(Model.)

N. M. HUTTON.

Shutter-Worker.

No. 227,533. Patented May 11, 1880.

Fig. 1.

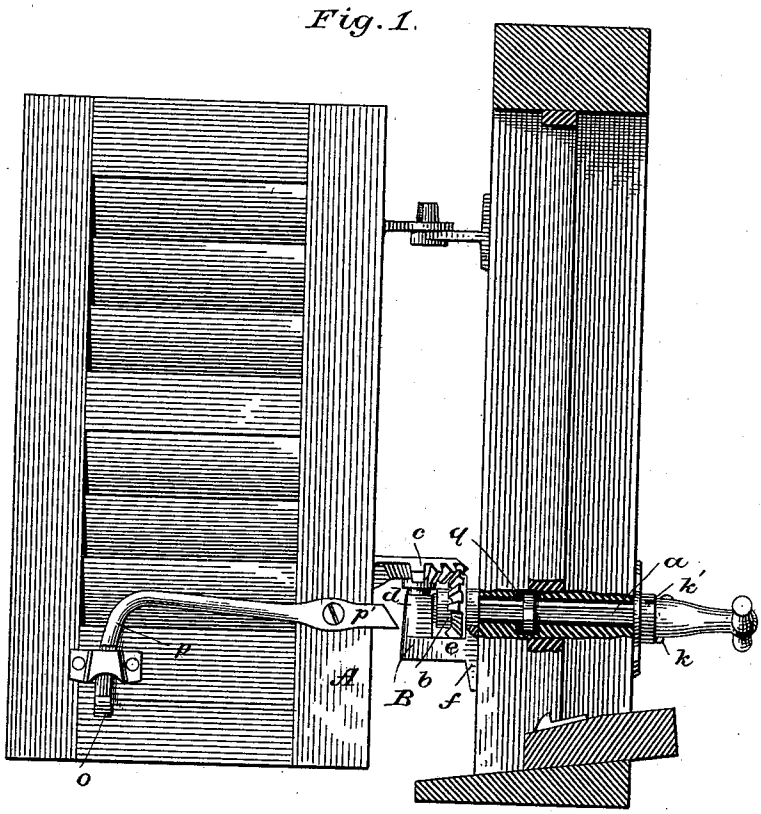


Fig. 2.

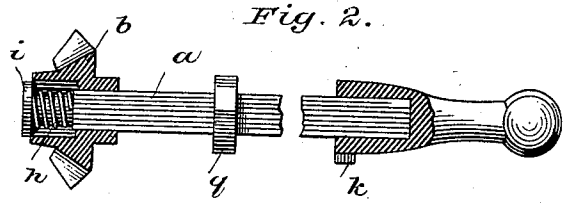
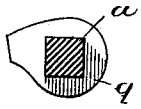


Fig. 3.



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NOAH M. HUTTON, OF QUINCY, ILLINOIS.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 227,533, dated May 11, 1880.

Application filed March 8, 1880. (Model.)

To all whom it may concern:

Be it known that I, NOAH M. HUTTON, of Quincy, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Shutter-Workers; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to devices for operating shutters and blinds of windows; and it consists in certain details of construction whereby the devices are simplified and improved in operation, and in the combination, with the shutter-working devices, of an improved catch or lock.

In the drawings hereunto attached, and forming part of this specification, Figure 1 is an elevation of the shutter in a half-open position, parts of the casing being broken away to show the shutter-working devices. Fig. 2 is a sectional view of the details, and Fig. 3 a section showing the cam by which the locking-lever is operated.

The general form of the mechanism by which the shutter is opened and closed from the inside is not new.

It consists of a shaft, *a*, passing through the wall or through the frame of the window, on the outer end of which is a beveled gear, *b*, which meshes into a beveled gear, *c*, on the hinge, which is attached to the blind A. The hinge-gear is perforated and made to fit the stud *d* of the stud-hinge B, and has a boss or rim, which supports the shutter. The stud-hinge, as represented in the drawings, is composed of the plate *f*, on which the bow *e* is cast, and of the stud *d*, also cast thereon. The plate *f* is formed with a slot to admit the shaft *a*, so that the plate may be put on after the shaft is in position.

The stud is provided with a plane face parallel with the plate *f*, against which the end of the shaft *a* is made to bear, and is thereby secured in position.

The beveled gear *b* has on the inner side a square perforation to fit the square shaft *a;* but on the outside the hole is made round and enlarged, and the square shaft is turned down to receive a spiral spring, *h*, held between the bottom of the round hole and the head *i* on the end of the shaft. The shaft has therefore some movement in the beveled gear which permits the stud *k* on the inside to be drawn out of the notch *k'* when it is desirable to unlock and operate the shutter. Obviously the stud, when engaged with the notches, holds the shaft from turning, and thereby secures the shutter in position.

The bevel-gear on the end of the shaft *a* is held securely in position by the peculiar construction of the stud-hinge, the bow of which gives the gear room to work freely. In order to give play to the shaft *a* the gear is prolonged into a tubular projection about the spring on the end of the shaft. This shaft is made to perform a double function of opening and closing the blind or shutter through the gears, and of lifting a catch by means of which the shutter is locked on the inside. This catch is shown at *o*. It is on the end of a bent lever, *p*, which is pivoted to the shutter on the inside and near the casing. A short beveled arm, *p'*, projects into the slot in the casing, and when the shutter is closed rests immediately underneath a cam, *q*, on the shaft *a*, so that when the shaft is turned to the left in opening the shutter its first effect is to depress the short arm of the lever *p* and lift and release the catch *o*, thus unlatching the shutter.

In order to give play to the shaft and allow it to perform the necessary preliminary operation of lifting the latch, I have made one tooth on the hinge-gear a little larger than the others and adapted to fit loosely into a wider space in the stud-gear. While, therefore, the thicker tooth holds securely in the gear, into which it meshes, it allows the shaft *a* to turn sufficiently to lift the latch *o* before bearing upon the bevel-gear to open the shutter.

The described construction of the hinge and gears leaves the hinge-gear with the teeth downward, thereby preventing them from becoming clogged by ice or snow in winter.

The shutter is, by my construction, double-locked. The lugs on the shaft-handle, drawn into gear with the notches by means of the spring, hold the hinge, and the latch securely locks the shutter on the other side. The spring also prevents the handle of the shaft from binding by reason of the swelling of the wood.

As the flattened surface of the stud-pin bears against the shaft, it cannot be opened from the outside by pressing against the end of the shaft to remove the handle from the catch-plate.

The upper hinge may be of any ordinary

construction adapted to operate in connection with the lower. The lower latch on the shutter should be ordinarily located about three inches from the edge of the sill, or midway of the sill.

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

1. In a shutter-worker, the combination of the shaft *a*, having cam *q*, and the lever *p*, having the catch *o*, substantially as described and shown.

2. A locking device for a blind, consisting of a shaft provided with a cam engaging with the end of a lever pivoted to the blind, and a stud, *k*, and notch *k'*, for holding such shaft stationary, all substantially as described and shown.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NOAH M. HUTTON.

Witnesses:

G. M. McMURRY,

WILBER T. C. WHITE.