G. L. Danforth,

Shutter Worker.

No. 105,918. Patented Aug. 2. 1870.

Fig. 1.

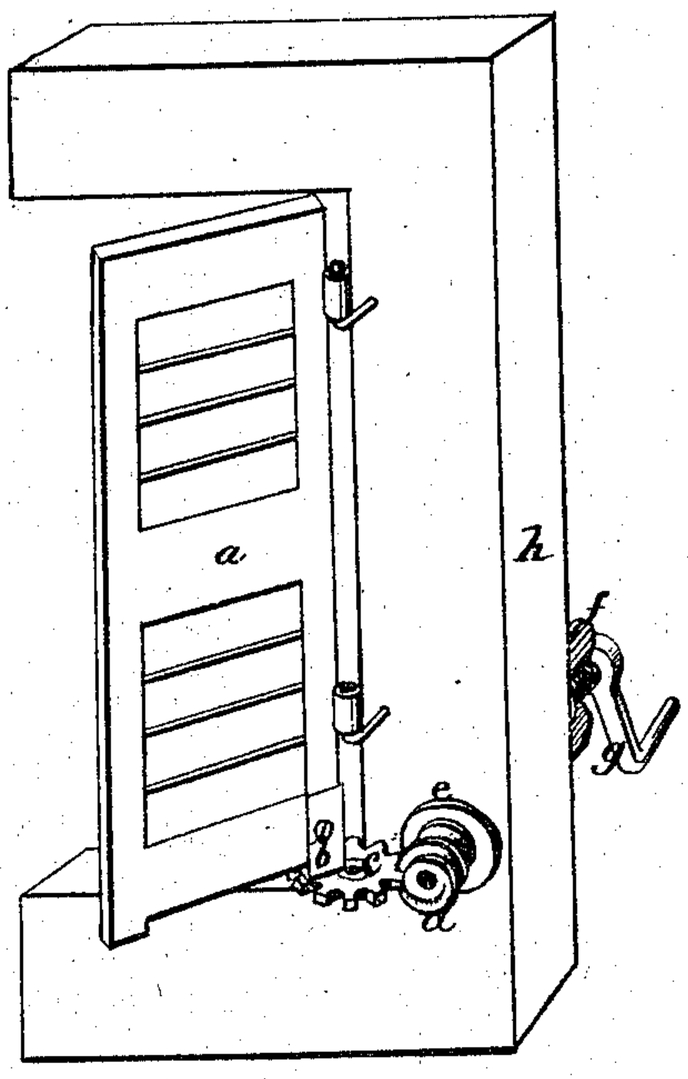
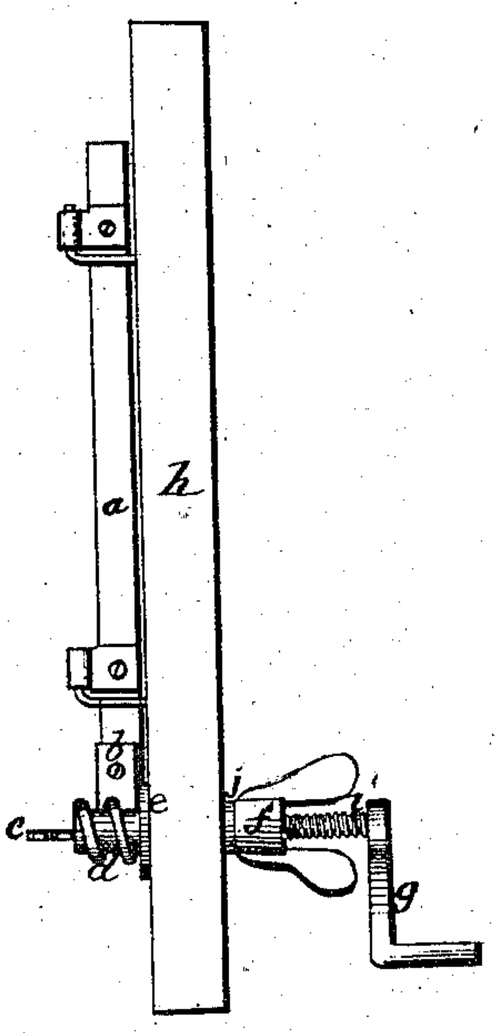


Fig. 2.



Witnesses,
Sydney E. Smith.
L. M. Campbell

Inventor,
George L. Danforth.
By his Attorney
J. C. Robbins

United States Patent Office.

GEORGE L. DANFORTH, OF LEBANON, NEW HAMPSHIRE.

Letters Patent No. 105,918, *dated August* 2, 1870.

IMPROVEMENT IN SHUTTER-WORKERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE L. DANFORTH, of Lebanon, in the county of Grafton and State of New Hampshire, have invented a new and useful Improvement in Apparatus for Opening and Closing Window-Blinds, and retaining said blinds in any desired position; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification, in which—

Figure 1 is a perspective view, and

Figure 2 an edge view of a window-blind and portion of the inclosing window-casing with which my said apparatus is combined.

A toothed wheel, *c*, is combined with the lower end of the inner bar of a window-frame, *a*, by means of the angular strap *b*.

Motion is imparted to the toothed wheel *c* and to the blind, with which it is combined, by means of an operating shaft, *d i*, which passes through an aperture in the side *h* of the window-casing, as shown in the drawing.

At the outer exposed end of the operating shaft *d i*, an actuating screw-thread projects therefrom, and passes into the spaces between the teeth of the toothed wheel *c*, which is combined with the window-blind.

The outer or exposed portion of the actuating shaft, from which radiates the screw-thread *d*, is of larger diameter than the portion thereof which passes inwardly through the window-casing *h*. The smaller portion, *i*, of said actuating shaft, has an ordinary screw-thread cut thereupon.

A thumb-screw, *f*, works upon the portion *i* of the actuating shaft, and a crank, *g*, (or a knob) is secured to the inner end of said shaft, to give the necessary leverage for operating the same.

Within the enlarged outer portion of the actuating shaft a washer, *e*, is placed, upon the smaller portion, *i*, of the same, and bears against the outer surface of the window-casing.

A similar washer, *j*, is also placed upon the said portion *i* of the actuating shaft, and bears against the inner face of the window-casing, as shown in fig. 2.

By turning the thumb-screw *f* firmly down upon the washer *j*, the window-blind can be securely held in an open or closed position, or in any desired partially-open position. Before operating the blind, the thumb-screw *f* must be so reversed in its position as to play loosely upon the actuating shaft.

It will be readily perceived that one advantage of my improved apparatus for opening and closing window-blinds and retaining them in any desired open or closed position, consists in its being readily adaptable to window-casings of different thicknesses. Another advantage consists in its capability of retaining window-blinds in any and every possible position to which they can be turned, from the slightest bowing of the blinds to an entire open or closed position.

When an actuating screw-shaft is combined with a window-blind and window-casing, substantially in the manner and for the purpose herein set forth,

I claim—

The combination of the set-screw *f* with said screw-shaft, for the purpose of retaining the window-blind in any desired open, partially open, or closed position, while it also enables the apparatus to be adapted to walls and casings of varying thickness, substantially as specified.

In testimony that the aforegoing is a full and exact description of my improvement in apparatus for opening and closing window-blinds and retaining them in any desired position, I hereto subscribe my name.

GEORGE L. DANFORTH.

Witnesses:

E. J. DURANT,

F. A. CUSHMAN.