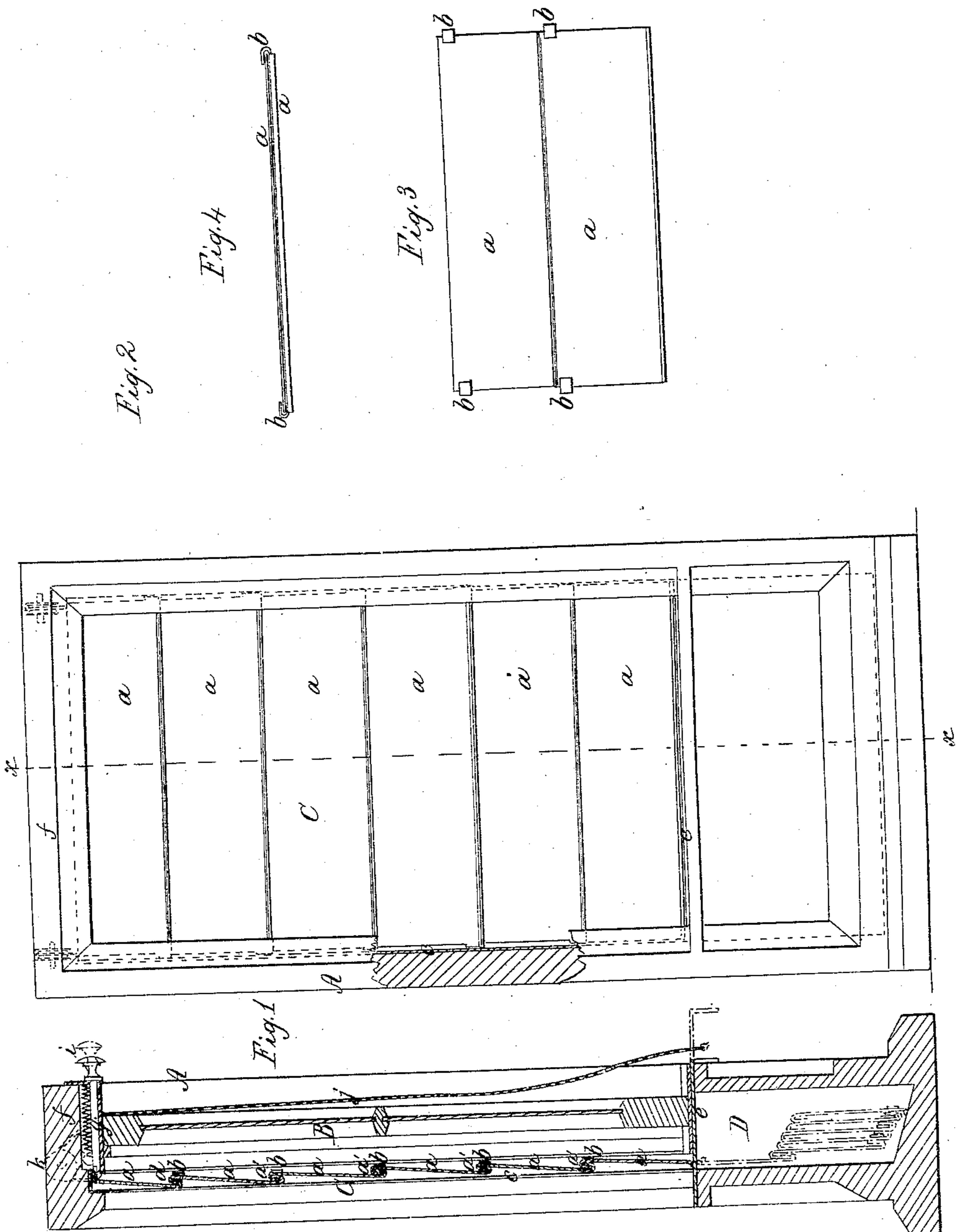


M. C. Root.

Iron Shutter.

N^o 18,554.

Patented Nov. 3, 1857.



UNITED STATES PATENT OFFICE.

M. C. ROOT, OF TOLEDO, OHIO.

IRON SHUTTER FOR DOORS, WINDOWS, &c.

Specification of Letter Patent No. 18,554, dated November 3, 1857.

To all whom it may concern:

Be it known that I, M. C. Root, of Toledo, in the county of Lucas and State of Ohio, have invented an Improved Mode of Applying Folding Iron Shutters to Doors and Windows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my improvement applied to a window, (x) (x); Fig. 2 indicates the plane of section. Fig. 2 is a face or front view of ditto. Fig. 3, is a detached view of two of the slats of ditto. Fig. 4, is a top view of ditto.

Similar letters of reference indicate corresponding parts in the several figures.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a window casing and B is a sash fitted therein. These parts are constructed as usual and therefore do not require a minute description.

C represents the shutter. The shutter is constructed of iron slats (a), the upper and lower edges of which are folded or bent at opposite sides as shown clearly at (a') in Fig. 1, the upper edge of one slat fitting in the lower edge of the one immediately above it, as shown clearly in Fig. 1.

At the end of each slat (a) and at its upper part a loop or hook (b) is formed. These loops or hooks are formed by merely leaving a projecting strip of metal at the desired point and bending the same in the desired form. The loops of one slat fit over the ends of the one immediately above it, see Fig. 3.

The inner sides of the stiles of the casing A have vertical grooves made in them and the grooves are lined with metal as shown at (c) and the ends of the slats (a) are fitted in their grooves and allowed to slide freely up and down therein.

Underneath the sill (d) of the window or door a box or recess D is formed, the upper part of which has a slide (e) placed over it, and in the upper crosspiece (f) of the casing a slide catch (g) is placed, the slide having a spiral spring (h) attached to it and a knob (i) attached to its inner end.

To each end of the uppermost slat (a) a cord (j) is attached said cords passing over pulleys (K) in the crosspiece.

By withdrawing the slide (e) and also the catch (g) the shutter C will fall by its own gravity, the slats (a) as they descend folding one by the side of the other, all of the slats passing into the box D as shown in red Fig. 1. The shutter is raised or closed by simply pulling down the cords (j) the catch (g) retaining the shutter in a raised and closed state.

By this improvement a burglar and fire proof shutter is obtained at a small cost, and one that may be easily operated. In consequence of having the slats (a) connected as shown so that they may fold or slide one by the side of the other, much expense is saved in the construction of the shutter the plan being far less costly than the curved and rolling slats and also much less than the kind which fold similarly to a Venitian blind.

I do not claim, broadly, the making of metallic shutters in such a manner that the slats shall fold and unfold in a self-acting manner when raised or lowered. Examples of devices of this character may be seen in the rejected case of Richard Murdock, May 1851, and in King's case, June 10, 1856. In the device of said King, the slats are of curved form, so arranged as to leave cavities at the bottom of each alternate slat into which the rain may fall to injure and corrode the shutters. This method also prohibits the application of the metallic shutter to doors in consequence of the great breadth required in the box which receives the slats when folded. Murdock's device bears a closer resemblance to my method than that of King; but in Murdock's invention the slats do not rise and fall in a vertical line as in my improvement; but when the shutter is extended, the slats are seen to stand one behind the other in a zig-zag or stairshaped form. This arrangement requires a great breadth in the door or window frame to which such slats are applied. But in my improvement, no such unusual width in the door or window frame is required, for the slats rise and fall in a vertical line and consequently occupy less lateral space when they are extended than when compacted. In Murdock's device, however, the lateral space occupied by the slats is as great when the slats are extended as when they are folded; the width of the lateral space occupied by the slats when extended being governed by the number of slats employed. In my im-

provement, however, the width of the lateral space occupied when the slats are all extended never exceed the breadth, endwise, of a single slat. My improvement, therefore, is
5 applicable to doors, or, owing to its compactness, the slats may be made to fold within the panels of the door which may be made hollow for that purpose.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is:

The construction of metallic shutters in the manner herein described and represented.

M. C. ROOT.

Witnesses:

JAMES M. WHITNEY,
JAS. CANNEFF.