

(No Model.)

B. F. FOX.
WINDOW SHADE ROLLER.

No. 280,808.

Patented July 10, 1883.

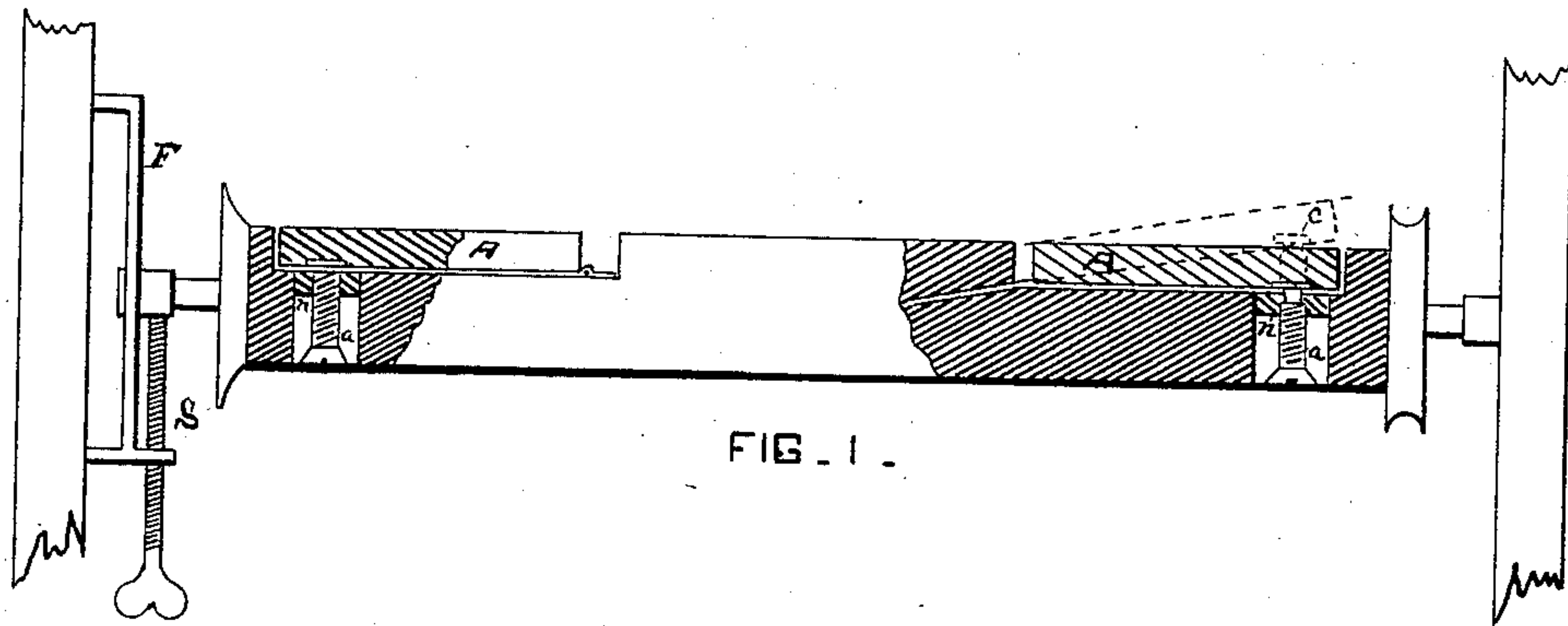


FIG. 2.



FIG. 3.



FIG. 4.

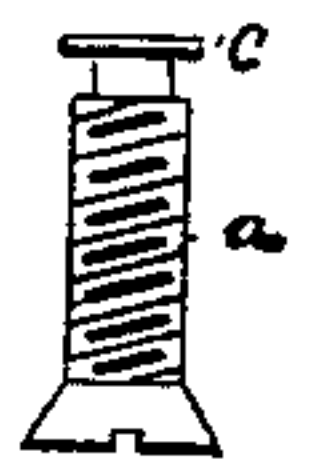


FIG. 5.

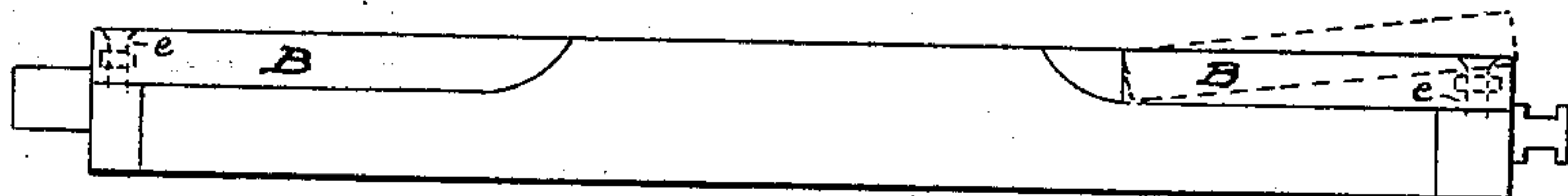


FIG. 6.



FIG. 7.



FIG. 8.



FIG. 9.

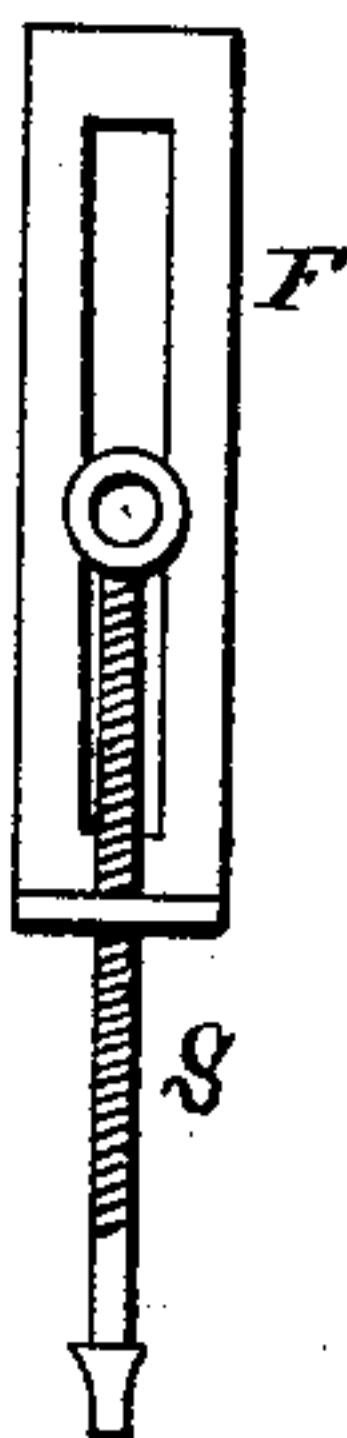


FIG. 10.

WITNESSES:

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BENJAMIN F. FOX, OF PHILADELPHIA, PENNSYLVANIA.

WINDOW-SHADE ROLLER.

SPECIFICATION forming part of Letters Patent No. 280,808, dated July 10, 1883.

Application filed July 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. FOX, a citizen of the United States, and a resident of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Window-Shade Rollers, of which the following is a specification.

The objects of my invention are to furnish a window-shade roller with such devices that the shade can be made to roll up and hang evenly under all circumstances.

In the accompanying drawings, forming part of this specification, and in which similar letters of reference indicate like parts throughout the several views, Figure 1 represents a side view of a window-shade roller embodying my invention; Fig. 2, a bottom view of the movable piece A furnished with a hinge; Fig. 3, a bottom view of the same furnished with a thin piece of metal instead of a hinge; Fig. 4, an enlarged end view of A; Fig. 5, an enlarged view of the screw by means of which A is operated; Fig. 6, a side view of a spring-roller, showing the manner in which my device for increasing the diameter is applied thereto; Figs. 7, 8, and 9, details of the same; and Fig. 10, an end view of my attachment for assisting in straightening the curtain.

It is well known that a window-shade, after having been in use for a time, hangs unevenly, and this may occur from one or both of two causes, the first being from the roller not being horizontal or perpendicular to the window-frame, and the second from a stretching of one side of the curtain or from the shade being unevenly secured to the roller. To overcome the first of these causes, I have one end of the roller secured in a bearing which is capable of an up-and-down movement in a vertical slot in a frame, F, which is secured to the window-frame. This frame carries upon it a thumb-screw, S, by means of which the end of the roller may either be raised or lowered. To overcome the second cause of the window-shade hanging and rolling up unevenly, I have the ends of the roller fitted with movable pieces A. This piece is secured to the roller by a hinge or its equivalent, and it may be raised at will by means of a screw, *a*, which passes through the roller. This screw has upon its end a collar, *c*, and it is slipped into the slot in the plate *b*, the collar holding it in place. The screw A may simply pass

through the wood of the roller; but I think it preferable that it pass through the nut *n*, which is shown in Fig. 1, and which is secured in some convenient manner to the roller.

In operating this device the piece A is raised by the screw *a* upon the side of the roller upon which the curtain is longest, increasing the diameter of the roller upon this side, and every time that the roller is turned a greater amount of curtain will be rolled up on this side than will be rolled up on the other, the diameter of which has not been changed.

If the roller is of the spring description, and is bored out so as to contain a spiral spring to operate it, it is impossible to cut the roller as shown in Fig. 1, and hence I use the device shown in Figs. 6, 7, 8, and 9.

B is a piece of metal bent to the shape of the roller, its inside end being secured to the roller by means of a hinge or its equivalent, and its outside end being furnished with a hole or slot, through which a screw, *e*, passes. This screw is furnished with a groove, *f*, directly beneath its head, and this groove holds the plate B. The lower end of the screw passes into the ends of the roller either directly into the wood or into a nut set therein. If it is now desired to increase the diameter of one end of the roller, the screw *e* is driven out and takes up with it the plate B. The plate B may either rest directly on top of the roller, or it may be countersunk flush with its top.

Instead of the frame F and screw S for elevating the roller, I may use a ratchet or rack, into the teeth of which the end of the roller-bearing may gear, its action being readily understood, and being equivalent to the device that I have illustrated.

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

1. The combination, with a window-shade roller having movable piece A, screw *a*, and plate *b*, of the slotted frame F and screw S, all arranged substantially as and for the purposes described.

2. In a window-shade roller, the combination of the movable piece A, furnished with a hinge or its equivalent, and the screw *a* and plate *b*, substantially as and for the purposes set forth.

BENJAMIN F. FOX.

Witnesses:

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