Jan. 2, 1923. 1,440,948.

T. McG. AIKEN.

SAFE.

FILED JUNE 20, 1921.

2 SHEETS—SHEET 1.

FIG. I.

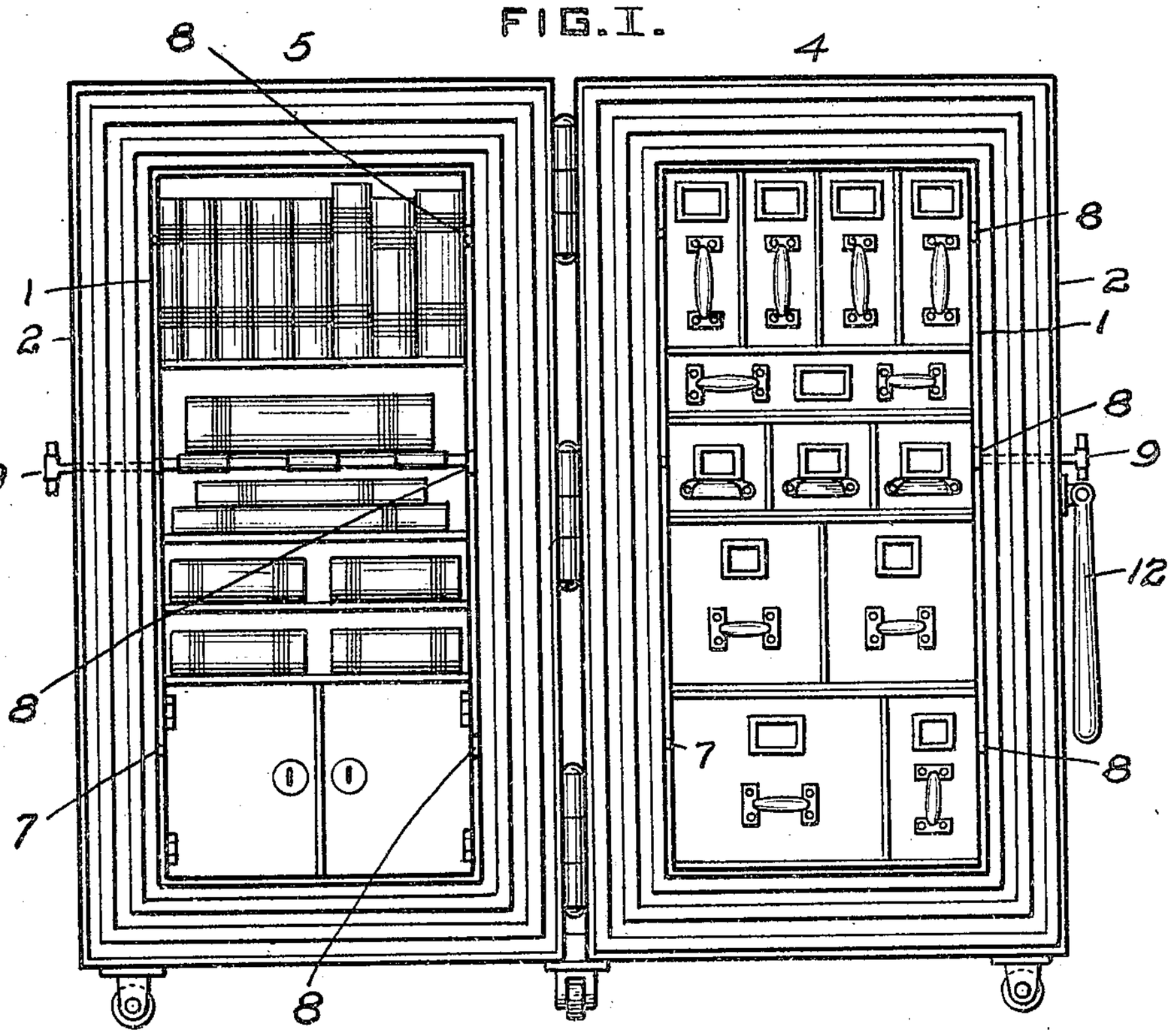

FIG. II.

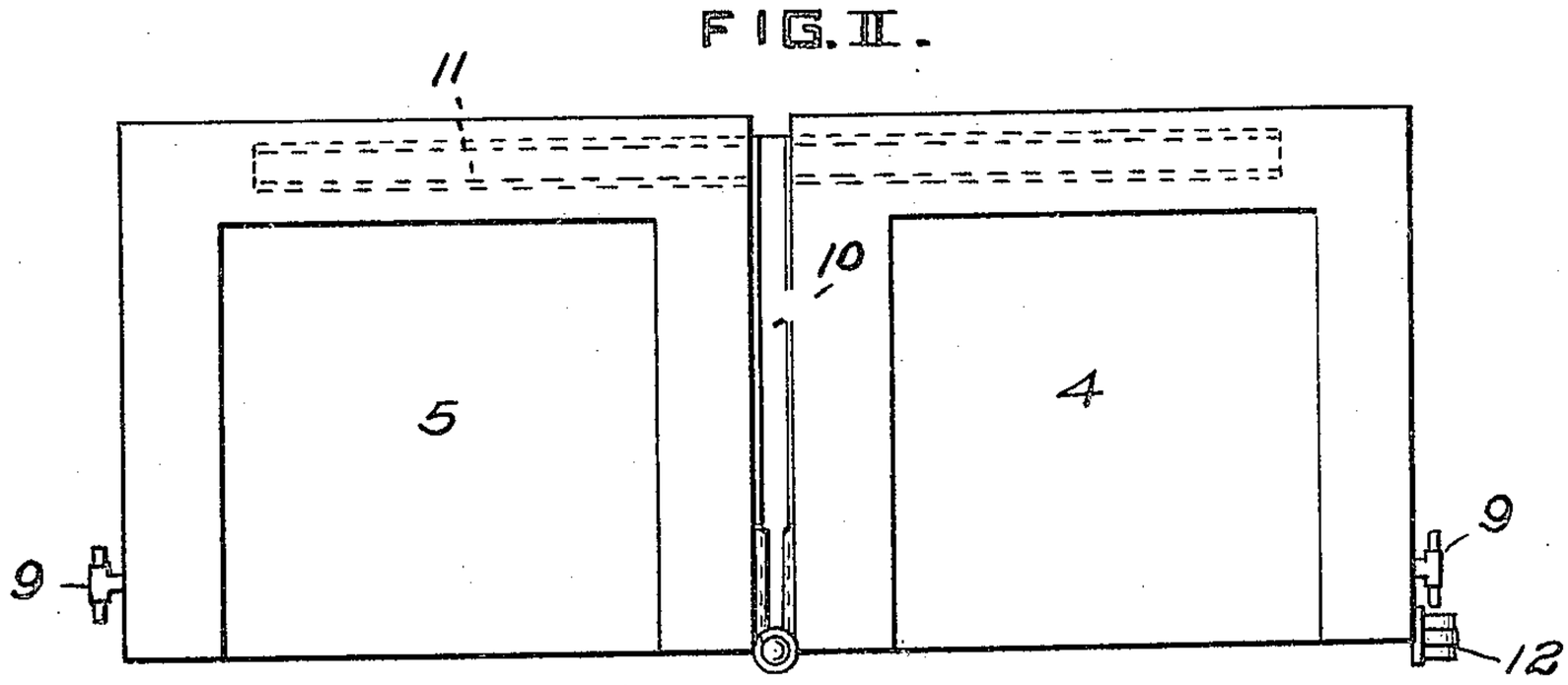

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FIG. III.

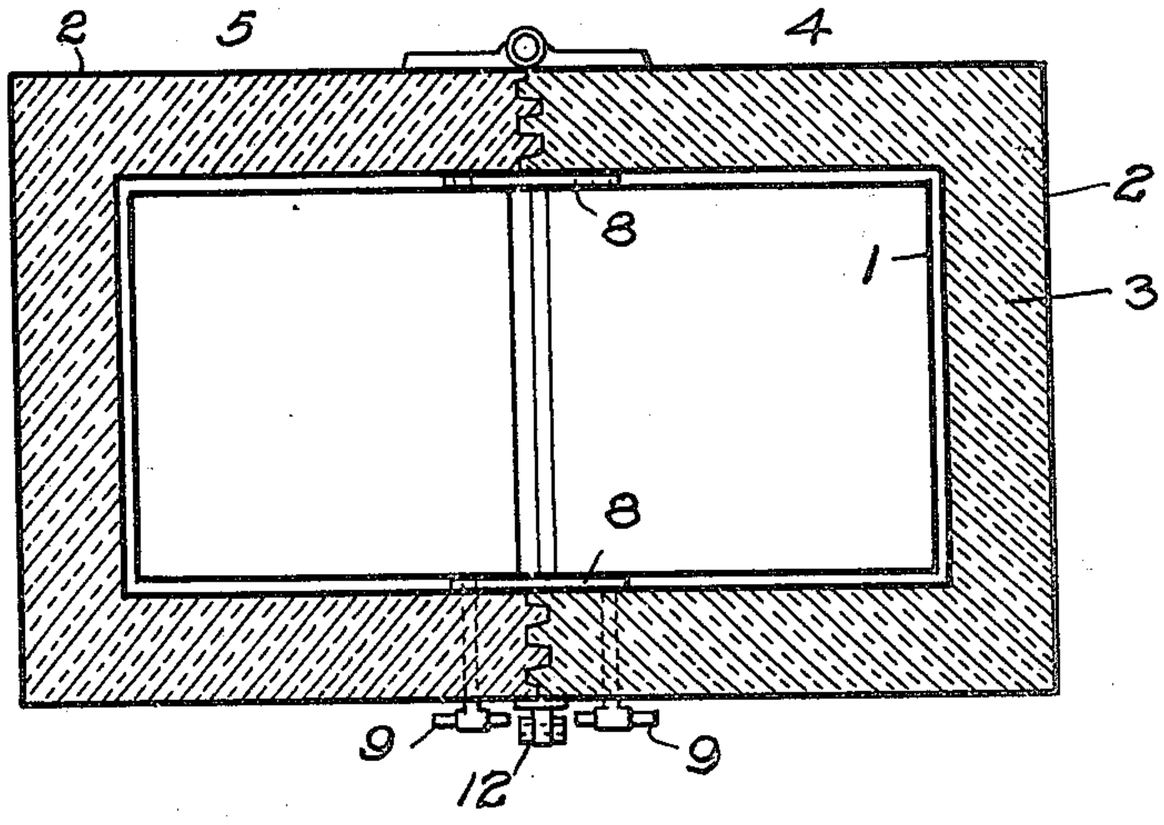


FIG. IV.

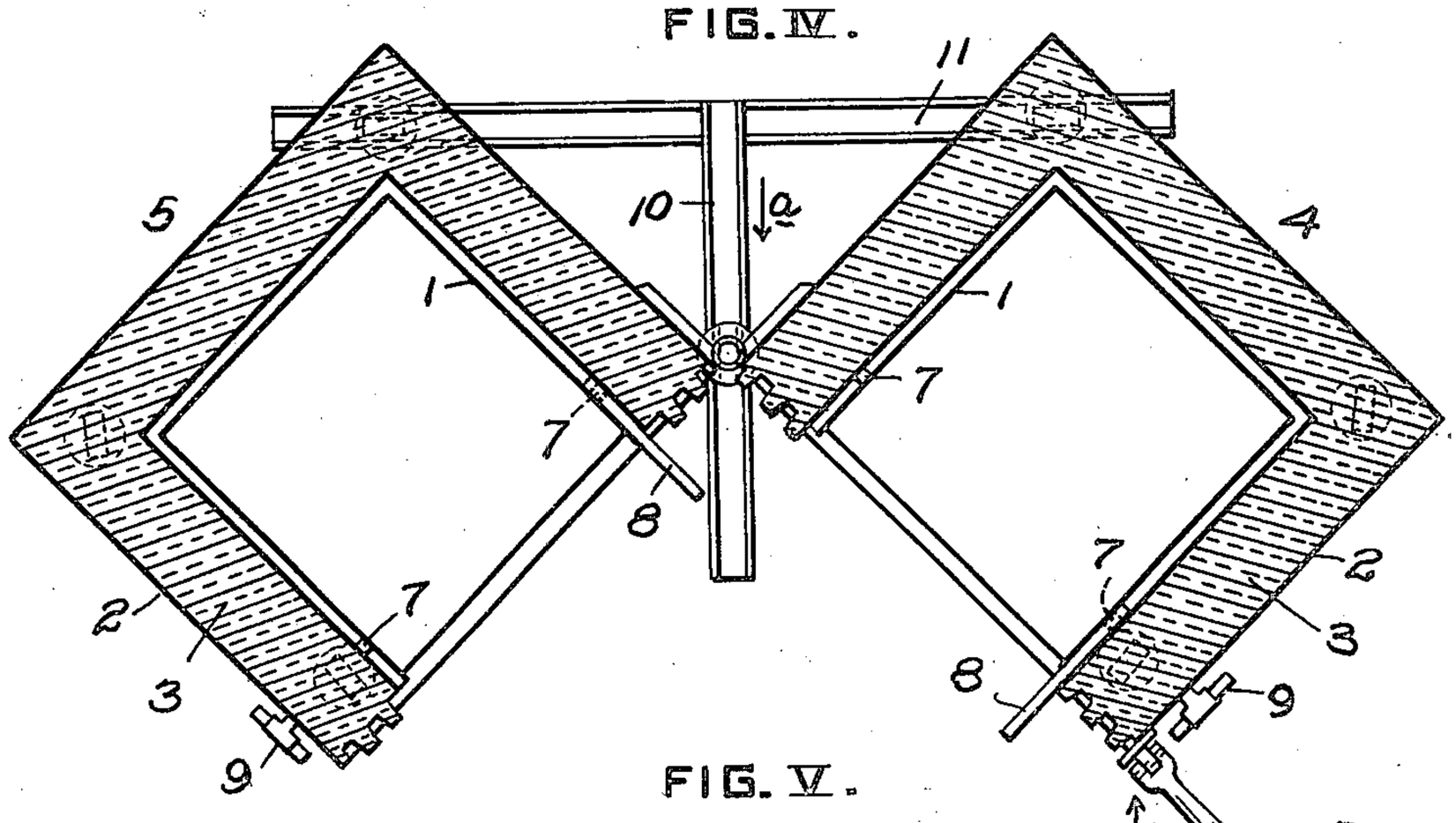
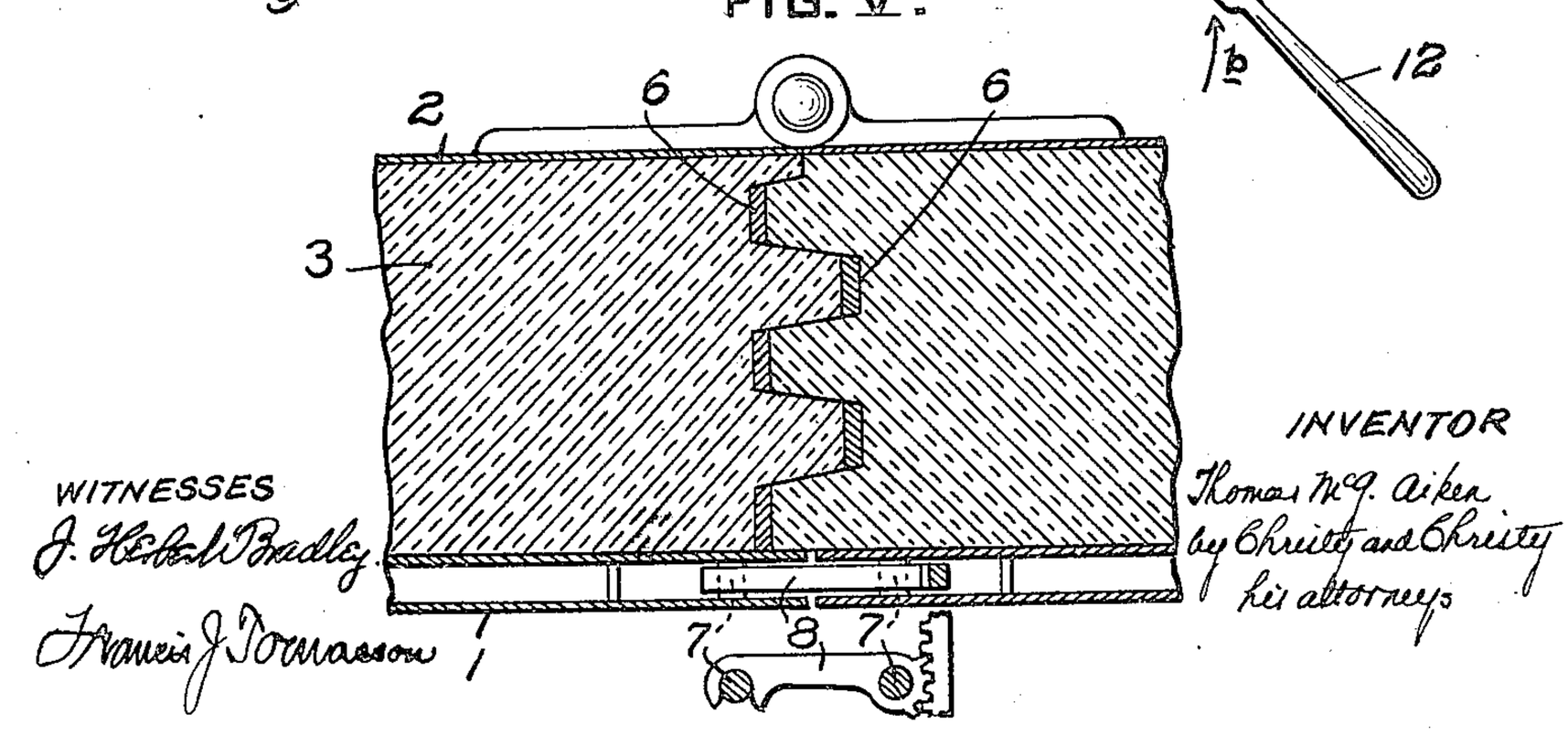


FIG. V.



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UNITED STATES PATENT OFFICE.

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SAFE.

Application filed June 20, 1921. Serial No. 478,814.

To all whom it may concern:

Be it known that I, THOMAS McG. AIKEN, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Safes, of which improvements the following is a specification.

My invention relates to the construction of safes. I have developed it in application to a filing safe of light-weight class.

In the accompanying drawings Fig. I is a view in front elevation of a safe of my invention, standing open; Fig. II is a plan view of the same safe in the same position, viewed from above; Fig. III is a view in horizontal section of the safe when closed; Fig. IV is a view in horizontal section of the safe when in intermediate position, between closed and open, and showing also in plan guides for controlling the movement of the parts over the floor upon which the safe stands; Fig. V is a view in detail to larger scale, being a sectional view on the same plane with Fig. III and showing the parts in the same relative positions as in Fig. III.

My invention, stated in general terms, consists in a safe composed of two parts of equal size and proportion, and complementary each of the other, each constituting a receptacle for articles to be stored and protected, the two halves being movable, alternately to close one upon the other, like the valves of a shell and to constitute each the closure or door of the other half, and to open to a position in which both halves are accessible for the introduction of and removal of articles. More minutely the invention consists in the formation of the meeting edges of the two parts or halves, in the locking device, and in the means for controlling and guiding the parts or halves in opening and closing.

The safe shown in the drawings will be recognized by those acquainted with the subject as a light-weight safe, its walls being built of inner and outer plates 1 and 2 of steel with interposed filling 3 of heat-insulating material.

Comparison of Figs. I–IV of the drawings will show this safe to consist of duplicate complementary halves 4 and 5 which may stand open and accessible, as indicated in Figs. I and II, or closed, as indicated in Fig. III. When closed, each half constitutes the closure for the other.

The walls, as in all safes, are of substantial thickness. The meeting edges of the two halves are provided with complementary tongue and groove faces. Ordinarily the meeting edges of wall and door of a safe are stepped. Compared with such a stepped engagement, the engagement of the edges of my safe parts, characterized by a series of tongues and grooves intermeshing and clamping is manifestly a more secure union and a union more completely fire resistant. Referring particularly to Fig. V, it is to be observed of this tongue and groove formation that clearance may be provided for opening and closing by forming tongues and grooves with tapering side walls—a feature generally advantageous; and if, as in the case illustrated, the two safe halves be hinged so as to open and close on relatively arc-shaped lines of movement, the inclining of the side walls of the grooves is a practical necessity. The meeting edges (which are of steel or faced with steel) will preferably be provided with suitable packing, and this packing will ordinarily take the form of gaskets of such material as asbestos, indicated at 6 in Fig. V, lying, when the safe is closed, between the tips of the tongues and the bottoms of the grooves.

Locking mechanism is indicated in Fig. V, where, across a narrow space formed for the purpose in the walls of the structure extend pins 7, over which suitable clamping members 8 may make engagement. Conveniently these clamping members are pivoted each on one of two companion pins 7 and are swung to and from clamping or locking position by handles 9. I preferably have a number of these clamping devices arranged at properly spaced points along the vertical meeting edges, both at the front and at the back, as indicated by the repeated numerals 8, Fig. I. As shown in Fig. I the clamping members for the front edges are borne by one of the two safe parts (4) while the clamping members for the rear are borne by the other part (5). This is merely a matter of convenience. All the clamping members borne by one part may be operated by a single handle (9) through operative connections which are not shown, because the supplying of such detail is obvious. It will be observed that the locking mechanism, both at front

and rear, is arranged at the inner side of the thick wall of the safe, where it is remote from disturbance by heat and from access by burglars.

The safe halves may be closed and opened in any preferred manner. Ordinarily these structures stand upon the floors of buildings, resting upon casters to facilitate being moved about. Since my invention in service involves the movement of one at least of the complementary safe halves, with its contents, suitable plates or tracks may be laid and casters in which friction is reduced to a minimum may be provided, to facilitate such movement. The two halves may be quite independent one of another, except when united by locking mechanism, and the two halves may be separable merely by being rolled apart, and the two halves may be separated to indefinite distances, or the direction and range of relative movement may be defined and controlled by suitable guides, runways or stops. Conveniently, the relative movability of the halves may be controlled in the manner shown in the drawings. Here the two halves are hinged together, and consequently relative movement is upon circular lines centering in the hinge; and, as has been explained, the tongue and groove formation of the meeting edges of the two halves will be minutely shaped to permit of such movement of the halves on circular lines. One half may swing (travelling upon properly laid tracks, if need be) while the other remains stationary; but I have shown both halves swinging relatively to the supporting floor. To this end two guides are laid down, both of them straight channels, in one of them, 10, rests a caster bearing the hinged corners of the two halves, a caster arranged on vertical line beneath the hinge, and the other guide, 11, extends at right angles across the rear end of the guide first mentioned, and in it rest the casters under the outer rear corners of the two safe halves. With this explanation, and with the drawings in view, it is manifest that when the safe is closed, as shown in Fig. III it may be opened to the position shown in Fig. IV and thence to the position shown in Fig. II by an initial forward pull on the center line in the direction indicated by the arrow *a* Fig. IV, and an ultimate rearward push at the outer edge, in the direction indicated by the arrow *b*. A long handle 12 may be provided, if desired, to afford added leverage, and such a long handle may of course be pivoted to hang out of the way when not in use.

The advantages of my invention are several: first, the safe constructed in the manner described is fire-resistant in superior degree,—this by virtue of the fact that its halves are complementary parts, equal in dimensions and alike in the material of which they are composed. Flames and heat frequently gain access to safes which close with apparently abundant security, consequent upon the fact that, under extreme temperature conditions, the unequal bodies of safe and of door expand unequally and edges separate which when cold had met perfectly. The second chief advantage of my improved safe is the economy of space incident to its use. The doors of safes now commonly in use occupy space, they must have space in which to swing and space in which to remain while the safe is open. My safe, in the sense that it has no door, is economical of space. Of course it must have room for opening, but once open there is no space occupied by the then useless door. Furthermore, given two safes of equal dimensions, one of usual construction, the other of the construction of my invention, my safe, though half as deep has double the opening of the other. Let this fact be taken in connection with the additional fact that a square shape in cross section as distinguished from an elongate shape is imposed on safes, not as the most advantageous shape from the point of view of accessibility, but as affording greatest protction against fire, and then the absolute advantage of my improved construction in this regard will be apparent. Finally, the safe of my invention is relatively burglar proof, for the reason that two members of equal weight, or approximately so, have to be blown apart, and that is a much more difficult and dangerous operation than to blow open the relatively light door of an ordinary safe.

It may, in some instances, be desirable to form the two safe parts of different depth; in this case there will be some small departure from the ideal construction already described; the essential feature of similarity in other respects will, however, remain, and the departure from the ideal will be merely a compromise of conveniences. Parts of varying depth may be made, and mated as desired.

Having now described in detail the structure shown in the drawings, it may be noted again that the safe walls, here shown to be formed of exterior plates with a contained filling of heat-insulating material between may be made as one wall, of metal plates throughout, or of other material.

I claim as my invention:

1. A fire-resistant, burglar-resistant, doorless, twin filing safe composed of two units, both chambered internally and in service meeting edge to edge and constituting closures each for the other, the walls of the safe being built of inner and outer steel plates and interposed heat insulating material, means for clamping the units in positions of relative closure such means consisting of a pivoted clamping member borne by one of

said units arranged interiorly of the heat insulating body of the safe and adapted to swing adjacent to and in a plane parallel to the inner steel plate which constitutes the safe wall, means exterior of the safe wall for swinging said clamping member, and a member borne by the other unit and adapted when the units are closed to be engaged by said clamping member in the range of its swing.

2. A fire-resistant, burglar-resistant, doorless, twin filing safe composed of two symmetrical and complementary units, both chambered internally and in service meeting edge to edge and constituting closures each for the other, and hinged together, the structure so defined resting on guides, such guides consisting of two rectilinear parts meeting at right angles in the form of a letter T, the safe at its two rear corners resting on and in opening and closing moving along the guide part which constitutes the crossbar of the T, and the point of hinging resting on and moving along the guide part which constitutes the stem of the T.

In testimony whereof I have hereunto set my hand.

THOMAS McG. AIKEN.

Witnesses:
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FRANCIS J. TOMASSON.