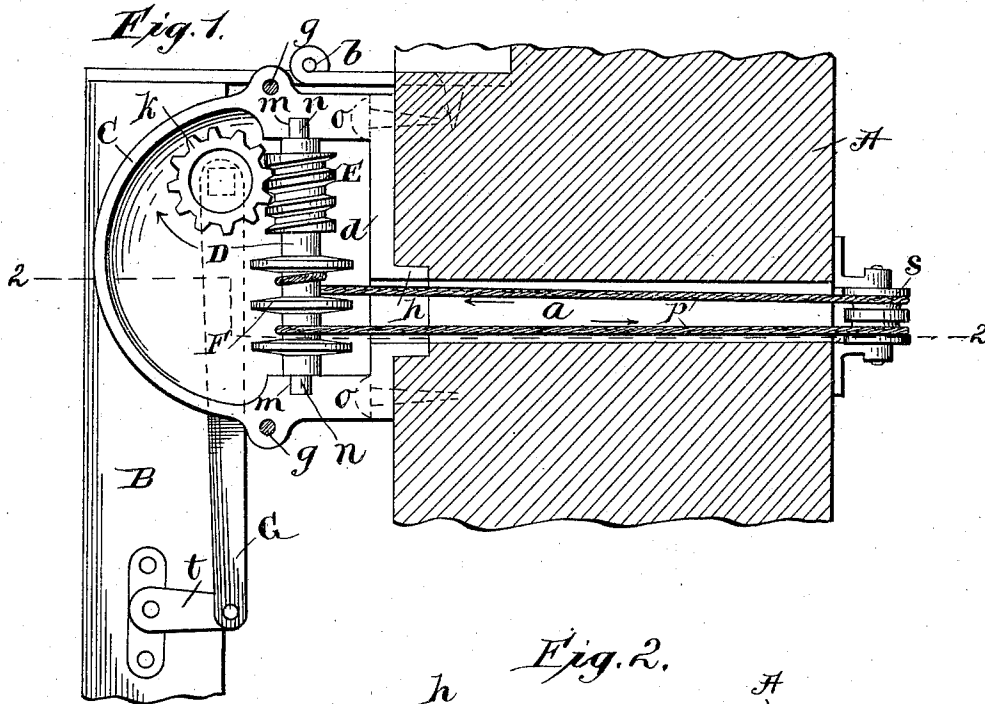
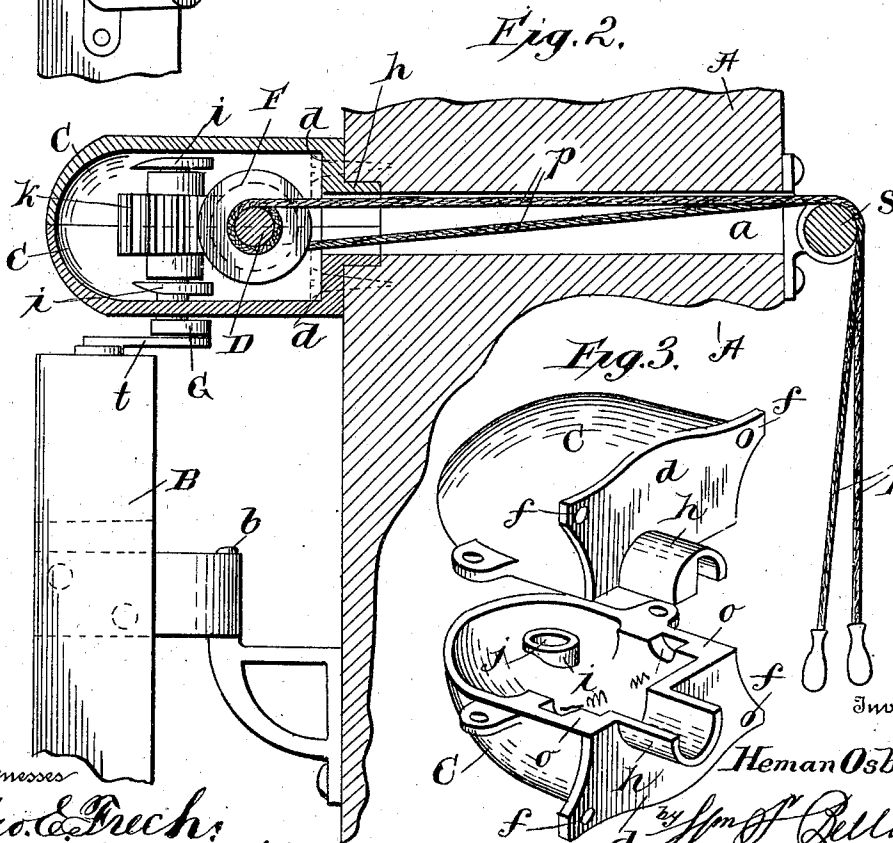


H. OSBORNE.
SHUTTER WORKER.

(Application filed Mar. 8, 1901.)

(No Model.)



Inventor

Heman Osborne

Attorney

Witnesses

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UNITED STATES PATENT OFFICE.

HEMAN OSBORNE, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NOVELTY BLIND OPERATOR COMPANY.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 683,221, dated September 24, 1901.

Application filed March 8, 1901. Serial No. 50,357. (No model.)

To all whom it may concern:

Be it known that I, HEMAN OSBORNE, 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 kind which are adapted to be operated from the interior of the building, and more particularly appertains to that description of shutter-worker in which there is comprised a worm which is positively operated as desired through operating means accessible within the room, and which worm in turn operates a worm-wheel or gear-wheel, between which and the hinged shutter is a medium of connection whereby the rotary motion as positively imparted to the worm-wheel causes a swinging motion in the desired direction for opening or closing the shutter or for placing and holding the shutter in any position to which it may be swung between its extremes of opened and closed positions, and in this class of shutter-workers, comprising the worm-wheel and worm, the shutter necessarily remains locked or set wherever it may wilfully have been placed by the manipulation of the mechanism from the interior, the necessity of catches or shutter-fasteners being dispensed with.

The object of the present invention is to devise a shutter-worker of the class indicated to embody by a new and ingenious arrangement of the component parts a minimum of parts, compactness, simplicity, directness of action, and avoidance of liability to derangement, durability, and the capability of withstanding the results of use for a long time without derangement.

To these ends the invention consists in certain specific and particular constructions, arrangements, and combinations of parts, all substantially as hereinafter described, and set forth in the claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a horizontal sectional view through the portion of the window-casing at

which the shutter-worker is applied, the shutter-worker being shown substantially in plan above the top of the window blind or shutter, a part of which is also shown in plan view. Fig. 2 is a vertical section taken on the line 2 2, Fig. 1. Fig. 3 is a perspective view of the two-part casing within which substantial portions of the operating mechanism are contained, and which casings constitute journal-bearings for such operating parts.

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

In the drawings, A represents a portion of the window-casing having the horizontal hole *a* therethrough.

B represents the blind or shutter, hinged in the ordinary manner at *b*.

C C indicate the two sections or halves of the case or inclosure for the shutter-working mechanism, the same being advantageously composed of cast-iron and having a straight flat back *d*, with ear-lugs *ff*, through which to screw the case securely to the exterior of the window-casing, above the top of the shutter, and said sectional case is also constructed with duplicate matching pairs of ear-lugs *ff*, through which by the screws *g* the sections of the case are held together in the manner of a close tight shell for the exclusion of moisture and dirt.

The sectional case has at its rear the hollow boss *h*, which fits into the window-casing hole *a*. The upper and lower case-sections have the alined bosses *i i*, with journal-sockets *j* therein, the lower one being extended through to the bottom of the casing. These sockets receive the upper and lower end journals of the worm-wheel *k*. The case-section to the rear of the mounting of the worm or gear wheel *k* has its opposite side walls thickened, as at *o*, in which thickened portions of each section are the duplicate pairs of matching half-cylindrical sockets *m*, receiving the end journals *n* of the shaft D, which has integrally formed by casting therewith the worm or screw E and the double sheave F. The worm meshes into the wheel *k*, and in winding engagement with the double sheave are the two cords *p p* or other equivalent flexible connections, the same extending through the

hollow boss *h* and through the hole *a* and are guided around the double sheave or rollers, and these cords constitute the direct operating means for the shutter-operating mechanism. The lever *G*, affixed on the lower end of the journal of the worm-wheel *k*, is linked at *t* to the top of the shutter.

The manner of operating the mechanism will be manifest from the illustrations provided. When one of the operating-cords is unwound, the other one is wound upon sheave *F*. The rotation of the sheave in either direction and the corresponding rotation in unison therewith of the worm impart the swinging motion to the lever which is in operating connection with the shutter.

The making of the worm *E* and the double sheave *F* as integral parts one with another and with the common shaft which has its mountings or journals provided therefor by mere cavities or sockets in the casing sections, which casing-sections also by right-angularly alined sockets constitute the journals for the worm-engaged wheel, contribute materially in composing what is deemed by me to be prominent and important specific features of my present invention.

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

1. In a shutter-worker, the combination with a casing, a gear rotatably mounted in the casing and having one end of its shaft projecting out of the casing, and means for operating the shutter from the said projecting end of the gear-shaft; of a shaft rotatably

mounted in the casing at right angles to the gear-shaft and parallel with the attaching side of the casing, a worm mounted on said last-mentioned shaft and arranged to engage said gear, the attaching side of the casing having an aperture therein located opposite to said worm-shaft, and a winding means projecting through said aperture and arranged to rotate said worm-shaft.

2. In a shutter-worker, the combination of two-part casing comprising the attaching-plate *d*, and the shell-sections *C, C*, which contain the oppositely-disposed journal-sockets *i, i*, arranged parallel with the attaching-plate, and the oppositely-disposed journal-sockets *m, m*, also arranged parallel with the attaching-plate and at right angles to said journal-sockets; a shaft journaled in the said sockets *i, i*, and projecting through one of them out of the casing; means for operating a shutter from said projecting end of the shaft; a gear mounted on said shaft inside of the casing; a shaft journaled in the said sockets *m, m*; a worm mounted on the said latter shaft and arranged to engage said gear; a double sheave also mounted on said latter shaft; said attaching-plate having an aperture located opposite to said sheaves; and a winding means engaging said sheaves and operating through said aperture.

Signed by me at Springfield, Massachusetts, this 6th day of March, 1901.

HEMAN OSBORNE.

Witnesses:

WM. S. BELLOWS,
JOHN ALDRICH.