

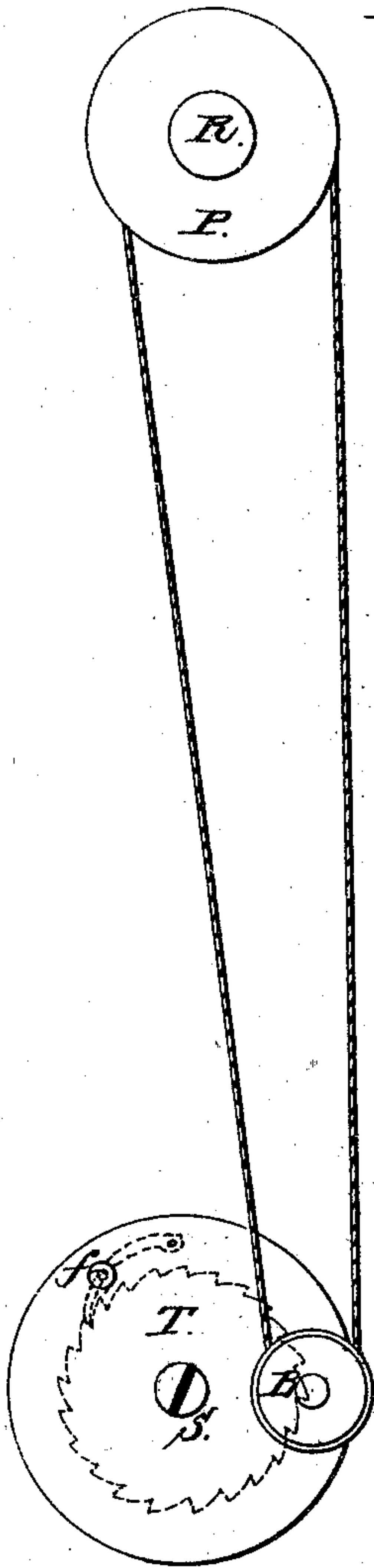
*R. Ballou, Jr. & B. F. Hooper,*

*Curtain Cord Tightener.*

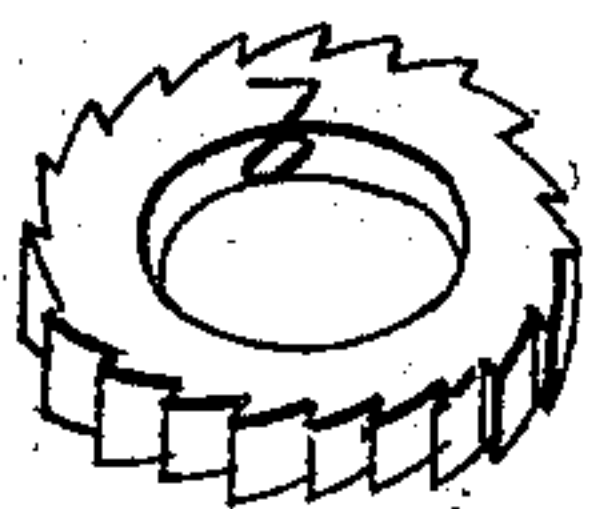
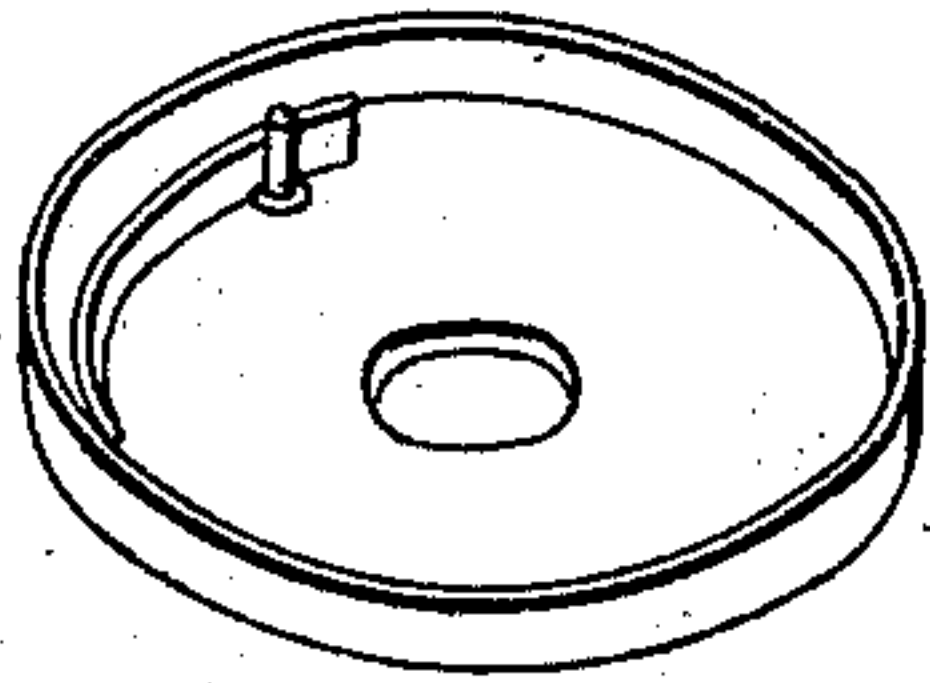
*N<sup>o</sup> 16,960.*

*Patented Apr. 7, 1857.*

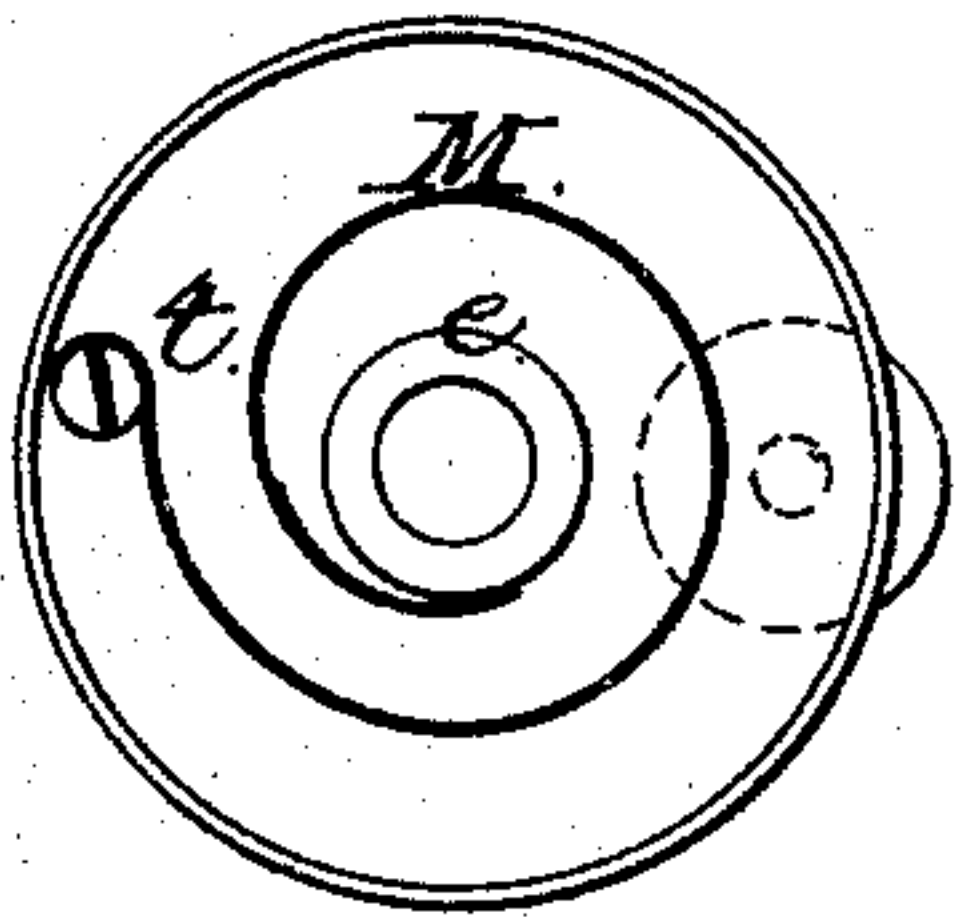
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses:*

*Emery  
Lawrence D. Witt.*

*Inventors:*

*Ransom Ballou  
Benj. F. Hooper.*

# UNITED STATES PATENT OFFICE.

RANSOM BALLOU, JR., AND BENJ. F. HOOPER, OF ALBANY, NEW YORK.

## WINDOW-CURTAIN FIXTURE.

Specification of Letters Patent No. 16,960, dated April 7, 1857.

*To all whom it may concern:*

Be it known that we, RANSOM BALLOU, Jr., and BENJAMIN F. HOOPER, of the city of Albany, State of New York, have invented new and Improved Tighteners for Window-Shade-Pulley Apparatus; and we declare the following specification, with the drawings accompanying and forming part of the same, to be a full and perfect description thereof.

Figure 1 represents the lever or revolving rack form of the tightener applied to the pulley P being the pulley attached to the curtain roller R. T is the tightener being a cylindrical shallow box turning on a central axis S being the screw or pin by which it is held down against the wainscot or window frame. Near one of its edges it has a button B around whose grooved circumference, or else around a small pulley revolving on the axis of this button, the cord C passes up and around P.

The interior apparatus is shown at Fig. 2 where *a* represents T turned upside down, and *b* is a ring with ratchet teeth on its outer edge. This is fastened concentric with T upon the window frame, on *a*. A spring pawl *p* is attached so that when it is turned over on *b* the pawl will operate on its teeth. Now when the apparatus is put together as in Fig. 1, it will be seen that whenever the cord relaxes, in order to tighten it, it will only be necessary to press B downward a trifle when *p* will pass a tooth and catch into the next one and so maintain the tight-

ness of the cord. A little finger piece *f* attached to the pawl and passing out through T, permits the withdrawal of *p* from the line of the teeth, and the relaxing of the cord when desired.

If it be wished to maintain a constant pressure so as to keep the cord tightened when it stretches, then instead of, or with the rack a spiral spring M, as shown in Fig. 3 (which is turned upside down) is attached to an annular boss or else to *b* and the other end to a pin *t* which is fixed into the window frame. This spring will it is seen, press down the outer end of T and carry B with cord down taking up its slack and keeping its pressure.

In their operations it will be seen that that part of T from S to B is a simple lever S being the fulcrum and B the point where the former is applied.

What we claim and desire to secure by Letters Patent is—

A tightening button or pulley affixed at or near the circumference of a rotary disk or barrel, the said disk being combined either with the pawl and fixed ratchet as described or with other means within it for maintaining the necessary stress upon the cord, substantially as set forth in the within specification.

RANSOM BALLOU, JR.  
BENJ. F. HOOPER.

Witnesses:

E. J. MILLER,  
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