H. A. HOUSE.

SHUTTER-WORKER.

No. 170,171. Patented Nov. 23, 1875.

Fig 1

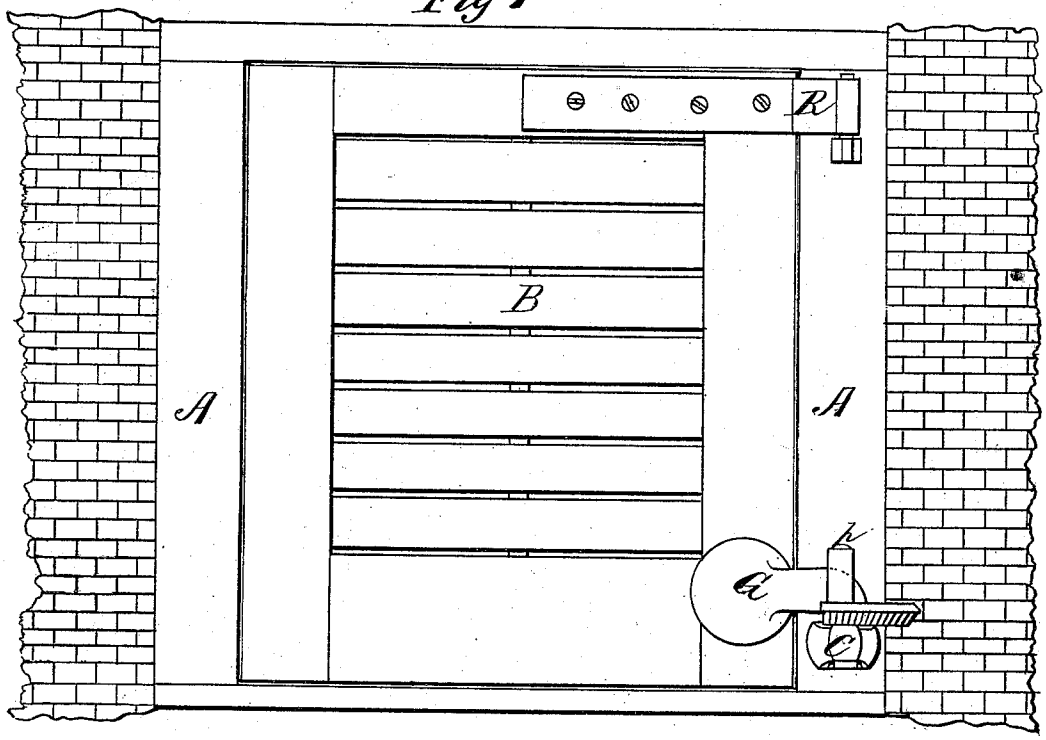


Fig 2

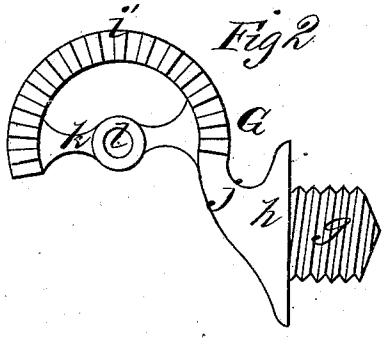


Fig 3

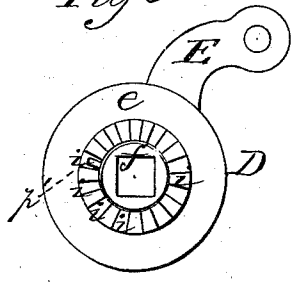


Fig 4

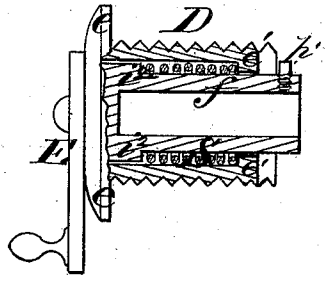
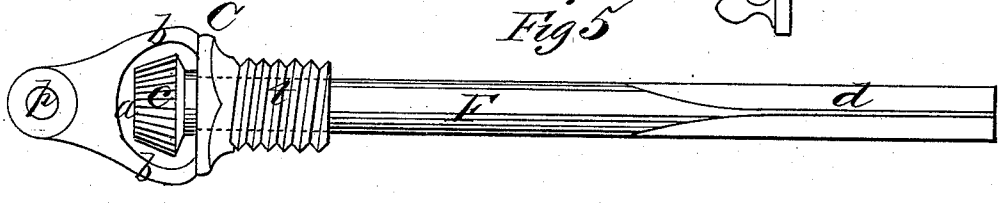


Fig 5



WITNESSES

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ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY A. HOUSE, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN SHUTTER-WORKERS.

Specification forming part of Letters Patent No. **170,171**, dated November 23, 1875; application filed April 24, 1875.

CASE B.

To all whom it may concern:

Be it known that I, HENRY A. HOUSE, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and valuable Improvement in Blind Openers and Closers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front view of my device, and Figs. 2 and 3 are detail views of the same. Fig. 4 is a sectional view, and Fig. 5 a plan view, of the same.

This invention has relation to improvements in window-blind openers and closers; and the nature of the invention consists in the novel construction and arrangement of devices, substantially as hereinafter described, whereby the opener is adapted to be locked for holding the blind in any desired position, and is likewise adapted to adjust itself automatically to jambs of various thicknesses, as will be hereinafter more fully explained and definitely claimed.

In the annexed drawings, A designates a window-frame set in a wall in the usual well-known manner, and B a blind fitting snugly therein, in connection with which I propose to illustrate my improved opener. The upper portion of the blind is secured to the jambs of the frame by the usual well-known blind-hinge R. C represents a knuckle of any suitable metal, the shank of which is of considerably larger size than is usual, is provided with a screw-thread, *t*, and is tubular; it also has on its outer end a pin, *p*, differing in no respect from those in common use, between which and the screw-thread is cut a slot, *a*, in a swell or enlargement, *b*, in which is arranged a beveled gear-wheel, *c*, rigidly secured upon the end of a rod, F, the same being of suitable length, and having its other end *d* of prismatic form for a purpose hereinafter explained. D represents a tubular screw-threaded nut, having a broad outwardly-projecting flange, *e*, and an inwardly-projecting flange, e^1, upon its other end, through which is passed the cylindrical shank *f* of an operating-crank, E, which is tubular, the form of the bore corresponding to that of the prismatic end *d* of rod F, so that the latter will be received within the former, and will be locked against rotation independent thereof. S represents a helical spring arranged on shank *f* of crank E, which spring is compressed between flange e^1 of nut D, and an annular enlargement, i^2, at the base of the shank of crank E, which latter projects a suitable distance through the said nut, and is held against casual detachment from the same by means of a stop, *p'*, screwed into the end of the said shank, as shown in figure. The space between stop *p'* and the arm of the crank is somewhat greater than the length of nut D, so that the former has endwise movement in the latter for the purpose of engaging the said stop in, and disengaging it from, one of several radial notches, *i*, cut in the inner edge of the said nut. This nut is adapted to be screwed into the jamb of a window-crank, arm E serving as a lever for the purpose, when its shank is locked against rotation by the engagement of stop *p* in a notch, *i*, on the edge of nut D; consequently when the latter is forced home, this engagement will hold rod F against rotation in either direction until the said stop is disengaged from the notch of the nut. G represents a metallic hinge-plate, consisting of a screw-threaded shank, *g*, adapted to be screwed into the side rail of a blind, and prevented from undue penetration therein by means of a head, *h*, to which a beveled spurred segment, *i*, is attached, by means of a neck, *j*. Segment i^1 is braced by a diametrical bar, *k*, in the center of the length of which is erected a sleeve, *l*, adapted to receive the pin *p* on knuckle C, after the usual well-known manner of blind-hinges. Hinge-plate G is cast in a single piece of any suitable metal, and when the blind is mounted in the frame, as shown in Fig. 1, its spurred segment i^1 will engage with beveled pinion *c*, so that when the crank is caused to rotate the latter will cause a horizontally vibratory motion to be communicated to the former, thus opening or shutting the blind, as the case may be. In order to rotate rod F, it is necessary to thrust crank-arm E inward, thus disengaging stop

p' from notch i of the nut or sleeve D, and when the blind has been either opened or shut to the desired extent, and the crank-arm is released from pressure, the reaction of spring S will force the stop to a re-engagement with a notch in the said sleeve, rigidly locking the said rod against further rotation. In this manner the blind is prevented from slamming under any circumstances, and as the slightest engagement of the prismatic end of rod F in the shank f of crank-arm E will suffice to effect a connection thereof, an opening and closing device is produced, which is self-adjusting, and is capable of being used in window-frames of different thicknesses.

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

1. In a blind opener and closer the hinge or eye section G, having screw-threaded shank g, head h, neck i^1, and sleeve l, in combination with a suitable knuckle or pintle section, substantially as and for the purpose set forth.

2. The combination of the rod F, having prismatic end d, with the endwise-movable and correspondingly-tubular shank f of crank E, and sleeve or nut D, substantially as specified.

3. The endwise-movable rotating crank-arm sleeve f, adapted to be locked against rotation, for the purpose of preventing a blind from slamming, substantially as specified.

4. The rotating rod F, adapted to be passed into the tubular shank of knuckle C, and to be rigidly attached to a beveled pinion, c, recessed into an enlargement, b, of the said knuckle, substantially as set forth.

5. The combination of the sleeve D, having radial notches i, the shank f of crank E, having stop p', and spring S′, compressed between flanges e^1 i^2, substantially as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HENRY A. HOUSE.

V. R. C. GIDDINGS,
A. B. BEERS.