No. 879,785. PATENTED FEB. 18, 1908.

J. R. MAXFIELD.

PERMUTATION LOCK.

APPLICATION FILED JAN. 16, 1907.

Fig. 1.

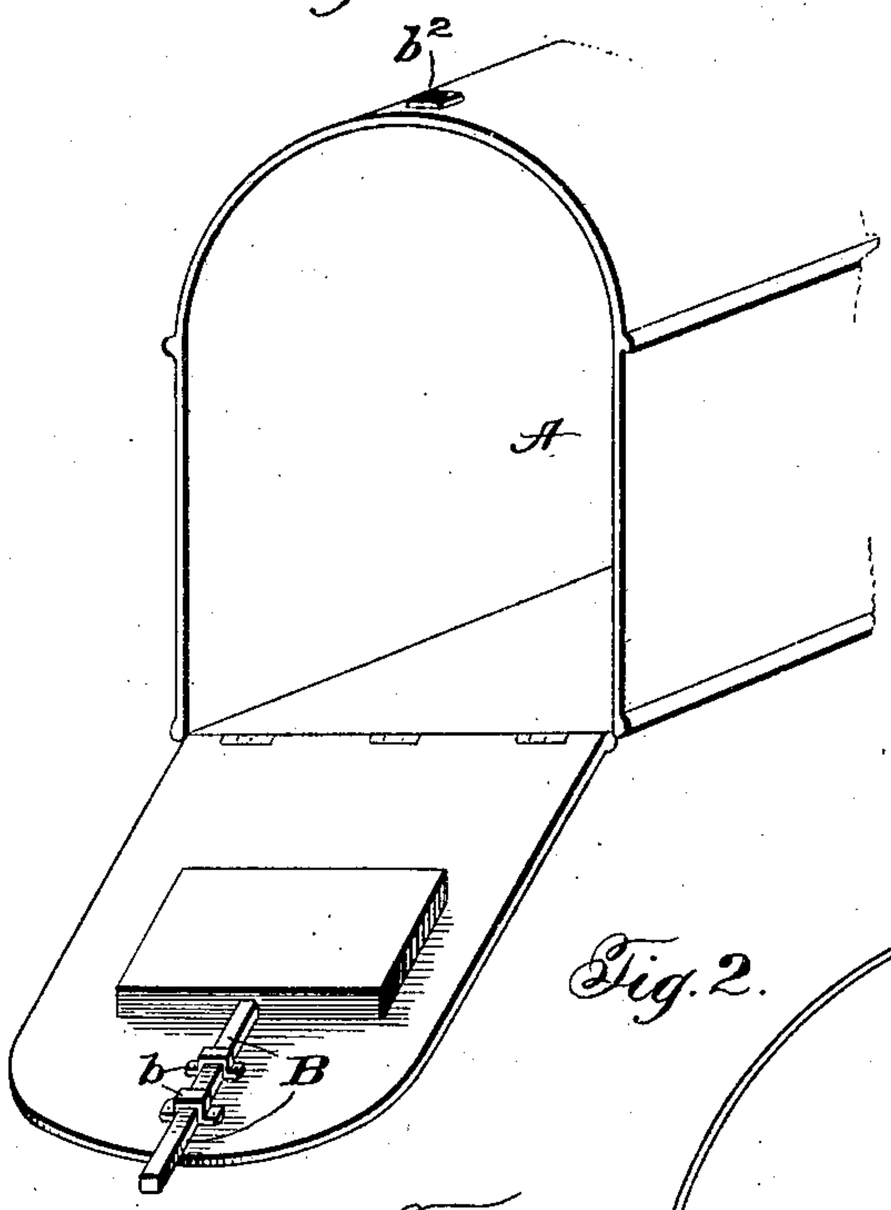


Fig. 3.

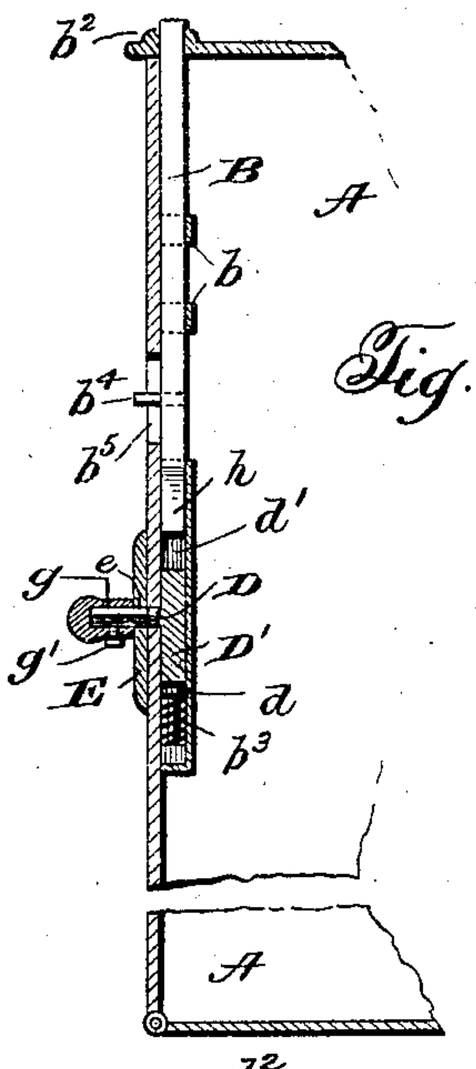


Fig. 4.

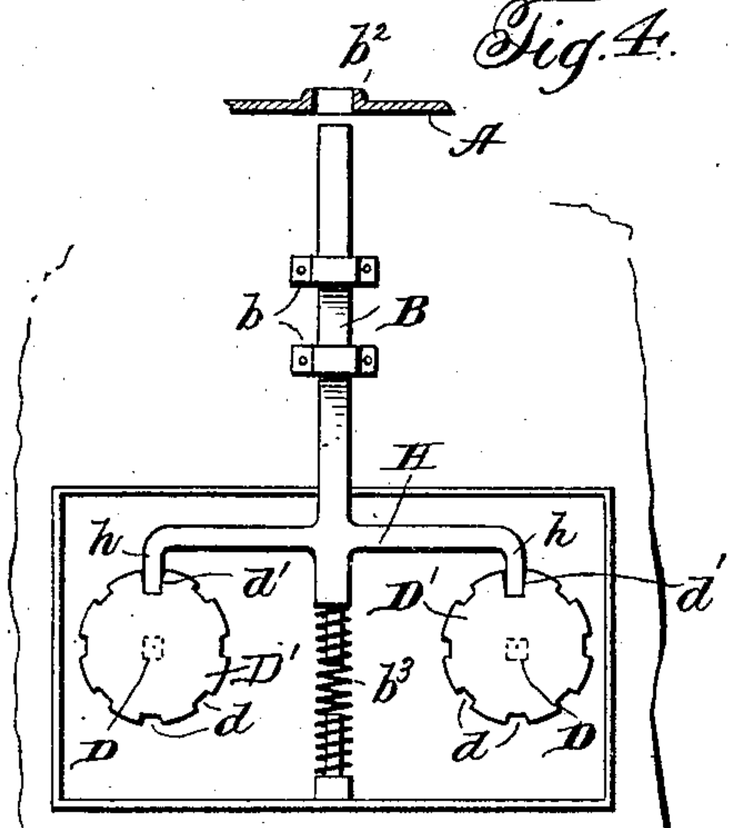
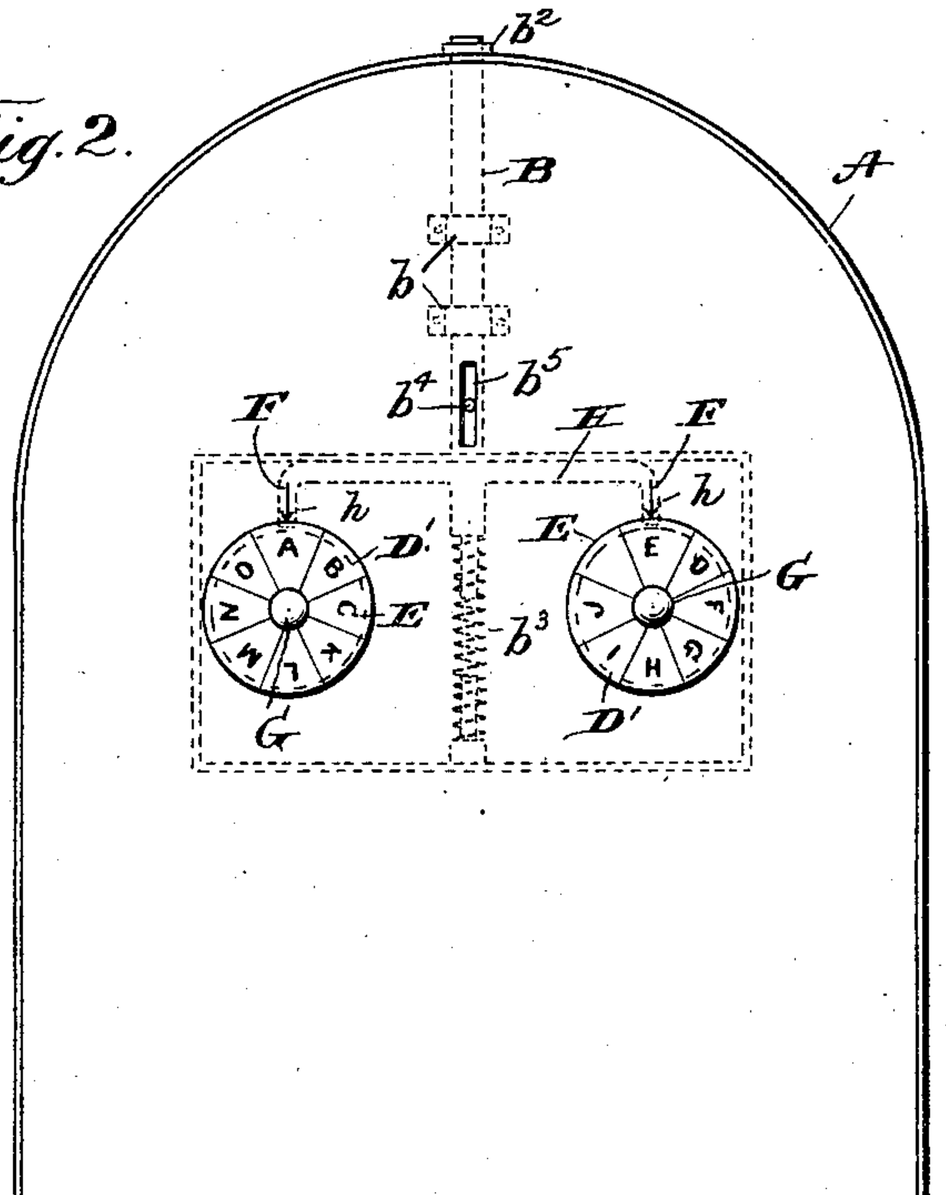


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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PERMUTATION-LOCK.

No. 879,785. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed January 16, 1907. Serial No. 352,613.

To all whom it may concern:

Be it known that I, JAMES ROBERT MAXFIELD, a citizen of the United States, residing at Grand Saline, in the county of Van Zandt and State of Texas, have invented certain new and useful Improvements in Permutation-Locks, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an improvement in permutation locks, and the object of the invention is the provision of a lock of this character which is particularly adapted for use in connection with mail boxes.

Other objects of the invention will be apparent from the detailed description hereinafter, when read in connection with the accompanying drawings forming a part hereof, wherein a preferable embodiment of my invention is shown, and wherein like numerals of reference refer to similar parts in the several views.

In the drawings:—Figure 1 is a perspective view of a mail box equipped with my improved lock, showing the door thereof in its lowered position. Fig. 2 is an end view thereof, showing the door in its raised or locked position. Fig. 3 is a longitudinal section of my improved mail box with the door thereof in its closed position, and Fig. 4 is a detail view showing the bolt in its retracted position to permit of the opening of the door.

Referring now more particularly to the drawings, A designates a mail box of any suitable form, one end of which is hinged along its lower edge to constitute a door affording access to the interior of the box. The door of the box is normally held in its closed or locked position by a bolt B, which slides in suitable guides b secured upon the inner face of the door of the box and engages a keeper b^2 of any suitable construction secured to or formed in the top of the box A. The bolt B is provided with a laterally extending finger b^4 which projects through an elongated slot b^5 formed in the door of the box A so that it may be readily engaged by the finger of a person desiring to operate the bolt B. Journaled in the door of the box A on opposite sides of the bolt B are shafts D D, to the inner ends of which are rigidly secured in any suitable manner so as to turn therewith, disks D′ D′. The disks D′ D′ are each provided with a plurality of equi-distant notches d extending around the periphery thereof. The notches d formed in the disks D′ D′ are all of the same depth with the exception of one notch d' in each disk, which is considerably greater in depth than the other notches, for a purpose to be hereinafter more particularly set forth. The portions of the shaft D D, which project beyond the outer face of the door of the box A are square in cross section.

E E designate disks which are provided centrally thereof with squared apertures e, which are designed to snugly fit the squared portions of the shafts D D, so that when the disks E E are slipped onto the projecting ends of said shafts, they will rotate therewith. The exposed faces of the disks E E are provided with a plurality of letters or other symbols or characters thereon, there being one letter for each of the notches formed in the peripheries of the disks D′ D′. The outer face of the door of the box A is provided just above each of the disks E E with suitable marks F F, into registration with which the characters on said disks are designed to be brought when working the combination.

The disks E E are retained on the shafts D by means of knobs G G the shanks of which are provided with squared recesses g, which are designed to fit over the projecting ends of the shafts D D. The knobs G G, which also constitute the means for actuating the shafts D D are secured to said shafts by means of suitable screws g', which pass through the shanks thereof and engage suitable apertures in the projecting ends of said shafts.

Secured to the bolt B adjacent the lower end thereof and movable therewith, is a cross bar H, extending from the outer end of which are downwardly extending lugs or dogs h, the lower ends of which are adapted to engage the notches formed in the peripheries of the disks D′ D′, a spring b^3 serving to normally hold the upper end of the bolt in engagement with its keeper and the downwardly extending lugs or dogs out of engagement with the notches formed in the peripheries of the disks D′ D′, the upward movement of said bolt being limited by the contact of the cross bar H with the top of a casing surrounding the disks. The notches d in the peripheries of said disks are of such a depth that when the dogs h are moved into engagement therewith, the upper end of the bolt B

will be maintained in engagement with its keeper b^2, but when the disks D′ D′ are adjusted to such a position that the bolt may be moved by the finger b^4 thereof to cause the dogs h to engage the deep notches d' therein, the downward movement imparted to the bolt B will be sufficient to cause its disengagement from the keeper b^2 and consequently permit the opening of the door of the box. From this construction, it is apparent that when it is desired to open the door of the box, the knobs G are manipulated to bring the characters on the disks E E which correspond to the notches d' in the disks D′ D′ into registration with the marks F F on the outer face of the door of the box, when the bolt may be moved downwardly a sufficient distance by the finger b^4 to effect the release of the door.

It will be apparent that inasmuch as the projecting ends of the shafts D D are squared and the disks E E are provided with squared apertures which engage the ends of said disks, the combination of the lock may be readily changed by removing the disks and shifting them a quarter, half or three-quarter turn, and while I have described the shafts as being square in cross section, it will be understood that they may have any other equi-sided polygonal shape in cross section, which will permit of a similar adjustment of the disks, said disks being of course provided with correspondingly shaped apertures to engage said shaft.

The casing which surrounds the disk D′ D′ serves to conceal the same from view and is provided with a suitable aperture therein permitting the passage of the bolt B therethrough.

It will be obvious that the device will work equally as well with but a single notch formed in the periphery of the disks D′ D′, namely, the deep notches d'. I have found, however, that when the disks are provided with the shallow notches in addition to the deep notches, the combination is less apt to be discovered by unauthorized persons.

I do not desire to limit myself to the precise form and construction shown in the drawings, as it is obvious that many minor changes may be made thereto without departing from the spirit of the invention, as defined in the appended claims.

Having thus described the invention, what is claimed is:—

In combination with a box and a door therefor, a lock for the box comprising a bolt slidably secured to the interior of the door and adapted to coöperate with a keeper on the box, said bolt being provided with an actuating portion projecting through the door of the box, a pair of dogs carried by the bolt and movable therewith, a pair of shafts journaled in said door and having equi-sided polygonal shaped portions projecting beyond the outside thereof, a pair of indicator disks engaging the projecting portions of said shafts, operating knobs removably secured to the ends of the projecting portions of said shafts and serving to lock said indicator disks thereon, a pair of disks rigidly connected to the inner ends of said shafts and lying snugly against the interior of the door, each of said disks having a notch in the periphery thereof adapted to receive one of the dogs carried by said bolt, a casing secured to the inner side of said door and housing said disks, said casing lying snugly against the backs of said disks, and a spring arranged within the casing intermediate said notched disks and normally serving to hold the bolt out of engagement therewith, said spring being positioned between the planes of the surfaces of said disks.

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

JAMES ROBERT MAXFIELD.

Witnesses:
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