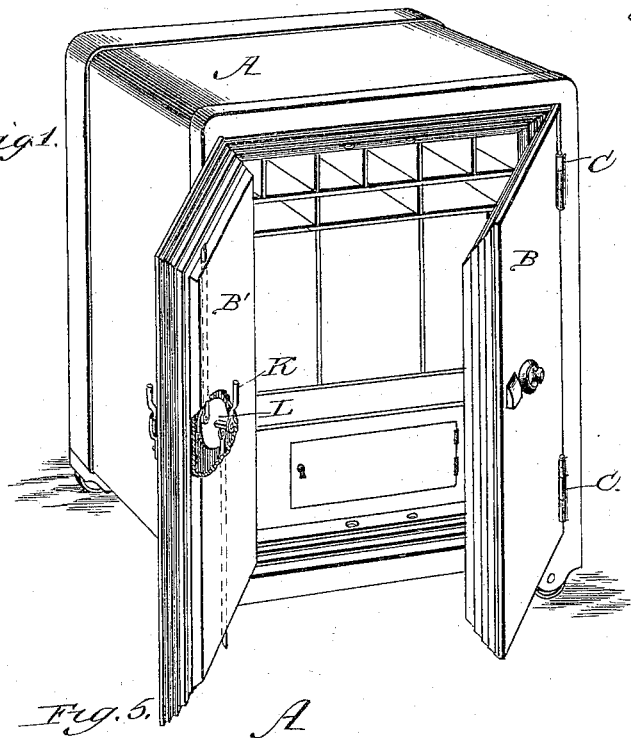
(No Model.)

H. GROSS.

SAFE.

No. 342,003. Patented May 18, 1886.

Fig. 1.



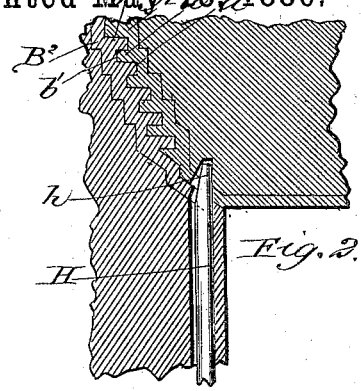


Fig. 2.

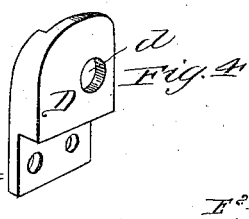


Fig. 4.

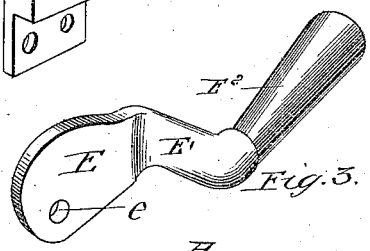
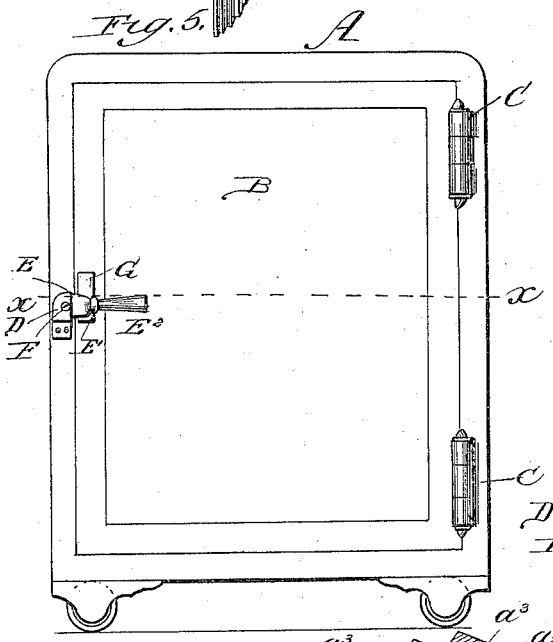


Fig. 3.

Fig. 5.



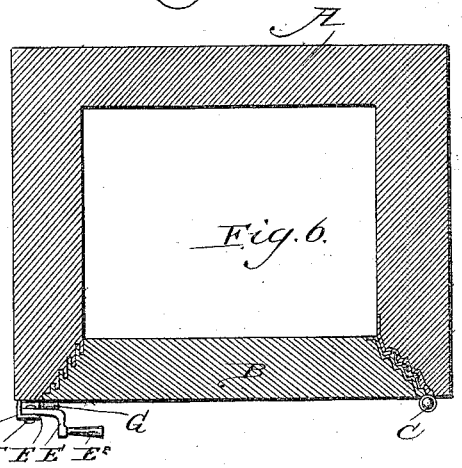


Fig. 6.

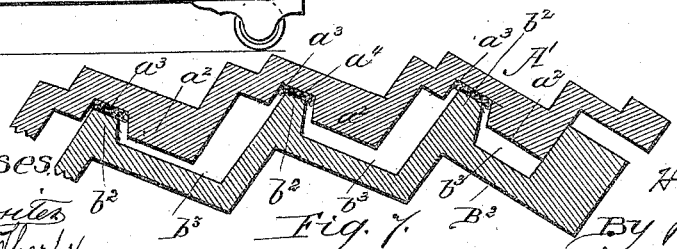


Fig. 7.

Witnesses.
W. Rossiter
Edward Thorpe.

Inventor.
Henry Gross
By Brice & Fishburn
His Attys.

UNITED STATES PATENT OFFICE.

HENRY GROSS, OF CHICAGO, ILLINOIS.

SAFE.

SPECIFICATION forming part of Letters Patent No. 342,003, dated May 18, 1886.

Application filed September 26, 1885. Serial No. 178,229. (No model.)

To all whom it may concern:

Be it known that I, HENRY GROSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Safes, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

In the manufacture of fire-proof safes and vaults it is of the greatest importance that the door of the safe or vault shall fit its jamb so very closely that in case of fire the intense heat and flame cannot pass between the two and injure the contents of the safe or vault. For this reason it has been heretofore proposed to provide the jamb of a fire-proof safe with a groove of uniform shape extending around its face and adapted to receive a corresponding rib on the door.

In order to enable the rib of the door to enter the groove of the jamb at the rear edge, it is necessary to connect the door to the jamb by a hinge of such character as would permit the door to swing until its rib was in front of the jamb-groove, and to be then forced inward by a pressure-bar a slight distance in a straight line. In other words, the uniform arrangement of the jamb-groove and the door-rib has heretofore been such as to render it necessary to connect the door to the jamb by a special construction of hinge that would permit a slight sliding movement inward, and to preclude the use of an ordinary swinging hinge fixed in the usual manner to the door and jamb.

My present invention has for its object, first, to provide means whereby a uniformly-tight joint may be formed between the sides of the door and jamb of a safe, (having its door attached by means of the usual fixed swinging hinge;) and to this end my invention consists in providing the several sides of the door-frame and the corresponding parts of the jamb with a series of grooves and ribs arranged in such manner as to coincide and interlock when the door is closed, and yet to permit the door to be readily swung upon its hinges.

In order to secure a perfectly-tight joint between the jamb and the door when the latter is closed, it is desirable, particularly if there be a felt backing to the grooves of the jamb, to provide means whereby the door may be forced tightly against the jamb.

A further object of my invention is to supply this desideratum; and to this end my invention consists in the novel construction of pressure-bar, hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a safe embodying my invention. Fig. 2 is an enlarged detail view of a portion of the safe and its door through one of the bolt-sockets. Fig. 3 is a perspective view of the pressure-bar detached. Fig. 4 is a perspective view of the retaining-plate for the pressure-bar. Fig. 5 is a front view of a single door safe having the pressure-bar thereon. Fig. 6 is a view in cross-section on line $x\ x$ of Fig. 5. Fig. 7 is an enlarged detail view, in cross-section, of the rear side or edge of the grooved door-plate and jamb-plate.

A designates the main body of the safe, and B B′ denote the doors, which are connected to the body by means of the fixed swinging hinges C, of usual construction.

In safes having two doors, as seen in Fig. 1, the door B is provided with a frame or plate, B^2, having upon its top, bottom, and front sides a series of ribs, b, and grooves b', like those shown in Fig. 2, and the top and bottom edges of the door-jamb are provided with a plate, A′, having corresponding ribs, a, and grooves a', as there seen. The plate of the door B′ has its top and bottom sides finished with ribs and grooves similar to the door B, while its front side is provided with ribs and grooves corresponding to the ribs and grooves a and a' upon the jamb-plate, in order to receive the front side of the plate or frame of the door B.

The rear side of the frame B^2 of each of the doors B and B′ is provided with a series of ribs, b^2, and grooves b^3, and the rear or hinge sides of the jamb-frame A′ are furnished with ribs a^2 and grooves a^3, adapted to mesh with the corresponding ribs and grooves of the door plate or frame B^2. As will be seen by reference to Figs. 2 and 6, the ribs and grooves a and a' of the jamb-frame extend in same plane as the wall in which they are formed, while the ribs and grooves b and b' of the door-

frame extend in a plane at right angles to the plane of the door.

In order to permit the door to be connected to the safe by fixed swinging hinges, I have found it necessary to provide a different arrangement of the grooves and ribs on the hinged sides of the door and jamb frames or plates. The grooves and ribs of these frames are preferably formed as seen in Figs. 6 and 7, those of the jamb-frame projecting in a plane at an angle to the plane of the side wall of the safe and approximately at right angles to the plane of the joint between the jamb and door, while those of the door-frame extend in a plane approximating that of the door and approximately at right angles to the plane of the joint. By this arrangement I am enabled to connect the door to the safe-wall by fixed swinging hinges, and at the same time effect a very tight joint between all the sides of the door frame and jamb. It will be noticed that in the grooves of the jamb-frame a packing of felt, a^4, is placed, against which the ribs of the door-frame will firmly bear.

My improved pressure-bar mechanism for tightly closing the safe-doors will next be described.

Upon the jamb of the safe (or upon the door B′ when two doors are employed) is screwed or riveted the retaining-plate D, the upper portion of which is recessed to receive the end E of the pressure-bar, the body of this bar being bent, as at E′, and provided with a handle, as at E^2.

In the retaining-plate D is formed the hole *d*, through which and the hole *e* of the pressure-bar passes the screw F, that is embedded in the wall of the safe, and serves as a journal for the pressure-bar.

Near the edge of the door B is fixed the cam-plate G, against which will bear the inner face of the portion E of the pressure-bar when the door is closed and this bar is forced downward.

The retaining-plate, constructed as shown, not only serves to securely hold the pressure-bar, but also affords a firm bearing for the outer end of the screw F, and avoids all danger of this screw becoming loosened by the operation of the bar.

When two doors are used for the safe, as seen in Fig. 1, the door B′, or that which is first closed, has the pressure-bar attached thereto near its edge. In order to secure a tight joint between this door and the jamb, the ends *h* of the bolts H are beveled, as shown, upon their outer sides, so that when the door is closed and the bolts are thrust outward, by means of the turning-handle K and disk L, the inclined ends of these bolts will ride against the bolt holes or sockets in the jamb-plate and will tend to draw the door inward.

Instead of beveling the ends of bolts H, the sockets may be beveled, or both the bolt ends and the sockets may be beveled, as seen in Fig. 2.

The operating-handle K, by which the bolts of the door B′ are thrown, is placed upon the inner face of the door, so that but one set of lock mechanism need be employed for both doors.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a safe, the combination of a frame or jamb and a door connected thereto by fixed hinges, said door and frame or jamb being provided on their top, bottom, and front faces or edges with ribs and grooves adapted to mesh, and being provided on their hinged faces or edges with ribs and grooves arranged at an angle to the plane of the ribs and grooves on their front faces or edges, substantially as described.

2. In a safe, the pressure mechanism for the door, comprising a cam, G, a bent pressure-bar pivoted at one end and provided with a handle at the opposite end, a recessed retaining-plate, D, for said bar, and a journal-pin for said bar, having one end held by the retaining-plate and the opposite end held in the wall of the safe, substantially as described.

HENRY GROSS.

Witnesses:
GEO. P. FISHER, Jr.,
JAMES H. PEIRCE.