(No Model.)

G. L. BAILEY.

Curtain Fixtures.

No. 233,961. Patented Nov. 2, 1880.

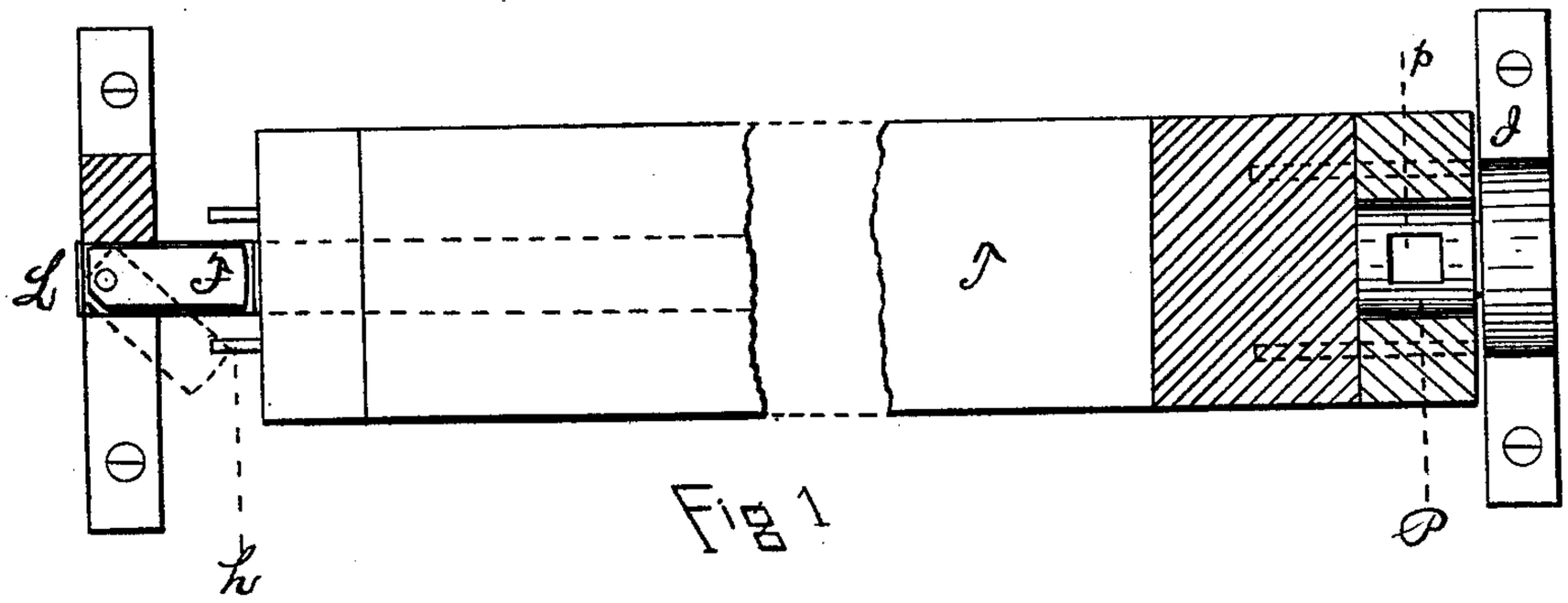

Fig 1

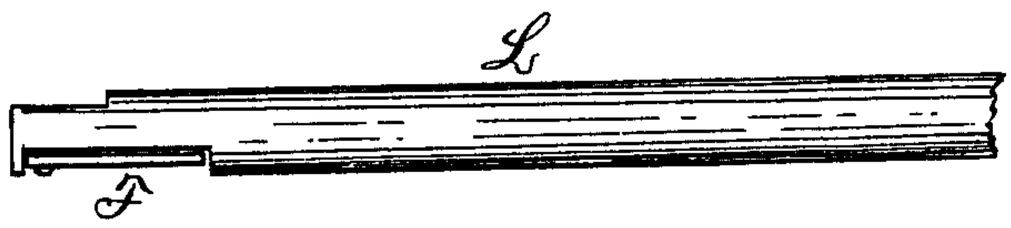

Fig 2

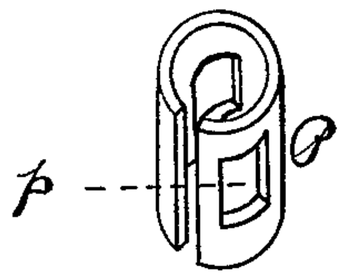

Fig 3

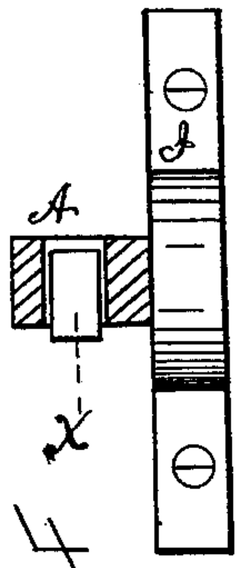

Fig 4

Witnesses:

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UNITED STATES PATENT OFFICE.

GILBERT L. BAILEY, OF PORTLAND, MAINE.

CURTAIN-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 233,961, dated November 2, 1880.

Application filed July 1, 1880. (No model.)

To all whom it may concern:

Be it known that I, GILBERT L. BAILEY, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented a new and useful Improvement in Curtain-Fixtures, of which the following is a specification.

My invention relates to that class of curtain-fixtures wherein a coiled spring is used to wind up the curtain and a weight to balance the tension of the spring; and the objects of my improvements are, first, to provide a frictional device for resisting the gravity force of the weight when the curtain is up and the spring at its lowest tension; and, second, to provide a simple means of holding the tension of the spring when the roller is removed from its brackets. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal view of an ordinary spring-actuated roller with my invention attached; Fig. 2, a top view of that part or end of the spindle to which the locking device is applied; Fig. 3, a vertical sectional view of the pivot or bearing, showing the stop-pin; and Fig. 4, a perspective view of the cylindrical spring-bearing.

My invention being applicable to nearly all the spring-balance rollers now made, any description of their mechanism for rolling up the curtain would be superfluous. I therefore omit it here, as I do not claim any part thereof as my invention.

Referring to the first part of my invention, in the solid end of the roller T, or through a separate piece to be attached to the end of the roller—the latter preferred—a cavity or hole is made, against the circumference of which the cylindrical spring-bearing P expands by its own tension with more or less force when placed therein. The two ends of the spring-bearing which are left apart when made are brought together, forming a hollow cylinder, which closely fits the hole in the end of the roller. The spring-bearing has one or more openings, *p*, through its circumference, as shown in Fig. 3. A pivot or bearing, A, projects from the inside face of bracket I, of a size to fit loosely inside the spring-bearing, having a square or rectangular hole made vertically through its diameter, in which stop-pin X is made to move freely, and the lower end of which is beveled on one side. The working positions of these parts are shown in vertical section in Figs. 1 and 4.

Its operation is as follows: The roller, with the shade wound upon it, being placed in position, when the shade is drawn downward, the stop X drops into one of the openings in the spring-bearing, holding it fast, while the roller revolves upon its outer surface, the tendency of the spring-bearing to expand causing considerable friction between the two surfaces, which, when the shade is at rest, acts as a counter-balance to its weight, preventing it from running down when the tension of the roller-spring is reduced beyond that required to overbalance the weight in the shade. When the weight is lifted the roller-spring starts the roller in the opposite direction and the stop-pin on its beveled side slides out of the opening in the spring-bearing, leaving the latter to turn with the roller on the bracket-bearing, thus transferring the friction from the outside to the inside of said bearing and reducing it materially, so that the roller-spring has only to wind up the unweighted shade on an ordinary bearing. When the shade is raised to the desired point and the weight released, if there is any tendency in the shade to run down, stop X again drops into one of the openings in the spring-bearing and holds it and the roller against the gravity force of the weight, the latter not being sufficient of itself to overcome the friction caused by the spring-bearing. By this arrangement it will be seen that a spring of much lower tension may be used to wind up the shade than is necessary in the ordinary spring-rollers, thus allowing a smaller roller to be used, requiring less nicety of adjustment and rendering the parts much more durable and convenient.

In the second part of my invention the projecting part of spindle L—which otherwise is made in the usual form—is cut away on one side, leaving a flat surface from near its outer end to where it enters the roller, to which, at a point near its outer end, a thin metal plate or arm, F, about the width and length of the flat surface, is pivoted, which enters and rests in the bracket with the spindle. A shorter flat

surface, leaving a shoulder, is made on the opposite side at the end of the spindle, to keep it from turning with the roller, and from moving endwise when placed in its bracket, which latter is of the ordinary notched form. So long as the spindle is held in its bracket—in which it may be placed without regard to which of two sides is uppermost—the arm F is upheld in its position in line with the spindle, or nearly so, by resting on the bottom of the notch in the bracket. When the roller is removed from the brackets its spring causes the spindle to rotate rapidly, and the free end of arm F is thrown out by centrifugal force, or falls by the force of gravity, and comes in contact with a pin or stud, *h*, placed in the end of the roller, as shown in broken lines in Fig. 1, stopping the rotation of the spindle and holding the tension of the spring until the roller is again placed in the brackets and moved against the action of the spring, when the arm drops from the upper, or is forced up by contact with the bottom of the notch in the bracket from the lower side into position along the spindle where the pins will not strike it. A slight shoulder is left at the end of the spindle just beyond the pivoted end of arm F, against which the latter strikes, preventing it from being thrown out too far.

I have applied the first part of my invention in several ways—for instance, placing the spring-bearing in the bracket and have a journal on the roller carrying the stop-pin enter said bearing; also, having the spring-bearing fit closely on the roller-journal and rest in an irregularly-shaped and enlarged bearing in the bracket, having a fixed stop-pin in said bracket to stop the spring-bearing, which would, in that case, revolve with the roller when the shade was wound up; but I prefer the first method herein described.

I am aware that prior to my invention friction devices and devices for holding the tension of the spring have been applied to spring-rollers in various ways. I therefore do not claim, broadly, such application as my invention; but

What I do claim, and desire to secure by Letters Patent, is—

1. In a spring shade or curtain roller, a hollow cylindrical spring-bearing expanding and fitting closely against the inside bearing of the roller at one end and loosely upon a pivot or bracket-bearing having one or more openings in its circumference, in combination with a stop-pin loosely fitting in the bracket-bearing, and adapted to drop into said opening and stop the revolution of said cylindrical spring-bearing when the shade is drawn down, and to be released therefrom and allow the said bearing to revolve with the roller upon the bracket-bearing when the shade is wound up, substantially as set forth.

2. In a spring shade or curtain roller, a hollow cylindrical spring-bearing so constructed and applied, in combination with a suitable bracket-bearing and stop-pin, that the friction, when the shade is drawn down, shall be upon the outer surface, and in rolling the shade up upon the inner surface, of said spring-bearing, substantially as and for the purpose set forth.

3. In a spring curtain or shade roller, a hollow cylindrical spring-bearing, in combination with the said roller and its bracket and a stop-pin so constructed and arranged that the friction of said cylindrical bearing, when the shade is moved up and down, shall be automatically changed alternately from the outside to the inside surface of said bearing, substantially as described.

4. In a spring curtain or shade roller, hollow cylindrical spring-bearing P, with its openings *p*, stop-pin X, and bracket-bearing A, combined and operating substantially as and for the purpose set forth.

5. In a spring curtain or shade roller, a metal arm or plate pivoted at one end to the spindle and resting within a bracket, in combination with one or more pins or studs fixed in the end of the roller, so constructed and arranged that the free end of said arm or plate will be brought by centrifugal force or by the force of gravity, or by both, into contact with one of said pins and stop the revolution of the spindle when the roller is removed from its brackets, substantially as described.

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Witnesses:
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