

No. 754,623.

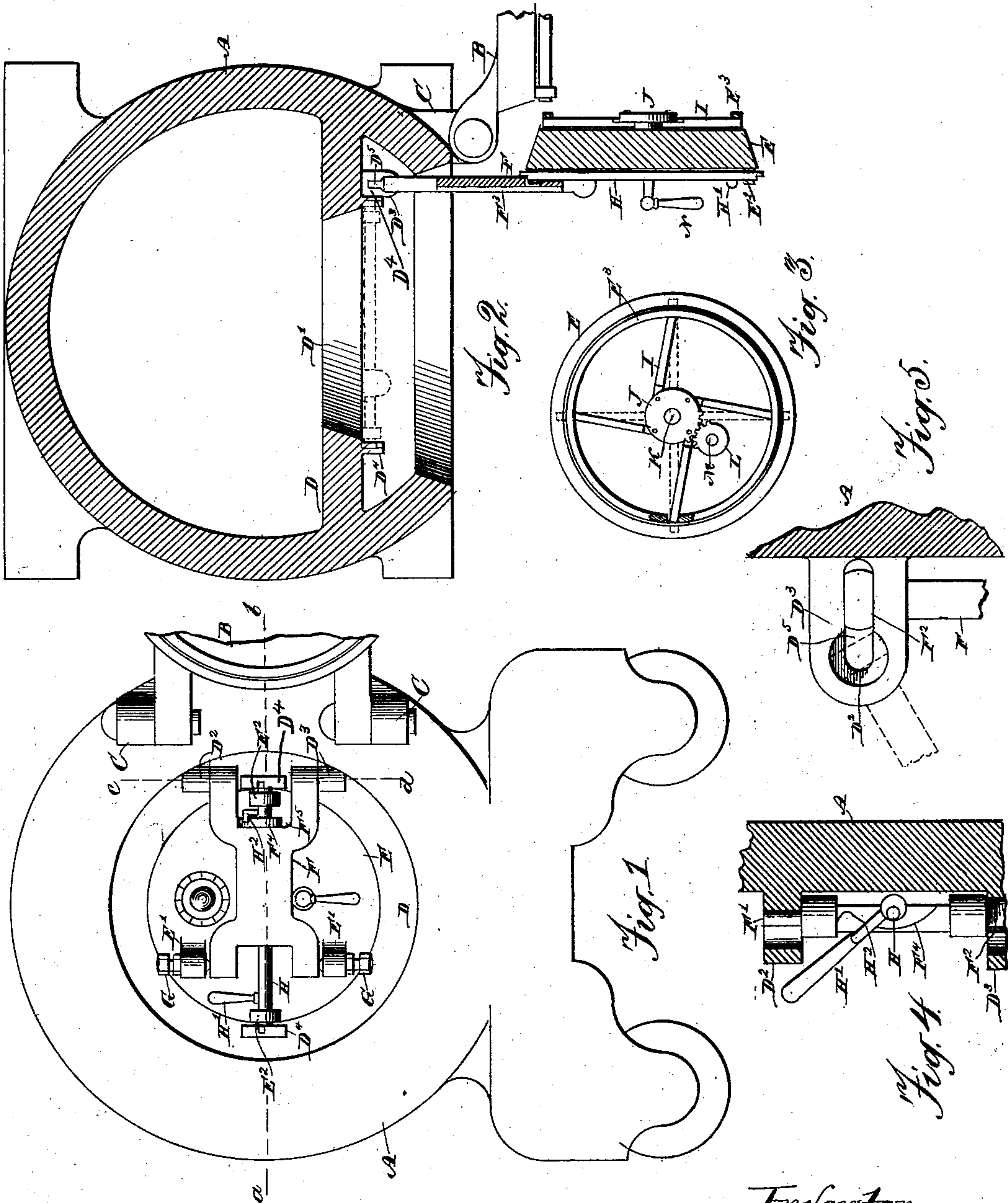
PATENTED MAR. 15, 1904.

E. E. THOMPSON.

SAFE.

APPLICATION FILED JUNE 15, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

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SAFE.

SPECIFICATION forming part of Letters Patent No. 754,623, dated March 15, 1904.

Application filed June 15, 1903. Serial No. 161,504. (No model.)

To all whom it may concern:

Be it known that I, ELLIS E. THOMPSON, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Safes, of which the following is a specification.

This invention relates to safes of the circular-door type, and has for its object to provide an inner burglar-proof door and improved mechanism for locking the same and for opening it to give easy access to the contents of the safe.

The nature of the invention will fully appear from the description and claims following; reference being had to the accompanying drawings, in which—

Figure 1 is a front view of a safe embodying my improvements with the outer door open and the inner one closed. Fig. 2 is a section of the same in the line *a b* looking down, with both doors open. Fig. 3 is a view of the inner side of one of the doors, showing the boltwork, but without any lock. Fig. 4 is a section of the inner door-hinge in the line *c d* looking to the left. Fig. 5 is a view of the same hinge as seen from the under side.

In the construction of safes designed to be burglar-proof the manufacturer aims to secure the desired result partly through strong and heavy construction and intricate locking mechanism and partly by a construction designed to baffle the burglar by mere prolongation of the time necessarily required to break open the safe. In the case of safes having a rectangular outer door this may be easily done by providing an inner door, preferably of the circular type and quite as difficult to open, except through its proper locking mechanism, as the outer one, or even more so; but if the outer door is circular, which construction has its own peculiar advantages, it is practically impossible to open such an inner door, if hinged in the usual way, wide enough to give proper access to the inner compartment of the safe, because the door strikes the curve of the outer door-jamb before it is fully opened. In this invention I have sought to overcome this difficulty, as will appear from the description following.

In the drawings, A is a nearly spherical safe, having one flat side for the door B. This may be hinged in the usual way to lugs C and need not differ essentially from outer doors in general use. Some distance back from the front opening the safe has a diaphragm D, forming the jamb for an inner door E, circular like the outer one, but smaller and fitting a suitable opening D' in said diaphragm. The outer face of the diaphragm is provided with hinge-lugs D² and D³ and lugs D⁴ to engage the pressure-bar H, which in the main may be of familiar construction. Pivoted in the hinge-lugs is an arm F, provided with trunnions F' and F² to engage the hinge-lugs D² and D³, respectively. Both of such lugs are slotted at D⁵ to allow the door to move straight inwardly or outwardly by the action of the pressure-bar. By reference to Fig. 5 it will be seen that the trunnion F² is flattened on two sides to correspond with the width of the slot in the lug. On the other two sides it takes the curvature of a circle of considerably larger diameter than the slot, so that when the arm is pushed outwardly it may turn; but as soon as it begins to turn it may not again enter the slot until restored to the initial position. This is to prevent the lower trunnion from being forced backwardly by the weight of the door E, which is hung on the other end of the arm F. For obvious reasons this construction need not apply to the upper trunnion and lug, where a simple slot and cylindrical trunnion are used. The opposite end of the arm F is pivoted to the door E near the side opposite the hinges just described. The door is provided with lugs E', and these are fitted with screw-pivots G, by means of which the position of the door respecting the opening in the diaphragm may be accurately adjusted. To open completely, the door turns a half-revolution on these pivots, as shown in Fig. 2.

In lugs E² is mounted the pressure-bar H of a familiar type and having a handle H'. When the door is closed, this lies just back of the arm F, which is channeled at F³ to give room for it. Near the end opposite the handle the pressure-bar has an angled finger H², adapted to engage a cam or curved part of the

arm F⁴ when the handle is thrown up to close the door, and thus force the trunnions of the arm back to the initial position. When the handle is thrown down, however, the arm is forced outwardly to a position to turn, as above described, and the angled part of the finger then lies opposite a notch F⁵, which admits of the door being swung on the arm to the position shown in Fig. 2. This construction, as will be seen, provides for a complete opening out of the inner compartment of the safe, notwithstanding the circular form of the outer door and by mechanism which folds up entirely within the safe when in closed position.

The improvement in the boltwork is shown in Figs. 2 and 3. The back face of the door is provided with an annular flange E³, bored at a number of cardinal points, preferably four, to take the bolts I and flaring somewhat inwardly. The inner ends of the bolts are pivoted to a disk J, pivoted at K. This disk engages by gear-teeth with another disk L, connecting by its spindle M with a suitable handle or lever N on the other side of the door. The action and operation of the device is clearly illustrated in Fig. 3, the bolts being thrown in or out by the turning of the central disk.

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

1. In a safe having a circular outer door, the combination of an inner door, a diaphragm therefor, and mechanism internal to the safe when closed adapted to carry the inner door through the outer door-opening from a closed position to a wide-open position and clear of the outer door-jamb.

2. The combination with a safe, of an arm

hinged to the safe at one end, and a door pivoted to the other end of said arm, the door-pivots being near the side opposite to the connection of said arm with the safe.

3. The combination with a safe having slotted hinge-lugs, of a door-supporting arm with trunnions in said slots, a door hinged to the other end of the arm, and a pressure-bar adapted to forcibly close the door, and in opening it to force the arm outwardly in said slot.

4. In a safe having circular outer and inner doors, the combination with the inner door, of an arm pivoted thereto and adapted to carry it through the outer door-opening, trunnions on one end of said arm the lower one flattened on two sides, lugs on the inner compartment of the safe to take said trunnions, the lower lug being slotted to fit the flattened trunnion, with a circular enlargement to allow the trunnion to turn when at the outer position, and a pivotal connection of said arm with the inner door near the side opposite the connection of the arm with the safe.

5. The combination with a safe, of a door-supporting arm, a door hinged thereto, trunnions on the other end of the arm, slotted lugs on the safe to take said trunnions, a pressure-bar adapted to forcibly open and close the door, and a finger on said bar adapted to engage the arm when in closing position and force the trunnions inwardly to initial position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ELLIS E. THOMPSON.

Witnesses:

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