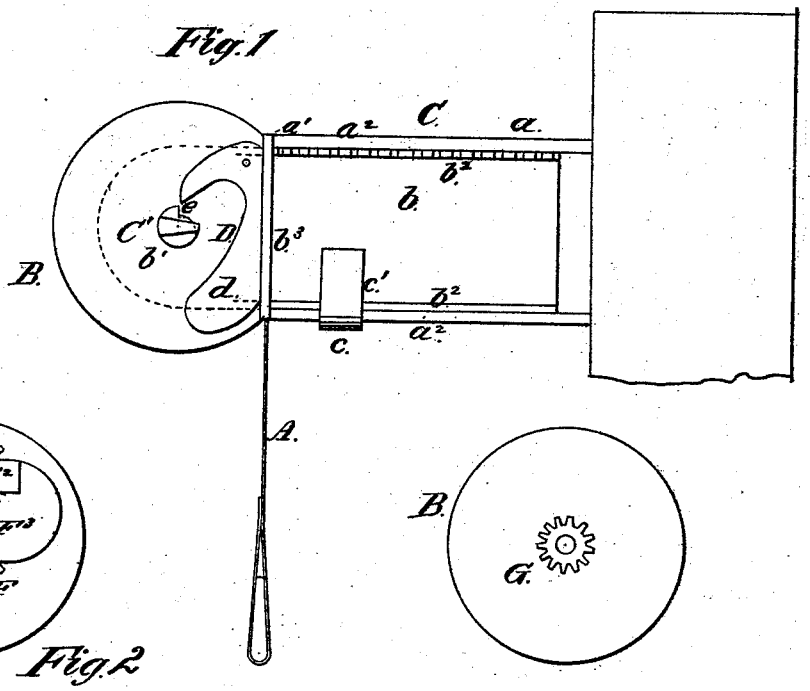
E. B. LAKE.

CURTAIN-FIXTURES.

No. 169,450. Patented Nov. 2, 1875.

Fig. 1



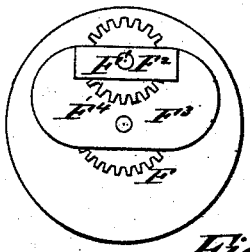


Fig. 2

Fig. 3

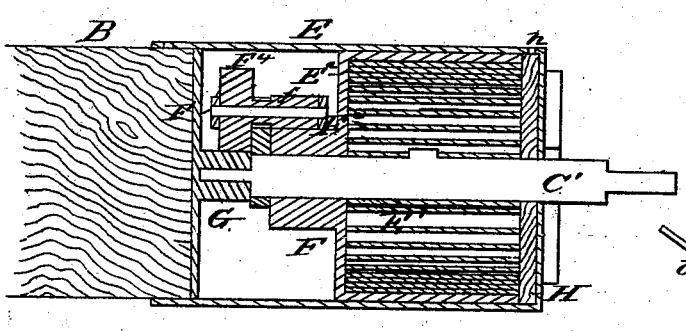


Fig. 4

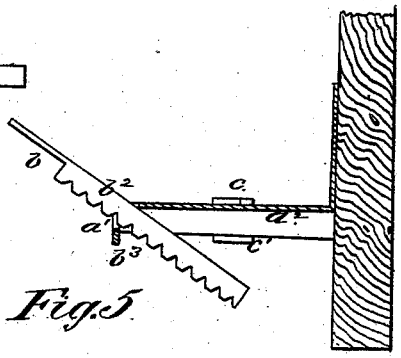


Fig. 5

Witnesses
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UNITED STATES PATENT OFFICE.

EZRA B. LAKE, OF TOM'S RIVER, NEW JERSEY.

IMPROVEMENT IN CURTAIN-FIXTURES.

Specification forming part of Letters Patent No. **169,450**, dated November 2, 1875; application filed November 7, 1874.

To all whom it may concern:

Be it known that I, EZRA B. LAKE, of Tom's River, in the county of Ocean and State of New Jersey, have invented a certain new and useful Improvement in Curtain-Fixtures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is an end view of my invention. Fig. 2 is an inner end view of gearing for imparting motion from roller to spring-barrel. Fig. 3 is a detail view. Fig. 4 is a vertical central section through roller, spring, and gearing, &c. Fig. 5 is a horizontal section through roller-bracket.

This invention has relation to curtain-fixtures; and consists in the novel construction and combination of parts having reference to, severally, the employment of an adjustable roller-bracket; the provision of a brace-pawl acting upon the roller-shaft, and adapted to engage therewith and arrest the motion of the roller when the latter tends to rotate rapidly; the provision of gearing and other appliances for effecting the compression of a coiled spring through the rotation of the roller, whereby a short spring is rendered serviceable in connection with a long curtain; and, finally, the provision of means for securing the curtain to the roller without danger of injury to the working parts or clock-work mechanism.

Referring to the accompanying drawings, A designates the curtain; B, the roller; and C, the adjustable bracket. The bracket is composed of two sections, *a b*. The section *a* is an L-shaped plate having its foot secured to the window-frame, its outer end bent laterally and slotted at a^1, and flanges or guides provided at a^2 a^2. The section *b* is an elongated plate having a triangular eye, b^1, for the reception of the end of the roller-shaft, and having toothed flanges b^2, which, when the section *b* is passed through the slot a^1, lie between the flanges a^2, the teeth engaging at any desired position of adjustment with the beveled bridge of the slot. *c* is a button, pivoted to the back of the section *a*, and formed with a U-shaped projection, *c'*, which embraces the lower edge of the bracket, so as to hold the two sections together. The section *b* is inserted or removed through the slot by turning it obliquely to the plate *a*, so as to avoid the slot-bridge b^3, the slot being continued beyond the bent end of the section *a*, as shown. D designates what I term a brace-pawl, to distinguish it from other forms of curtain-pawls intended to operate by centrifugal impulse. The pawl D is of an approximately V shape, and is pivoted to the end of the roller by a pin passing through its apex. The tail *d* is elongated, and of a form adapted to its peculiar functions. The shaft C' has a notch or shoulder at *e* for the engagement of the pawl, and is evenly curved or rounded on its surface to correspond to the form and position of the shoulder.

When the pawl is hanging in its normal position its upper or brace end just clears the shoulder *e*, its weight being counterbalanced by that of the tail-piece or pendant *d*. If, now, the roller be turned slowly in the direction required to elevate the curtain, the impulse being given by means of a spring, or, if the roller be turned in the direction required to unroll the curtain, the pawl will not be caught by the shoulder. If, however, the roller be allowed to rotate rapidly—that is, if the curtain be released—the tail-piece *d* will be thrown outward centrifugally, causing the brace to engage instantly with the shoulder on the shaft and arrest the motion of the roller.

The brace-pawl, as specifically described, I consider an important feature of my invention; but I do not wish to be understood as claiming, broadly, a centrifugal pawl irrespective of its form, arrangement, or function.

I regard my brace-pawl as an improvement, specially on what may be termed a "drag-" pawl—that is, a pawl having a tail-piece formed with an inwardly-projecting head or barb—a device which I have discarded the use of on account of its uncertainty of action and difficulty of management.

E designates a metallic casing or box applied to one end of the roller, to contain the roller-spring and the mechanism pertaining thereunto. E^1 designates the spring coiled around the stationary shaft, and having its

ends, respectively, attached to the latter, and to a spring-barrel, E^2. To the inner end of the barrel is secured a gear-wheel, F, engaging with a pinion, *f*, supported by a shaft, F^1, having its bearings in a box, F^2, formed on a standard, post, or plate, F^3, which is rigidly secured to the stationary shaft. The shaft F^1 holds also a gear-wheel, F^4, of greater diameter than the pinion *f*. Said gear-wheel engages with a pinion, G, attached rigidly to the end of the roller proper, and forming the inner bearing of the stationary shaft. By the use of suitably-proportioned gearing, arranged as described, so as to impart motion to the spring-barrel and wind the spring, the roller may be made to turn several revolutions for every single revolution of the barrel, and thus a short spring be adapted to work effectually in connection with a long curtain.

The operation of the roller is as follows: The curtain being first rolled up the roller is adjusted upon the brackets. Now, when the curtain is drawn down the roller turns in one direction while the spring-barrel turns in the reverse. The spring is thus compressed, and, by expansion, effects the reversal of the roller and the rolling up of the curtain.

H designates a disk of wood inserted in one end of the casing E. *h* is a hole in the casing, coinciding with said disk, through which may be driven a tack to secure the curtain at the point indicated.

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

1. The combination, with the stationary shaft C′, having a convoluted hub terminating its surface with the shoulder *e*, and the roller B operating automatically through the agency of a spring, of the brace-pawl D, having its tail-piece and locking arm joined at substantially an acute angle, the former being weighted so as to control, by gravity, the normal position of the pawl and lock it against the shoulder *e* by centrifugal force, specifically as shown and described.

2. The adjustable bracket C, composed of the section *a*, having the flanges a^2, slot a^1, and bridge b^3, and the sliding section *b* having the notched flange b^2, in combination with the locking device *c*, substantially as described and shown.

3. The combination, with the stationary shaft C′ and the rotating barrel E^2, of the rigid post or frame F^3 carrying the gearing F^4 *f*, engaging, respectively, with the pinion G attached to the roller, and the toothed wheel F attached to the barrel, substantially as shown and described.

4. The roller B having a cylindrical chamber, E, at one end containing a coiled spring, and a rotary drum, a pinion attached to the curtain-roller, and intermediate multiplying gearing or mechanism, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of October, 1874.

EZRA B. LAKE.

Witnesses:

JOHN AUMACK,

CALEB FALKINBURGH.