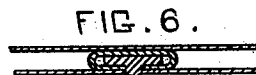
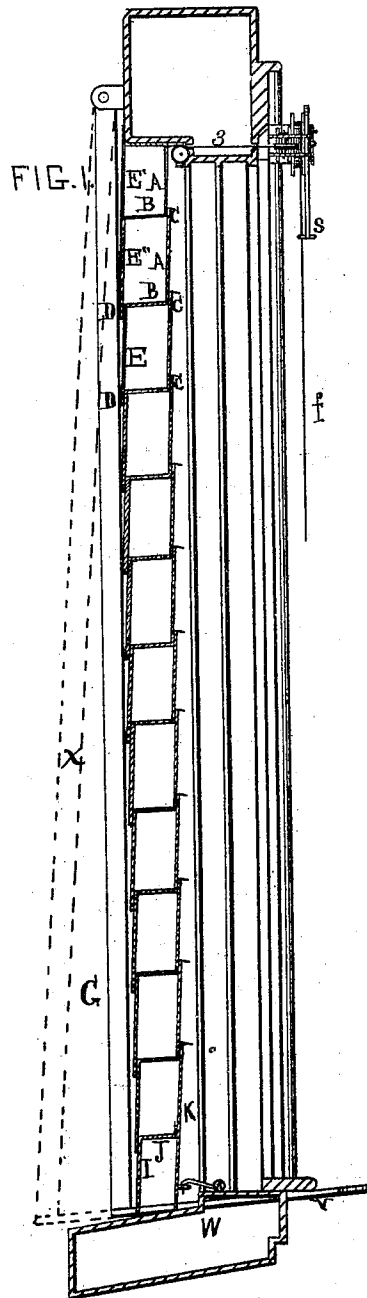
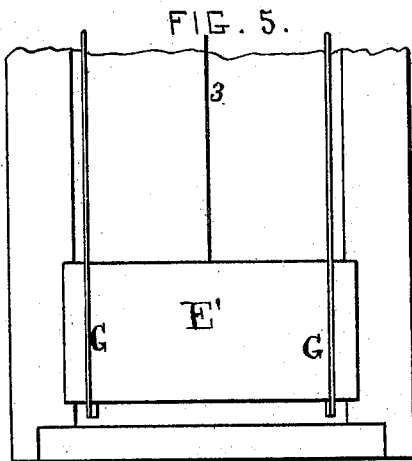
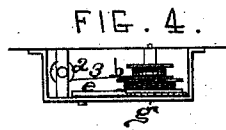
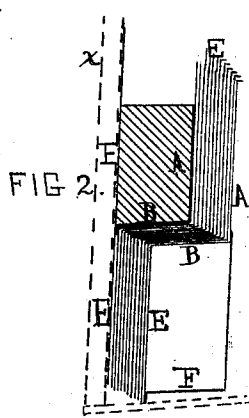
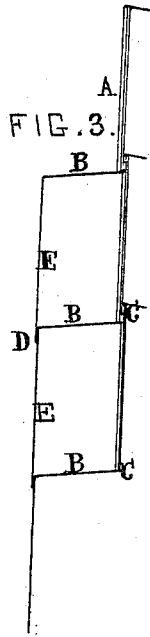


E. H. JOHNSON.  
METALLIC-SHUTTER.

No. 172,744.

Patented Jan. 25; 1876.



ATTEST.  
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# UNITED STATES PATENT OFFICE

ENOS H. JOHNSON, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN METALLIC SHUTTERS.

Specification forming part of Letters Patent No. **172,744**, dated January 25, 1876; application filed December 20, 1875.

*To all whom it may concern:*

Be it known that I, ENOS H. JOHNSON, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Double-Plate Sliding Shutters, of which the following is a specification:

The nature of the present invention consists, first, in the combination of a series of chair-shaped metal plates, arranged to slide on one another, so as to cover a door or window opening, and so as to shut together at the top or bottom of an opening; second, in the arrangement of vertical clamping-bars, which are hinged to the wall at the outside of the opening, and are combined with a latch at the bottom, whereby they may clamp the shutter closely to the margin of the opening; third, in the combination of the sections of the shutter, with a cord and pulley for elevating and depressing the plates, as hereinafter shown and described.

Figure 1 is a vertical central section of my improvement in shutters. Fig. 2 is an enlarged view, showing the shutter folded, as when the opening is exposed to view; Fig. 3, an enlarged section of the shutter, showing how the plates are connected; Fig. 4, a top view of the pulley attachment; Fig. 5, a broken face view of the shutter as folded at the bottom of the window; Fig. 6, an enlarged horizontal section of one of the guides and stud, by means of which the shutters are held together.

E' A B represent the top box shutter-plate, having a depending plate, E, attached to it, of such a length as to overlap the horizontal part B of the plate below. All the other plates, except the bottom plate, consist of chair-shaped plates overlapping each other on opposite sides C D, the side D being the outside of the shutter.

The bottom plate has a box form, as shown at J I, and is provided with a back, K, extending up to overlap the plate above.

Those parts of the plates shown at E' E'' and I are made longer than the other parts so as to lap over the jambs of the opening, the other parts fitting in between the jambs, and leaving an air-chamber between the front and back plates, as shown in Fig. 1.

The means for operating these sectional plates consists of a horizontal pulley, *a*, drum *b*, and looped pawl *e s*, and cords 3 *f*. The cord 3 fastens to the top shutter-plate, ex-

tends through the lintel to the pulley *a* and drum *b* inside of the window, and through the looped pawl *e s* is a cord, *f*, so that the two cords can be made to elevate and depress the shutter, and the pawl hold it in any desired position.

In practice, the cord and its attachments may be made to operate two or more shutters by suspending it from between the openings.

G represents clamping-bars hung to the lintel of the opening, and provided at their lower ends with two catches, V, which extend through the window-sill and lock thereon at W, the catches having a longitudinal movement, so as to permit the bars to swing outward, as shown by dotted lines *x*, Figs. 1 and 2, to accommodate the increased width of the thickness of the shutter when open.

In the manufacture of the plates they may be corrugated or plain, as desired, but if corrugated, the vertical grooves must conform to each other so as to bring the plates closely together.

I do not confine myself to opening the shutter by running the plates down from the top, but raise them up, in which case the clamping-bars will be hung at the bottom of the opening, and the catch placed at the top.

If the plates be elevated when open, a hood over the top of the window will protect them from snow and ice.

When the plates are opened, by resting on the sill, their top edges may be turned so as to overlap each other, as shown at Fig. 3, to keep snow and ice from interfering with their movement.

I claim and desire to secure by Letters Patent—

1. The chair-shaped plates, forming the continuous double shutter, arranged to fold, as and for the purpose set forth.

2. The combination of the plates, constructed as set forth, with cord *f*, pulley 2, drum *b*, ratchet *g*, and pawl *e s*, as set forth.

3. The combination of the shutter, formed of chair-shaped plates, with the clamping-bars G and catches V, substantially as and for the purpose set forth.

ENOS H. JOHNSON.

Witnesses:

G. L. CHAPIN,  
O. H. ADIX.