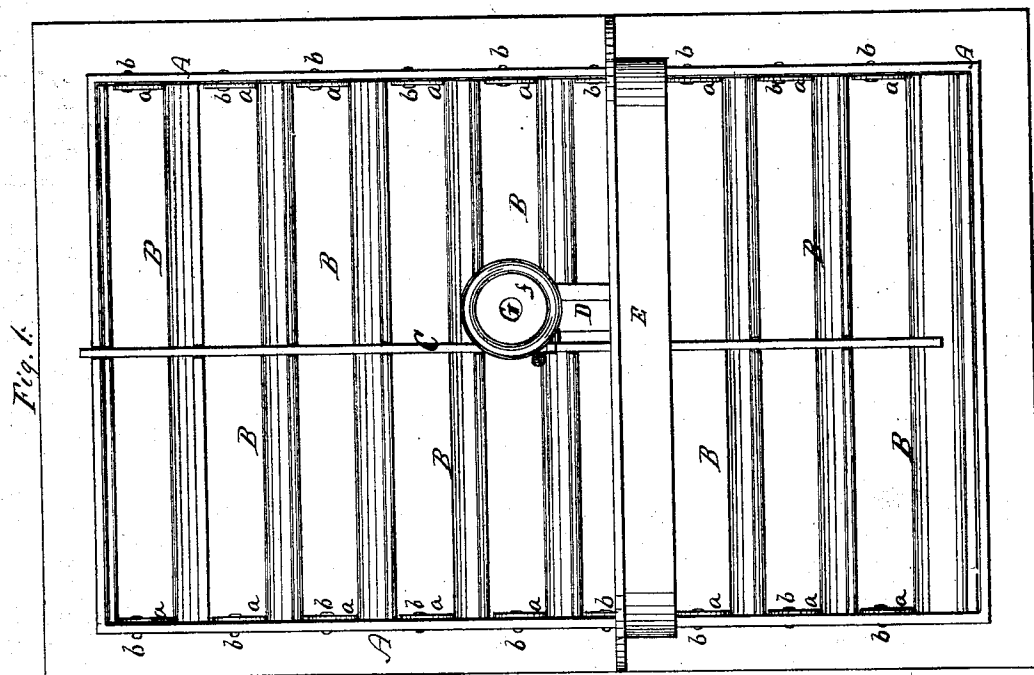
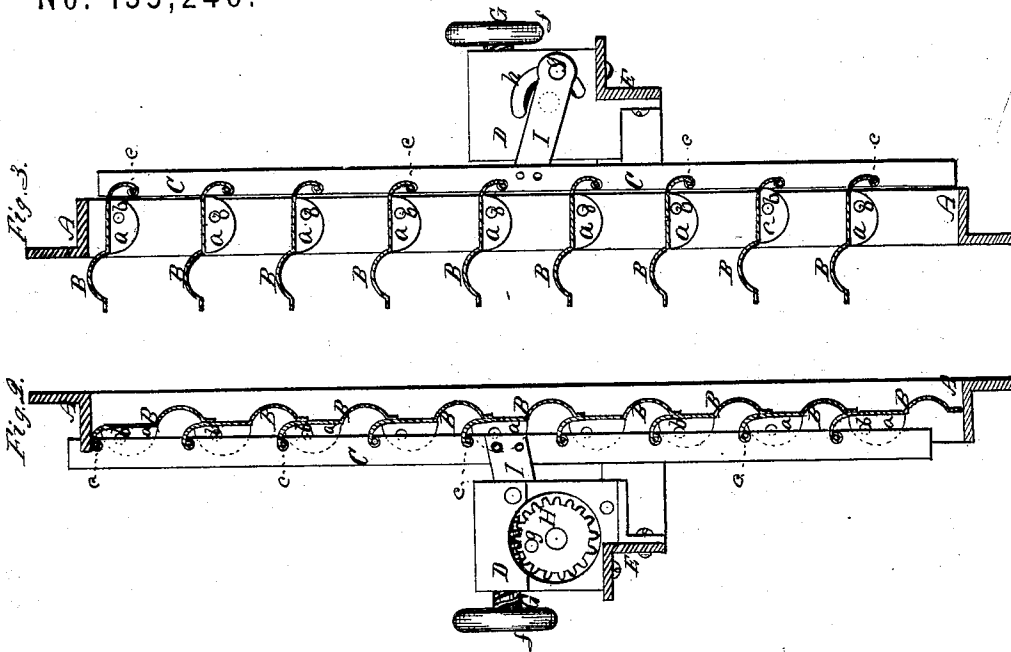


W. H. RODDEN.
Metallic Shutters.

No. 135,246.

Patented Jan. 28, 1873.



Witnesses,
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Geo. P. Barth.

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UNITED STATES PATENT OFFICE.

WILLIAM HENRY RODDEN, OF TORONTO, CANADA.

IMPROVEMENT IN METALLIC SHUTTERS.

Specification forming part of Letters Patent No. **135,246**, dated January 28, 1873.

To all whom it may concern:

Be it known that I, WILLIAM HENRY RODDEN, of the city of Toronto, in the county of York, Province of Ontario, Canada, have invented an Improved Metallic Venetian Blind and Shutter; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification—

Figure 1 being a view of the inner side of the shutter; Fig. 2, a transverse vertical section of the shutter looking in one direction, the slats being closed; Fig. 3, a transverse vertical section thereof, looking in an opposite direction, the slats being open.

Like letters designate corresponding parts in all of the figures.

The purpose of my invention is to so construct the shutter as to possess the properties of a Venetian blind or sun shade, and to be ordinarily fire and burglar proof, the construction being substantially as herein specified.

The frame A of the shutter is made of the required form and dimensions, and of angle iron or steel, as represented, the sides of the iron being generally from three-fourths of an inch to one and one-half inch wide. It is hinged to the building, or to the window or door-frame, in any suitable or usual manner, and is provided with a suitable fastening. The shutter-frame is provided with loose or rolling slats B B, of any suitable metal, but preferably of sheet-steel, and having a plane or corrugated surface, the latter being preferred, as shown in the drawing, because of the additional strength and stiffness as well as beauty of appearance imparted to them thereby. These slats, at their ends, are bent at right angles, or to an angle fitting the inner surface of the shutter-frame, so as to form bearings *a a*, that are perforated to receive rivets *b b* secured in the sides of the frame and serving as pivots, on which the slats turn. These rivets are shouldered where their projecting ends are in contact with the sides of the frame, so that they may be headed firmly to the frame, and not bind the bearings of the slats, nor prevent their turning freely thereon. The pivot-holes of the slats are nearer to the inner than the outer edges thereof, so that the outer edges have a greater movement than the inner, and

open and close quickly by comparatively little movement imparted to the inner edges. The slats thereby are less shaken, and remain more firmly in position when subjected to a strong wind. The upper or inner edge of each slat is bent or folded over and wired in the fold, either the whole length of the slat or only a short portion of the middle thereof. The wire *c* passes through a hole in the upright working rod or bar C, the slats being notched to receive the edge of the rod. By this means a simple, accurate, strong, and free connection is made between all of the slats and the rod.

The slats are opened, and closed, and locked in position by means of this working rod or bar and an operating and locking device constructed and arranged in connection therewith, substantially as follows: The lock is mounted, to protect and guard it, in a suitable case, D, attached to a cross-bar, E, which is secured to the sides of the frame in a convenient position for the lock. The bar E is suitably made of angle-iron, like the frame A, and it serves to strengthen or brace the middle thereof in addition to its main use. It also serves as a convenient handle by which to swing the shutter out or in. The said locking device is composed essentially of a quick-threaded screw, G, with a handle or knob, *f*, on one end to turn it by, and a worm-wheel, H, which gears into the screw, and has a crank-pin, *g*, on one side to receive one end of a connecting-rod, I, the other end of which is attached to the upright working bar or rod C; or the crank-pin may work in a hole in the bar itself or a projection thereof. A curved slot, *h*, in the side of the lock-case D allows the crank-pin to project through, and this slot may serve to limit the movement given to the shutter-slats.

As the screw G is turned it turns the worm-wheel H, and thereby opens or closes the slats according to the direction in which the screw-knob is turned; and it firmly holds the worm-wheel from turning in any position, so that the slats are securely held at whatever angle they are placed; and when closed up to form a shutter they are securely locked there, so that no one on the outside can open them without using such violence as will destroy the shutter.

I place knobs or projecting-studs at the corners or elsewhere on the shutter-frame to protect the slats from injury should the shutter be thrown out violently against the wall of the building when the slats are projecting beyond the surface of the frame.

Thus this shutter possesses all the advantages of the Venetian blind or sun-shade, and even surpasses it in neatness and lightness of appearance and in durability. At the same time it is a great safeguard against fires, being wholly of metal, and close. It is also burglar-proof in proportion to its strength, which may be increased to any desired degree for the purpose required.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A shutter, composed of an angle iron or steel frame, A, eccentric movable metallic slats B B bent at the ends and pivoted there to the frame A on shouldered rivets, and wired at one edge to connect them with the upright or transverse working rod or bar C, substantially as herein specified.

2. In combination with the movable slats B B and working bar or rod C, the slat lock or fastener, composed of the screw G and worm-wheel H, with its crank-pin g, substantially as herein specified, and for the purpose set forth.

WILLIAM H. RODDEN.

Witnesses:

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