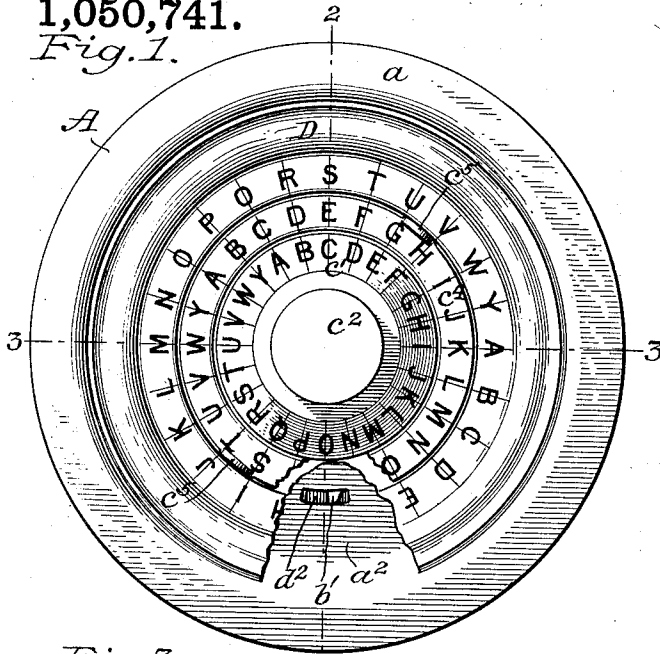


H. C. LOWRIE, DEC'D.
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SAFE DOOR AND LOCKING MECHANISM THEREFOR.
APPLICATION FILED AUG. 26, 1911.

1,050,741.
Fig. 1.



Patented Jan. 14, 1913.

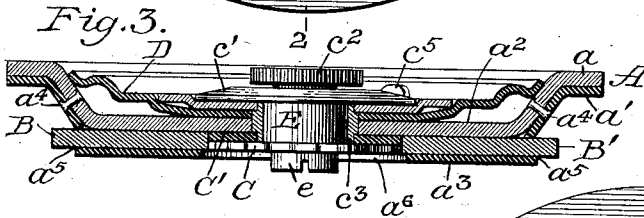
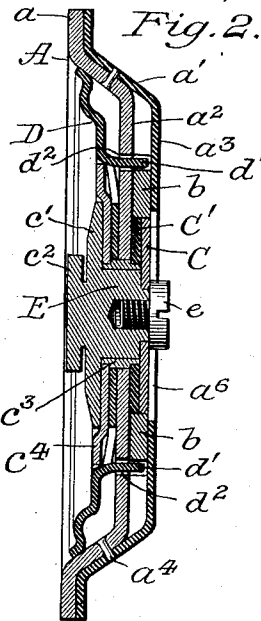


Fig. 5.

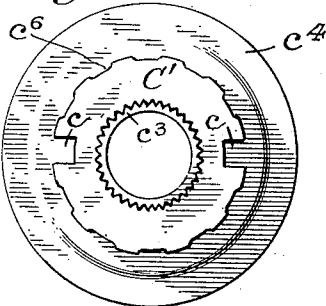


Fig. 6.

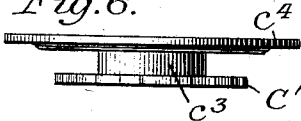
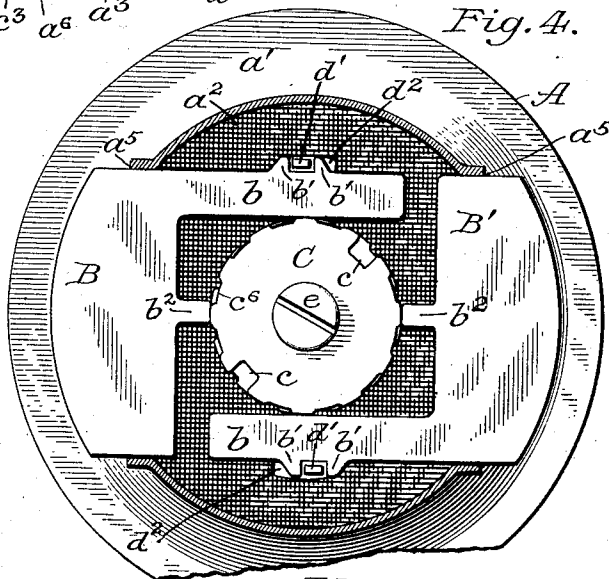


Fig. 4.



Attest:
Annie Cooper
Paul Finkel

John M. Lowrie,
Administrator of the Estate of
Harvey C. Lowrie, deceased, Inventor.
By *Lowrie & Little*
Attorney.

UNITED STATES PATENT OFFICE.

HARVEY C. LOWRIE, DECEASED, LATE OF NEW YORK, N. Y., BY JOHN M. LOWRIE,
ADMINISTRATOR, OF NEW YORK, N. Y.

SAFE-DOOR AND LOCKING MECHANISM THEREFOR.

1,050,741.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed August 26, 1911. Serial No. 646,162.

To all whom it may concern:

Be it known that HARVEY C. LOWRIE, deceased, who was a citizen of the United States, and resided at New York, in the county and State of New York, invented certain new and useful Improvements in Safe-Doors and Locking Mechanism Therefor, which I, JOHN M. LOWRIE, administrator of the estate of said HARVEY C. LOWRIE, fully set forth in the following specification.

This invention relates to a door and locking mechanism therefor, and the main object of the invention is to provide a door and locking mechanism for wall safes or small lock boxes which shall be simple in construction and mode of operation and at the same time afford requisite strength and security, and which may be manufactured at comparatively small cost.

The invention consists in the novel features hereinafter described and particularly pointed out in the appended claims.

For a detail description of the invention reference will be made to one embodiment thereof which is illustrated in the accompanying drawings, in which:

Figure 1 is a front view of a door embodying the invention, with a portion of the bolt actuator and one of the lock controlling dials broken away to show the slot through the front plate of the door through which the bolt actuator connects with the locking bolts. Figs. 2 and 3 are central vertical sections of the door taken on lines 2—2 and 3—3, respectively. Fig. 4 is a rear view of the door with a portion of the rear plate removed for disclosing the locking mechanism. Figs. 5 and 6 are rear and edge views of one of the circular notched disks and its attached dial.

The door A is made up of a pair of dished or cup shaped plates a and a' fitting one within the other and which are secured together at or near the outer edges to form a stiff rigid structure. The cupped shape form of the outer plate a affords a depression in the outer surface of the door for the reception of the bolt actuator and the lock controlling dials, so that these parts may be located wholly within the extreme outer surface of the door, and when said door is used in connection with a wall safe, or a jewel box, the bolt operating and controlling mechanism will not project beyond the sur-

face of the safe or lock box. The inner or rear plate a' is formed to closely fit the plate a around the outer edge or periphery of the door and also around the annular dished portion thereof, but the dished or cupped portion of the plate a' is somewhat deeper than that of the plate a so as to afford a space between the main or central part a^2 of the plate a and the main or central part a^3 of the plate a' , this space being provided for the reception of the locking bolts B and B' and the disks C and C', which latter operate to prevent or permit the retraction of the bolts. The plates a and a' may be secured together by electric welding or by means of rivets a^4 , but when the latter are used they should be preferably located in the cupped portions of the plates or at some point where they will be concealed by the bolt actuator D. The rear plate a' is provided with slots a^5 through which the bolts B and B' are projected, the latter being adapted to engage a flange or projection on the wall of the opening in which the door is inserted for securing or locking the door therein as will be readily understood. The bolts are made of a thickness substantially equal to the space between the central portions of the two plates a and a' so that they will need no other guides than will be afforded by said plates and by the disks C and C', as will be hereinafter explained. Each of said bolts is provided at one side with a rear extension b which contacts with the disks C and C' and on said extensions there are two lugs b' between which is located a tongue or projection d' which extends rearwardly from the bolt actuator D which is located on the outside of the door within the depressed portion of the plate a , said lugs d' projecting through slots d^2 , in the front plate a of the door, so that by rotating the bolt actuator D, the bolts B and B' may be retracted when the disks C and C' are properly adjusted with reference to each other and to said bolts.

The disks C and C' are practically duplicates of each other and each is provided with a pair of oppositely arranged notches which are adapted to receive tongues or projections b^2 on the bolts B and B', said lugs being arranged to engage the peripheries of the disks C and C' when the bolts are projected, as shown in Fig. 4. The disk

C is rigidly secured to the rear end of a spindle E by means of a screw *e*. Said spindle E projects through an opening centrally formed in the door plate *a* and on its outer end it is provided with a dial *c'* rigidly secured thereto and is also provided with a knob *c''* by means of which the dial, spindle and disk C, may be freely revolved. The disk C' is rigidly secured to a sleeve *c''* which surrounds the spindle E and which also projects through the central opening in the front door plate *a*, and at its outer end it carries a dial *c''* which is somewhat larger than the dial *c'* and at opposite points of its periphery it is provided with projections *c'''* by means of which said dial may be readily rotated for rotating the disk C'. The bolt actuator D consists of a circular plate having a diameter substantially equal to the depressed portion of the plate *a*, so that its outer portion will surround the dial *c''*, while its inner portion extends beneath the two dials *c'* and *c''* and is centrally perforated and journaled on the sleeve *c''* so that it may be revolved thereon. Said actuator is preferably stamped from sheet metal and at opposite points it is provided with two integrally formed tongues or projections *d'* located beneath the dial *c''* and projecting through slots *d''* formed in the door plate *a* and between the lugs *b'* formed on the bolts B and B', so as to engage with said lugs *b'* for projecting or retracting the bolts when revolved in one direction or the other, as will be readily understood.

The dials *c'*, *c''*, and the actuator D, are each provided with index lines designated by the letters of the alphabet so that by rotating the dials *c'* and *c''*, the operator may be guided in adjusting the disks C and C' so that the notches in the disks may be brought into alinement with the lugs or projections *b''* on the bolts; and when this is accomplished, the bolts may be retracted by a slight rotation of the bolt actuator. When the door is to be locked, the bolts are projected by the bolt actuator and the notches in the disks are thereafter thrown out of alinement as illustrated in Fig. 4.

The disks C and C' are each provided with false notches *c''* to prevent "feeling" for the combination, this being a well known expedient in permutation locks. The disk C' is also made adjustable with relation to the dial *c''* for varying the combination, this being effected by providing the central opening of the disk with a serrated edge which closely fits a similarly formed edge on the sleeve or collar *c''* so that said disk may be removed from the sleeve and placed thereon in a different position. This is also a well known expedient, and the disk C may also be made adjustable in the same manner with reference to the spindle E on which it is mounted.

It is to be noted that the bolts B and B' are accurately guided by the walls of the chamber in which they are located, this being supplemented by the disks C and C' against which the rearward extensions *b* of the bolts slide, so that no guiding means are required other than the parts specified. Attention is also called to the fact that the rear plate *a'* of the door is provided with a central opening *a''* which is slightly larger than the diameters of the disks C and C'. The door plates are first secured together in complete finished relations. The bolts are then inserted through the slots *a''* in the rear plate. The bolt actuator D is then inserted within the depressed portion of the front plate with the tongues *d* projecting through the slots provided therefor in proper engagement with the bolts. The dial *c''* with its attached sleeve *c''* is then inserted through the openings in the actuator D and the front door plate *a* and the disk C' is secured to the sleeve *c''* through the openings *a''* in the rear plate *a'* after which the spindle E is inserted through the sleeve *c''* and the disk C secured thereto by the screw *e*.

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

1. A door of the character described, comprising a pair of cup shaped plates fitting one within the other, with the concave side of one of the plates forming the outer face of the door and with the convex side of the other plate forming the inner face of the door, and having their central portions spaced apart to form a bolt receiving chamber, the rear plate being provided with slots in the cupped portion of the plate, bolts slidably mounted within the chamber formed by the said plates, and adapted to be projected and retracted through said slots and means for controlling the movement of said bolts.

2. A door of the character described, comprising a pair of cup shaped plates attached one within the other, with their central portions spaced apart to form a bolt receiving chamber, the rear plate being provided with slots communicating with said chamber and also with a central opening, bolts slidably mounted in said chamber adapted to be projected and retracted through said slots, a plurality of notched disks mounted between the bolts and adapted by rotative adjustment to prevent or permit inward movement of said bolts, said disks having a diameter less than the diameter of the central opening in the rear plate, and means for adjusting said disks and for moving said bolts.

3. In a door of the character described, the combination of a plurality of radially arranged locking bolts, a plurality of notched disks mounted between the bolts and adapted by rotative adjustment to pre-

vent or permit inward movement of said bolts, dials located on the outside of the door, and rigidly connected through the door to each of said disks, and a bolt actuator provided with tongues or projections directly engaging said bolts through slots formed in said door.

4. In a door of the character described, the combination of a slidably mounted bolt, a plurality of notched disks adapted by rotative adjustment to prevent or permit retraction of said bolt, a dial for each of said disks located on the outside of the door, each being rigidly connected to one of said disks through a suitable opening through the door, and a bolt actuator surrounding said dials and directly connected through a suitable slot in the door to said bolt.

5. The combination of a door of the character described, having a suitable opening, of a sleeve rotatably mounted in said opening, a dial rigidly secured to the outer end of said sleeve and a notched disk rigidly secured to the other end thereof, a spindle rotatably mounted in said sleeve, a dial rigidly secured to the outer end of said spindle and a notched disk rigidly secured to the other end thereof, a plurality of radially arranged slidable bolts, the before mentioned disks be-

ing adapted by rotative adjustment to prevent or permit retraction of said bolts, and a bolt actuator surrounding said dials and journaled on the before mentioned sleeve, said actuator being directly connected to said bolts through suitable slots in said door.

6. The combination of a door of the character described, having a central opening, of a sleeve rotatably mounted in said opening, a dial rigidly secured to the outer end of said sleeve and a notched disk secured to the other end thereof, a spindle rotatably mounted in said sleeve, a dial rigidly secured to the outer end of said spindle and a notched disk secured to the other end thereof, a pair of oppositely arranged bolts each having a rearwardly extending lug or projection adapted to enter the notches in said disk, a bolt surrounding said dials, said actuator being provided with tongues or projections which extend through slots in the door and directly engage said bolts.

JOHN M. LOWRIE,

*Administrator of the estate of Harvey C.
Lowrie, deceased.*

Witnesses:

C. B. HAGANS,

KATHARINE WOOD.