H. C. HART.

SHUTTER-WORKER.

No. 175,604. Patented April 4, 1876.

FIG. 1.

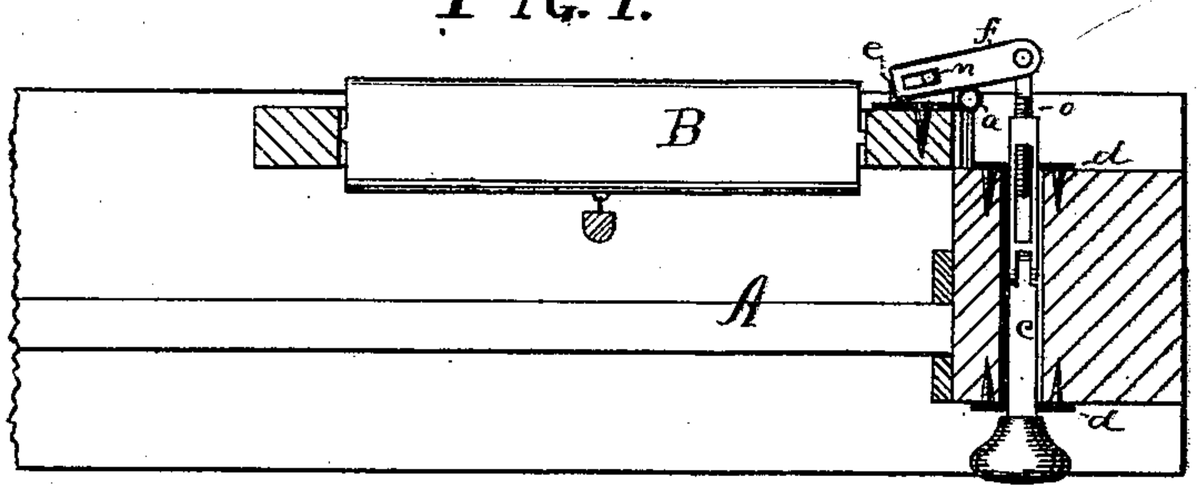


FIG. 2.

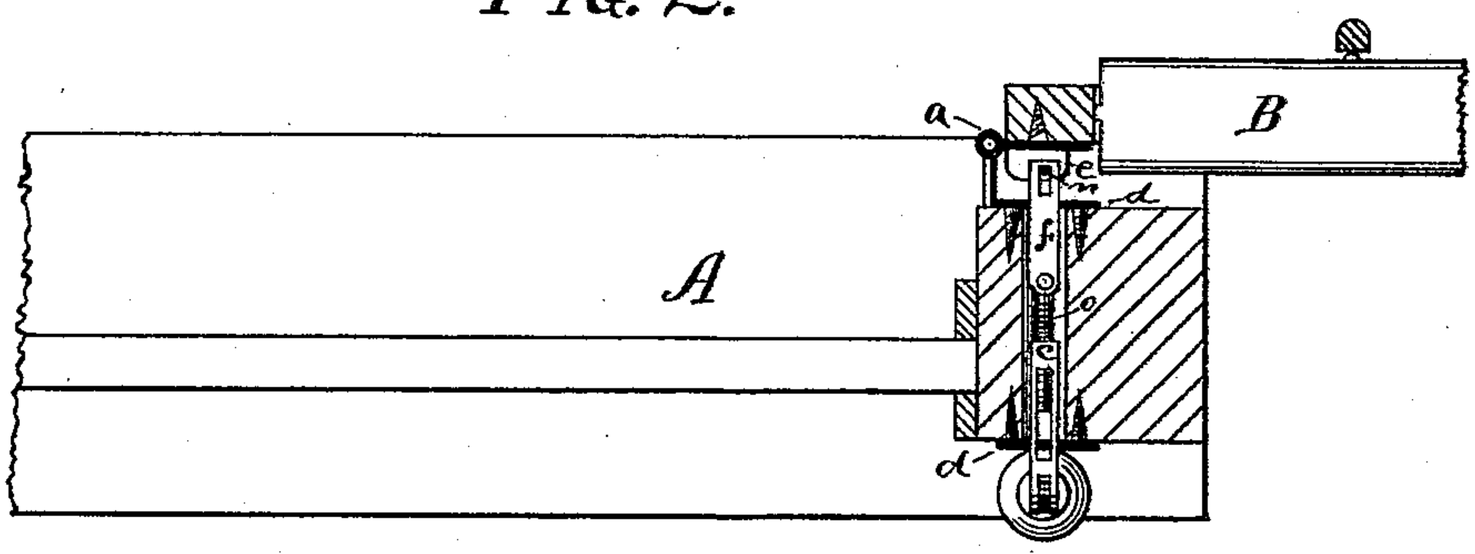
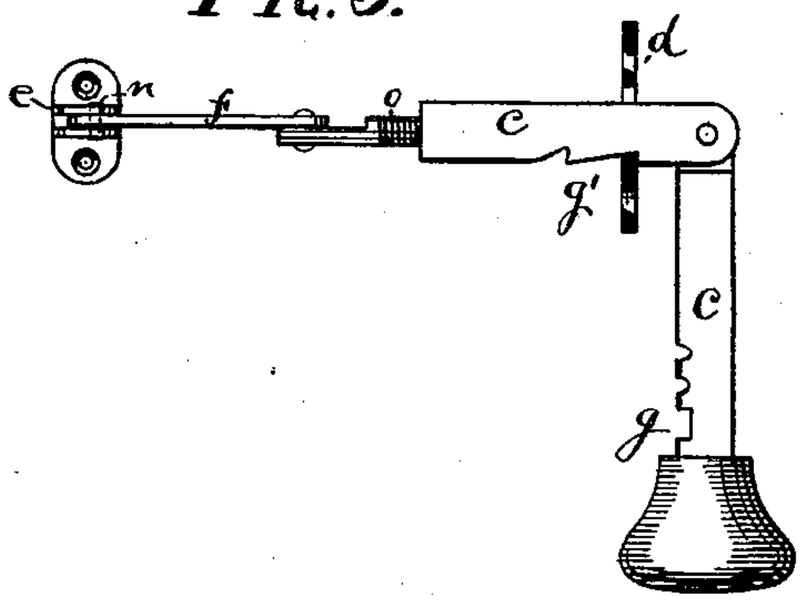


FIG. 3.



Witnesses.
H. N. Gale.
Geo. H. Gourdy

Inventor.
Herbert C. Hart.
By James Shepard & Co.
Atty.

UNITED STATES PATENT OFFICE.

HUBERT C. HART, OF UNIONVILLE, CONNECTICUT, ASSIGNOR TO HIMSELF AND A. D. PRESTON, OF SAME PLACE.

IMPROVEMENT IN SHUTTER-WORKERS.

Specification forming part of Letters Patent No. **175,604**, dated April 4, 1876; application filed January 29, 1876.

To all whom it may concern:

Be it known that I, HUBERT C. HART, of Unionville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Blind-Operators, of which the following is a specification:

My invention consists of a sliding shaft working through the window-casing outside of the hinge, and connected to a lug on the blind or shutter inside of the hinge by means of a lever, the connections being jointed, all as hereinafter described.

In the accompanying drawing, Figure 1 is a plan view of a blind-operator which embodies my invention, and also a horizontal section of the blind and window-frame to which it is hung. Fig. 2 is a similar view of the same, showing the blind open; and Fig. 3 is a side elevation of said blind-operator.

A designates the window-frame, and B the blind or shutters, hung on hinges *a* of any ordinary construction. Through the frame A, and at a point outside the hinge *a*, as shown, I bore a hole large enough to allow the sliding bar *c* to pass through it, and the escutcheons *d d* are placed upon the frame A, to guide the bar or shaft *c*, and also to close the hole in the frame. Upon the outside of the blind or shutter B, and near its hinged edge, but inside the hinges *a*, as shown, I fasten a lug or lugs, *e*, between which is the lever connection *f*, slotted at one end, as shown in Figs. 1 and 2. The position of the bar and lug relatively to the hinge should be such that when viewed from the top, and the blind closed, as shown in Fig. 1, the hinge *a* will be about half-way between the two ends of the connecting-lever *f*. Through this slot, and through the lugs *e*, I place a pin, *n*, to fasten said lugs and lever-connection, and allow them to turn as on a hinge, and also to allow the lever-connection to have a longitudinal movement upon the pin *n*. The opposite end of this lever-connection is pinned, so as to form a joint, to the outer end of the sliding bar *c*. Upon the lower edge of the sliding bar *c* notches *g g'*, Fig. 3, are formed.

The operation is as follows, to wit: When the blind is shut, as shown in Fig. 1, the notches *g*, near the handle end of the sliding shaft or bar *c*, engage with the inside escutcheon *d*, and prevent it from withdrawing, and thereby the blind cannot be thrown open. By raising the sliding bar, so as to disengage it from the notch *g*, and pulling the bar inward, it will, through the medium of the lever-connection, throw the blind open, as shown in Fig. 2, and the notch *g'* may be engaged with the escutcheon *d*, and retain the bar, and consequently the blind, in place. By raising the bar, so as to disengage the notch and escutcheon, and forcing it into the casing, the blind will be closed, and may then be locked in position, as before described.

The position of the parts when the blind is closed is such that by pulling the sliding bar inward, the lever-connection soon strikes the base of the lug, so that it can turn no farther without turning the blind, thereby forming a fulcrum of the hinge, about which the lever-connection turns, so that pulling its outer end inward throws its inner end and the blind outward, until the latter passes its perpendicular, (that is, open half-way,) after which the connection acts as a direct pull. It should be further noticed that before the joint of the lever-connection and sliding bar reaches the outer escutcheon, the blind is half-way open, and as the joint gradually straightens as it passes inward, so that it is substantially straight when passing through the escutcheon, what little angle there is when at that point can be accommodated inside of the escutcheon by the hole in the framing, so that the hole in the escutcheon need necessarily be but a little larger than the cross-section of the sliding bar and lever-connection, and thereby said escutcheon prevents cold air, rain, &c., from passing beyond it.

During the movement of the blind, the slot in the bar *f* moves on the pin *n*, so that said pin traverses the whole length of the slot. When the blind is closed, the pin is at the inner end of said slot, as shown in Fig. 1, and when open it is at the opposite end, as shown in Fig. 2.

If desired, the bar *c* may be jointed, so as to

drop down when drawn inward, so as to be more out of the way, as shown in Fig. 3; but this is not considered as essential, and is no part of my invention.

In order to accommodate the device to window-frames of varying thickness, a part of the bar *c* may be formed into an extension-bar, *o*, the same being provided with a screw-thread, which fits a female screw in the bar *c*, so that by screwing said extension-bar out and in, the length of the bar *c*, of which *o* forms a part, may be adjusted to accommodate itself to the thickness of any casing or frame designed to receive it.

I claim as my invention—

The combination of the lug *e*, secured to the blind inside of a line passing through the hinge-knuckles, the sliding bar *c*, secured to the window-frame outside of the same line, and the lever-connection *f*, slotted at *n'*, whereby a single thrust or pull of the bar *c* turns the blind to an open or closed position, substantially as described.

HUBERT C. HART.

Witnesses:
C. L. DAVIS,
C. L. MASON.