

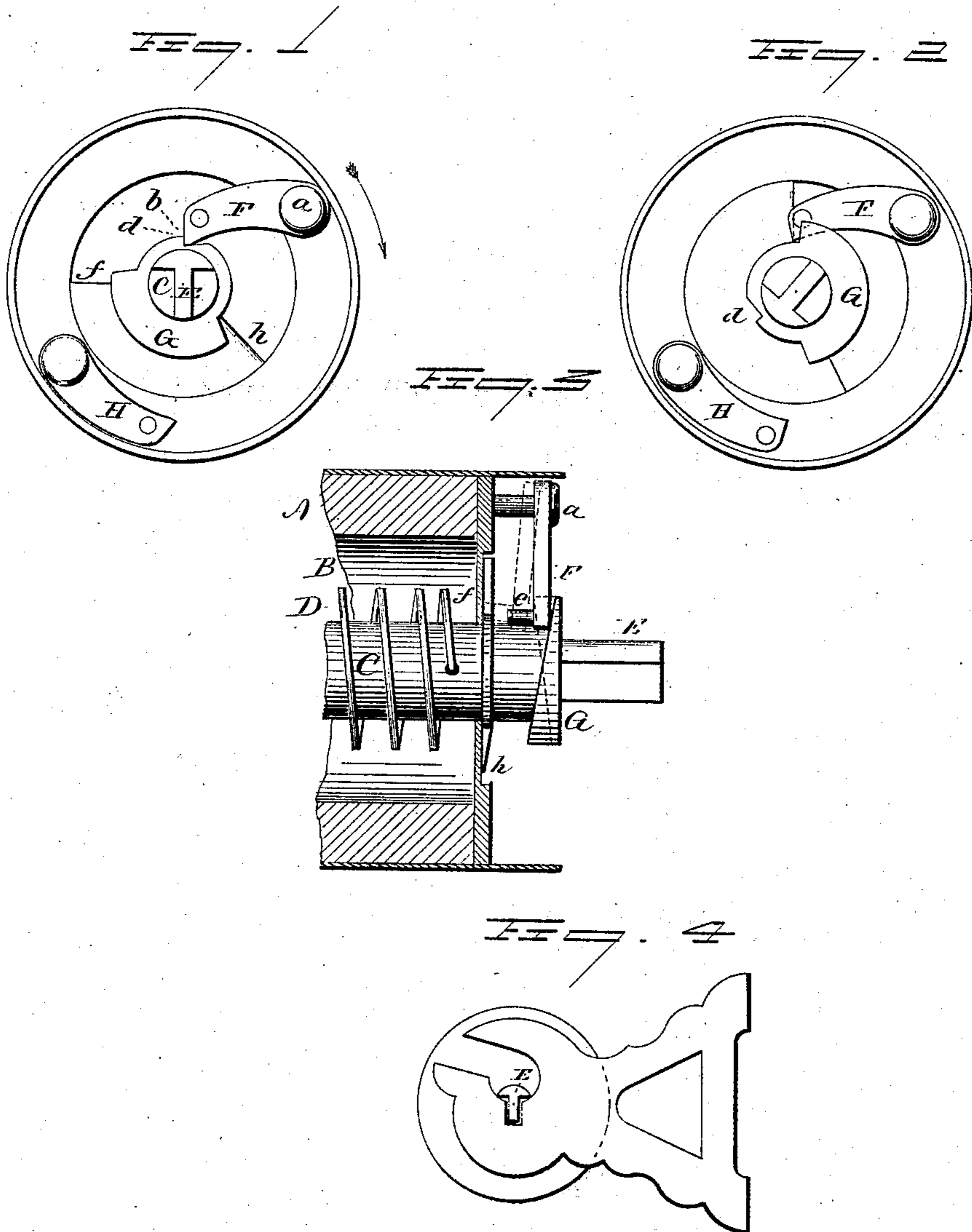
(No Model.)

L. L. SAWYER.

SPRING ROLLER FOR CURTAINS.

No. 287,729.

Patented Oct. 30, 1883.



Witnesses
J. H. Shumway
Jos. C. Earle

Lodowick L. Sawyer
By Atty. Inventor
Jos. C. Earle

UNITED STATES PATENT OFFICE.

LODOWICK L. SAWYER, OF MERIDEN, CONNECTICUT.

SPRING-ROLLER FOR CURTAINS.

SPECIFICATION forming part of Letters Patent No. 287,729, dated October 30, 1883.

Application filed September 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, LODOWICK L. SAWYER, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Spring-Rollers for Curtains; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an end view of the fixture as in the bracket, the bracket not shown; Fig. 2, an end view as removed from the bracket, and the spindle engaged to prevent its rotation; Fig. 3, a sectional side view of the mechanism; Fig. 4, an end view of the spindle as engaged with the bracket to prevent its rotation and insure its being set in its proper position.

This invention relates to an improvement in that class of curtain-fixtures in which a spring is arranged in a cavity in the roll, one end of which is engaged with a spindle concentric in the roll, the spindle fixed in the bracket, so as to prevent its rotation, the other end of the spring fixed to the roll, and so that as the curtain is drawn down or from the roll it winds the spring, and so that when free the reaction of the spring will turn the roll in the opposite direction to rewind the curtain upon it, and particularly to that class in which a pawl is hung to the roll, so as to engage a tooth or shoulder on the spindle to hold the roll against the reaction of the spring, and so that the curtain may be held at any desired position, but so that if the reaction of the spring be permitted to revolve the roll rapidly the centrifugal force will throw the pawl away from the shoulder, and so that it will pass the shoulder on the spindle without engagement. In putting up this class of fixtures, it is necessary to wind the spring to some extent before the spindle is engaged with the bracket or set in place, and this winding must be held so as to prevent the reaction of the spring; then, if occasion requires to remove the roll from the bracket, the person takes hold of the roll and lifts the spindle from its fixed position in the bracket, and in that condition the spindle is free to revolve until the spring be run down, so that when

replaced the spring must be rewound. While this rewinding is a simple matter to those familiar with the construction of fixtures, such fixtures are largely used by those who are unfamiliar with them, and when once they are removed from the roll they are useless, from the fact that the person does not understand how to rewind the spring to bring it to its proper tension before replacing it in the bracket, and the fixture is useless unless a person skilled in the construction be called upon to replace it. Numerous devices have been combined with the pawl and notch on the spindle, to engage the spindle and roll when removed from the bracket, so as to prevent the unwinding of the spring; but these devices have been additional to the devices which engage the roll with the spindle in the ordinary working of the roll when in the bracket.

The object of my invention is to adapt the same pawl which engages the roll and spindle in their ordinary working to engage the roll and spindle when taken from the bracket; and it consists in the construction as hereinafter described, and more particularly recited in the claims.

A is the roll, of usual construction, and having a longitudinal chamber, B, at one end, concentrically in which the spindle C is arranged, with a spring, D, one end of which is attached to the spindle and the other to the roll, so that holding the one and turning the other will cause the spring to be wound, all of usual construction. The spindle C has its supporting outer end, E, constructed to be engaged with the bracket, and so as to insure its position always the same side up. This is best done by making it T-shaped, as seen in Fig. 1, and in accordance with patents heretofore granted for this purpose.

F is a pawl hung to the end of the roll upon a pivot, *a*, and so as to swing freely toward or from the other, its nose *b* arranged to engage a corresponding notch or shoulder, *d*, in the spindle when the spindle stands in its up position, as seen in Fig. 1. The roll is rotated in the direction indicated by the arrow to draw the curtain from the roll; hence in drawing the curtain from the roll the pawl F will travel with the roll and escape the notch *d*; but when the curtain is left free the pawl will engage

the notch *d*, as seen in Fig. 1, provided the spring be not permitted full and free action, so as to give a rapid rotation to the roll. If, however, such full action of the spring be permitted, and consequent rapid rotation of the roll, the pawl will be thrown outward by centrifugal force, so as to escape the notch *d* in its backward movement, and thus the winding of the curtain may be continued until it be wound entirely upon the roll, or until the winding be so far retarded as to destroy the centrifugal force and permit the pawl to fall into the notch *d*. This is a common and well-known construction. If care be exercised to have the pawl in engagement with the notch *d* of the spindle when the curtain is removed with the roll, the spring would still be held; but if such care be not exercised, and either the roll or spindle be turned independent of the other, so as to release the pawl from its engagement with the spindle, then the spindle will be rapidly revolved until the spring be run down. To adapt the same pawl *F*, to prevent such accidental revolving of the spindle and running down of the spring, I construct the pawl with a stud or shoulder, *e*, upon its side and projecting toward the end of the roll, and upon the spindle inside the pawl I form a shoulder, *f*, which, in the ordinary working of the roll in its place in the bracket, is out of the path of the stud *e*. The pawl is hung upon its pivot, so as to permit it to swing inward toward the end of the roll, as indicated in broken lines, Fig. 3. On the spindle upon the under side—that is, opposite the notch or shoulder *d*—I form a cam or spiral-shaped shoulder, *G*, and which is out of the path of the rotating pawl when the roll is in the bracket, because as the pawl comes below it falls away from the center of its own gravity, as seen in Fig. 1, the pawl *H* representing that position, and thus avoids contact with the inclined or spiral-shaped cam *G*.

Now, suppose the roll to be removed from the bracket and held in the hand, the spindle free to revolve so soon as it escapes from its bearing in the bracket, in such revolution of the spindle the cam *G* will strike the outer surface of the pawl, as seen in Figs. 2 and 3, and then, continuing its rotation, the inclined or spiral shape of the cam will turn the pawl inward, as indicated in broken lines, until the stud *e* upon the inside of the pawl engages the shoulder *f* on the spindle, and when so engaged the cam *G* holds the parts thus engaged until they are, by some mechanical means, released. I preferably employ two pawls, *F* *H*, one of which will be thus engaged by the cam *G* upon but a small portion of a full rotation of the spindle. The parts will be thus held engaged until replaced in the bracket, and when replaced in the bracket and the spindle is brought to its proper position, with the shoulder *d* upward, then a slight turning of the roll, by pulling down the curtain or otherwise, will release the pawl *F* from its

engagement with the shoulder *f* and cam *G*, leaving the pawl free to return to its vertical position and operate in the usual manner for supporting the curtain.

I have represented the stud *e* as on the inside of the pawl *F*, the spindle-shoulder *f* in a corresponding position, and the cam *G* on the spindle outside the pawl, and so that the cam acts to turn the pawl toward the shoulder *f* on the spindle; but it will be understood that the position of these parts may be reversed—that is to say, the stud *e* placed upon the outside of the pawl, the shoulder *f* on the spindle in a corresponding position, and the cam *G* in a reverse position on the inside of the pawl—in which case the movement of the pawl as produced by the cam would be reversed—that is, outward instead of inward, as in the first case—it only being necessary that there shall be a shoulder on the spindle, which may be engaged with a corresponding shoulder on the pawl by a lateral swinging movement of the pawl, and a cam on the spindle, which, when the spindle revolves, will force the pawl from its normal path into engagement with the spindle.

While, ordinarily, the pawl will return by its own gravity to the vertical position and out of line with the fixed shoulder *f*, to insure such return of the pawl, I make an incline, *h*, back of the shoulder *f*, as seen in Figs. 1 and 3, and so that as the curtain is pulled down after the roll is placed in the bracket to cause the pawls to rotate with the rolls, the stud *e* will strike the incline *h* and ride outward upon it, so as to escape possible contact with the shoulder *f*, and when once brought to its vertical position, as seen in Fig. 3, there is no liability of the pawls approaching the shoulder *f* until the roll be taken from the bracket.

While I prefer to construct the pawl with a stud or shoulder upon its side to engage the shoulder *f* on the spindle, it will be readily seen that the nose of the pawl itself may engage the shoulder *f* when turned sufficiently far in a lateral direction.

I claim—

1. In a curtain-fixture, the combination of a roll having a chamber at one end, a spindle concentric in said chamber, a spring having one end attached to the roll and the other to the spindle, the spindle fixed in the bracket to prevent its rotation, a pawl hung upon the roll, a notch in the spindle with which the pawl will engage or escape from, according as the curtain is raised or lowered, the said pawl constructed for lateral movement, a cam on the spindle, which the pawl will freely pass when the roll is in the bracket, but which, when the roll is removed from the bracket, will impart said lateral movement to the pawl, and a shoulder on the spindle, with which, by such lateral movement, the pawl will engage, substantially as described.

2. In a curtain-fixture, the combination of a roll having a chamber at one end, a spindle

concentric in said chamber, a spring having
one end attached to the roll and the other to
the spindle, the spindle fixed in the bracket
to prevent its rotation, a pawl upon the roll,
5 the said pawl constructed for lateral move-
ment; a cam on the spindle, which the pawl
will freely pass when the roll is in the bracket,
but which, when the roll is removed from the
bracket, will impart said lateral movement to
10 the pawl, and a shoulder on the spindle, with

which, by such lateral movement, the pawl
will engage, and an incline back of said shoul-
der, which, when the spindle is secured in the
bracket, will operate to return the pawl to its
normal position, substantially as described.

LODOWICK L. SAWYER.

Witnesses:

JOHN E. EARLE,

JOS. C. EARLE.