

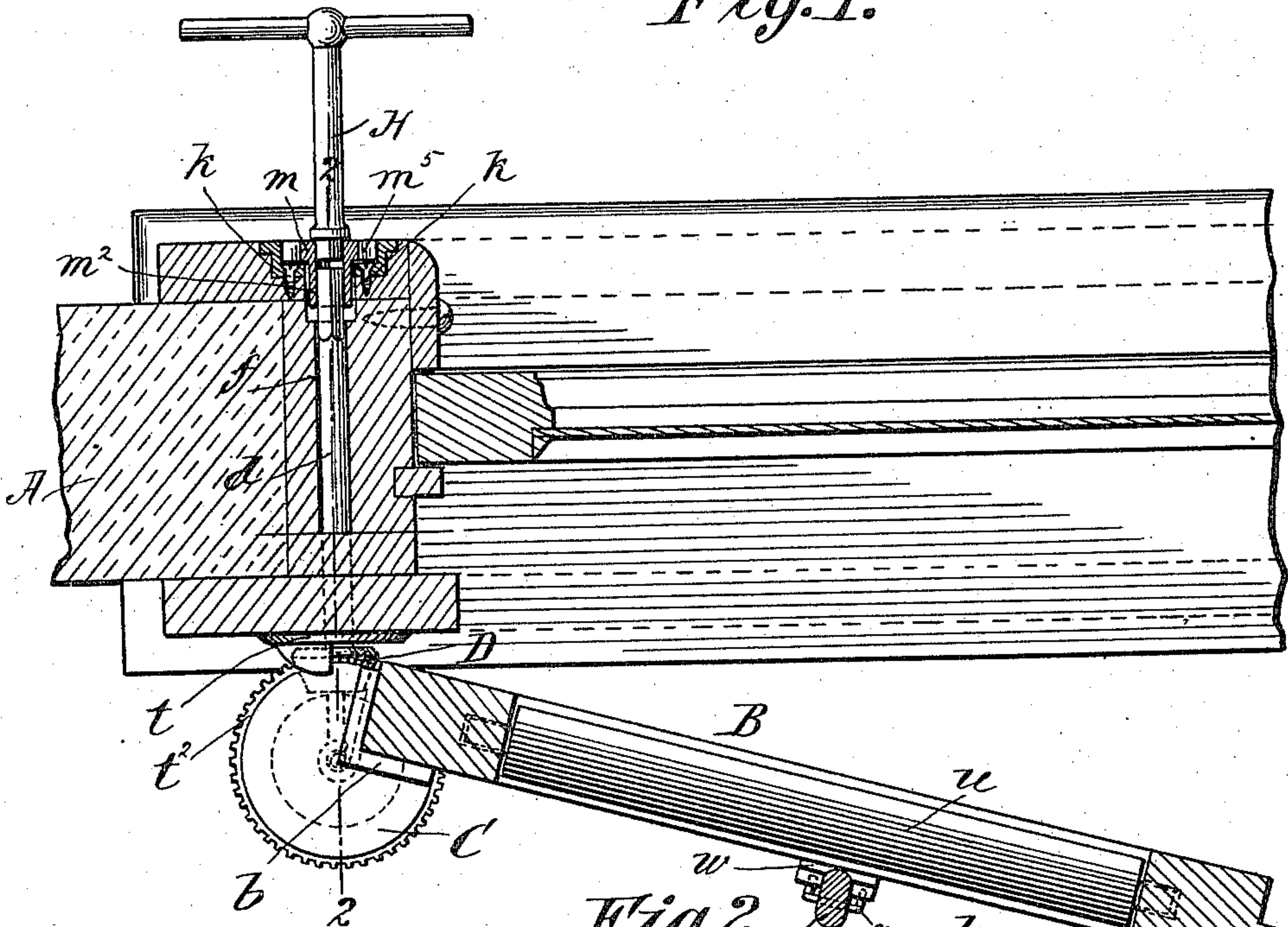
(No Model.)

J. W. COLE.  
SHUTTER WORKER.

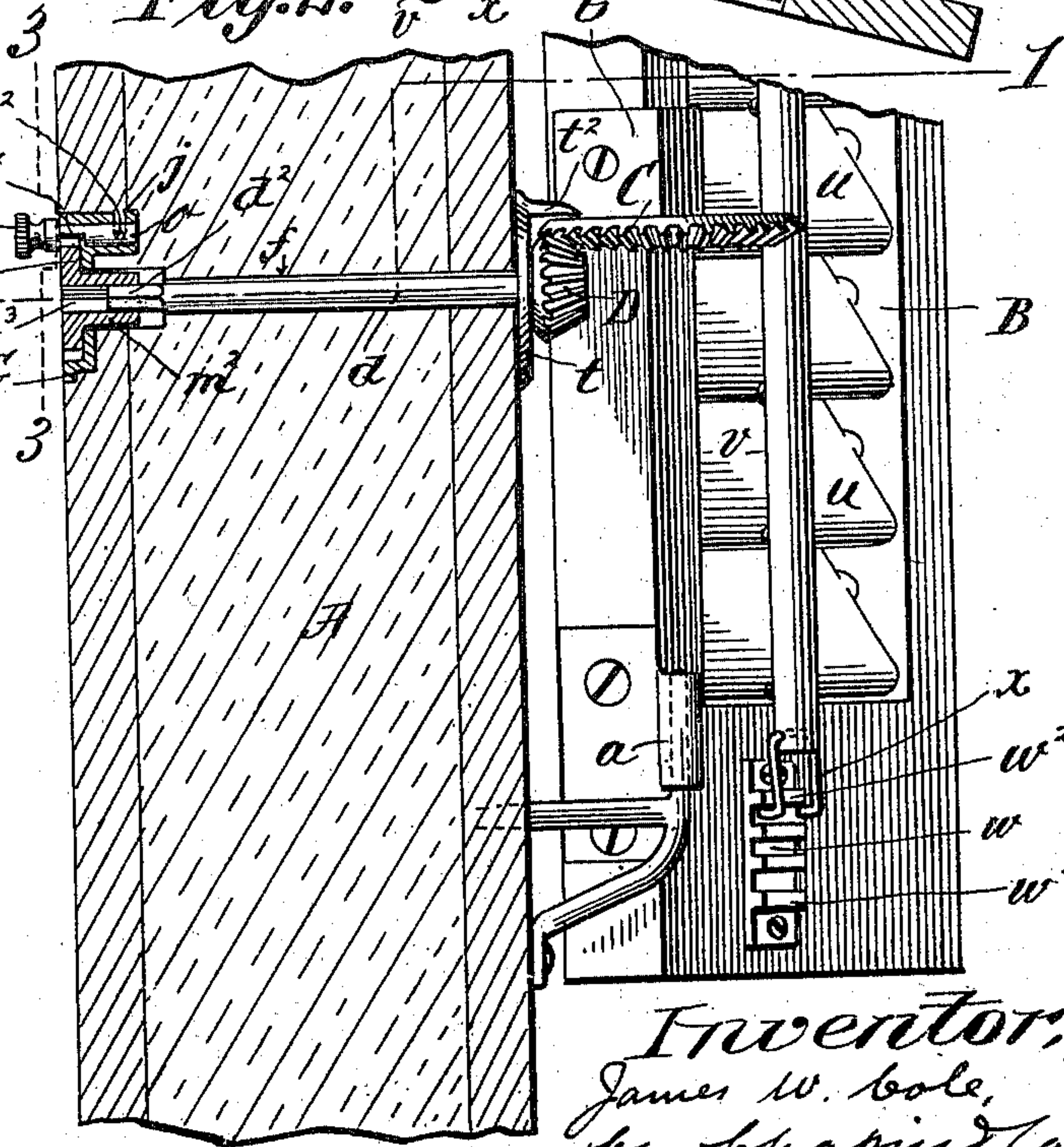
No. 575,329.

Patented Jan. 19, 1897.

*Fig. 1.*



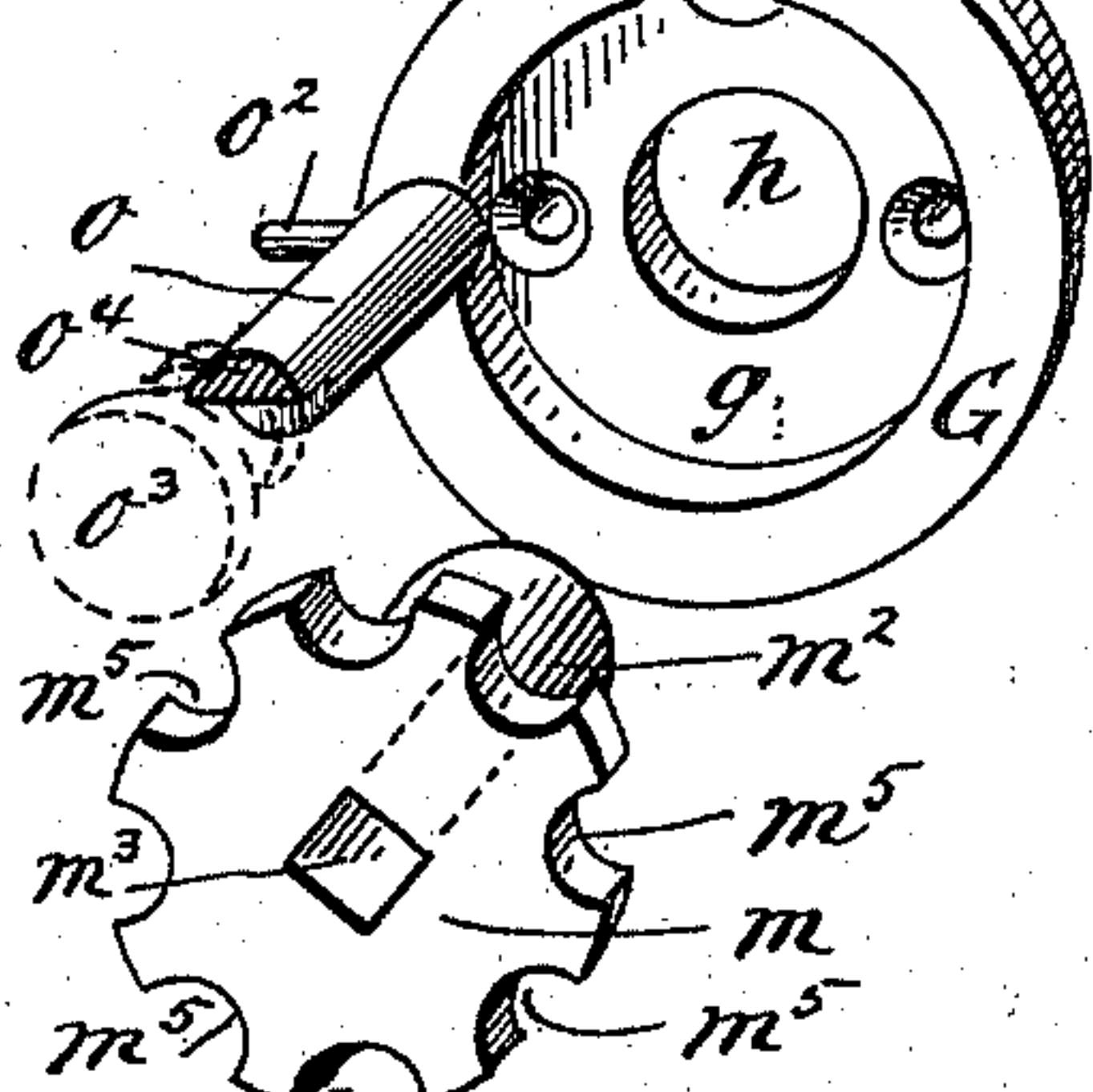
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:  
J. D. Garfield  
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# UNITED STATES PATENT OFFICE.

JAMES W. COLE, OF NORTHAMPTON, MASSACHUSETTS.

## SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 575,329, dated January 19, 1897.

Application filed March 20, 1896. Serial No. 584,113. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. COLE, a citizen of the United States, residing at Northampton, in the county of Hampshire and State of Massachusetts, have invented new and useful Improvements in Shutter-Workers, of which the following is a specification.

This invention relates to improvements in shutter-operating devices, more particularly relating to means which is operated at the inside of the window-casing for swinging the hinge-supported shutters or blinds and holding them locked and immovable in any of their positions, either wide open, closed, or in an intermediately-adjusted position.

The invention also relates to a device for operating all of the tilting slats of the blind and for locking them in any of their tilted positions.

The object of the invention is to materially improve the constructions of the aforementioned devices whereby they are rendered simple, effective, and have no liability of becoming deranged or bound; and to these ends the invention consists in constructions and combinations of parts, all substantially as will hereinafter fully appear, and be set forth in the claim.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a horizontal section through a window-casing and the hinged blind and through or along the blind-operating devices. Fig. 2 is a vertical section of the same, taken on the line 2 2, Fig. 1, the operating key or handle, which is shown in Fig. 1, being, however, in this view omitted. The line 1 1 on this view, Fig. 2, indicates the planes of section on which Fig. 1 is taken. Fig. 3 is a face view of fittings within the inner side of the window-casing, an operating-spindle with the handle-knob being shown as in section taken on the line 3 3, Fig. 2. Fig. 4 represents in perspective and detached the parts seen in Fig. 3.

In the drawings, A represents the window-casing having the blind or shutter B, which is of the usual well-known construction, hinged to the casing at *a* by the employment of the usual form of hinges. At the hinged edge of the blind there is mounted the bevel segment-gear C, which, as shown, comprises

three-quarters of a circle and has the angular lug *b* standing above its back, this lug overlapping and fitting the edge and outer face of the appropriate member of the blind-frame, being secured thereto by screws. The axis of the gear C is coincident with the hinge *a*.

A hole *f* is bored horizontally through the window-casing from the inner to the outer side, within which is introduced the arbor *d*, which carries at its outer end the beveled pinion D, which is in mesh with the aforesaid bevel segment-gear C. The aforesaid hole *f* is counterbored or enlarged within the inner face of the window-casing, within which is set the bushing G, which constitutes the support and bearings for movable parts of the shutter operating and locking devices, which will be shortly described.

The bushing consists of an annular disk having the lateral rabbet or depression *g* within its outer face, and this part *g* furthermore has off to one side from its axial opening *h* the rearwardly-projected tubular hub *i*, with the cross slot or kerf *j* transversely placed near its inner end, as clearly seen in the drawings, this cross-kerf *j* having a depth of approximately half the diameter of the said tubular hub, and it intersects the bore of said hub *i*. This bushing G, with its tubular hub *i*, is sunk within the vertical inner face of the window-casing, within the enlarged orifice of the hole *f*, which is formed therefor, and is secured by the screws *k*.

Within the depression *g* of the bushing is provided the disk *m*, having the rearward axial hub *m*<sup>2</sup>, which latter protrudes through and rearwardly beyond the central opening *h* of the bushing. The disk and its said hub *m*<sup>2</sup> has the axially-extended squared opening *m*<sup>3</sup>, within the inner portion of which the correspondingly-squared part *d*<sup>2</sup> of the pinion-arbor *d* enters with a non-rotatable engagement. The disk *m* is adapted to receive, in the outer part of said squared opening *m*<sup>3</sup>, the squared inner end of the key H, whereby the turning of the key, and thereby the disk, causes the rotation of the arbor and pinion and the swinging of the blind. The said disk is provided, marginally, with the semi-circular notches *m*<sup>5</sup>. A spindle *o* is entered within the aforesaid tubular hub *i*, and this



has the radially-projected stud  $o^2$  near its inner end, which, as the spindle is turned, moves within the aforesaid cross-kerf  $j$ , and, by its abutment against the base of said kerf at the one or the other side of the axis of the hub, the half rotational movements of the spindle are limited. This spindle  $o$  is provided at its end farthest from that having the stud  $o^2$  with the handle-knob  $o^3$ , whereby it may be conveniently turned, while next within this handle-knob, and as seen at  $o^4$ , the spindle is recessed or slabbed, so that the unrecessed part of the spindle may, accordingly as the spindle is turned to the one or other of its extremes, lie within one of the marginal notches  $m^5$  of the disk to lock the disk, and consequently the blind, or lie within the portion of the socket for said spindle which is radially outside of the periphery of the disk  $m$ , then leaving the latter free to be turned by the key to operate the blind.

Upon the outer face of the window-casing is the face-plate or bushing  $t$ , through which passes the pinion-arbor  $d$ . This plate  $t$  has the lug  $t^2$ , standing horizontally outwardly therefrom, in a plane for engagement with the upper face or back of the beveled segment-gear C, and this serves as a stop to prevent the lifting of the blind.

The blind B, which has the series of tilting slats  $u$  and the vertical operating-bar  $v$ , individually jointed thereto, has below the end of the operating-bar  $v$  the plate or casting  $w$ , with the series of outstanding lugs  $w^2$

$w^2$  like rack-teeth. The bar has at its lower end the catch device  $x$ , which may swing on the bar and relatively to the teeth  $w^2$ , so as to engage one or another of the latter, according to the vertical adjustment of the bar, and thereby hold the bar and tilting slats in any set position and against rattling.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a shutter worker and lock, the combination with the casing and blind, the gear, C, and the pinion, D, with the arbor,  $d$ , projected through a hole therefor in the window-casing, the annular bushing, G, secured within the inner face of the casing, and provided with the tubular hub,  $i$ , inwardly extended at one side of its axis, which hub has the cross-kerf,  $j$ , intersecting its axial bore, the disk,  $m$ , having the marginal notches,  $m^5$ , and the hub,  $m^2$ , in which the pinion-arbor has a non-rotatable engagement, the spindle,  $o$ , rotatable within said hollow hub,  $i$ , having the radial stud,  $o^2$ , to play in, and to be limited by the opposite base portions of, the said cross-kerf,  $j$ , and provided, outwardly, with the handle-knob,  $o^3$ , and having the recessed portion,  $o^4$ , next to the notched rim of the said disk, all substantially as and for the purpose set forth.

JAMES W. COLE.

Witnesses:

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