

No. 677,894.

Patented July 9, 1901.

J. NORTON.  
SHUTTER WORKER.

(Application filed Dec. 12, 1899.)

(No Model.)

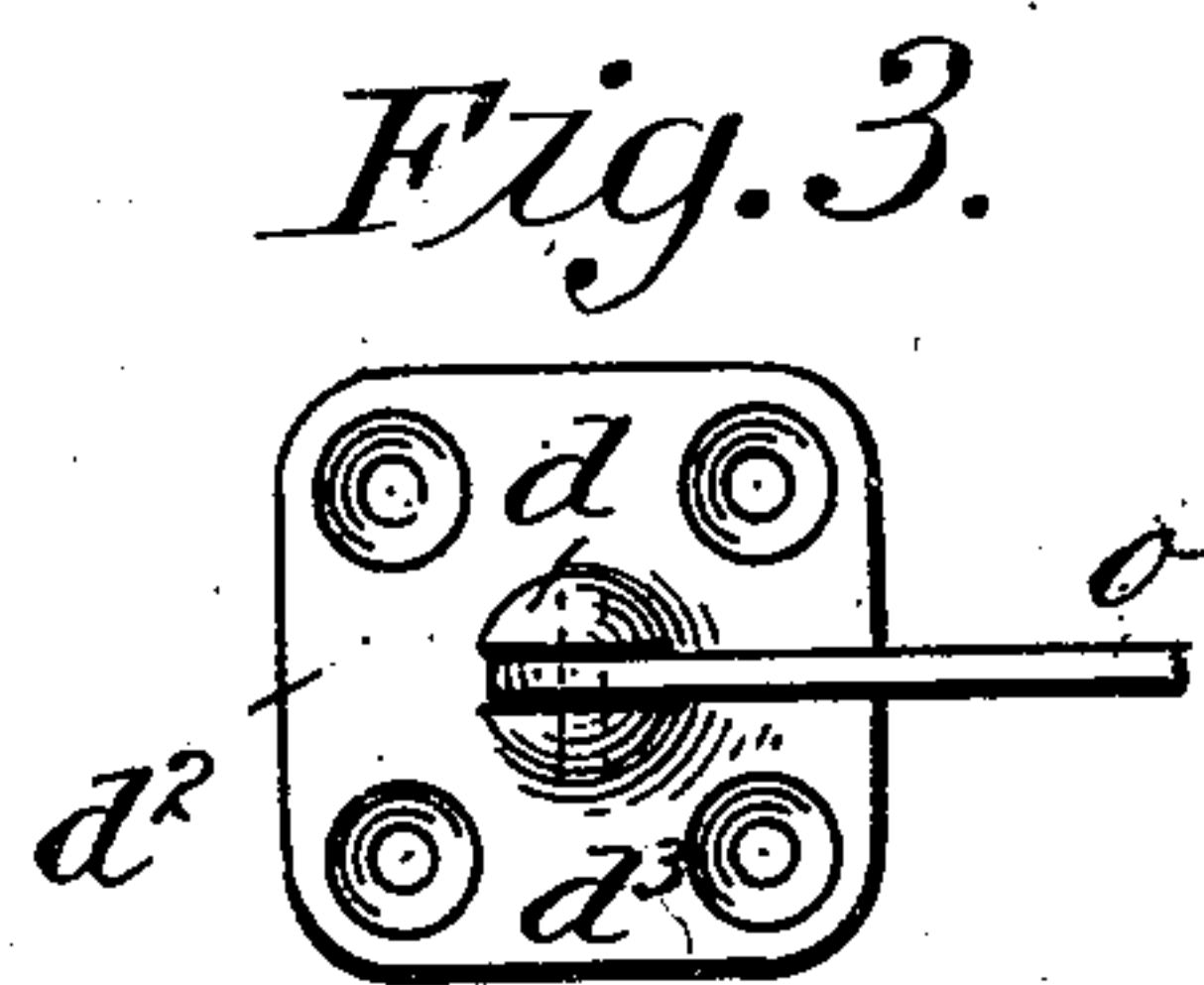
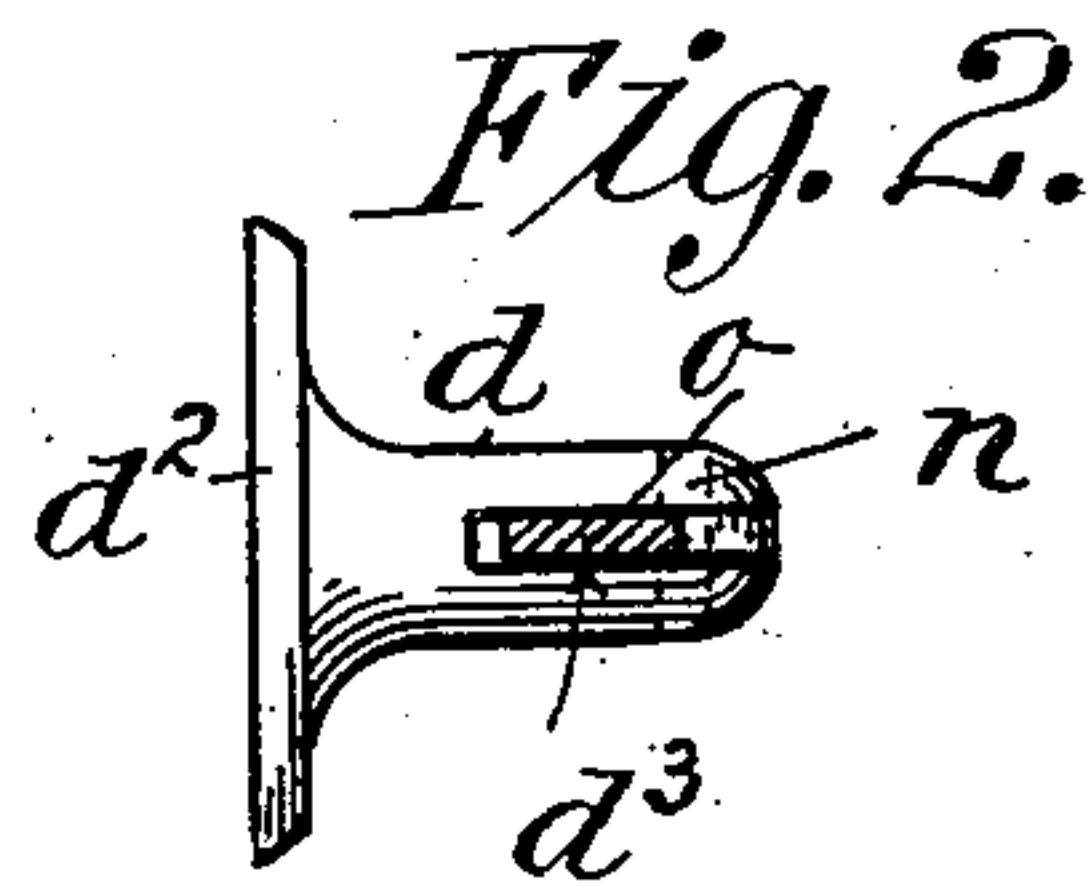
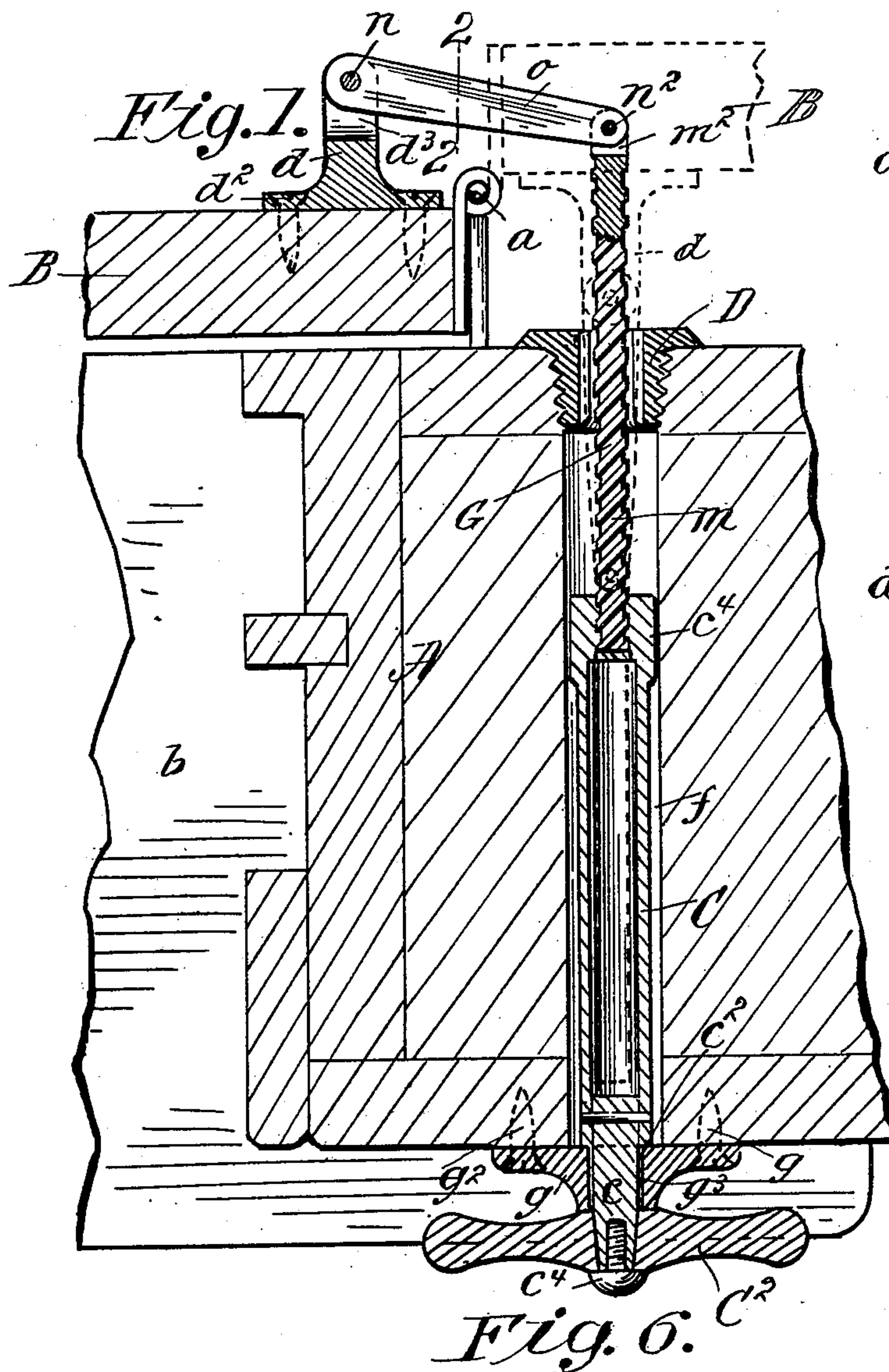


Fig. 4.

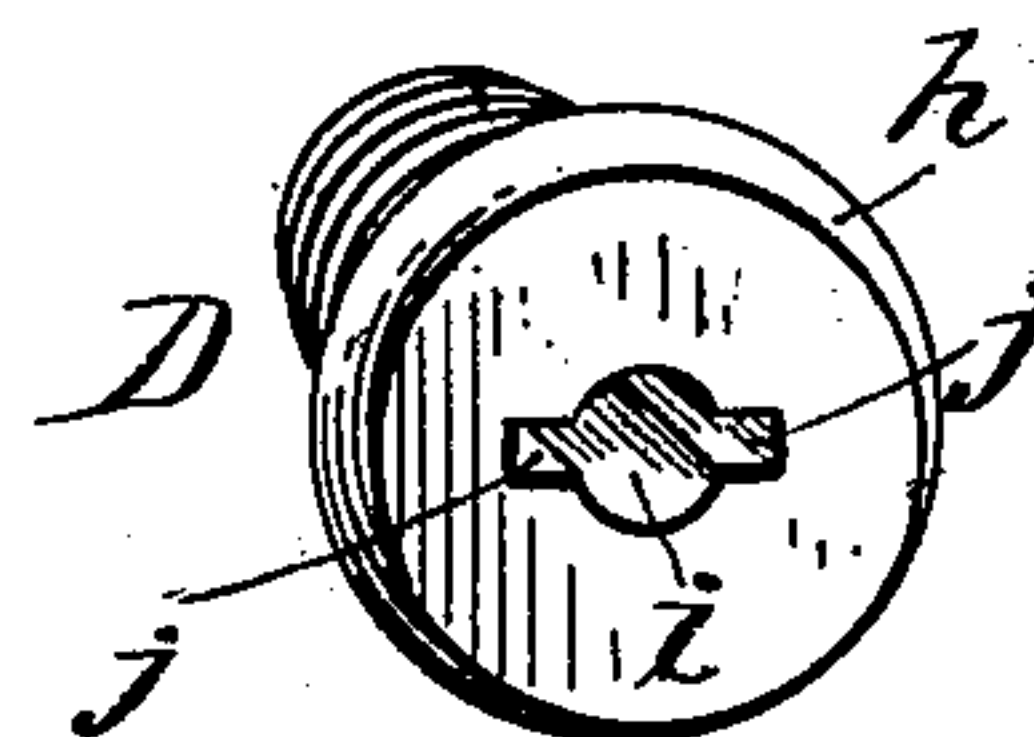
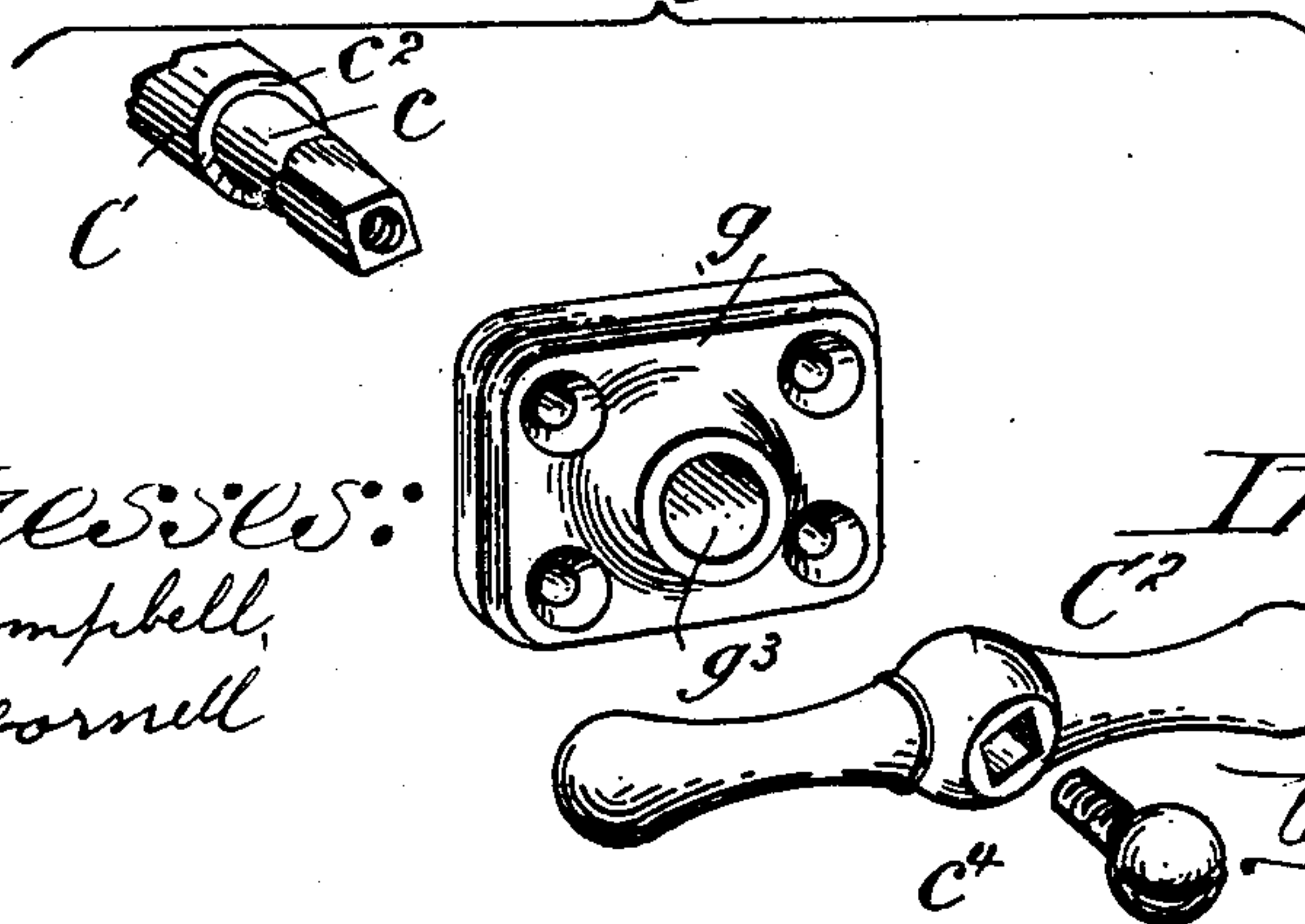
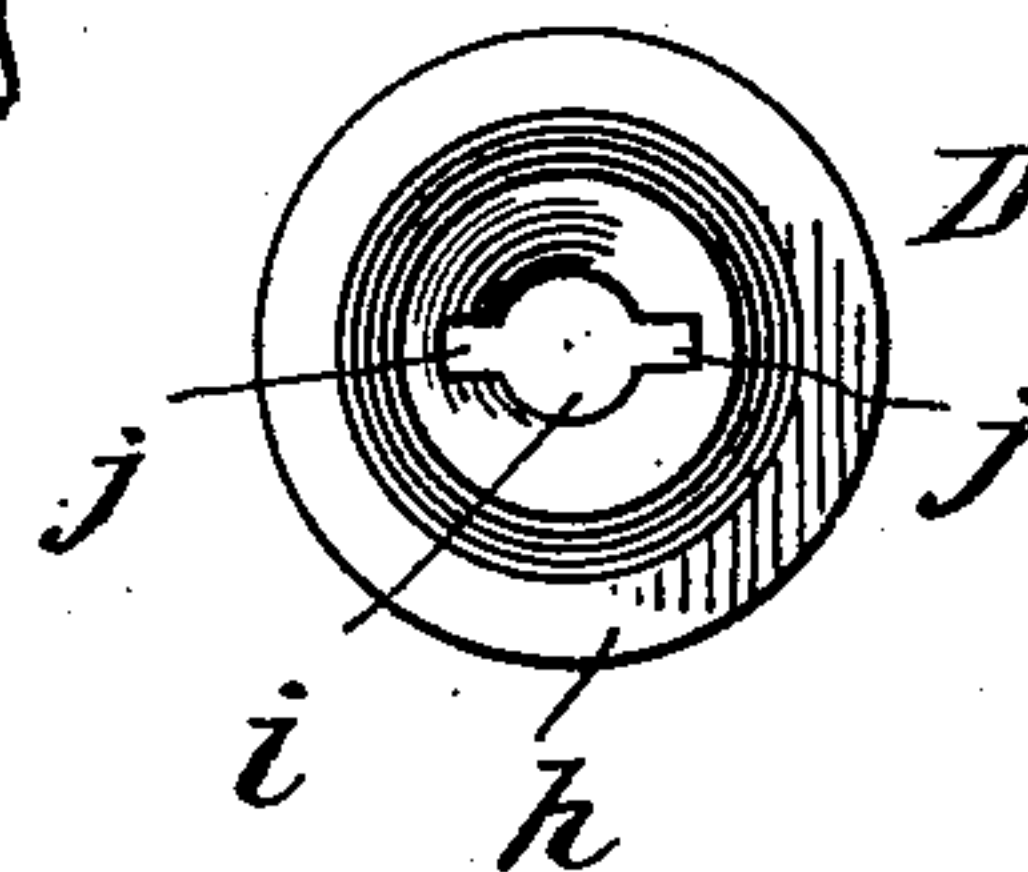


Fig. 5.



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# UNITED STATES PATENT OFFICE.

JAMES NORTON, OF SPRINGFIELD, MASSACHUSETTS.

## SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 677,894, dated July 9, 1901.

Application filed December 12, 1899. Serial No. 740,069. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES NORTON, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Shutter-Workers, of which the following is a full, clear, and exact description.

This invention relates to improvements in shutter-workers of the general class which comprises means for operating the blind or shutter at the exterior of the building from within and without the necessity of opening the window.

The object of the invention is to provide an improved shutter-worker of the class indicated which shall be of simplified and inexpensive construction, easy of application in relation to window casings and shutters as already applied; compact and unobtrusive, and easily operated.

The invention consists in the construction and combination or arrangement of parts one in relation to another, all substantially as hereinafter fully described, and set forth in the claims.

In the drawings, Figure 1 is a sectional view horizontally through the portion of the window-casing at which the shutter-worker is applied. Fig. 2 is a side view of the shutter lug and section or link on line 2 2, Fig. 1; and Fig. 3 is a view of same as seen in elevation. Fig. 4 is a perspective of the outside bushing, of peculiar construction; and Fig. 5 is an inner end view of same. Fig. 6 is a perspective view of parts comprised as the inner portion of the shutter-worker, hereinafter individually referred to.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the window-casing, outside of which the shutter B is hinged at *a* in the ordinary manner.

Fig. 1 in full lines shows the shutter as in the position closed across the window-opening *b*, while by dotted lines the shutter is shown in its fully-opened position.

As described relatively to its closed position, the shutter is provided at its outer side, adjacent the hinge *a*, with the outwardly-projecting lever lug or post *d*, having as an integrally-cast part thereof the foot-plate *d*<sup>2</sup>,

which is screwed to the shutter, and the said lug or stud *d* has the kerf or slit deeply formed therein, extended from its outer end, as shown at *d*<sup>3</sup>. The window-casing, in a line about on the level of the position of the said lug *d*, has a hole *f* bored through it from the inside to the outside. On the inner face of the window-casing, surrounding the orifice of the hole *f*, is the bushing-plate *g*, secured by the screws *g*<sup>2</sup> *g*<sup>2</sup> to the casing, the same having centrally through it and the central hub *g*<sup>3</sup>, formed as a part thereof, the circular hole. At the rear end of the said hole *f* through the casing the bushing D is screwed into a countersunk seat therefor, the said bushing being provided with the outlying flange *h*, the central circular hole *i*, and the diametrically opposite wing-slots *j j*, which radiate from opposite sides of the inner wall in said bushing, which constitutes the boundary of the central hole therethrough, said wing-slots extending from end to end through the bushing.

C represents a sleeve located within the inner portion of the aforesaid hole *f*, the same having the extremity *c*, which is necked down or of reduced diameter. Before the bushing-plate *g* is fastened on the inner face of the window-casing the said sleeve is introduced within the aforesaid hole *f*, the shoulder *c*<sup>2</sup> at the junction of the contracted extremity *c* with the portion therebeyond being about flush with the front face of the casing. The centrally-apertured bushing-plate *g* is then screwed in place, and on the extremity of the necked-down portion *c*, which protrudes beyond the end of the hub *g*<sup>3</sup> of said bushing, is secured by the screw *c*<sup>4</sup> the handle C<sup>2</sup>, through means of which the sleeve is rotated. The said sleeve C internally is provided with a projection or thread, engaged with which is the quick-screw *m*, formed externally on the shaft or rod G, the same playing through the central perforation of the outer bushing D and having its rear end slotted, as indicated at *m*<sup>2</sup>, and pivoted by its one end at *n* within the slotted lug *d* and by its other end at *n*<sup>2</sup> within the slotted end of the said shaft G is the flat link-bar *o*.

In the assemblage or connection of the parts in their relative positions when the shutter is swung closed it will be noted that the cen-



tral line of the stud  $d$  is as far off from one side of the hinging-point  $a$  of the shutter as the axial line of the bushing D, and the screw-shaft G and sleeve-nut C is off to the other side, so that when the blind is swung open through the draft action of the link, as insured by the endwise movement of the screw-shaft G induced by the turning of the sleeve-nut C exerting its leverage action on the lug or stud  $d$ , which is practically a lever-arm extended from the blind, the link-bar  $o$  may enter through the bushing and have its disposition within the hole  $f$ , the wing-slots  $jj$ , arranged in the plane of the flat link-plate, permitting the link to enter through the bushing, even although it may not be straightened out truly in the line of the screw-shaft and sleeve-nut. The bushing also constitutes an adjustable stop for the shutter—that is to say, by screwing the bushing in or out one or more turns, as may be required, its outer end may have such a position as to constitute a bearing for the end of the lug  $d$  thereagainst.

By the dotted-line indications in Fig. 1 it is seen that the shutter is brought to its fully-opened position, as insured by the rotation of the sleeve-nut C through its handle  $C^2$ , the sleeve-nut not being permitted to have any endwise movement by reason of its shoulder  $c^2$  against the inner face of the bushing and the handle against the outer portion of the bushing-hub, and hence the screw-shaft G is drawn not only for its full length within the hole  $f$  through the window-casing, but the flat link-bar  $o$  is drawn for substantially its full length into the said hole  $f$ , it passing through the bushing D, having the central opening and wing-slots.

By having the location of the axis of the hole  $f$  as far to one side of the hinged point  $a$  of the blind as the pivotal point of link  $o$  with the lug  $b$  is at the other side of the hinge-point it is insured that in the operation of the shutter-worker as the screw-shaft is drawn inwardly by the sleeve-nut and through the link exerts a blind-swinging lever action on the lug  $d$  and the blind is swung into the open position the screw-shaft and link-bar may, so to speak, be "swallowed" into the throat within the window-casing constituted by the aforesaid hole  $f$ .

The sleeve-nut C has its bearing for rotation and is maintained in its proper axial line by having its necked-down forward end portion  $c$  in comparatively long bearing through the hub of the plate  $g$ , although its slightly-

circularly enlarged opposite end portion  $c^4$ , in bearing in the hole  $f$  through the casing, serves also to steady the said part C, and the quick-screw is supported and guided through the hole  $i$  in the outer bushing D.

The blind or shutter will remain in any set position intermediate between its fully-opened and fully-closed position, as manifest, it being possible only to change the position of the shutter by positively and wilfully imparting rotation to the sleeve-nut.

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

1. In a shutter-worker, the combination with the window-casing having the hole  $f$  therethrough, and provided at the inner end of said hole with the bushing  $g$ , and at the outer end thereof with the screw-bushing D having the central hole and the wing-slots  $jj$  therethrough, of the shutter hinged to the window-casing and provided with the lug  $d$  secured thereto and extended beyond its face and constructed with the slot  $d^3$ , the sleeve-nut C located in the outer portion of the said hole  $f$ , and having the shoulder  $c^2$  and the necked-down portion  $c$  in bearing for rotation through and extended beyond said bushing  $g$  and provided with the handle  $c$ , a shaft G having the quick-thread engaged by said sleeve-nut, the outer end of which is slotted and the flat link-bar  $o$  having its extremities hinged to the slotted ends of said screw-shaft G and lug  $d$ , substantially as described.

2. In a shutter-worker, the combination with the window-casing having the hole  $f$  horizontally therethrough, and the shutter hinged to the exterior of the window-casing, and provided with the post or lug  $d$ , the location of which is as far from the hinging-point of the shutter as said hinging-point is distant from said hole  $f$ , the long sleeve-nut C, means for rotating it, and means for preventing its endwise movement, the screw-shaft engaged by, and adapted to be drawn into, and expelled from, the sleeve-nut, and the link  $o$  connected pivotally with both the outer end of the screw-shaft and with said lug  $d$ , and all adapted as the device is operated to swing the shutter from its closed to its open position for the screw-shaft and the link to enter said hole  $f$ , substantially as described.

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Witnesses:

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