as set forth.

2. The spool E, adapted to be made fast in the shell A, in combination with the friction-head D, passing through the spool and formed with the flange G, which turns against washers placed between the spool and flange, as shown and described.

3. The friction-head D, having the cup F, and formed with the flange G, in combination with the spool E and washers *a b*, as set forth.

4. In a spring-roller, the combination, with the spool E, of the friction-head D, and the cup

F, secured to its end projecting through the spool, substantially as herein shown and described, and for the purpose set forth.

5 5. In a spring-roller, the combination, with the spool E, having its outer end cupped at *h*, of the friction-head D, provided with the flange G and the cup F on its inner projecting end, and the washers *a b*, substantially as herein shown and described.

6. In a spring-roller, the flange G, formed with the recess *d* and notches *g*, substantially as and for the purposes set forth.

JAMES H. RUSS.

Witnesses: .

H. A. WEST,

EDWARD M. CLARK.