

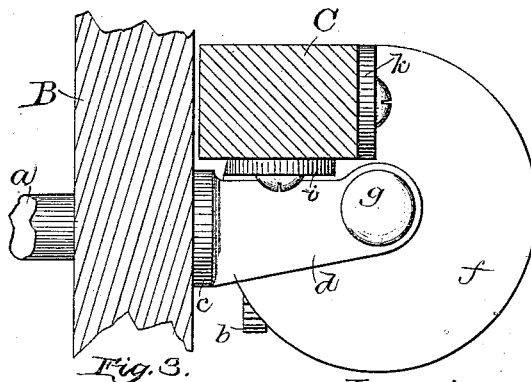
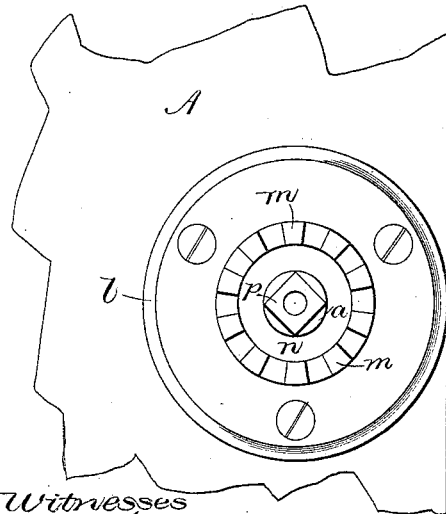
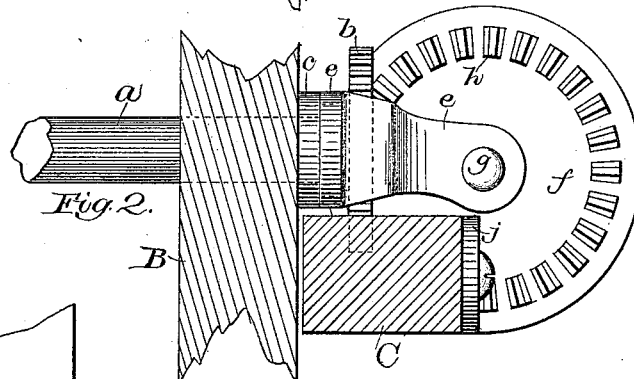
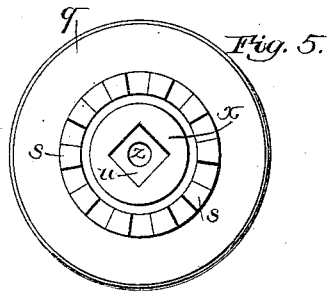
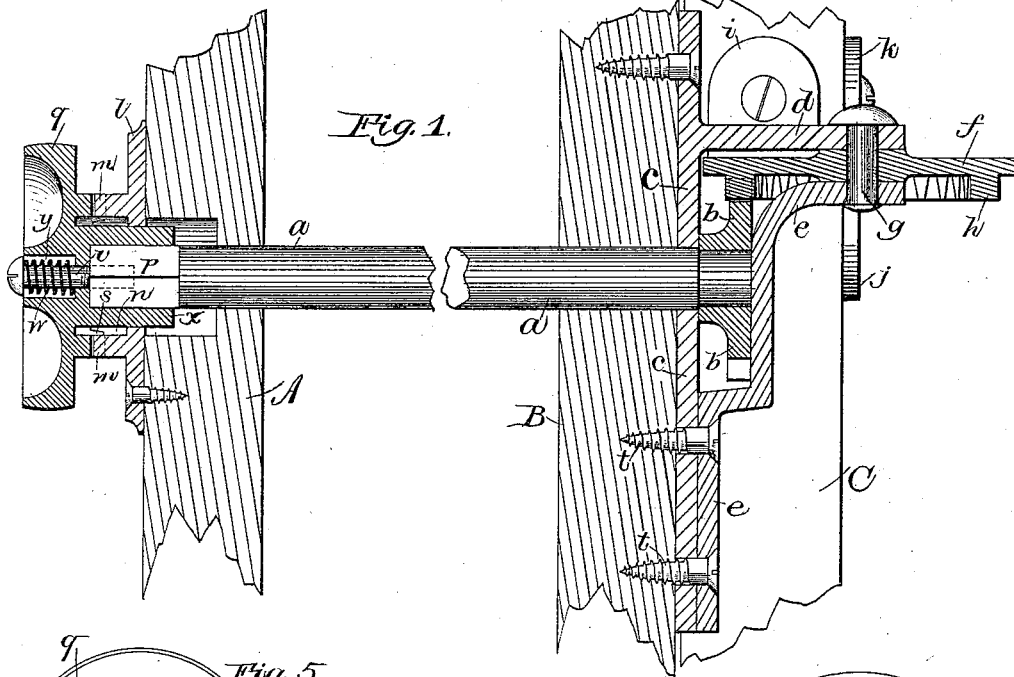
(No Model.)

C. W. LITTLEFIELD.

SHUTTER OPERATOR.

No. 346,855.

Patented Aug. 3, 1886.



Witnesses  
A. C. True  
Eugene Humphrey

Fig. 4.

Inventor  
Charles W. Littlefield  
per O. W. Porter, Atty.

# UNITED STATES PATENT OFFICE.

CHARLES W. LITTLEFIELD, OF AMESBURY, MASSACHUSETTS, ASSIGNOR OF  
THREE-FOURTHS TO FRANK P. TODD AND JAMES L. FOWLER, BOTH OF  
SAME PLACE.

## SHUTTER-OPERATOR.

SPECIFICATION forming part of Letters Patent No. 346,855, dated August 3, 1886.

Application filed September 14, 1885. Serial No. 176,996. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. LITTLEFIELD, of Amesbury, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Window-Blind Attachments, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claim.

Figure 1 is a vertical section through the window-casings and the blind attachment, taken in the line of the actuating-spindle, which latter is shown in elevation. Fig. 2 is an inverted or under side plan view of the exterior devices shown in Fig. 1, and a portion of the actuating-spindle. Fig. 3 is a top plan view of the exterior devices shown in Figs. 1 and 2. Fig. 4 is a detached elevation of the interlocking plate shown at the left in Fig. 1, as with the actuating-knob removed, and showing the end of the actuating-spindle. Fig. 5 is a detached elevation of the actuating-knob, viewed as from the right in Fig. 1.

Referring to the drawings, A represents the interior casing of the window, and B the exterior casing thereof, while C represents the stile of the blind. An actuating-spindle, *a*, of the requisite length extends through said casings, and upon its outer end is secured the spur-pinion *b*, arranged next to plate *c*, secured to casing B, and which serves as the journal-bearing of the spindle. A segmental crown-gear, *f*, whose teeth *h* are engaged by pinion *b*, is pivoted upon pin *g*, which is secured in horizontal arm *d* of plate *c*, and in bracket *e*, which is secured to said plate *c* by screws *t*, that enter casing B, said gear *f* being arranged between said arm and bracket, as shown.

Gear *f* is effectively secured to stile C by means of screws passing through ears *i j k*, formed integrally with the gear, and thence into the stile. The rotation of spindle *a* will, through the described gearing, swing the blind upon its pivot *g*, which, as described, serves also as the axis of gear *f*, which latter is the hinge of the blind.

For the purpose of actuating and locking

spindle *a*, it is provided with a hand-knob, *q*, the sleeve *x* of which has a square hole, *u*, which fits to slide freely on the angular portion *p* of the spindle. Said sleeve *x* fits to rotate freely in hole *n* in face-plate *l*, the concentrically-arranged teeth *m* of which interlock with the corresponding teeth, *s*, of the knob. For securing knob *q* to the spindle, a recess, *y*, to receive the head of screw *v* and coiled spring *w*, is formed in the outer portion of the knob, and said screw passes through the spring and diminished passage *z* of the knob, and is threaded in the axis of the spindle, said spring by its expansive force tending to interlock teeth *s* of the knob with teeth *m* of plate *l*, which, when so arranged, lock the blind in position. By drawing the knob outward till its teeth are disengaged from teeth *m*, it then serves as the means of actuating the blind through the spindle and gears.

The bracket *e* may be formed as an integral portion of plate *c*; but for obvious economical reasons it is preferably formed separate therefrom, and the pinion and gear may, if desired, be formed with bevel-teeth, instead of those as shown.

I am well aware that it is not new to employ a spindle extending through the window-casings from the interior to the exterior, and arranged to actuate the blind by means of gears; hence I do not broadly lay claim thereto, my invention consisting in the subject-matter specified in the appended claim, in which—

I claim—

The combination, with spindle *a*, its pinion *b*, and the enmeshing gear *f*, formed to be secured to and serve as the hinge of the blind, of plate *c*, formed with its angle-arm *d*, and the bracket *e*, formed and arranged to receive the gear-pivot *g* jointly with said arm, and to support said gear and the blind to which it is secured, substantially as specified.

CHARLES W. LITTLEFIELD.

Witnesses:

GEORGE H. BRIGGS,  
FRANK P. TODD.