

UNITED STATES PATENT OFFICE.

JAMES S. PATTEN, OF BALTIMORE, MARYLAND, ASSIGNOR OF THREE-FOURTHS TO JACKSON HOLLAND, OF SAME PLACE.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 482,562, dated September 13, 1892.

Application filed October 28, 1891. Serial No. 410,144. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. PATTEN, of Baltimore, Maryland, have invented certain Improvements in Shutter Workers and Locks, of which the following is a specification.

In the description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a sectional top view of a window-frame and its connections to which the invention is applied, and Fig. 2 an outside elevation of the same. Figs. 3 to 9, inclusive, are details of the invention on an enlarged scale.

Referring to the drawings, A is the sill, B the sub-sill, and C the window-frame.

The shutters denoted by D and E are shown in dotted lines in Fig. 1 and in full lines in Fig. 2.

F is a plate secured to the lower edge of each shutter, to which an arm G is attached by means of a pin *a*. The outer end of this arm is provided with a slot *b*, which is enlarged in width and formed into an opening *c* at its outer extremity.

H is a lever with its fulcrum, which consists of a pin *d* within a slotted plate I, having lugs *e*, through which the pin *d* passes. This plate is let into the sub-sill B, which is provided with a cavity *f* to admit of the movement of the inner end of the lever H and a link J, herein-after described. The lever H is bent for the purpose of bringing the two arms of the same at different sides of the front line of the sub-sill when the shutter is closed, as shown to the left of Fig. 1. It also serves to partially close the slot in the plate I, in which the said lever works, when the shutter is either closed or open, and thereby prevent to some extent the entrance to the room of cold air from the outside. The link J is pivoted to the short arm of the bent lever H, and its inner end is curved and to it is attached by means of a pin *g* a joint K.

By reference to Figs. 4, 5, and 9 it will be seen that the joint K is adapted to slide in the slot *k* of a plate L, secured to the inner surface of the sub-sill and which closes the cavity *f* therein. The outer end of the joint K is threaded, as shown particularly in Figs. 4 and 5, and on the threaded portion is screwed

a knob M, having an inner flange *m*, which is larger in diameter than the width of the slot. One end of this slot is enlarged in width, as shown at *n*, to admit of the end of the threaded portion of the joint being passed through it, and the joint has a shoulder *o*, which comes up to the inner side of the plate L.

As will be seen from the drawings, the operation of opening and closing the shutter is effected by merely moving the knob M from one end of the slot *k* to the other, and when thus moved the return of the shutter to its first position is prevented by turning the knob so as to draw the shoulder *o* closely in contact with the inner face of the slotted plate L.

In the drawings the shutter E to the right is shown as open and the other D to the left closed.

While the knob M serves to lock the shutter when closed or opened or while the same is bowed or placed at any intermediate position, it is desirable to have a more positive lock for the shutter when closed. This is effected by making the pin *q*, which served to connect the arm G to the lever H, with flat sides, thus reducing the width of the pin to the width of the slot *b*, and further by providing the lever H with a pin *r* and the arm G with a curved notch *s*, into which the pin *r* enters as the arm G and the lever H fold in closing the shutter. (See Fig. 3.)

With the constructions shown the closed shutter is locked by the flattened pin *q*, not being movable, except longitudinally in the slot *b* by the pin *r*, resting in the curved notch *s*, and by the setting up of the knob M so as to prevent the movement of the link J.

Supposing the shutter to be closed and locked, as shown to the left of Fig. 1, the operation of opening the same consists as follows: The knob M is first slackened or unscrewed slightly on the threaded portion of the joint K and then moved longitudinally of the slotted plate L in the direction of the arrow. The first movement results in carrying the end of the lever H longitudinally of the arm G and moving the flattened pin *q* along the slot *b* therein until it reaches the enlarged portion *c* thereof, when it is free to turn. At the same time the pin *r* is carried along the curved notch *s*, and in bearing against the

hollow side thereof serves to begin the unfolding of the arm G on the lever H. The further unfolding of these parts is effected by the continued movement of the knob M in the direction described, and when this is completed by the striking of the knob against the end of the slot k of the plate L the shutter is fully open. This position is maintained by tightening the knob on the joint K.

10 The operation of closing the shutter is exactly the reverse of that described, the pin r entering the curved notch s and finally reaching its extremity, where it serves as a lock in addition to that formed by the flattened pin q and the knob M. If desired, the knob M

15 may be attached to the sill or sub-sill by a slack chain to prevent its becoming lost if removed from the joint.

I claim as my invention—

1. In a shutter-worker, the combination of 20
an arm pivoted to the shutter and provided with a slot, a lever having its fulcrum in some stationary part of the sill or sub-sill and loosely connected at one end to the slotted end of the arm, a link hinged to the other end 25
of the said lever, and a handle to move the other extremity of the said link crosswise of the window-frame, substantially as specified.

2. In a shutter-worker, the lever H, having a pin, and the arm G, having a curved notch 30
whereby in the folding of the two parts the pin will enter the notch and lock the two parts, substantially as specified.

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Witnesses:

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