

(No Model.)

3 Sheets—Sheet 1.

H. C. STOCKWELL.
DOOR FOR SAFES.

No. 551,696.

Patented Dec. 17, 1895.

Fig. 1.

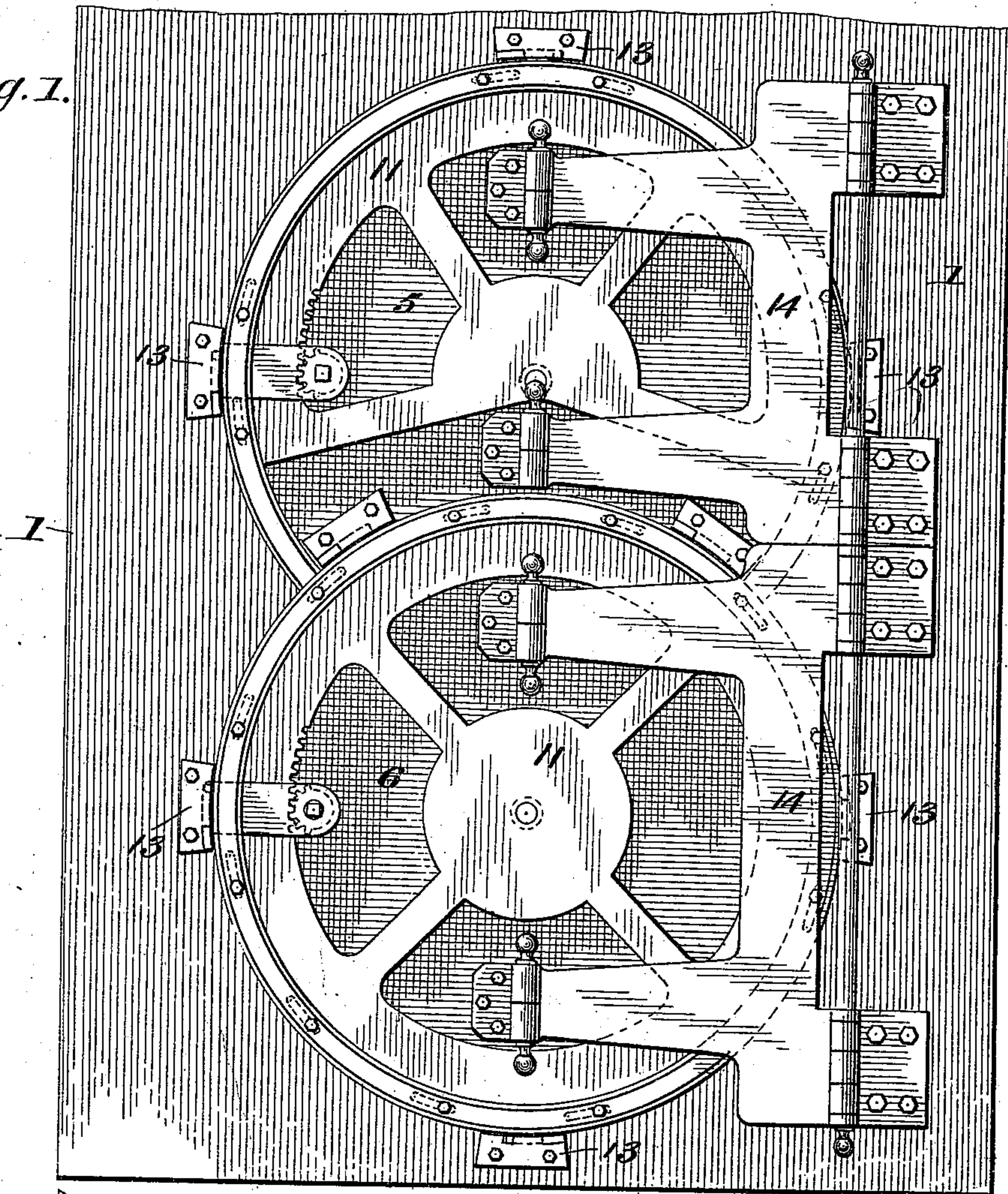
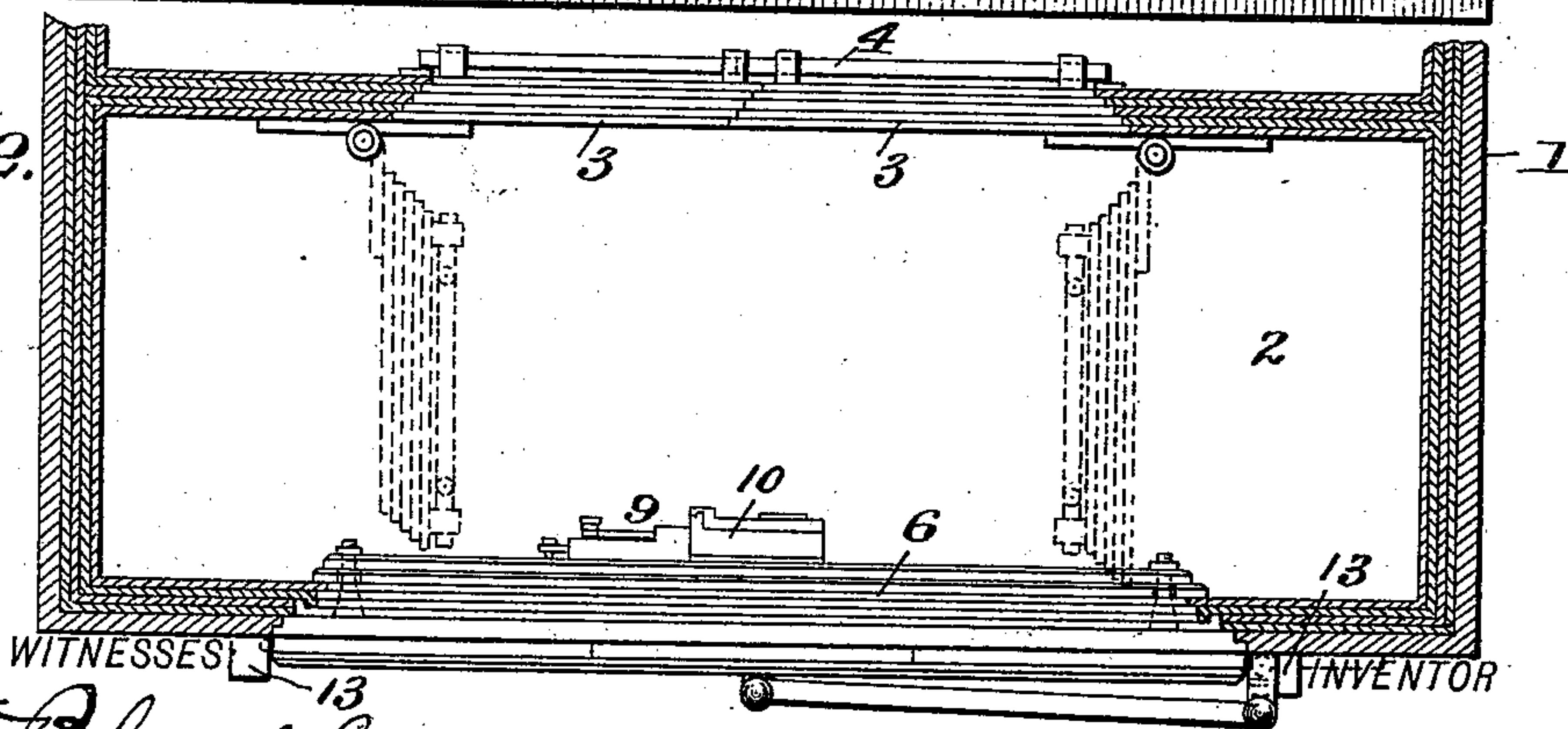


Fig. 2.



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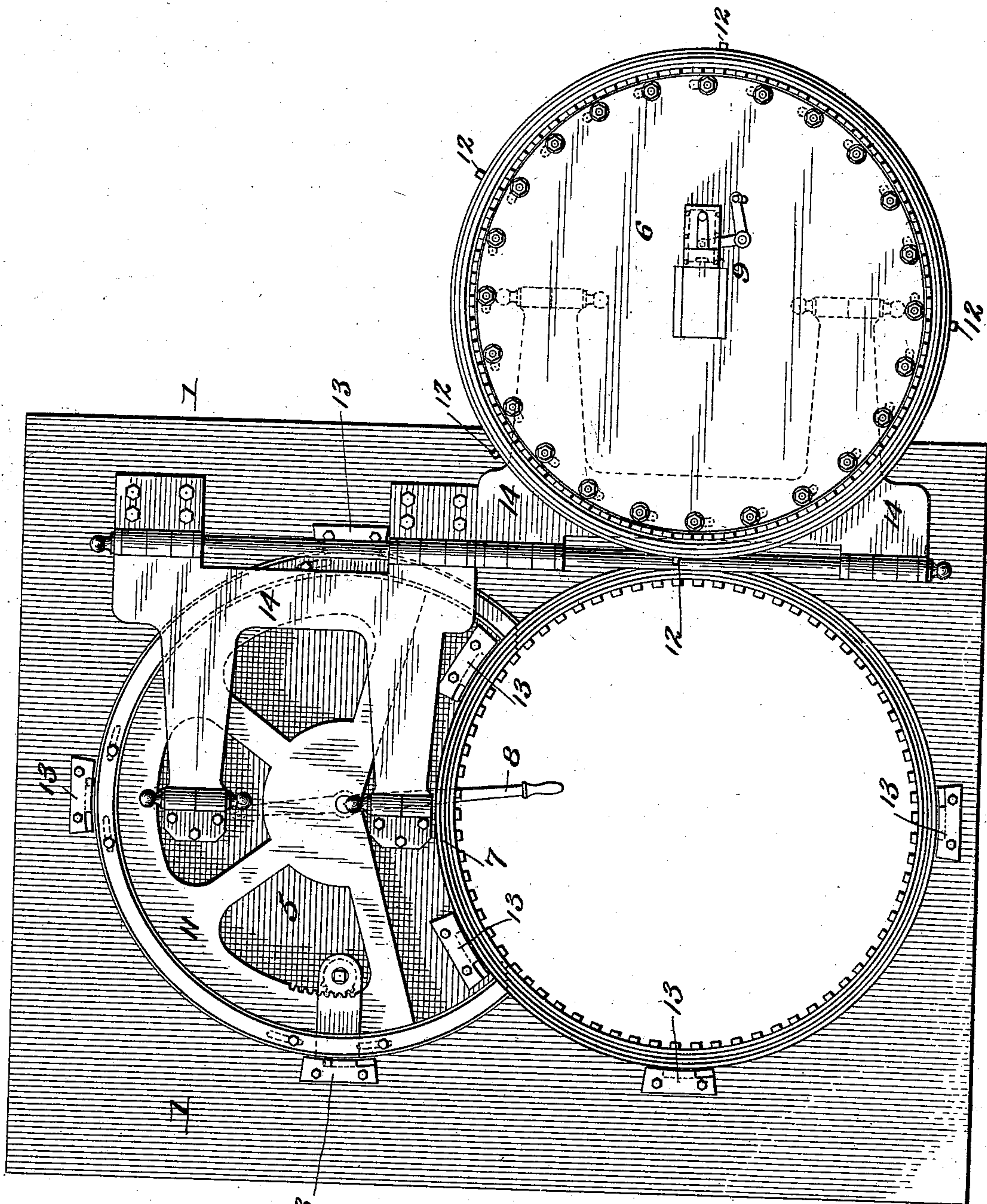
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Fig. 3.

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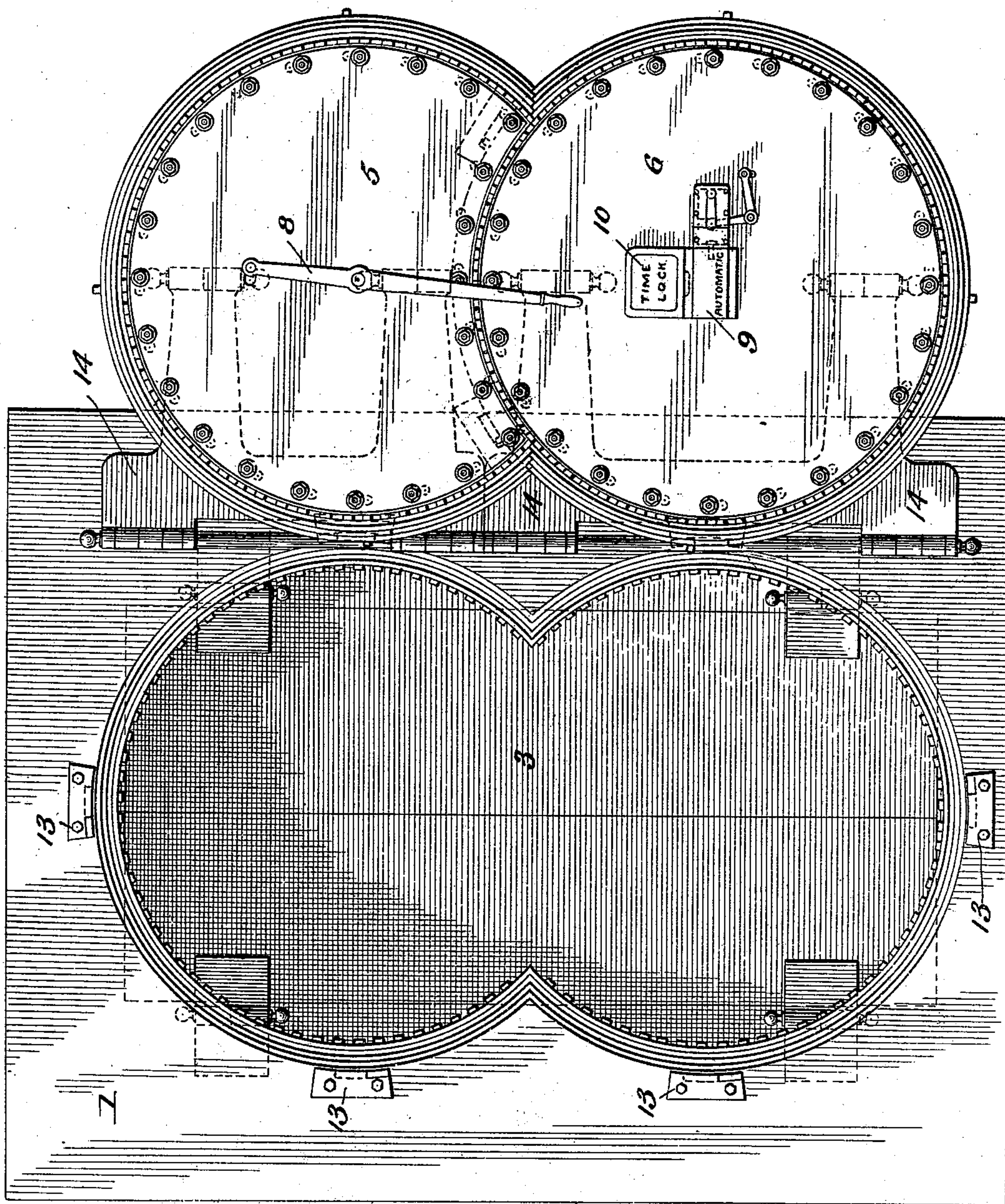
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Fig. 4.

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UNITED STATES PATENT OFFICE.

HERBERT C. STOCKWELL, OF STAMFORD, CONNECTICUT.

DOOR FOR SAFES.

SPECIFICATION forming part of Letters Patent No. 551,696, dated December 17, 1895.

Application filed December 3, 1894. Serial No. 530,723. (No model.)

To all whom it may concern:

Be it known that I, HERBERT C. STOCKWELL, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Doors for Safes, Vaults, &c., of which the following specification, taken in connection with the accompanying drawings, is a full, clear, and exact description.

In view of the methods which are now used to attack safes—namely, by liquid high explosives—an absolutely-tight fit between the door and the jamb is essential; and such a fit can, for reasons well understood by mechanics, be more perfectly and readily accomplished upon a round door than upon a square one, it being possible to grind the former into place, but not the latter. For these reasons the use of a round-door safe has of late years extended very rapidly; but heretofore it has not been found practicable to use round doors for vaults where a large amount of room is required, because in order to get the necessary size to the entrance so that a man might enter the vault it was necessary to make the door of a diameter practically equal to the height of a man. This necessitated unnecessary width and weight of door, and made the expense so great as to render it impracticable. So-called “double-deck” safes have been made with round doors having one door above the other; but these are divided by a horizontal partition, so that they do not in any way solve the problem of making an opening high enough to admit a man and yet to have the advantages of a round door.

The problem is solved in my present invention by making two intersecting round doors, arranged vertically one above the other. One door, preferably the upper one, is first made complete and ground into place in any desired manner. When perfectly fitted, the said door is fastened securely in its place and then treated as part of the front of the safe. The second door is then ground into its place, and part of the first door cut away so as to make a jamb for the second door. When this second operation is completed, it is obvious that there will be two doors—one a circle with a segment cut away in order to make a jamb for the second door and a second complete

circle; and it is also obvious that the second door will cover and interlock with the first. The two doors having been thus fitted, the upper door is provided with any desired form of hinge, which must, however, be of such construction that the door may be presented accurately to its jamb, and the hinge must also provide for adjustment to take up any sagging or wear. The upper or first door is then provided with any desired form of fastening to lock it in place. In the drawings the locking appliance is an inner revolving plate or disk with teeth or lugs which enter corresponding recesses in the inner plate or jamb, and said plate is then by means of a lever revolved so that the teeth engage with the teeth or projections upon the inner plate of the safe. This door is thus locked by its own revolving plate, and the second door is then closed and locked by its own locking mechanism, which preferably is an automatic bolt-operating device controlled by a time-lock. The locking-bolt in the drawings is a revolving plate similar to that described for the upper door, but may be any desired form of locking device. It is evident that this lower door by engaging with the jamb formed in the cut-away segment in the upper door also serves to lock the upper door in place.

In order that my invention may be fully understood I will now proceed to describe it with reference to the accompanying drawings, and afterward particularly point out the novelty in the annexed claims.

In said drawings, Figure 1 is a detail front elevation of a safe or vault having my improved intersecting round doors attached. Fig. 2 is a transverse sectional view showing the vestibule of a safe or vault having my improved intersecting round doors on the outside and the ordinary square doors on the inside. Fig. 3 is a view similar to Fig. 1 with the lower round door in open position. Fig. 4 is a similar view showing both doors in open position.

1 is a safe or vault of any approved construction which may be provided with a vestibule 2, as shown in Fig. 2.

3 3 are the inner safe-doors provided with any suitable locking mechanism 4.

5 and 6 are the exterior round doors of my

improved construction, which will now be fully described.

In my improved construction the outer doorway of the safe is formed of two vertically-arranged intersecting round openings, which are formed in the front of the safe in any customary manner, and this peculiar construction of doorway is adapted to be closed by the intersecting and overlapping round doors which are independently hinged to the exterior of the safe and provided with independent locking mechanisms. The upper round door 5 is preferably made complete and ground into place in any desired manner. A part of the first door is then cut away to form a jamb portion 7. The door 6 is then ground into its place so as to rest snugly in the circular opening formed partly by the lower rounded portion of the doorway and the cut-away portion of the upper door.

Each door is provided with independent locking mechanism of any approved construction. I prefer to provide each door with an inner revolving plate formed with lugs which are adapted to engage corresponding lugs or projections on the inner plate of the safe. Such a locking mechanism is covered in patent of Emery Stockwell, No. 206,147, dated July 16, 1878.

The rotatable locking plate of the upper door may be operated by the hand-lever 8, while the rotating plate of the lower door is preferably operated by an automatic locking mechanism 9 and controlled by the time-lock 10.

For forcing the doors into locked position and holding them securely in place it is preferable to provide exterior rotatable plates 11 formed with lugs 12, which engage in the cam-blocks 13, and accomplish this purpose when they are rotated by suitable mechanism.

14 are the independent hinges for the upper and lower doors which enable them to swing outwardly independently, as shown in the drawings.

It will be observed that the upper door having the lower segment cut away is first moved into position and locked by the hand-operated mechanism, and then the lower door is moved into position so as to overlap the cut-away portion of the upper door and securely hold it in position. When these two doors are closed and locked the front of the safe is practically solid and as impregnable to attack as a

safe provided with a single round door, while at the same time the intersecting openings make an opening to a vault which is large enough to admit a man, and this result is obtained by little if any increase in cost over that required for the manufacture of a square door.

Having thus fully described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. An improved door for safes, vaults, &c., comprising two intersecting round doors, one of which has a segment cut out of it to receive the intersecting portion of the other, substantially as set forth.

2. An improved door for safes, vaults, &c., comprising two intersecting and overlapping round doors, one of which has a segment cut out of it for the reception of the overlapping portion of the other, substantially as set forth.

3. The combination of a safe or vault having two intersecting round openings forming a door-way, with two independently hung inter-engaging round doors adapted to close said door-way, and suitable locking mechanism therefor, substantially as set forth.

4. The combination of a safe or vault having two intersecting round openings forming a door-way, with a round door hung to close one part of said door-way and having a segment cut out of it to complete the opening of the other portion of the door-way, a second door hung to close the other portion of the door-way, and circular intersecting locking disks on the respective doors, substantially as set forth.

5. The combination of a safe or vault having a door-way formed of two intersecting round openings with suitable jambs to receive the doors, a door fitting one of the round portions of said door-way and having a segment cut out of it and a portion of a door jamb formed on the cut out portion to form a continuation of the jamb of the second rounded portion of the door-way, and a second round door adapted to close the second portion of the door-way and the cut out portion of the first door, said doors being arranged to lock and unlock by rotary motion, substantially as set forth.

HERBERT C. STOCKWELL.

Witnesses:

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