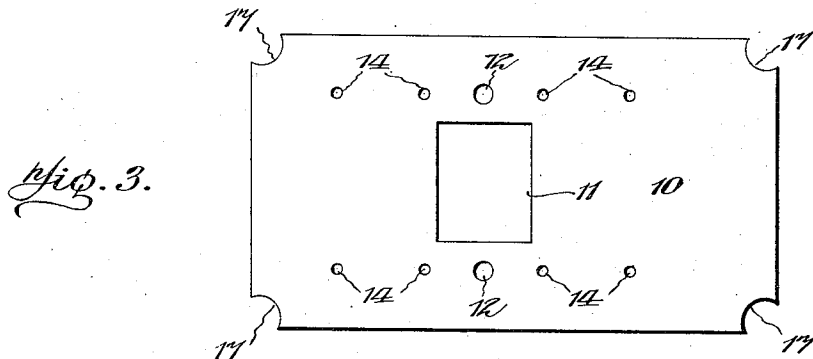
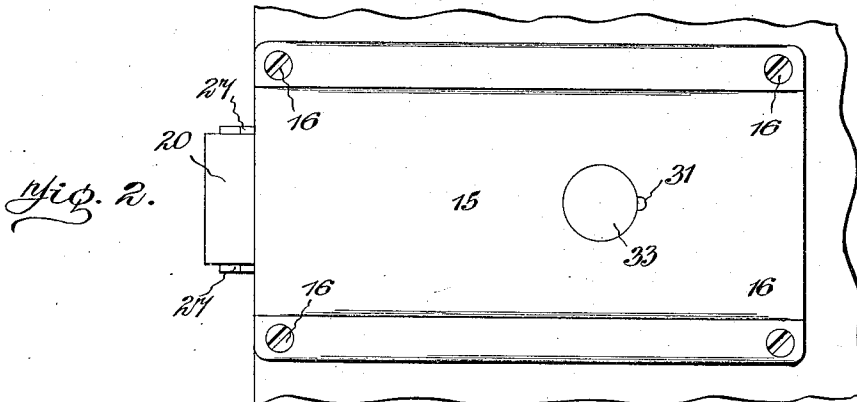
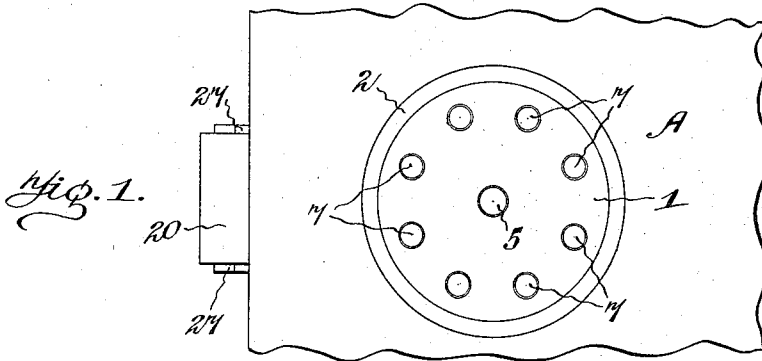


J. J. SCHAEFER.
KEYLESS COMBINATION DOOR LOCK.
APPLICATION FILED APR. 21, 1911.

1,017,327.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.



WITNESSES:

E. F. Lamp
A. R. Walton

INVENTOR:

John J. Schaefer,
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Fig. 4.

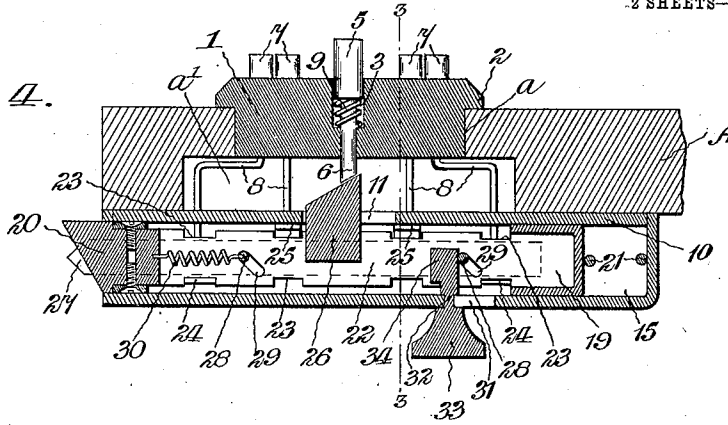


Fig. 5.

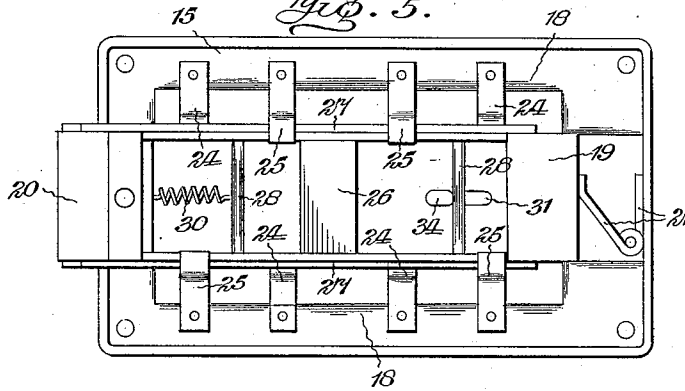
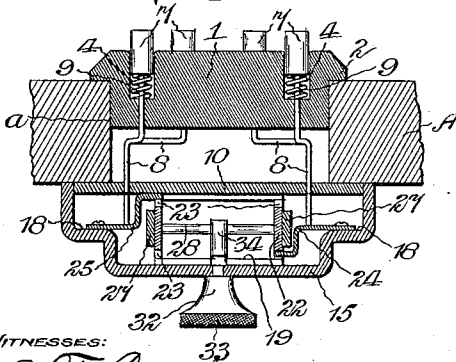


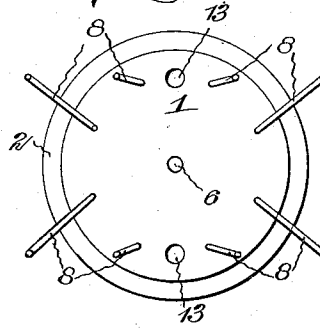
Fig. 6.



WITNESSES:

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Fig. 7.



INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN J. SCHAEFER, OF ELGIN, ILLINOIS.

KEYLESS COMBINATION DOOR-LOCK.

1,017,327.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed April 21, 1911. Serial No. 622,516.

To all whom it may concern:

Be it known that I, JOHN J. SCHAEFER, a citizen of the United States, residing at Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Keyless Combination Door-Locks, of which the following is a specification.

My present invention relates to door locks, and my object is to provide a novel and simple lock which will operate entirely with a combination and do away with the use of keys.

With this and other objects to be herein-
after made apparent, my invention resides in the features of construction, arrangement and operation to be now described with reference to the accompanying drawings, in which—

Figure 1 is an elevation of the outside edge portion of a door supplied with my improved lock. Fig. 2 is a similar view looking from the inside. Fig. 3 is a plan view of the guide plate to be hereinafter specifically described. Fig. 4 is a horizontal section through the door edge and my improved lock. Fig. 5 is a plan view of the lock case, looking from the inside, showing the bolt and catch releasing member in position therein. Fig. 6 is a cross-section through the lock, taken on line 3—3 of Fig. 4, and Fig. 7 is an elevation of the plunger holding plate, looking from the inside.

In applying my improved lock to a door A, I provide said door with a circular opening a , extending in its outer surface adjacent its edges, said opening being enlarged to form a substantially rectangular cavity a' upon the inner door surface. Within the circular opening a , extends a circular plunger-holding plate 1, having an outer circular flange 2, abutting the outer door surface. This plate 1 has a central bore 3 and a circular series of smaller bores 4, each of said bores 3 and 4 communicating with a small opening which extends from its base through the inner surface of the plate. Mounted within the bore 3 is a bolt moving plunger 5, the reduced stem 6 of which has its inner end beveled as shown in Fig. 4. Mounted in the bores 4 are a series of catch releasing plungers 7, the reduced stems 8 of which have inner offset extensions for a purpose to be hereinafter described. Each of the plungers 5 and 7 is pressed outwardly by

a small spring 9 coiled about its stem in the base of its bore.

Mounted over the cavity a' upon the inner surface of the door A, is a guide plate 10, shown in detail in Fig. 3, and provided with a substantially central opening 11, and with openings 12 at opposite sides of said opening 11, through which fastening members (not shown) extend outwardly into openings 13 in the inner surface of the plunger-holding plate 1. The guide plate 10 also has straight parallel rows of openings 14, inwardly through which extend the inner offset ends of the plunger stems 8. Mounted also upon the inside of the door A, to extend over and around the guide plate 10, is the bolt case 15, which is secured by corner fastening members 16, extending into the door through cut-out portion 17 in said plate 10, the longitudinal side of said case being provided with central offsets to form inner shoulders 18 and a channel between said shoulders, in which is mounted to slide the locking bolt 19, the outer locking head 20 of which is removably secured to the bolt sides so that it may be reversed if necessary. This bolt 19 is normally pressed outwardly by means of a spring 21 within case 15 and bearing between the case end and the inner closed bolt end. The sides 22 of the bolt 19, intermediate the bolt ends, are reduced, as particularly shown in Fig. 4, and are provided with series of cut-out portions 23 in their inner and outer edges to receive the inner offset ends of spring catches, the outer ends of which are secured upon the shoulders 18 of the bolt case 15. As shown particularly in Figs. 4 and 6, certain of the spring catches 24 are turned so that they extend within the notches 23 of the outer bolt edge, these catches forming the combination, as each of the catches is alined with, and corresponds to, one of the plungers 7. The remaining catches 25 are secured to extend upon the inner edges of the bolt sides but free of the cut-out portions. Thus when the proper plungers are depressed to engage the catches which are in the notches upon the outer bolt edges, said catches are forced outwardly and the bolt released, but should any one of the other plungers be depressed, it would strike a catch upon the inner edge of the bolt and force it into its cut-out portion 23, thus locking the bolt. Intermediate its ends, the bolt 19 is provided with a block

26 secured between its sides 22 and extending at right angles thereto and through the slotted opening 11 of the guide plate 10, said block 26 having a beveled end, as particularly shown in Fig. 4, to be engaged by the end of the central plunger stem 6. In this manner, when the proper ones of the plungers 7 are depressed to release the engaging spring catches 24, the plunger 5 may then be depressed to force the bolt inwardly and unlock the door.

Mounted in parallel relation to slide along the outer surfaces of the bolt sides 22, is a pair of strips 27 which are connected by transverse bars 28. These bars 28 extend through diagonally disposed slots 29 in the bolt sides 22, which thus cause downward movement of the strips 27 when they are moved inwardly. These strips 27 are normally forced outwardly by a spring 30 connected between the outer bar 28 and the bolt head 20, and are provided with beveled ends which project slightly beyond the beveled end of the bolt head, whereby when it is desired to close the door, the said beveled ends of said strips 27 will strike the keeper and thus force the strips inwardly and against the catches 25 to release the same and permit inward movement of the bolt 19.

The bolt case 15 has an intermediate slot 31 through which extends a stud 32 having an outer knurled head 33 and an inner cam end 34 located outwardly of the inner bar 28. Thus the door may be unlocked from the inside by turning the stud 32 until its cam end 34 forces the strips 27 inwardly and against the catches 24 to release the same. The bolt may then be moved inwardly by sliding the stud 32 in the slot 31.

While I have shown and described a simple and inexpensive form of my invention, and one which I prefer, yet numerous changes and modifications may be made without departing from the spirit thereof, and I wish to reserve all such as fall within the terms of the following claims.

I claim:

1. The combination of a bolt case, a bolt slidably mounted in said case, members engaging said bolt to lock the same, plungers mounted to engage and release said bolt engaging members, and a supplemental member mounted to release said bolt engaging members, and having a portion thereof projecting outwardly of the bolt head.

2. The combination of a bolt case, a bolt slidably mounted in said case, members engaging said bolt to lock the same, plungers

extending into the case from one side to release the bolt engaging members, a supplemental member projecting from the bolt head to automatically release the bolt engaging members, and means extending into the opposite side of the case to manually actuate said supplemental member.

3. The combination of a bolt case, a bolt slidably mounted in said case and provided with notches upon opposite faces, spring catches secured at one of their ends to the case on the inside thereof to coincide with the bolt notches, certain of said catches being extended upon one face of the bolt and in engagement with certain of the notches, and certain others of the catches being extended upon the opposite bolt surface and free of the notches, and a plurality of plungers extending into the case from one side thereof to engage the free ends of said catches.

4. The combination of a bolt case, a notched bolt slidably mounted in said case, spring catches secured in the case to engage within certain of the notches of the bolt to lock the same, a plurality of catch-releasing plungers extending into the case, each of said plungers coinciding with one of the bolt notches, a member slidably mounted alongside the bolt and having a beveled head extending outwardly of the bolt head, said member being movable toward, and engageable with, the said catches, to release the same upon its sliding movement.

5. The combination of a bolt case, a notched bolt slidably mounted in said case, spring catches secured within the case to engage within certain of the notches of the bolt to lock the same, a plurality of catch-releasing plungers extending into the case, each of said plungers coinciding with one of the bolt notches, a member disposed alongside the bolt, within its case, and provided with a beveled end extending outwardly of the bolt head, said member being movable toward, and engageable with, the said catches, to release the same upon its sliding movement, a member movably mounted through a portion of the bolt case, said member being engageable with said sliding member, to slide the same and release and move the bolt.

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

JOHN J. SCHAEFER.

Witnesses:

WILLIAM B. VOGT,
HATTIE TREDER.