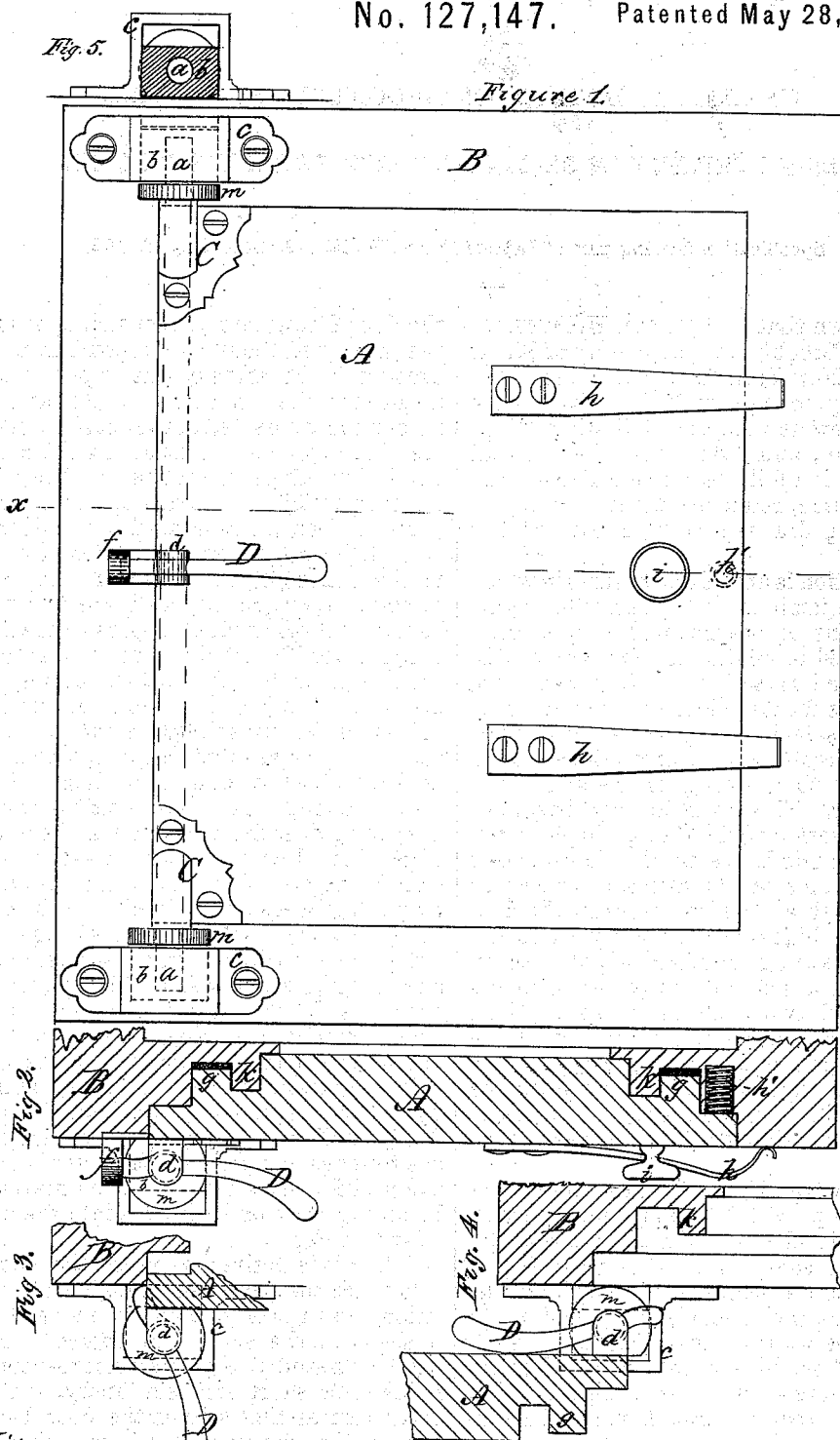


WILLIAM H. BUTLER.
 Improvement in Sliding Hinges for Safe-Doors.
 No. 127,147. Patented May 28, 1872.



Witnesses,
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IMPROVEMENT IN SLIDING HINGES FOR SAFE-DOORS.

Specification forming part of Letters Patent No. 127,147, dated May 28, 1872.

Be it known that I, WILLIAM H. BUTLER, of the city of Brooklyn, in the county of Kings and State of New York, (doing business at No. 298 Broadway, in the city of New York,) have invented a new and Improved Sliding Hinge for Safe-Doors; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making part of this specification.

This invention is applicable to safes in which the door and jamb are provided with engaging projections to prevent wedging, as originally described in application for patent of R. H. Holmes and myself, dated 28th February, 1855; and has for its object to provide means whereby the safe-door may be moved directly out from the jamb until the projections are disengaged, and then swung to one side in the usual manner. The invention consists, first, of the combination with sliding hinge-blocks, arranged in guide-boxes on the door-jamb of one or more cams or eccentrics, operating in connection with a lever to withdraw the door and hold the hinge-blocks rigidly while the door is being swung back; second, of the combination with a safe-door provided with devices for withdrawing the hinged edge a short distance before the door is swung back, of one or more springs arranged to operate in connection with the edge of the door opposite the hinges, to withdraw said edge coincidently with the other edge, and thus prevent jamming.

In the drawing, Figure 1 represents a front view of a safe provided with my improvement, the door being closed. Fig. 2 is a horizontal section of the same on the line *xx* in Fig. 1. Fig. 3 is a similar section of a portion of the door and jamb, the former being pulled out in position to be swung back. Fig. 4 is a similar section of portions of the door and jamb, the former being swung open. Fig. 5 is a horizontal central section through one of the sliding blocks and guide-boxes.

A designates the safe-door, and B that portion of the body of the safe which forms the door-jamb. The door and jamb are provided with the usual stepped edges, and upon the same and extending upon all sides of the door and of the opening in the jamb, are one or more projecting tongues or ribs, *g k*, those on

the door fitting into corresponding grooves on the jamb, and those on the jamb into similar grooves in the steps on the edge of the door. Secured to the face of the door near two corners on the same side, are the usual hinge-brackets C C, to which are attached the male portions of the hinges or pintles *aa*. These pintles *aa* turn in hinge-blocks *b b*, which are supported in boxes *c c*, secured to the door-jamb. The blocks *b b* are at their sides fitted nicely in the boxes *c c*; but, together with the door to which they are attached, are free to slide back and forth at right angles to the front of the safe a sufficient distance to withdraw the tongues *g* and *k* from their corresponding grooves. The door and hinge-blocks may be pulled out in any suitable manner. D represents a lever for this purpose, which is pivoted at *d*, on the edge of the door. By operating the long arm of this lever the short arm presses against the door-jamb, and the hinged edge of the door is drawn out—the opposite edge being moved out simultaneously, either by pulling on a suitable knob, *i*, with the hand or by means of one or more springs *h' or h*, either flat, coiled, or of any desired shape, each spring being set in a suitable cavity in one of the steps on the door or jamb, or if desired, attached to the outside of the door to press against the jamb—the spring, in whatever form, being so arranged that it will be compressed by the act of shutting the door. When the door is pulled out the proper distance to clear the tongues and grooves, the lever D assumes the position shown in Fig. 3, and the door may be swung back on its hinges into the position shown in Fig. 4.

When it is desired to press the door back into place the parts are brought into the position shown in Fig. 3, and the lever D being pushed in, the short arm thereof strikes a catch on a stud, *f*, or enters a slot therein which holds such short arm stationary, so that the lever carries that side of the door back into the position shown in Fig. 2, the other side of the door being at the same time pushed in by hand. The bolts of the lock should throw out in both directions, so as to hold both edges of the door, and keep the tongues tightly pressed against the rubber or other packing which is usually inserted at the bottom of the grooves.

Upon one, at least, of the pintles *a* is secured

a cam, *m*, consisting of a circular disk with a segment removed, leaving a flat side, which when the door is in the position shown in Figs. 1, 2, and 3, faces the body of the safe, and permits the door to be pushed in; but as the door is swung round on its hinges the circular part of the cam bears against the door-jamb and holds the sliding blocks out to their greatest limit, so that the door, in effect, swings in stationary hinges.

In some cases I make both pintles *a a* of a single rod, which extends through bearings in the brackets *O O*, as shown in dotted lines, and carries one or more cams, *m*, made of proper shape, so that when operated by a lever on the rod they will force out the door by reaction against the jamb and return it by reaction against a front covering-plate.

The lower block *b* is preferably made to slide

on the bottom of the supporting-box *c*, so as to form a step to support the weight of the door.

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

1. In combination with sliding hinge-blocks *b*, arranged in guide-boxes *c*, on the door-jamb, I claim one or more cams, *m*, arranged and operating substantially as described.

2. In combination with a safe-door, provided with devices for withdrawing the hinged edge a short distance before the door is swung back, I claim one or more springs, arranged to operate in connection with the edge of the door opposite the hinges, substantially in the manner and for the purposes specified.

Witnesses:

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