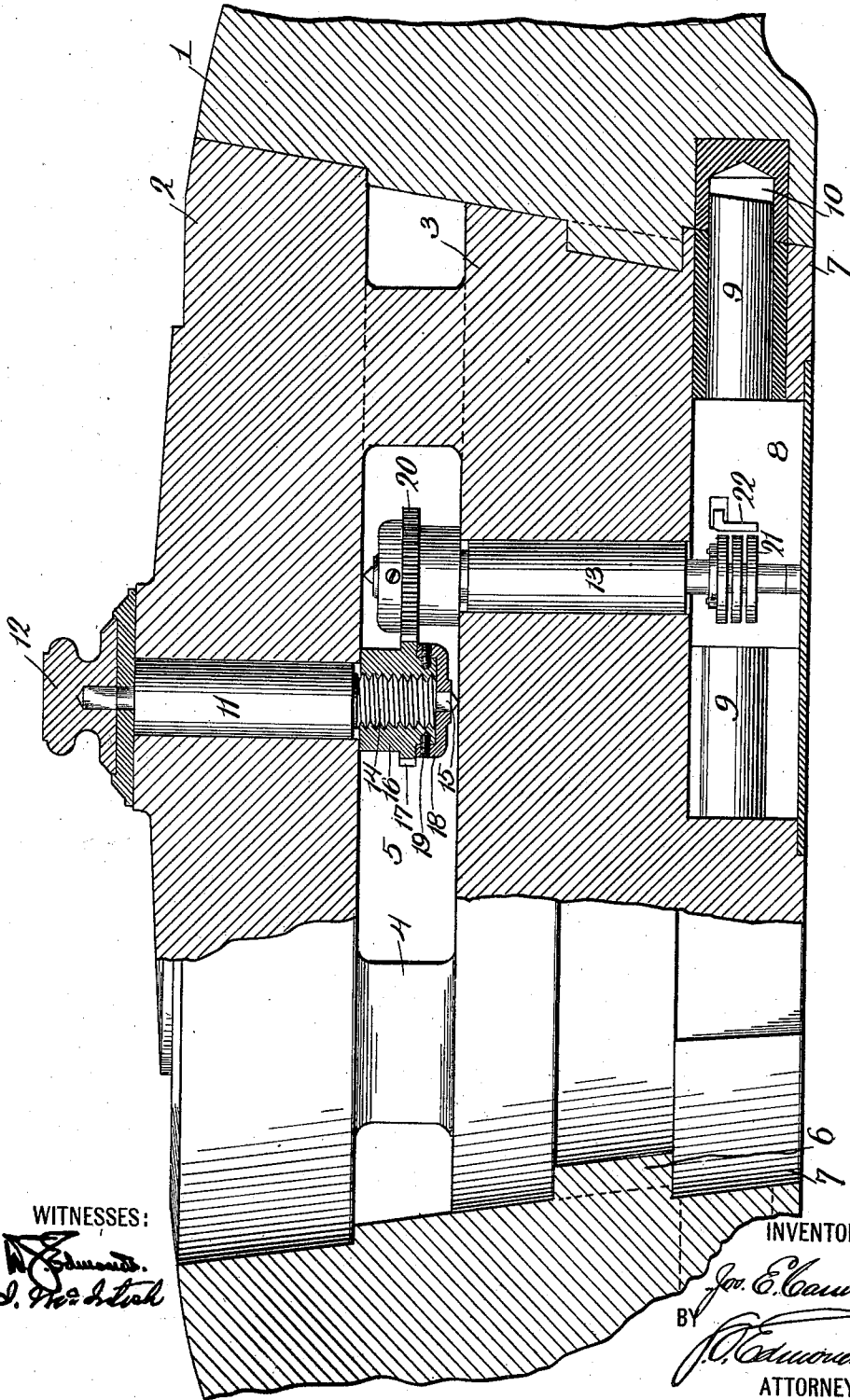


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SAFE.

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WITNESSES:

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To all whom it may concern:

Be it known that I, JOSEPH E. CASSERLY, a citizen of the United States, residing in the city of New York, State of New York, have invented a certain new and useful Improvement in Safes, of which the following is a specification.

This invention relates to locking mechanisms for safes and particularly for burglar-proof safes having circular doors.

The invention is directed specially to the provision of an improved form of locking mechanism for a circular door of the type consisting of two or more door sections which are integral with each other or permanently united and which have between them a chamber such that if an explosive were inserted between the door and jamb and detonated the gases would expand within this chamber and their only effect would be to blow off the outer section of the door, leaving the inner section or sections intact and closing the opening to the interior of the safe.

In the construction of safes, the necessary provision of a shaft or spindle passing through the door for operating the locking mechanism has always been considered as introducing an element of weakness, and great care has been exercised in the construction and assemblage of the parts of the operating device for the lock. In accordance with the invention, an improved form of operating connection from the outside of the door to the lock is provided, the improvement involving the arrangement of a portion of this operating mechanism within the chamber provided between the sections of the door. Instead of employing a single spindle passing from the outside of the door to the lock, the operating device is formed in two or more parts which are connected together within the chamber of the door, so that they will operate together and the parts of this operating connection are displaced one from another so that even if the outer one were mutilated or removed, access to the lock and operation thereof from the outside of the door by unauthorized persons are prevented.

In the preferred construction, the door consists of two integrally connected door sections having a chamber between them, and the lock, which may be of any suitable construction, is mounted upon the rear face

of the door; a spindle is provided passing through the outer section of the door, and a second spindle is provided passing through the inner section of the door, these two spindles being out of axial alinement and connected together so as to operate in unison by devices within the chamber between the two sections of the door.

I have illustrated an embodiment of my invention in the accompanying drawing, in which a portion of the front wall of a safe is shown in section and a circular door is shown partly in section and partly in elevation, lying within the opening in the wall.

Referring to the drawing, 1 indicates the front wall of a burglarproof safe having a circular opening therein adapted to receive a door consisting of two sections 2 and 3 integrally connected by webs 4 so as to provide a chamber 5 between the two sections 2 and 3. This chamber is preferably of large area and extends outwardly to the periphery of the door. On the jamb of the door are formed lugs 6 and the door is provided with corresponding lugs 7 such that when the door is inserted within the jamb it may be turned sufficient to carry the lugs 7 behind the lugs 6 so as to hold the door in the closed position. A combination-lock 8 of any suitable construction is mounted upon the rear face of the door, this lock being adapted to operate radially-disposed bolts 9 so as to cause the ends of those bolts to be inserted within or withdrawn from openings 10 formed in the door-jamb to preclude or permit turning of the door in order to hold the lugs 7 behind the lugs 6 or permit them to be moved to position for opening the door. In the outer section 2 of the door is an opening adapted to receive a spindle 11 for operating the lock 8, this spindle having on its outer end an operating handle 12. A similar opening is provided in the inner section 3 of the door, adapted to receive a spindle 13, this spindle and the spindle 11 being displaced laterally so as to be out of axial alinement. At its inner end, the spindle 11 is provided with an integral threaded portion 14, and beyond this at the extreme end of the spindle an integral bearing-piece 15 of polygonal section, here shown as square, provided with a pointed end which bears against the face of the rear section 3. Threaded on the portion 14 is a sleeve 16 having a gear 17

formed thereon. A cap 18 lies against the end of sleeve 16 and has a square opening therein through which the bearing piece 15 extends. At its edge cap 18 has an integral
 5 flange overlying the sleeve 16, as shown, and screws 19 pass through openings in this flange and into threaded openings formed in sleeve 16 to hold the sleeve and cap together. The end of the spindle 13 lying
 10 within the chamber 5 may be constructed in the same manner as that above described as to the inner end of the spindle 11, and the gear 20 of the spindle 13 meshes with the gear 17 of the spindle 11. Upon the inner
 15 end of the spindle 13 are a plurality of notched disks 21, with which a tumbler 22 is adapted to coact in the usual or any suitable manner, the position of tumbler 22 with reference to the disks 21 governing the
 20 operation of the bolts 9.

By this construction, employing two spindles for connecting the operating handle on the outside of the door and the lock mounted within the door, these two spindles being
 25 displaced so as to be out of axial alinement, it will be seen that if the outer spindle were destroyed and removed, no opening would be provided through the door through which the combination lock might be operated, and the outer end of the inner spindle
 30 13 is so inclosed by the walls of the

chamber 5 as to protect it against an effort to destroy it.

Having now described my invention, what I claim as new therein and desire to secure 35 by Letters Patent is as follows:—

A circular door for a safe, comprising a plurality of door sections of unmachineable metal rigidly connected but spaced apart so as to form a chamber of substantial size between the door sections open at the periphery of the door, a combination-lock mounted upon the rear face of the door, a spindle passing through the inner section of the door and connected to said lock, a spindle 45 passing through the outer section of the door and displaced axially from said spindle, parts on said last-named spindle coacting with the inner and outer walls of said chamber to prevent axial movement of the spindle, gearing located in said chamber and connecting said spindles, and an operating handle on the outer end of the spindle passing through the outer section 50 of the door, substantially as set forth. 55

This specification signed and witnessed this 22nd day of December, 1908.

JOSEPH E. CASSERLY.

Witnesses:

EDWIN I. PYLE,
 ROBERT HARDING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."