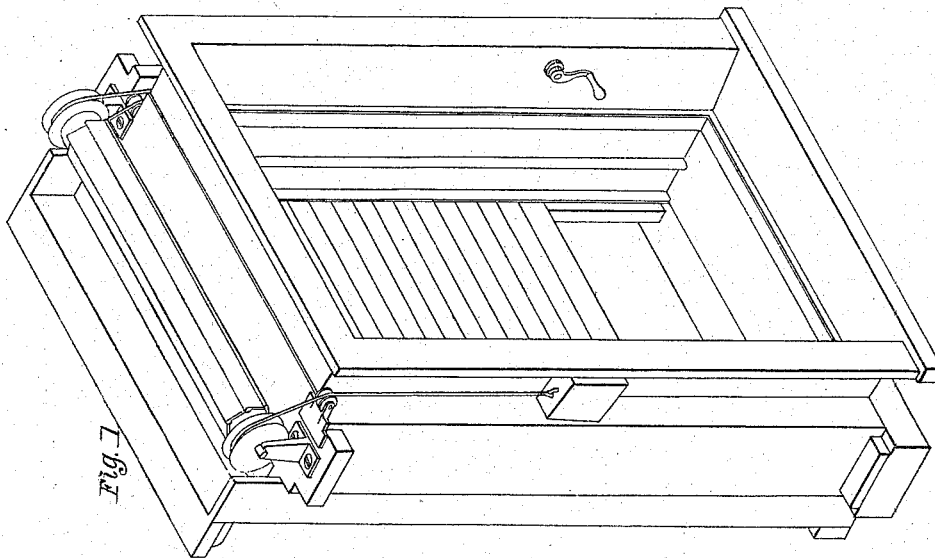
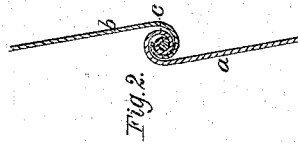
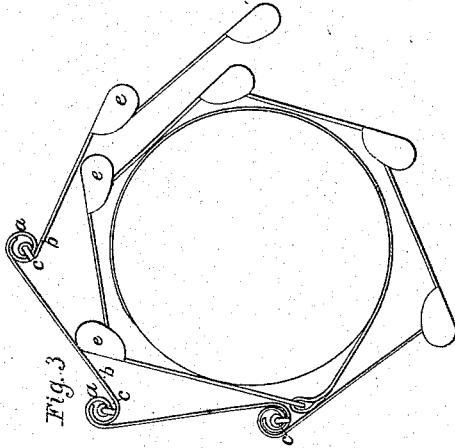


A. L. Johnson.

Iron Shutters.

N^o 7,457.

Patented Jan. 26, 1860.



UNITED STATES PATENT OFFICE.

A. L. JOHNSON, OF BALTIMORE, MARYLAND.

HINGE OF ROLLING IRON SHUTTERS.

Specification forming part of Letters Patent No. 7,457, dated June 25, 1850; Reissued April 24, 1855, No. 307.

To all whom it may concern:

Be it known that I, A. LIVINGSTON JOHNSON, of Baltimore, in the State of Maryland, have invented Improvements on the Rolling Iron Shutters, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, of which—

Figure 1, is a general view. Fig. 2 an enlarged section of one of the joints, and Fig. 3 a section of a blind rolled up.

My invention consists in important improvements in that species of hinge or joint which is formed by locking the edges of plates or sheets of metal by curling them spirally within each other. These improvements enable me to form from strips of thin sheet metal, an iron shutter which can be rolled up like a blind, and which at the same time shall possess strength sufficient to resist the attacks of burglars, though made of metal so thin that in any other form it would be entirely inefficient.

Rolling iron shutters have long been known, and I now have a patent for important improvements therein, but in these shutters very stout iron plates are required in order to give them sufficient strength, the slats of which the shutter is composed being flat bars of iron with straight smooth edges. In my present shutter I can use very thin iron for any breadth of shutter, as its stiffness is dependent on the shape of the slats and not on the weight of the metal. There are no projections beyond the joints, and they require no rib pieces to strengthen them, and the expense of their construction is less than most iron shutters as their manufacture is simple, and the weight of material is small.

The construction is as follows: I take a number of thin strips of sheet metal of a length sufficient for the breadth of the shutter, and the width required to form a single slat, and turn their upper and lower edges into the curves shown at (*a*, *b*,) Fig. 2. The

edge (*a*) it will be seen is carried around further than that lettered (*b*) and incloses an iron bar, rod, or wire (*c*) which fills up the center of the joint and prevents its injury by indentation; the portion (*b*) is formed to lock into the curve (*a*) as shown by the red lines, in the same figure; and to unite them, the part (*b*) must be shoved lengthwise into the part (*a*) where they are perfectly locked, and form a joint to permit them to turn to wind on a cylinder above when drawn up. To prevent their sliding out of place and binding I project the ends of the wire through the ends of the slats and turn it down after the parts are united which holds them securely in place, and to cover the bent end of the wire, and add to the strength of the joint, by preventing any lateral motion of the slats on each other, and also to make an even edge to the shutter so that it shall slide smoothly in the window frame, I project a portion of the end of each slat, beyond the end line of its face, as at (*e*) and turning it down at right angles and making a neat finish to the edge. A head may be formed on the wire instead of bending down the ends as above described.

Having thus fully described my improvements what I claim therein as new and desire to secure by Letters Patent in constructing the hinges or joints of rolling iron shutters of thin slats of iron is—

Having a bar or wire inserted within the coiled edges of the joint or hinge to give strength and stiffness to the joint, said bar having its ends bent to prevent the several strips of iron composing the shutter from sliding laterally on each other, and the projecting bent ends of the wire being covered by ears projecting from the ends of the strips and turned down; thus forming an even edge to the shutter, which will slide easily in the groove of the frame in which it is placed, the whole being constructed substantially as herein described.

A. LIVINGSTON JOHNSON.

Witnesses:

EDWARD EVERETT,
WM. GREENAUGH.