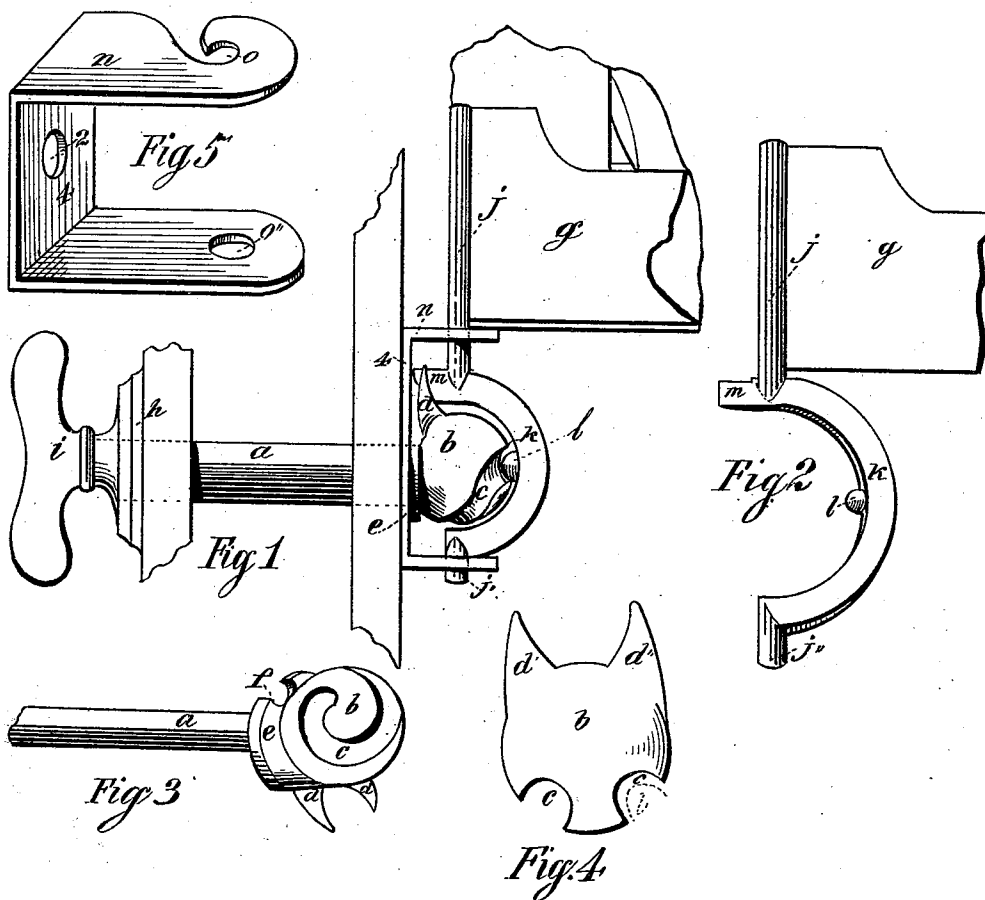


(No Model.)

W. P. TOOMER.
SHUTTER WORKER.

No. 548,021.

Patented Oct. 15, 1895.



Witnesses,
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UNITED STATES PATENT OFFICE.

WHITFIELD POTTER TOOMER, OF WILMINGTON, NORTH CAROLINA.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 548,021, dated October 15, 1895.

Application filed October 18, 1894. Serial No. 526,317. (No model.)

To all whom it may concern:

Be it known that I, WHITFIELD POTTER TOOMER, of Wilmington, in the county of New Hanover and State of North Carolina, have invented certain new and useful Improvements in Shutter-Workers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in outside-blind fixtures; and the object of my invention is to release and open the blinds from the interior of the structure without raising the windows. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of a window-sash, showing the application of the hinge. Fig. 2 is the operating sweep or arc and a portion of the hinge-plate. Fig. 3 is a perspective view of the worm-ball, pass-pins, and a portion of the connecting-bar. Fig. 4 is a cross-section of the worm-ball. Fig. 5 is a perspective of the hinge-socket.

Similar letters and numerals refer to similar parts throughout the several views.

A bar *a*, Fig. 1, having fixed at one end a ball *b*, on the surface of which is cut a worm or screw thread *c*, and it *b* is further provided with projections or lugs *d* and a collar *e*, in which collar *e* is cut a notch *f*, Fig. 3. The other end of the bar *a*, Fig. 1, is passed through an escutcheon plate or washer *h* and then into a handle of convenient form *i* and fastened therein in the manner usual with the ordinary door-knob. *g* is an ordinary hinge-plate the socket of which is firmly fastened to the pin *j*, which, passing downward, is bent into an arc of a circle *k* sufficiently large to embrace the knob *b*, which arc *k* is continued until it reaches a point in line with the pin *j*, which line is continued downward the requisite distance to form *j''*. At one-half the arc's length or one-quarter of the circle's circumference it (*k*) is provided with a projecting pipe or lug *l* of such size that it will enter the worm *c*. The upper end of the arc *k* is continued past the pin *j* and terminates in a wedge-shaped projection *m*.

A flat plate *n*, Fig. 5, of metal, bent at right angles twice, as shown, is perforated at *o o''* near its extremities, the openings *o o''* being large enough to admit of the free movement of the hinge-pins *j j''*, Fig. 2, when placed therein, the upper perforation *o*, Fig. 5, being slotted out so that the pins *j j''* can be placed in them at *o o''*. The back or middle section 4 of the plate *n* is also provided with an opening 2 of sufficient size to allow the passage of the bar *a* and in such a position that the center of the opening is in line with the centers of the openings *o o''* and level with the lug *b* when the pins *j j''* and arc are in place, as hereinafter described. The plate *n* may be further provided with screw-holes for attachment, although they are not essentially necessary.

The plate *g*, Fig. 1, being fastened to the blind in the usual manner and the blind being hung on the upper hinge, which is of the usual butt construction, is swung closed. The lower hinge-plate *n* is placed upon the pins *j j''* and fastened to the outside of the building. A hole is now bored through the opening 2, Fig. 5, to the interior of the structure and of sufficient size to allow the passage of the bar *a*, Fig. 1, which is passed therethrough, and the notch *f*, Fig. 3, in the collar *e* allowing the lug *b*, Fig. 1, to enter the groove *c*. Passing to the interior of the building, the face plate or washer *h* is first placed over the projecting end of the bar *a* and fastened to the facing by means of flush-screws or any convenient means. The handle *i* is then passed onto the remaining projection of the bar *a* and fixed, as before described. Upon partly rotating the handle *i* the groove or worm *c* will impel the arc *k* through its lug *l* outward until the pin or pass-lug *d* engages the projection *m*, carrying it over the dead-center, when the opposite side of the groove *c* will force it the balance of the half-revolution about its perpendicular axis in *j j''*. The pin *j* being fastened to the arc *k* and hinge-plate *g* will also rotate and cause it *g* to perform a like rotation, thereby opening or closing the blind, as desired. As the blind has to be passed slightly farther than the half-revolution, I have the plate *g* bent sufficiently out of line with the arc *k* to allow therefor, and in

the inturning end of the worm *c* it is carried sufficiently beyond its center to insure the closing of the blind too.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, the blind, having a hinged plate formed with an extension having an arc shaped portion, a ball or knob fitting in said arc shaped portion and having a cam groove and lugs *d, d*, said arc shaped portion having a lug *l* to engage the cam groove and the lug *m* to fit between the lugs *d*, and the handle for turning the knob, substantially as described.

2. In combination, the blind, the hinge plate provided with an extension having an arc shaped portion, the bearing plate *n* having upper and lower arms to receive the journals of the arc shaped extension, the upper bearing of the plate being slotted laterally, the

cam for operating the arc having a groove receiving a lug from the arc, means for moving the arc independent of the cam groove to move the lug past the dead center of the groove and the handle for operating the cam passing through the base of the bearing plate.

3. In combination, the hinge plate having the arc extension, the cam fitting within said arc and having a groove to receive a lug therefrom, means for moving the arc independently of the cam groove to move the lug past the dead center of the groove and means for operating the cam substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WHITFIELD POTTER TOOMER.

Witnesses:

R. E. TOWNSEND,

GEO. SLOAN.