

J. L. Hall,

Burglar-Proof Safe.

No 67,046.

Patented July 23, 1867.

Fig. 3.

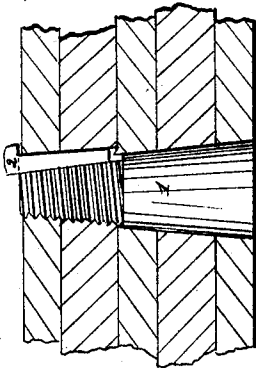


Fig. 2.

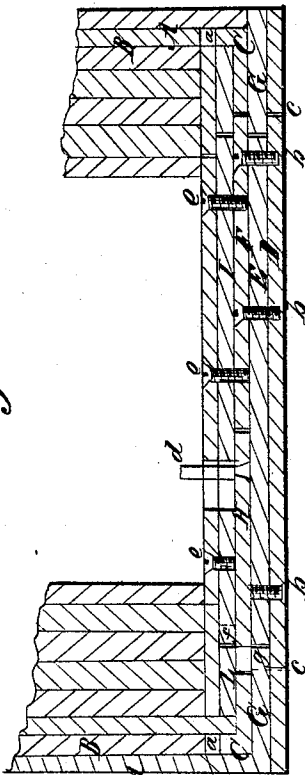
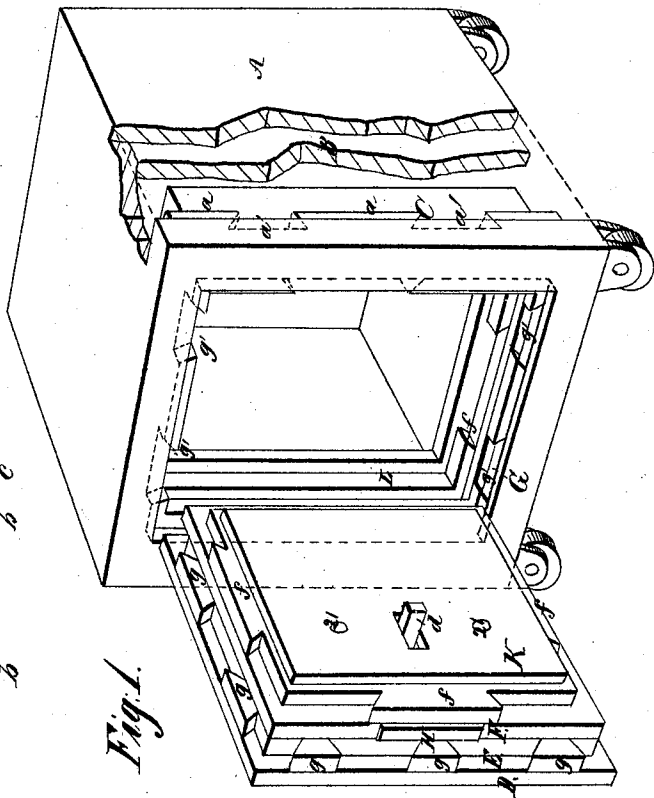


Fig. 1.



Witnesses:

Charles L. Fisher

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN CONNECTING DOORS AND CASINGS OF SAFES.

Specification forming part of Letters Patent No. **67,046**, dated July 23, 1867.

To all whom it may concern:

Be it known that I, JOSEPH L. HALL, of Cincinnati, Hamilton county, and State of Ohio, have invented a new and Improved Mode of Securing and Connecting Doors and Casings of Safes, &c., of which the following is a full and clear description thereof, reference being had to the accompanying drawings, making part of this specification.

The nature of this invention consists in connecting together the plates or casings of safes and other secure receptacles by dovetailing them into each other, and further securing a series of plates forming a casing or door of the safe by means of conical or tapering arbors, which, being tapped in from the outside of the door or casing, and keyed upon the inside, present serious obstacles to the removal of successive plates forming the body of the safes.

Figure 1 represents a perspective view of a safe embodying my improvements. Fig. 2 is a horizontal section of part of the same. Fig. 3 is a detail view in cross-section of the door of the safe, showing the shape of and manner of securing an arbor.

The most approved method of securing together the numerous plates forming the casings and doors of safes is by means of screws tapped in from one series of pairs or triplets of plates from the inside, presenting no rivet-heads upon the outside surface of the safes. To further secure together the plates and series and the sides, top, and bottom of the body of the safe to the back and door of the safe when closed, I dovetail the abutting plates at the corners, as exhibited in Fig. 1 of the accompanying drawings.

A is the exterior plate of the body of the safe; B, the second plate in the series of plates, is dovetailed into the corner angle-bar, C, clearly shown in the section of Fig. 2. This manner of giving greater security to the corners of the safe-body may be repeated in every other layer of plates.

The number of mortises *a'* for receiving the dovetails *a* of abutting plates may be multiplied for greater security to the structure. In the doors of safes the outer plate, D, is secured to the plates E F by screws *b* countersunk in the plate F. The edges of plate D

fill completely the jambs in the door-frame of the safe at *c*. The plate E, though having about the same thickness as the plate D, is in its other dimensions smaller. It abuts upon the second plates, G, of the safe-body in the front series of plates. The plate F projects its hinged end over the second plates, G, as shown in Fig. 2, when the door is closed. The lock end of the plate F has let into it the bolt-plate H, which is operated by the bolts or lock secured to the inside of the door through the stem *d*. When the door is locked the bolt-plate H is thrown out and abuts upon the angle-bar C, projecting over the plate G.

A much greater degree of security is obtained than in the usual manner of construction, wherein the plate F and bolt-plate H are not used.

The fourth plate, I, has about the same area as the plate E. It is secured to the plate F by screws *e*, which pass through the inner plate, K, in which they are countersunk. The plate K has a smaller superficial area than the plate I. The plate I is constructed with dovetailed edges upon three sides, the top, bottom, and lock side. These dovetails *f* enter the mortises *f'* in the edges of the plate L of the body of the safe. The plate E has, like plate I, dovetails *g*, which, when the door is closed, fit securely the mortises *g'* in the second plate, B, of the body of the safe.

In order to still further secure together the plates forming the door of the safe, I use a conical arbor, 1, or a number, if necessary. They are introduced in openings through the series of plates, being tapped into the two innermost or all of the plates, and keyed in position. A smooth surface in the plane of the outer face of the door is presented, giving no means of removing the arbors 1, even should the key 2 be removed.

The object of the system of dovetailing the doors of safes, as well as other secure receptacles, the door-jambs being provided with corresponding mortises, is to prevent the forcible springing out of the casing from the door by means of wedges introduced between the door and casing, enabling the designing operator to open the door without unlocking it. Since the doors of safes are more exposed than any other part of them, it is necessary to embody

in their construction such devices which in themselves are the simplest as shall effectually bar forcible entrance to the safes. The introduction of arbors for the purpose of more effectually binding in one compact mass the series of alternate iron and steel plates in the doors or bodies of safes will very much protract the labors of the burglar; indeed, it will be necessary, in order to remove one sheet in succession, to cut out the arbors, which are made of the hardest steel.

The arbors may be tapped through the entire series of plates, and the inner end rivet-headed instead of keyed, as shown in the drawings, or the inner plate as well as other in the series of plates may be put together in sections, and, fitting into notches in the arbor or arbors, secure them in position. In this latter construction the arbors need not be conical, but may have any cross-section tapering longitudinally.

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

1. Constructing the abutting edges of doors and casings of safes and other secure receptacles with dovetails *g*, closely fitting corresponding mortises *g'*, substantially as and for the purpose herein described and specified.

2. In the series of plates in the doors of safes, the plate or plates *F*, having their hinged ends projecting over the plates immediately outside of them, and so arranged that they shall enter a rabbet in the body of the safe when the door is closed, and the bolt-plate *H*, when the same are constructed and operate substantially as herein specified.

3. The conical or tapering arbors 1, in combination with two or more plates of metal in the doors and casings of safes and other secure receptacles, the arbors being secured in place in the plates by keys 2, or in other substantial manner.

4. The combination, in the doors and casings of safes, of one or more sets of dovetailed plates and angle-iron, *B* and *C*, one or more plates, *F*, and bolt-plates *H*, and conical or tapering arbors 1, secured by means of keys or rivet-heading upon the inside of the safes, when the same are arranged substantially as herein described, and for the purpose specified.

JOSEPH L. HALL.

Witnesses:

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C. L. FISHER.