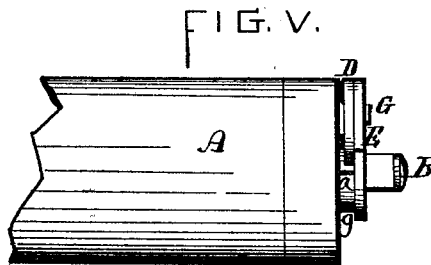
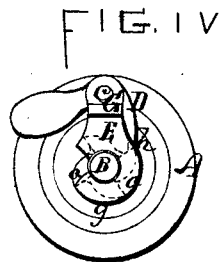
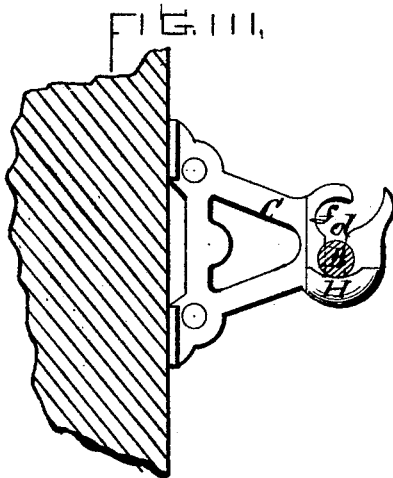
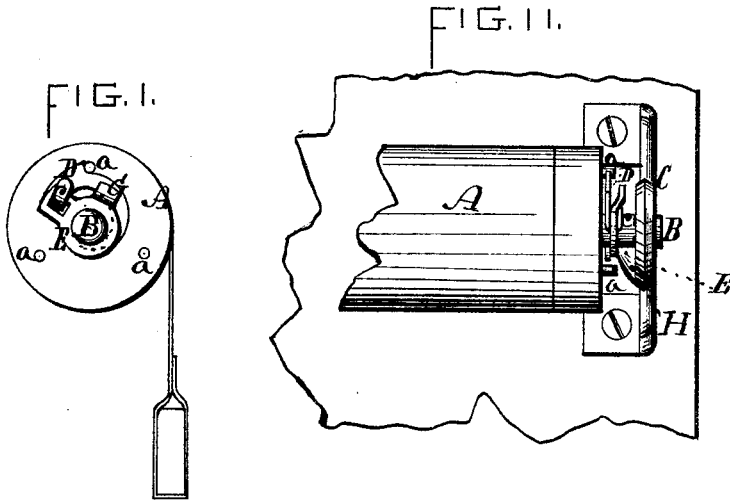


A. H. KNAPP.
 CURTAIN-FIXTURES.

No. 183,809.

Patented Oct. 31, 1876.



WITNESSES
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UNITED STATES PATENT OFFICE.

A. HAYDN KNAPP, OF NEWTON, MASSACHUSETTS.

IMPROVEMENT IN CURTAIN-FIXTURES.

Specification forming part of Letters Patent No. **183,809**, dated October 31, 1876; application filed May 19, 1876.

To all whom it may concern:

Be it known that I, A. HAYDN KNAPP, of Newton, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Curtain-Fixtures; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being an end view of a curtain-roller constructed with my improvement; Fig. 2, a side view of the same end of the roller arranged in its bracket; Fig. 3, a cross-section of the spindle of the roller and a view of the inner side of the bracket; Fig. 4, an end view of a roller provided with a modification of my improvement; Fig. 5, a side view of the same.

Like letters designate corresponding parts in all of the figures.

My invention belongs to the class of curtain-fixtures in which a coiled spring, located in the roller, is employed to raise and sustain the curtain or window-shade; and it consists in an improved device for automatically insuring the insertion of the spindle into the bracket, so that the spring-locking pawl will gravitate away from the locking-stops or ratchet-teeth on the roller as long as the curtain-roller remains mounted in the brackets; but when the roller is removed from the bracket, the pawl is thrown by centrifugal force against one of the stops, to keep the spindle from unwinding.

In the drawings, A represents the roller of a spring-balance or overbalance curtain-fixture; B, the fixed spindle at the spring end of the roller; and C, the bracket, in which the spindle is mounted.

This device has four combining elements: the centrifugal locking pawl or catch, mounted on the spindle, which carries the spring of the curtain-roller; the locking-stops or their equivalent—such as ratchet-teeth—against which the pawl catches, to prevent the uncoiling of the spring; and two co-operating projections, one upon the spindle and the other upon the bracket, the former arranged to strike the latter, and thereby prevent the insertion of the spindle into the bracket-notch, except when the said spindle is right-side up to bring the pawl into a self-gravitating position for

keeping it out of contact with the stops on the roller.

The pawl D is pivoted to a projection, E, on the spindle B, so that the pawl-pivot *c* is brought a sufficient distance from the center of the spindle, to permit the necessary movement toward and from the spindle, for the purpose required. The spindle is to rest in the bracket C, with the pawl uppermost, so that the latter, by its own gravity, may drop away from the stops *a a* or ratchet-teeth on the roller, and remain out of contact therewith as long as the roller is mounted in the brackets, and thus not interfere with the revolution of the roller therein. The pawl rests over the spindle in this position. When the spindle is taken from the bracket by seizing hold of the roller, the spring in the roller immediately tends to make it revolve, whereby centrifugal action is at once imparted to the pawl, causing it to engage with one of the stops *a a*, and to prevent any further uncoiling of the spring.

In order always to insure the insertion of the spindle in its bracket, so that the pawl D shall automatically and necessarily come above the spindle to gravitate away from the roller-stops, as desired, I secure a stop or projection, G, (which may be a part of, or connected with, the pawl-pivot projection E,) on the spindle, to extend from it outward in the direction of the pawl, the said stop or projection being at, and close to, the inside of the bracket, and on the inside of the bracket there is formed a projection, H, in the shape of a lip or ledge generally, below the spindle-notch *d*, in such a position and of such extent that the stop or projection G on the spindle will strike it, and prevent the spindle from descending into the notch when the said projection G, and consequently the pawl D, is downward, but will not strike the said bracket-projection when the pawl D is uppermost, and therefore will offer no impediment to the entrance of the spindle into the bracket-notch. The upper part of the spindle-notch *d* of the bracket is sufficiently widened and rounded, as at *f*, Fig. 3, to allow the flattened part of the spindle to turn therein. Then, if the spindle is put into the bracket-notch wrong-side up, the stop or projection G first striking the projection H on the bracket thereby prevents the descent of

the spindle into the bottom or holding part of the notch. This enlargement of the upper part, after the spindle is entered therein, allows the same to turn round till the right side is brought upward, when it will at once descend into the bottom of the notch automatically.

Upon the withdrawal of the spindle from the bracket-notch proper, the wide or enlarged part *f* of the notch allows the spindle immediately to commence revolving, in obedience to the uncoiling force of the spring in the roller, thereby at once imparting centrifugal motion to the pawl *D* sufficient to cause the same to engage with the first stop *a* of the roller that it meets in its path, and thus locks the spring, so that the whole fixture is as free to be removed from the brackets as a simple solid roller.

The modification shown in Figs. 4 and 5 differs from the construction above described in having a ratchet, *a*, formed on the periphery of a hub or projecting tube, *g*, upon the roller, close to the spindle, and in having the pawl *D* made with two arms, the inner arm *h* taking into the notches of the ratchet *a*, and the other arm being long and heavy enough to lift the inner arm out of the ratchet-notches by its gravity, and to cause the said inner arm to engage with the ratchet by its centrifugal action, the

same arrangement of projections on the spindle and bracket, and the same construction of the enlarged notch in the bracket, being used to act on the long or balance arm of the ratchet as with the simple centrifugal and gravitating pawl first described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a spring-actuated curtain-roller, in combination with a pawl pivoted to the spindle thereof and stops or ratchet-teeth on the roller, for the said pawl to engage with when impelled by centrifugal force, a projection on the spindle and a projection or stop on the adjacent bracket, arranged and co-operating in such a manner that the spindle will descend into the notch of the bracket only when turned into the proper position to cause the pawl to gravitate away from the stops or ratchet-projections on the roller, substantially as and for the purpose herein specified.

2. The spindle-bracket, provided with an enlargement, *f*, in the upper part of its notch, substantially as and for the purpose herein specified.

A. HAYDN KNAPP.

Witnesses:

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