W. P. McCOBB.

SHUTTER-WORKER.

No. 191,454. Patented May 29, 1877.

Fig. 1

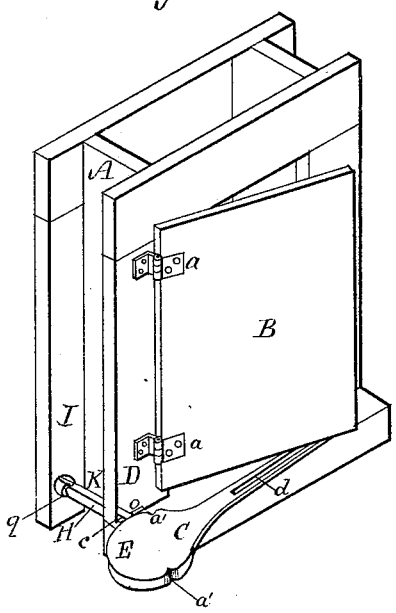


Fig. 3.

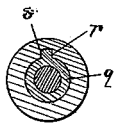


Fig. 2.

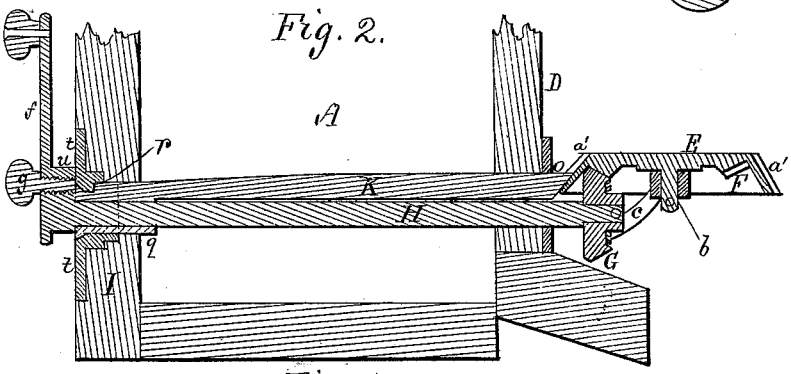


Fig. 4.

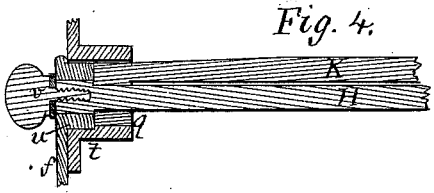
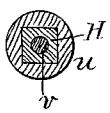


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM P. McCOBB, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SHUTTER-WORKERS.

Specification forming part of Letters Patent No. **191,454**, dated May 29, 1877; application filed May 7, 1877.

To all whom it may concern:

Be it known that I, WILLIAM P. McCOBB, of Boston, Suffolk county Massachusetts, have invented an Improvement in Shutter-Workers, of which the following is a specification:

My present invention is an improvement in devices for operating and securing shutter-workers, shown in Letters Patent No. 187,474 of the United States, granted to me on the 20th day of February, 1877, and embraces mechanical devices for holding the shutter at any desired point between its full open and closed positions, the purpose of my present improvement being mainly to guard against accident or injury to the working parts during high winds, or from other causes; and consists in the employment, in combination with the shaft which carries the actuating pinion, of a rod, one end of which is adapted to operate with the hinge-plate of the shutter and produce friction upon it, or estop its movements, or to permit it to rotate freely, as the case may be, while the opposite end of such rod is provided with means for advancing or retracting the rod with respect to the pinion, the whole being substantially as hereinafter more fully set forth and definitely claimed.

The drawings accompanying this specification represent, in Figure 1, a perspective view, and in Fig. 2 a vertical section, of portions of a window frame and shutter containing my improvements, while Fig. 3 is a cross-section of the operating-shelf and its hub. Fig. 4 is a longitudinal section, and Fig. 5 a cross-section, of a modified construction of the pinion-shaft and its accessories.

In these drawings, A represents a window-frame of ordinary construction, and B, a shutter combined therewith in the customary manner, the hinges of the shutter being shown at *a a*. Immediately below the shutter B, and somewhat outside of its hinges, I dispose a slotted horizontal lever or arm, C, which has, near its end, a pendent pivot, *b*, that is supported in a shelf or bracket, *c*, secured to the outside or casing D of the window-frame. The base of the arm C is a circular plate or shield, E, of which the pivot is the center and turning-point; and upon the under side of such plate, and near its perimeter, I cast a segmental toothed rack, F, with which a beveled pinion, G, engages, this pinion being affixed to the outer end of a horizontal shaft, H, which extends through the window-frame and into the interior of the building or an apartment. The free end of the arm or lever C is slotted or furcated, as shown at *d*, and straddles a pin depending from the under side of the shutter B, and near the edge of the latter most remote from its hinges *a*.

It will be seen that an outward movement of the arm C upon its fulcrum, by the instrumentality of the pinion, has the effect of opening the shutter, and vice versa.

The plate or shield E constitutes a cap or shield to protect the rack and pinion and the pivot of the arm B from corrosion and injury by the elements, and from becoming inoperative by reason of ice or snow.

The above constitutes, substantially, the shutter-operating device shown and explained in my patent before named.

In carrying my present improvement into practice I provide a rod, K, which extends through the window-frame, and immediately above and parallel with the shaft H, the outer end *o* of this rod terminating at a point immediately adjacent to the edge of the plate E, while its inner end is tubular, as shown by a hub, *q*, and encompasses the inner end of said shaft H.

A spline, *r*, is formed upon the top of the inner end of the rod K, and slides in a groove, *s*, cut in the escutcheon *t*, which is secured to the inner face or casing I of the window-frame, by which means the rod is permitted endwise movement, but not a rotary movement, with respect to the shaft H.

To the inner end of the said pinion-shaft H I affix a crank, *f*, while through the hub *u* of this crank, and to one side of the axis of the shaft H, I pass a screw, *g*.

The crank serves to turn the arm C upon its pivot, and consequently to open or close the shutter; and when it is desired to securely hold the shutter in a position partly open, the screw *g* is advanced, and abuts against the inner end of the hub *q*, and pushes the latter, as well as the rod K, outward, until the outer end of the rod abuts against the plate E, and by this means estops rotation of such plate under all ordinary circumstances.

Should a high wind arise, and great strain or thrust from this or other cause be exerted upon the shutter, the plate E will slip upon the rod K, and thus avoid fracture or injury. To lock the shutter B in a full open or closed position I create in the edge of the hinge-plate E two notches, *a' a'*, with which the rod or bolt K operates.

I do not limit myself to the precise construction and arrangement of the rod K, escutcheon *t*, sleeve or hub *q*, crank *f*, and screw *g*, as herein shown, as these may be modified to a considerable extent. For instance, I have shown in Figs. 4 and 5 of the drawings a modification of these parts, in which the hub *q* upon the inner end of the rod K abuts against the hub *u* of the crank, as before; but the crank slides longitudinally upon its shaft H, and does not rotate thereon, and is pressed forward by a screw, *v*, which screws into the end of the shaft, and whose head overlaps the said hub *u*.

By advancing the screw *v* the crank *f* is also advanced, and, in its turn, abuts against and advances the rod K, and pushes the latter into contact with the hinge-plate E, with the same result as in the first instance.

I claim—

1. The combination, with the shaft H and hinge-plate E, of the rod K, adapted to operate upon said plate with a frictional pressure, substantially as and for purposes stated.

2. The combination, with the plate E, of the shaft H, rod K, with its hub *q*, crank *f*, and screw *g*, whereby a frictional pressure is exerted upon said plate E by means of the end *o* of rod K, substantially as and for purposes stated.

WM. P. McCOBB.

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