G. SCHWINN.

LOCK BOX.

APPLICATION FILED AUG. 30, 1909.

976,102. Patented Nov. 15, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

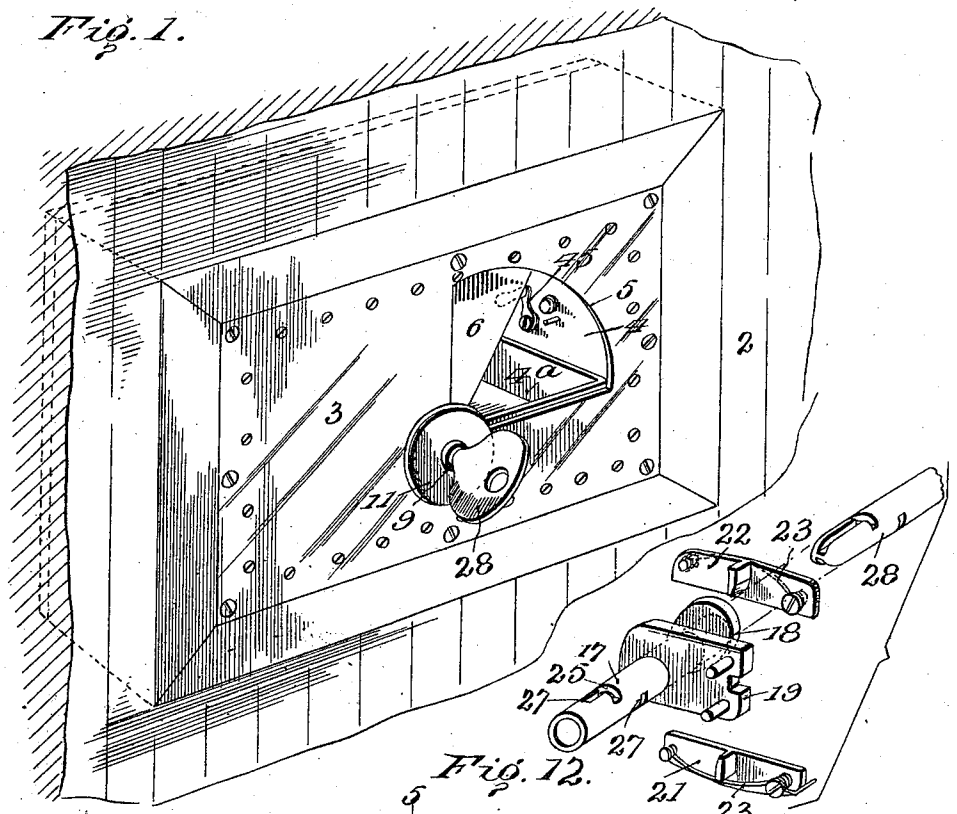


Fig. 1a.

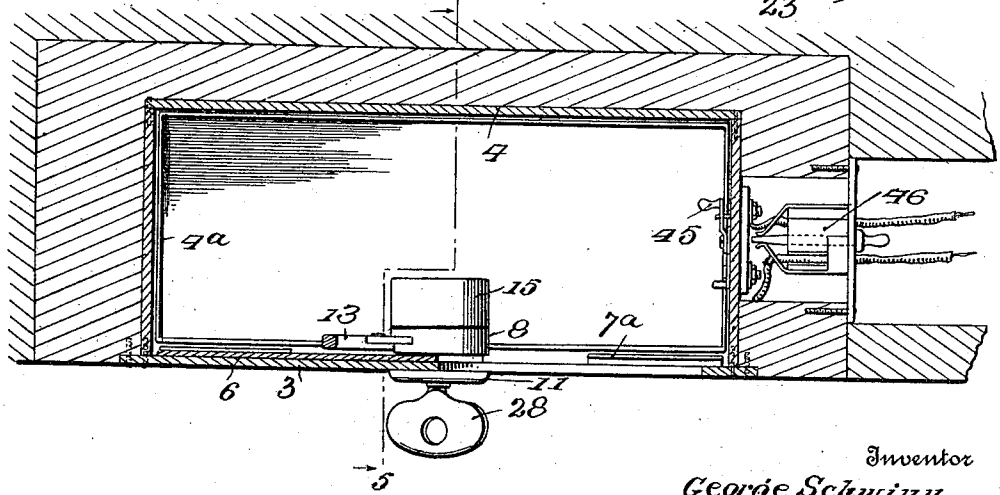


Fig. 2.

Witnesses

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3 SHEETS—SHEET 2.

Fig. 3.

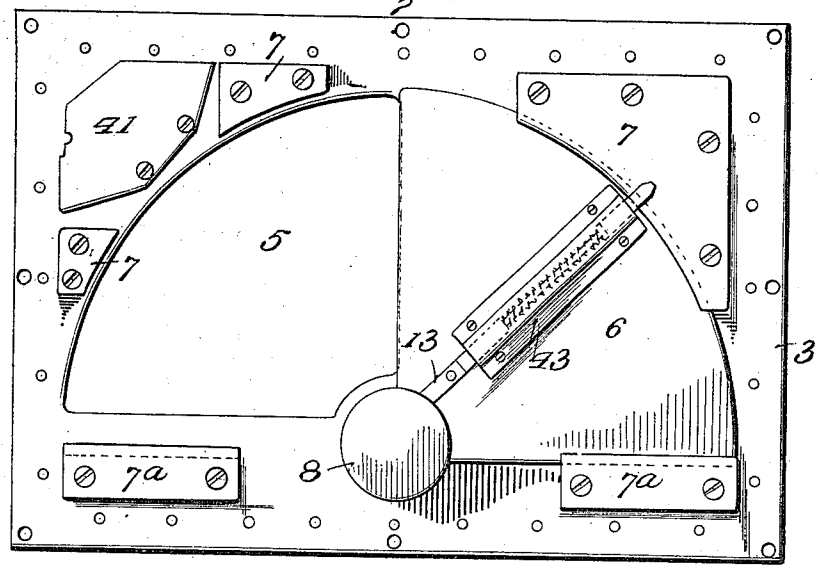
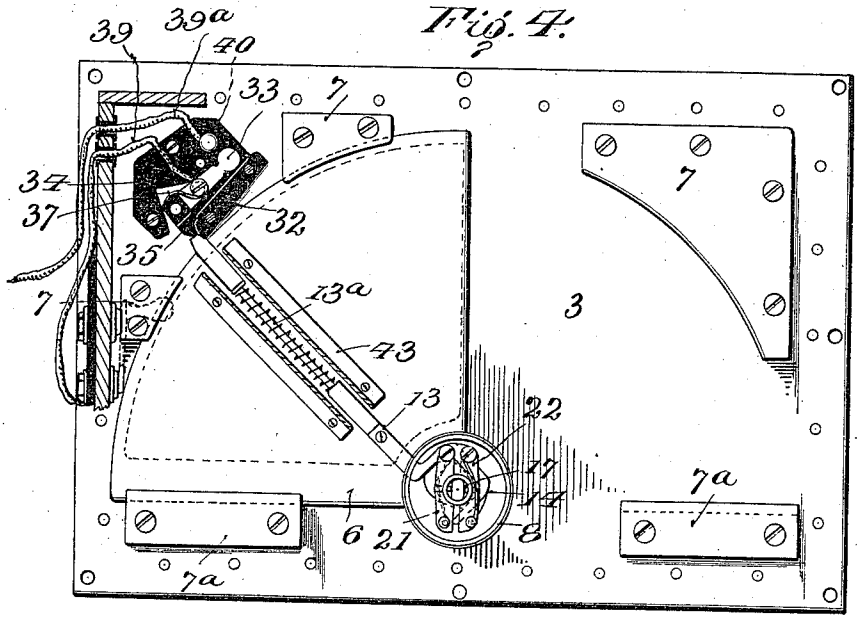



Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 5.

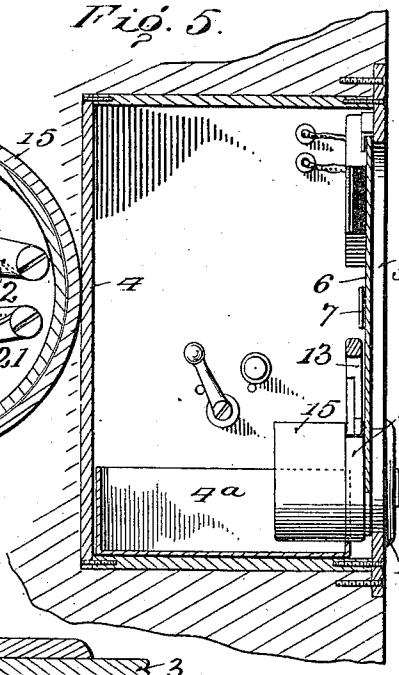
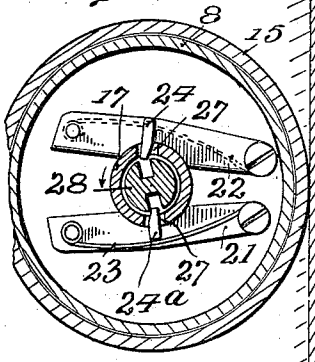



Fig. 11.



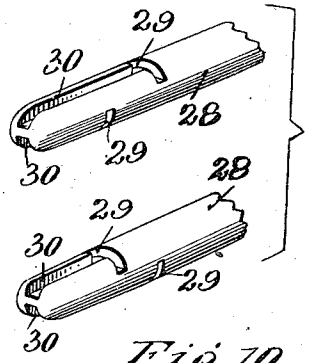




Fig. 10.

Fig. 6.

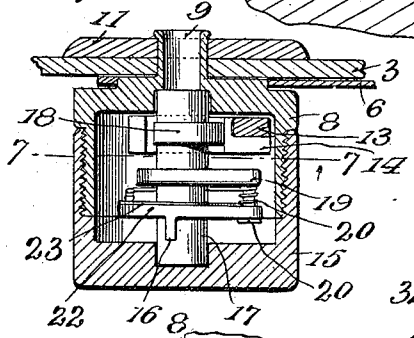
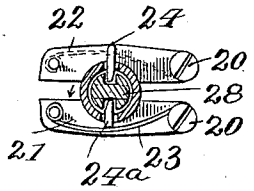



Fig. 9.



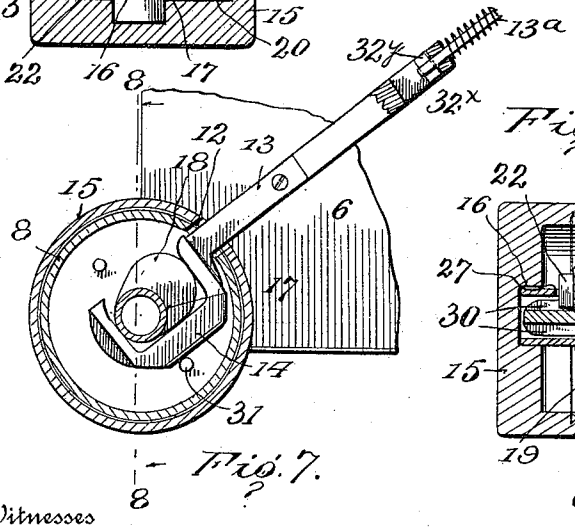
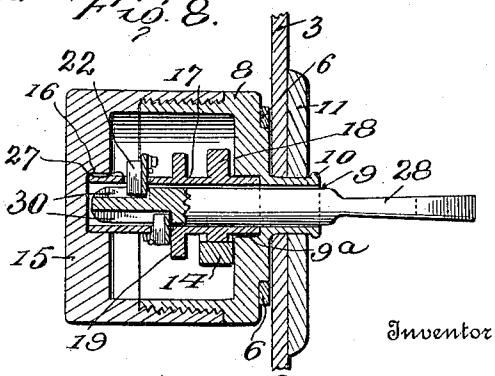




Fig. 7.

Fig. 8.

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Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE SCHWINN, OF SAN FRANCISCO, CALIFORNIA.

## LOCK-BOX.

976,102. Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed August 30, 1909. Serial No. 515,314.

*To all whom it may concern:*

Be it known that I, GEORGE SCHWINN, citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Lock-Boxes, of which the following is a specification.

My invention relates to lock boxes for the safe keeping of valuables deposited in the same.

The object of my invention is to provide a box of this character which shall be particularly compact and thereby adapted to use as a wall compartment in hotels, apartment houses, railroad cars, etc., the box itself being made from hard pressed steel and provided with a lock of a peculiar character which forms the means whereby the door or box is closed and opened, as well as means whereby the bolt is shot or withdrawn.

The invention includes in its general features a front plate adapted to be set in the front wall of any suitable compartment. This front plate preferably having a steel casing or box attached to or formed with it, and also having a tray within the box, a rotatable closing plate mounted upon the front plate and closing an opening therethrough, a locking bar or bolt on the closing plate engaging with a projection on the inside face of the front plate to prevent the rotation of the closing plate except when the lock has been properly operated, and locking means so arranged that upon the first part of the unlocking movement the locking bar or bolt will be thrown radially inward to escape the projection or abutment of the front plate, the latter portion of the key turning movement acting to open or rotate the closing plate so as to leave the opening through the front plate unobstructed.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a perspective view of my improved lock box in position with the door open. Fig. 2 is a longitudinal horizontal section of the box and its surrounding casing. Fig. 3 is an inside face view of the front plate of the box showing the door in its opened position. Fig. 4 is an inside face view of the box showing the door in its closed position, the cap on the tumbler-containing hub being removed. Fig. 5 is a vertical section on the line 5—5 of Fig. 2. Fig. 6 is an enlarged diametrical section of the tumbler-containing hub. Fig. 7 is a cross-section of Fig. 6 on the line 7—7. Fig. 8 is a diametrical section of the hub taken on the line 8—8 of Fig. 7. Fig. 9 is an end view of the tumbler-operating barrel and the tumblers attached thereto, the barrel and key being in section. Fig. 10 is an enlarged perspective view of the extremity of the key and showing opposed sides of the key. Fig. 11 is an enlarged cross-section of the hub, the barrel and the key, the tumblers being shown in elevation and as being moved outward by a rotation of the key. Fig. 12 is a perspective view of the barrel, the key and the tumblers detached from each other so as to show the details of construction.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring to the drawings 2 designates the front wall of any suitable compartment, as for instance, a partition in a room, the wall of a railroad car, etc. 3 designates a front plate which is preferably of pressed steel and is rigidly fastened along its margin to the wall into which the plate is set. The front plate is also attached to an interior box or casing 4 which is preferably made of hardened steel. Fitting within the box 4 is a shallow tray $4^a$ adapted to contain jewelry, money or other valuables. While I have shown this tray I do not wish to be limited to its use, as it will be of course obvious that this feature may be omitted.

The front plate is cut away as at 5 to form a segmental opening through which the hand may be inserted for the purpose of placing within the tray the articles to be protected or for withdrawing them. The outer edge of the opening 5 is formed in the arc of a circle to conform to the arc of movement of the rotatable door. The door 6 has an approximate triangular or segmental shape and is of course larger than the opening 5 which it is to close. The outer edge of the door is arcuate, while the inner end of the door is connected to a rotatable hub as will be hereinafter described. The inner face of the front plate is provided with a plurality of guard plates 7, $7^a$ which are attached to the front plate at the edge of the path of movement of the door and projects over said door as it is turned beneath

the guard plates, thus holding the door flat against the inside face of the front plate and preventing the door from being forced inward.

It will be seen that the plates 7a act to hold the lower edge of the door when it is turned to either open or closed position. The inner end of the door is attached to a rotatable hub 8 which is cylindrical and has a central key opening 9 in its front wall which is extended outward beyond the front plate and through an escutcheon 11, over which it is headed as at 10. This provides a rotatable mounting for the hub. The escutcheon 11 is rounded off on its outer face, thereby preventing the application of a wrench thereto.

The hub is slotted as at 12 for the reception of the locking bolt or bar 13, whose construction will be later described in detail. The inner end of the locking bar is provided with an eccentric yoke 14. This yoke is supported on the inner face of the front wall of the hub 8.

The hub is made in two sections, screw-threaded together, the rear section 15 being formed at its center with a socket 16 providing a seat for the rear end of a rotatable barrel 17. This rotatable barrel forms means whereby the operating key engages with the shiftable locking bolt to lock or unlock the door and to rotate it. One end of this barrel extends into an enlargement 9a of the central key opening 9 at the end of the casing, and the rear end of the barrel is supported in the socket 16, as before described. Fast on the forward end of the tubular barrel is the eccentric 18 which is received between the arms of the yoke 14 so that as the barrel is turned the eccentric will bear against the yoke to draw in or push out the bolt 13 in an obvious manner. Fast on the barrel, inward of the eccentric, is a bracket plate 19, having projecting therefrom pivot studs 20, one longer than the other. Mounted on these studs are the tumblers 21 and 22, one of which rests upon the face of the bracket plate, while the other is located on the outer end of its pivot stud and is thereby longitudinally spaced from the other tumbler as shown in Fig. 8. Attached at one end to the pivot studs and at the other bearing against pins on the free ends of the tumblers 21 and 22 are the springs 23 which act to force the tumblers inward. Each of these tumblers has lugs 24 24a projecting from one side and toward the rear of the barrel. The barrel is slotted transversely at opposite sides as at 25 and 26, one of these slots being rearward of the other, each of these slots having a longitudinal extension 27. The inner edges of the tumblers project into the slots 25 and 26, while the lugs 24 are accommodated in the extensions of the slots. The springs 23 of course act to force the tumblers into an innermost position so that they obstruct all passage through the barrel unless they are forced outward against the force of the springs.

In order to operate the locking bar or bolt 13 it is necessary that the barrel 17 with its tumblers should be rotated, thereby rotating the eccentric 18 and moving the locking bar as well as operating the hub and the door attached thereto.

For the purpose of rotating the barrel and tumblers I provide the key 28 shown in Fig. 10. This key is beveled or rounded at its forward end so as to be easily inserted between, and force laterally outward the tumblers 21 and 22. The key is also transversely slotted on opposite sides as at 29, one of these slots being located nearer to the extremity of the key than the other. Longitudinal slots 30 also extend from each transverse slot to the extremity of the key. It will be seen that the slotted portion of the key conforms to the position of the tumblers 21 and 22 and the lugs 24. Thus when the key is inserted it will force out the tumblers laterally and then upon the arrival of the key to its proper position, the tumblers will drop into the slots 29 and the lugs extending from the tumblers will be accommodated in the slots 30. In this position as shown in Fig. 9 the key will have a locking engagement with the barrel through the tumblers for the reason that upon turning the key in the direction of the arrow, the longitudinal slot 30 will engage with the lug 24 and the pressure at the side of the slot 30 will be against the lug in the direction of and against the pivot stud 20. The lug 24a on the tumbler 21 is, however, beveled on its under face so that when the key is turned in the opposite direction and there is resistance to the rotation of the barrel 17 the tumbler 21 will be forced out. The lug 24 is also slightly beveled on its upper face for the same purpose so that it will be forced outward under rotation of the key in the direction to the arrow in Fig. 11. This beveling of these lugs is very slight, so slight that the key will carry the barrel with it in its rotation until the movement of the barrel is obstructed by the arrival of the yoke 14 at the extremity of its movement, which takes place of course when the door has reached its closed position. When this point has been reached, a further turning of the key in a direction opposed to the arrow in Fig. 11 acts to disengage the lugs from the slots 30 and to force out the tumblers laterally, thus permitting the key to be withdrawn. As soon as the key is withdrawn the springs will force the tumblers inward, practically closing the passage.

It will be obvious that only a key with the peculiar slots possessed by my key, as illus-

trated, is capable of operating the barrel, and thereby operating the locking bar or bolt to retract it from its locking position and to rotate the door.

The yoke is supported against the inside face of the hub 8 and upon a pin 31. It will be seen that the eccentric 18 does not turn completely around, but that a partial rotation of the key in a direction reverse to a clockwise movement after it has become engaged with the tumblers turns the eccentric so that the locking bar is withdrawn from engagement with the abutment 32. When the eccentric yoke 14 has reached its innermost position and the bolt has been completely withdrawn, the yoke will be forced against the wall of the hub and thereby bind so that the barrel and its eccentric can turn no farther independently of the hub, but that a further movement of the key in this direction will turn the barrel and the hub together. The turning of the hub will of course rotate the door 6 from its closed to its open position. When it reaches its open position the lower edge of the door will strike the guard plates $7^a$ and the further movement of the door will be stopped. The key is still further rotated, slightly, in the same direction, which will act to force out the tumblers and permit the key to be withdrawn. A closing movement of the door is effected in the same manner. When the door has reached its closed position, with its lower edge in contact with the other guard plate $7^a$, the further rotation of the key will act to force out the tumblers and permit the key to be withdrawn.

The locking bar, when the door is in its closed position, engages with the abutment 32 which is fast on the inside face of the front plate adjacent to the margin of the door. When the locking bar is forced outward, it will of course prevent any opening movement of the door.

As a means of signaling or sounding an alarm whenever the door of the cabinet is opened I provide a spring switch 33 which projects out through a slot or notch at the end of the abutment and contacts with the beveled extremity of the locking bar.

When the locking bar is forced outward and the door is locked it will break the circuit to the alarm mechanism. When the locking bar is retracted to open the door the circuit will be closed and the alarm will be sounded. A housing 41 covers and protects the switch and is preferably attached to and supported on the abutment 32 by screws or other suitable means.

The locking bar or bolt 13 is made in two sections, the section $13^a$ is reduced. A spiral spring surrounds the reduced section $13^a$ and bears against the end of the section so that the section $13^a$ will be forced yieldingly outward. The section 13 is slotted as at $13^x$ and a transverse pin $32^y$ is attached to the inner extremity of the section $13^a$ and passes through this slot so as to hold the two portions of the locking bar together, so that when the yoke and section 13 are withdrawn, the section $13^a$ will also be positively withdrawn. Upon a return movement however, it will be seen that the section $13^a$ of the locking bar will yield slightly so that its extremity will bear yieldingly against the inside face of the abutment 32 and yield slightly as it is moved along the abutment, until it reaches the locking end of the abutment, whereupon the spring will snap the section $13^a$ outward and into locking engagement with the abutment 32. It will be noticed from the drawing that the abutment does not conform in curvature to the arcuate edge of the door 6, but that it is slightly tangential to said arcuate edge, thus preventing all change of the locking bar engaging with the end of the abutment in its passage to its closed position.

It will be seen that while the locking bar yields upon a movement of the door from its open position yet the locking bar will not yield when it is engaged with the locking end of the abutment for the reason that in this position the eccentric on the barrel 17 will positively force and hold the locking bar in its outward position. The housing 43 covers the locking bar and guides the same in its lateral movement, this housing being attached to the inside face of the door 6 in any suitable manner.

The operation of my invention is obvious from what has gone before. In its normal position when the door is closed the locking bar or bolt 13 engages with the abutment to prevent the opening of the door and the circuit to the alarm is broken. When the key is inserted in the key opening and turned from left to right, that is, in a counter clockwise direction, the eccentric upon the barrel 17 will act to withdraw the bolt from its engagement with the abutment. A further movement of the key in this same direction will act to turn the door to its open position allowing the articles contained within the cabinet to be withdrawn. A reverse movement of the key first acts to close the door, the section $13^a$ of the locking bolt after it has reached the abutment, being forced slightly inward until it has passed the edge of the abutment when it springs outward. At this position the key has also turned the barrel and eccentric so that the locking bar will be forced outward. As soon as it is forced outward, the switch arm 33 will be turned so that the circuit to the alarm is broken. It is of course desirable to provide means for preventing a continuous ringing of the alarm while the door is opened, and it is for this reason that I have provided a switch 45, which after the door is opened

may be turned to break the circuit of the alarm and prevent any further ringing. It will be seen that it is impossible to withdraw the key from the lock until the door has been thrown to its full open or closed position. Only when the door has been stopped by engaging with the guard plates 7 and 7ª, does the rotation of the key act to throw out the tumblers and permit the withdrawal of the key. It will also be obvious that only a key especially formed as described, will operate the tumblers to actuate the door and that the position of these tumblers along the barrel, the length of their lugs and other details of like character may be varied upon different locks so that a large variety of keys may be used.

Having thus described the invention what is claimed as new is:—

1. The combination with a casing having an opening therein, and a pivoted door closing said opening and adapted to be turned away therefrom, of a shiftable locking bolt mounted on the door and engaging the casing to prevent an opening movement of the former, and key-actuated means for withdrawing the bolt and then rotating the door to disclose the opening in the casing.

2. The combination with a casing having an opening therein, and a rotatable door closing the opening but adapted to be turned away therefrom, of a shiftable locking bolt mounted on the door and engaging said casing to prevent an opening movement of the door, and key-actuated means located at the pivotal center of the door for actuating the door to disclose the opening in the front plate.

3. The combination with a casing having an opening therein, and a door closing the opening and adapted to be turned away therefrom, of a locking bolt slidably mounted on the door and engaging with the casing, an abutment on the side face of the casing with which the bolt engages, an eccentric rotatably mounted on the inside face of the door and engaging with the bolt, rotatable key-actuated means engaging with the eccentric to rotate the same and thereby withdraw said locking bolt, and means mounted on the inside face of the door limiting the independent rotation of the eccentric and against which the eccentric binds to cause a rotation of the door with the eccentric after the eccentric has made its initial unlocking movement.

4. The combination with a casing having an opening therein and a pivoted door closing the opening but adapted to be turned away therefrom, a rotatable barrel mounted on the door and opening through the front thereof at the pivotal center of the door, an eccentric mounted on the barrel and rotatable therewith, a longitudinally shiftable locking bolt mounted on the inside face of the door and normally projecting beyond the margin of the door opening, a bevel-faced abutment mounted upon the inside face of the casing adjacent to the door opening with which the beveled extremity of the locking bolt engages, a yoke on the locking bolt having an inwardly turned end with which said eccentric engages to withdraw the bolt, a spring for urging the bolt into engagement with the abutment, key-actuated means for rotating the eccentric, thereby releasing the locking bolt from engagement with the abutment, and means mounted on the door limiting the independent rotation of the eccentric relative to the door and against which the yoke engages to cause a rotation of the door with the eccentric after the eccentric has made its initial unlocking movement.

5. The combination with a pivoted door and a casing having an opening normally closed by the door, of a rotatable key-actuated locking device mounted on the door at its pivotal center, but independently movable relative thereto, and having locking engagement with the casing, means for engaging said locking device to shift it out of engagement with the casing, and means on the door engaged by said locking device when so shifted to lock the door and locking device to each other to permit of a unitary movement of the door and locking device to move the door to its open position.

6. The combination of a casing having a door opening therein, and a pivoted door closing the opening but adapted to be turned away therefrom, of a longitudinally shiftable locking bolt mounted on the door and having locking engagement with the casing, an independently rotatable member mounted on the door and acting to shift the bolt longitudinally when rotated, key-actuated means engaging the rotatable member to rotate the latter, and means on the inside face of the door limiting the further independent rotation of the member after the bolt has been withdrawn from its engagement with the front plate and thereby causing the further rotation of the member to rotate the door.

7. The combination with a casing having a door opening and a door pivoted to the casing and adapted to close the opening, of a longitudinally shiftable locking bolt mounted on the door and having locking engagement with the casing, an independently rotatable member mounted on the door at its pivotal point and acting to shift the bolt longitudinally when rotated, yielding tumblers engaging the rotatable member and rotating therewith and adapted to be engaged by a key, said tumblers being movable out of engagement with the rotatable member upon a rotation of the key in either direction relative to the tumblers, said tumblers being

resiliently forced into engagement with the rotatable member, and means on the inside face of the door limiting the further independent rotation of the member and tumblers after the bolt has been withdrawn from locking engagement with the casing, said tumblers yielding to permit the further rotation of the key and the longitudinal movement of the key to disengage it from the rotatable member.

8. The combination with a casing having a door opening, the door opening being provided with an abutment on its margin, and a rotatable door pivotally mounted on the casing and radially sliding into or out of engagement with said abutment, key-actuated means for actuating the bolt and rotating the door to disclose the opening in the casing, or to return the door to its closed position, and stops mounted on the inside face of the casing along the margin of the opening with which said door engages at the extremity of its movement.

9. The combination with a casing having a door opening therein, and a door pivoted to the inside face of the casing adapted to close the opening, guides in which said door moves, and stops for engaging the door at the extremity of its opening and closing movement, of a radially movable locking bolt slidably mounted on the door, an abutment on the inside face of the casing with which said locking bolt engages in its locked position, and key-actuated means for withdrawing the bolt and then rotating the door to disclose the opening in the casing, said bolt being formed in two sections, one slidable relative to the other, a spring forcing said sections outward, and a stop limiting the relative movement of the sections to each other.

10. In a device of the character described, the combination with a door and a door casing, of a locking bolt holding the door closed, a rotatable barrel adapted to receive a key, said barrel being transversely slotted at opposed points of its diameter, each of said slots being longitudinally extended along the barrel for a short distance, opposed tumblers pivotally supported on the barrel, lugs on the tumblers extending longitudinally of the barrel and accommodated in said longitudinal extensions of the slots, and a key having a tapered end, opposed transverse kerfs and longitudinal grooves extending from the kerfs.

11. The combination with a pivotally mounted door and a door casing, of a locking bolt slidably mounted on the door adapted to hold the door closed, said bolt having a yoke at one end, a rotatable barrel mounted on the door and adapted to receive a key, an eccentric on the barrel engaging with the yoke to shift the locking bolt when the barrel is rotated, and key-actuated means for rotating said barrel to thereby withdraw the locking bolt and then rotate the door and move it into its closed position.

12. The combination with a pivoted door and a door casing, of a radially movable locking bolt mounted on the door and having a yoke at one end, said yoke being located at the pivotal center of the door, a rotatable barrel located in the door in the pivotal center thereof and adapted to receive a key, said barrel being transversely slotted at opposed points of its diameter, each of said slots having a longitudinal extension along the barrel, an eccentric on the barrel engaging with the yoke to withdraw the locking bolt when the barrel is turned, tumblers pivotally supported on the barrel adapted to enter said transverse slots therein, each of the tumblers being provided with a longitudinally extending lug accommodated in the longitudinal extensions of the slots, springs for forcing the tumblers into the slots, a key having a tapered extremity, opposed kerfs and longitudinal grooves extending from the kerfs, and stops for preventing further movement of the barrel independently of the door after the locking bolt has been forced out or retracted.

13. The combination with a casing having an opening and a door therefor, of a locking bolt and means for shifting the locking bolt including a rotatable barrel engaging therewith adapted to receive a key, tumblers supported on the barrel and projecting into the passage for the key, springs for yieldably holding the tumblers in their inward position, and means on the tumblers adapted to engage with a key and connect the key and tumblers for rotary movement in either direction.

14. The combination with a casing having an opening in one side, of a door rotatably mounted on the casing to close said opening, a longitudinally shiftable locking bolt carried on the door, an abutment on the casing with which the locking bolt engages when the door is closed, a rotatable barrel passing through the pivotal center of the door and transversely slotted, a tumbler pivotally mounted upon the barrel and extending into the slot, a spring for forcing said tumbler inward, a key adapted to be forced into said barrel, said key and said tumbler being so arranged that when the key is turned in one direction the key shall engage the tumbler to rotate the barrel, but when turned in the other direction the key shall disengage from the tumbler against the force of its spring, and means on the door for limiting the rotation of the barrel with relation to the door in both directions, to thereby cause the door to rotate with the barrel when the barrel has reached the limit of its relative rotation.

15. The combination with a casing having an opening in one side, of a door rotatably

mounted on the casing to close said opening, a longitudinally shiftable locking bolt carried on the door, an abutment on the casing with which the bolt engages when the door is closed, a yoke on the inner extremity of the locking bolt, a rotatable barrel passing through the pivotal center of the door, said barrel being transversely slotted at opposite points in its diameter, each of said slots having a longitudinal extension, opposed tumblers pivotally mounted upon the barrel adapted to extend into the slots, each of said tumblers being provided with longitudinally extending lugs adapted to be received in said extensions of the slots, said lugs being beveled upon their inner edges and on opposite sides, an eccentric mounted on the barrel and engaging with said yoke on the locking bolt, stops on the inside face of the door for limiting the independent movement of the yoke and eccentric with relation to the door, to thereby cause the door to rotate with the barrel when the barrel has reached the limit of its relative rotation, and a key for operating said lock having a tapered extremity, the body of the key being provided with opposed transverse kerfs adapted to aline with the tumblers and with the longitudinally extending slots into which said lugs may be received.

16. The combination with a door casing having an opening in one side of an oscillatable door pivoted to the door casing, a cylindrical shell mounted on the inside face of the door and rotatable therewith and surrounding the pivotal center of the door, said shell having a socket formed in its opposite ends, a radially shiftable locking bolt mounted on the inside face of the door and extending into said shell and being formed with an eccentric yoke, an independent rotatable barrel mounted within the shell, the extremities of the barrel fitting in said sockets, said barrel being adapted to receive a key and being disposed at the pivotal center of the door, an eccentric on the barrel engaging with the locking bolt yoke for shifting the bolt when the barrel is rotated, said shell and yoke being of such relative size that the yoke strikes against the casing at the extremity of its radial movement and locks the eccentric against further rotative movement independent of the door to thereby cause the door to rotate with the barrel when the barrel has reached the limit of its independent rotation, and means on the barrel whereby it may be rotatably engaged by a key.

17. The combination with a casing having a door opening in one side and a door rotatably mounted on the casing to close or disclose said opening, of a cylindrical shell mounted on the inside face of the door surrounding the pivotal center of the door and rotatable with the door, said shell having its opposed ends formed with alined sockets, a radially movable locking bolt carried on the inside face of the door, and engaging with an abutment on the margin of the door opening when in its projected position, a yoke formed on the inner end of the locking bolt and disposed within the shell, an independently rotatable barrel carried within the shell and having its ends supported in said socket, said barrel being disposed at the pivotal center of the door, an eccentric on the barrel engaging with said yoke to shift the locking bolt when the barrel is rotated, opposed tumblers mounted upon the barrel, springs projecting the tumblers into the key-passage of the barrel, lugs on the tumblers projecting longitudinally along the key-passage, said lugs having each a beveled face, the beveled face of one lug being opposed to that of the other, and a key adapted to be inserted into the barrel, said key having opposed transverse kerfs and longitudinal grooves engageable with the tumblers and the lugs thereon to connect the key to the tumblers for unitary movement in one direction, the shell being of such dimensions as to limit the radial movement of the bolt when it is unlocked by rotation of the barrel and eccentric, thereby causing the shell and door to rotate with the barrel when the yoke has reached the limit of its unlocking movement.

18. The combination with a casing and a door pivotally mounted thereon, of a longitudinally movably bolt, a tubular rotatable barrel operatively engaged with the bolt to shift the bolt longitudinally upon a rotation of the member, spring-pressed tumblers mounted on the barrel and normally intersecting the hollow interior thereof to prevent the insertion of a key, and a key adapted to engage said tumblers and force them outward to permit the introduction of the key into engagement with the rotatable member.

19. The combination with a casing and a door pivotally mounted thereon, of a longitudinally movable bolt, a tubular rotative barrel disposed at the pivotal axis of the door, operatively engaged with the bolt to shift the bolt longitudinally upon a rotation of the barrel, spring-pressed tumblers mounted upon the rotatable barrel and normally intersecting the hollow interior of the barrel to prevent the introduction of the key, said tumblers forming the means whereby the key is engaged with the barrel for a unitary rotative movement, and a key adapted to engage said tumblers and initially force them outward to permit the introduction of the key into engagement with the barrel.

20. The combination with a casing having a door opening, a pivotally mounted door closing said opening, and a bolt mounted

on the door and adapted to engage the door casing to hold the door closed, of a rotatable barrel operatively engaged with the bolt to shift it longitudinally upon a rotation of the barrel, said barrel being transversely slotted and formed with a longitudinal slot intersecting the transverse slot, a spring-pressed tumbler pivotally supported on the barrel and normally disposed within the transverse slot and acting to prevent the introduction of a key, said tumbler having an angularly disposed lug projecting into the longitudinal slot in the barrel, and a key having a tapered end adapted to engage with the tumbler to initially force the tumbler outward, and having a transverse groove and an intersecting longitudinally extending groove to receive the inner edge of the tumbler and lug, and thereby engage the key with the barrel by a rotative movement.

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

GEORGE SCHWINN. [L. S.]

Witnesses:
JOSEPH LEVY,
P. J. GALLAGHER.