(No Model.) 2 Sheets—Sheet 1.

R. G. DUDLEY.

SHUTTER WORKER.

No. 315,393. Patented Apr. 7, 1885.

Fig. 1.

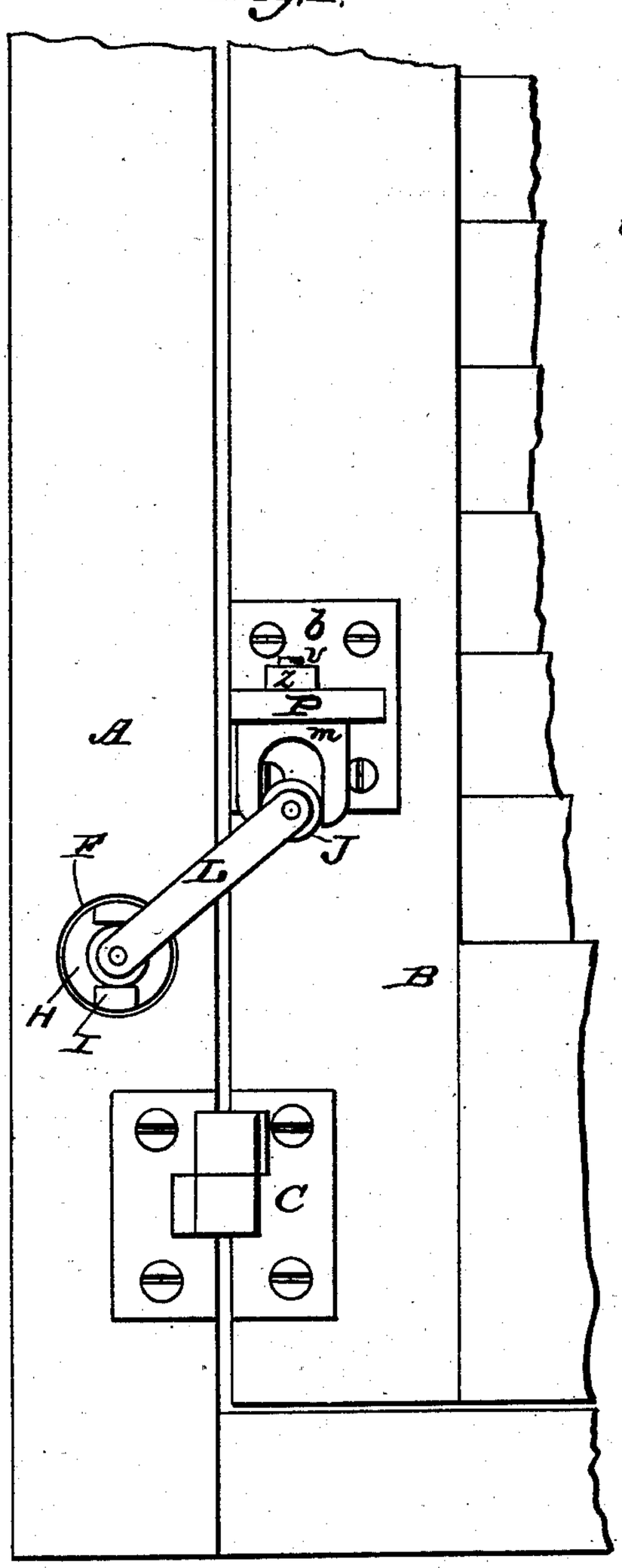
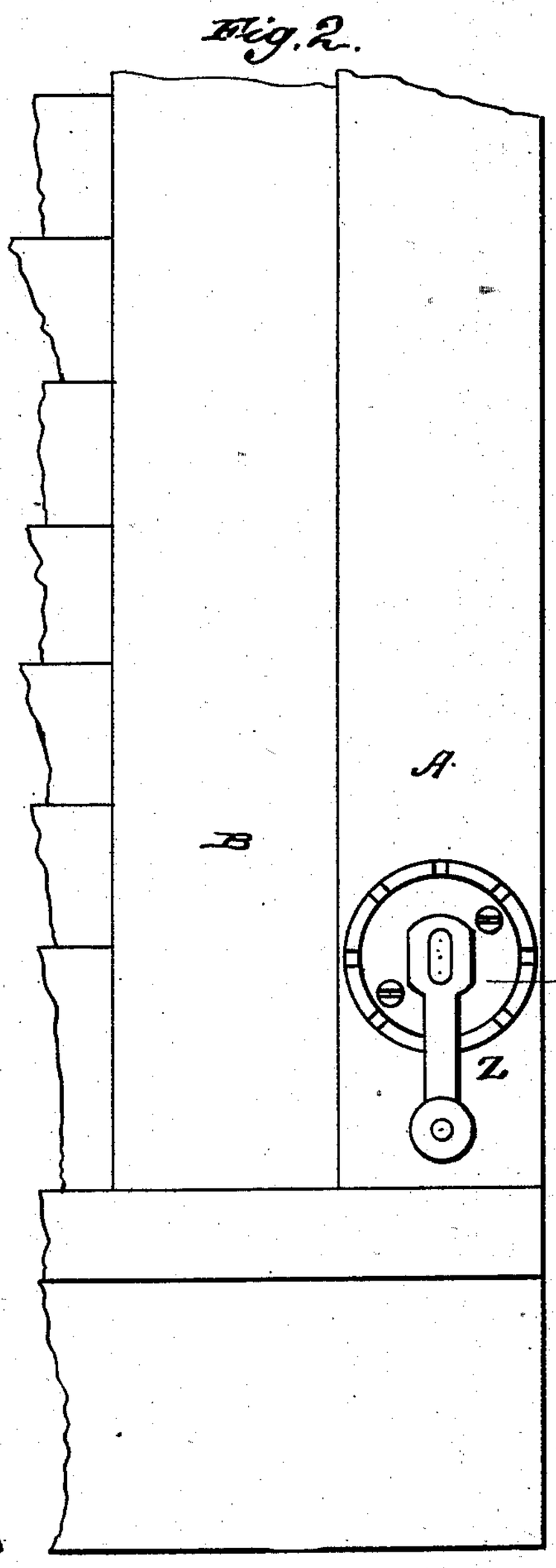


Fig. 2.



WITNESSES

E. H. Bates

P. C. Masi.

INVENTOR

R. G. Dudley

by Anderson & Smith

his ATTORNEYS

(No Model.) 2 Sheets—Sheet 2.

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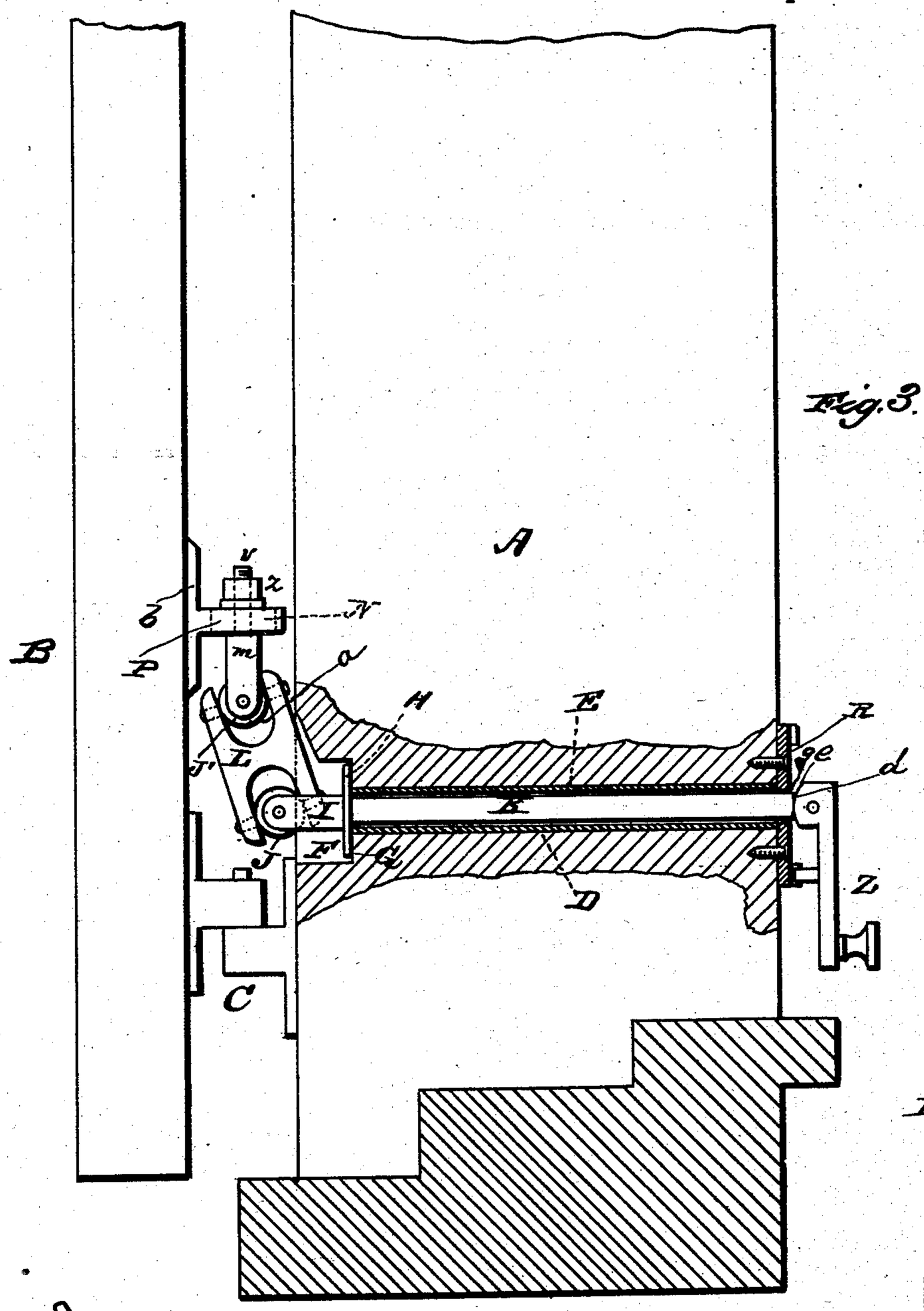

Fig. 3.

Fig. 4.

Fig. 7.

Fig. 6.

Fig. 5.

WITNESSES

E. H. Bates

P. Allasi

INVENTOR

R. G. Dudley

by Anderson & Fritch

his ATTORNEYS

UNITED STATES PATENT OFFICE.

RUSSELL G. DUDLEY, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO THE DUDLEY SHUTTER WORKER AND BURGLAR ALARM COMPANY, OF NEW YORK, N. Y.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 315,393, dated April 7, 1885.

Application filed July 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, RUSSELL G. DUDLEY, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Shutter-Workers; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a face view of my device. Fig. 2 is also a face view of the inner portion of the window-frame. Fig. 3 is a vertical sectional view, and Figs. 4, 5, 6, and 7 are detail views.

This invention has relation to shutter-working mechanism; and it consists in the construction and novel arrangement of devices, as hereinafter set forth, and pointed out in the appended claims.

In the accompanying drawings, the letter A designates the side of the window-casing, and B a shutter connected thereto by hinges C.

Through the casing is bored a passage, D, at right angles to the plane of the window, and in this passage is fitted a tubular bearing, E. The outer end of the passage D is enlarged a little, as shown at F, usually forming an interior annular shoulder, G, upon which is secured an annular wear-plate, H.

Through the wear-plate, passage, and bearing E extends the rotary operating-shaft K, the outer end of which is provided with a fork, I, in which is pivoted a turning piece or articulation, J, to which is also pivoted the inner forked end of the short tumbler L, forming a gimbal-joint. By means of a similar double-pivot articulation, J′, the outer forked end of the tumbler L, which extends obliquely, is connected to a fork-bolt, *m*. The articulation-pieces J and J′ are made with plain bearing-balls *a*, preferably, said faces working against the parallel inner surfaces of the fork branches, so that the joints have great strength to withstand the leverage strain.

P represents a lug having a base, *b*, which is secured to the shutter; or the lug may be formed on the lower hinge. The lug, however, is in vertical line with the hinge-pivots, and is slotted, as shown at N, to form a bearing for the squared shank *s* of the fork-bolt *m*, which is thus rendered capable of adjustment to bring it in line with the hinge-pivots. The squared shank *s* of the fork-bolt is formed with a threaded extension, *v*, on which is applied a securing-nut, *z*, whereby the fork-bolt is firmly attached to the lug P after adjustment.

The inner end of the operating-shaft K is formed with a seat, *c*, for the rocking crank Z, the bearing *d* of which is slightly rounded at its base, as indicated at *e*. The seat *c* is made large enough to allow play to the crank, which is connected to said seat by a pin. A ratchet-plate, R, having a central bearing aperture, *g*, for the inner end of the shaft K, is secured to the inside of the window-casing. The crank Z is radially arranged with reference to the ratchet-plate, and may be held in any position by engagement with the teeth thereof. A spring, *h*, is usually provided in connection with the crank to hold the latter in engagement with the ratchet, except when a disengagement is purposely effected in order to move the shutter.

These devices are readily applied and will be found strong and effective. As the operating-rod runs squarely through the casing, it can be fitted to one of the narrowest dimensions without interfering with the weight-boxes.

I am aware that it is not new to employ a gimbal-joint in connection with a shutter-worker, and I do not, therefore, claim such device, broadly.

I am aware of the patent granted to L. O. Dion, October 3, 1882, in which a single gimbal-joint is used to connect the shutter with the operating-rod, the said rod passing diagonally through a window-casing, and therefore do not claim such devices.

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

1. In a shutter-worker, the combination, with the operating-shaft K, running horizontally through the casing, of the shutter-lug P,

the fork-bolt *m*, and the double gimbal-joint, whereby said shaft is connected to said fork-bolt, substantially as specified.

2. In a shutter-worker, the combination, with a shaft running horizontally through the casing, of a double gimbal-joint and devices for connecting the same with a shutter, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

RUSSELL G. DUDLEY.

Witnesses:
PHIL. C. MASI,
M. P. CALLAN.