W. H. KLUGE.

COIN CONTROLLED INDICATOR.

APPLICATION FILED NOV. 22, 1909.

955,968. Patented Apr. 26, 1910.

Fig. 1.

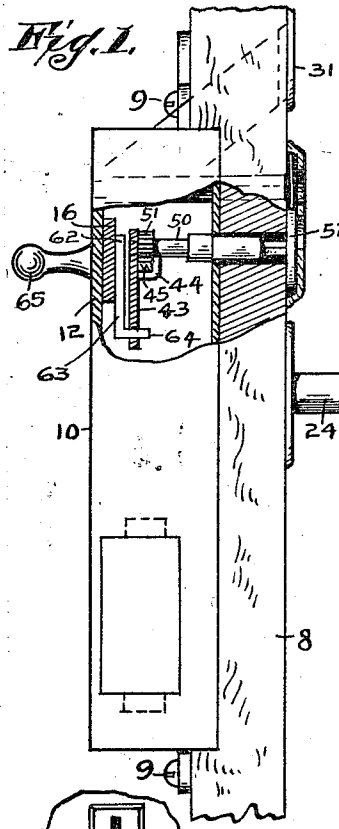


Fig. 4.

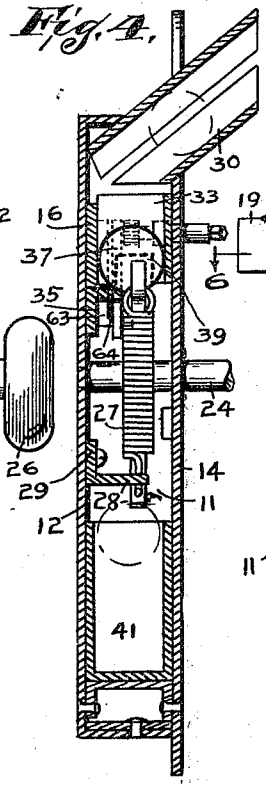


Fig. 5.

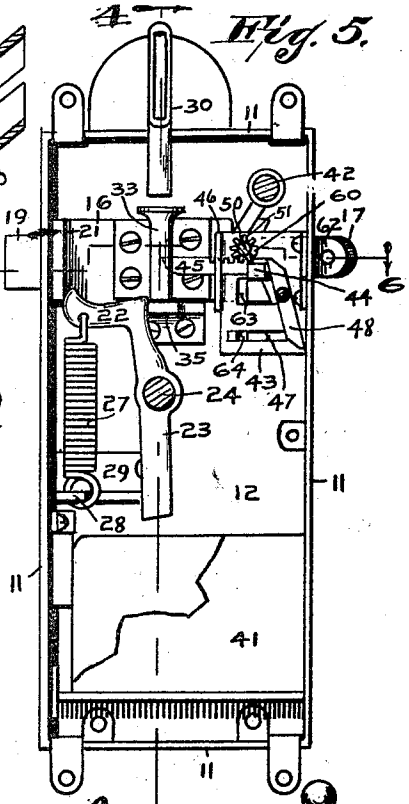


Fig. 2.

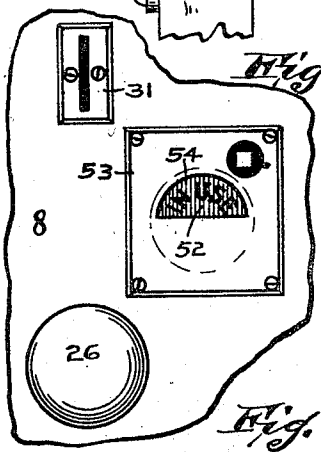


Fig. 6.

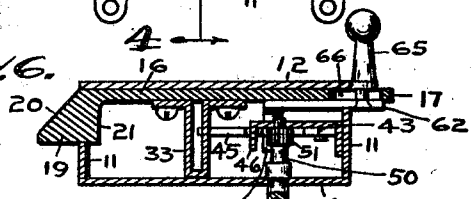


Fig. 7.

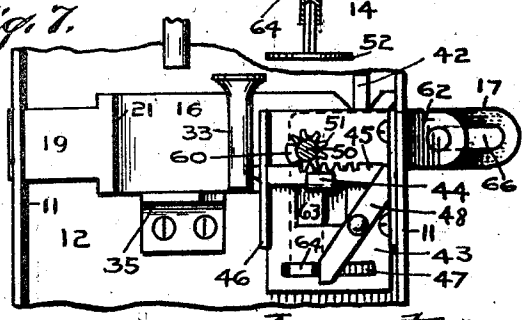
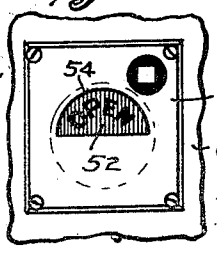


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM HERMAN KLUGE, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE COIN CONTROLLING LOCK COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

COIN-CONTROLLED INDICATOR.

955,968. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed November 22, 1909. Serial No. 529,283.

To all whom it may concern:

Be it known that I, WILLIAM H. KLUGE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Coin-Controlled Indicators, of which the following is a specification.

This invention relates to improvements in locks for rooms, booths, lockers and the like which are controlled by the insertion of a coin of proper denomination, and the object of the invention is to provide an indicator which will be controlled by the same coin that controls the lock so as to indicate at all times whether the room is "In use", or whether it is not in use or "Open".

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is an edge-view of a portion of the door equipped with my improved lock, the view showing parts broken away and in vertical section to illustrate the indicator mechanism. Fig. 2 is a detail in front view of the door showing the dial of the indicator in its "In use" position. Fig. 3 is a like view showing the dial of the indicator in "Open" position. Fig. 4 is a vertical section of my improved lock, detached from the door, and taken on the line 4—4 of Fig. 5. Fig. 5 is a front inside view of the lock with the inner plate of the case or housing removed, the view showing the bolt and mechanism for controlling the indicator in position ready to receive a coin. Fig. 6 is a horizontal section on the line 6—6 of Fig. 5, showing the parts in the same relative position as the same are illustrated in Fig. 5, and Fig. 7 is a front inside view of the lock with the inner plate removed, similar to the showing in Fig. 5, but on a somewhat larger scale, and representing the shot-in position of the bolt and showing the coin indicator mechanism in the positions which they assume when the dial is "In use".

Like characters of reference indicate like parts throughout the several views of the drawing.

8 represents a door to which my lock is applied. The mechanism of the lock is contained within a sheet-metal casing 10 which is fastened to the door by means of screws 9. The casing 10 comprises an outer plate 12 having integral ends and sides 11 at right angles thereto, and an inner plate 14 which is removably secured to the casing.

The main bolt of the lock is shown at 16, the body of which is flat and comparatively thin and bears against the inner side of the plate 12. One end of the bolt is reduced in width to form a part 17 which is projected through a suitable opening in the side 11. The opposite end of the bolt is also reduced in width to form shoulders which will arrest the outward movement of the bolt, and this end of the bolt is thickened to form the part 19 which passes through the adjacent side 11 of the casing to engage a striking-plate (not shown). This end of the bolt is beveled as shown at 20 for the usual purpose. The increase in thickness at this end of the bolt provides a shoulder 21. A lever 23 having an upper bent end 22, is mounted on a shaft 24. The shaft 24 is supported by the two plates 12 and 14 of the casing and extends outside of the casing and through the door, and terminates with a handle 26. The bent end 22 of the lever is attached to one end of a spirally wound spring 27, and the opposite end of said spring is attached to a lug 28, which lug is a part of a bearing-plate 29 supported by the plate 12 of the casing. The end of the bent portion 22 of the lever 23 is held in constant contact with the shoulder 21 by the spring 27 and the bolt is normally held in outer shot position by the tension of said spring 27.

Supported by the upper end of the lock casing is a coin chute 30, the lower end of which discharges within the casing above the bolt 16. This chute extends obliquely through the casing and also through the door 8 to a suitable slotted escutcheon 31.

Mounted on the bolt 16 so as to be directly under the discharge end of the chute 30 when the bolt is shot out in its locked position is a continuation 33 of the chute, the upper end of which will preferably be expanded into a funnel to insure the accurate delivery of the coin thereto from the the upper chute 30. An angle plate 35 is secured to the plate 12 of the casing and the upper horizontal member of said angle plate projects across the discharge end of the chute extension 33 far enough to keep a coin from dropping out of said chute extension while the bolt is in its outer or locked position. The chute exten-

sion 33 has a transverse notch 39 in its lower end (shown in dotted lines in Fig. 4) which will permit the upper end of the lever 23 to travel through said chute extension, except when its travel is prevented by the presence of a coin 37 in said extension. When the notch 39 is closed by the presence of a coin in the part 33 the lever 23 by contact with the coin will shoot the bolt 16 inwardly of the casing thereby unlocking the door, and as soon as the bolt moves far enough to cause the coin to pass the end of the angle-plate bracket 35 the coin will be free to drop by gravity as shown by dotted lines in Fig. 4. The throw of lever 23 is arrested by the contact of its lower end against the lug 28, and a person manipulating the knob 26 will invariably release the knob upon the arrest of the lever 23 by its contact with shoulder 28 so that, if the coin has not been previously released, it will be upon this occurrence and will drop to the bottom of the lock-casing into a suitable receptacle 41 placed there to receive it.

42 is a key mounted in the lock-casing so as not to be removable therefrom and having its stem extending out through the door 8 and squared to fit the socket of a removable extension carried by a porter or other attendant who is required to enter the room frequently for the purpose of cleaning same or for other reasons. The bit of the key enters a suitable notch in the bolt 16.

Supported by the lock-casing between the bolt 16 and plate 14 and parallel with the bolt 16 is a plate 43 which has a tongue 44 formed out of the body of the plate and turned up parallel with said body to form a support and guide for a sliding rack bar 45. The inner edge of the plate 43 is bent out at right angles to form the flange 46 and this flange is slotted opposite the tongue 44 to permit the passage therethrough of said rack-bar 45. The plate 43 adjacent its lower edge, is provided with a slot 47, and pivotally mounted on the plate 43 is a lever 48, one end of which crosses the slot 47, and the upper end of which is in contact with the outer end of the rack-bar 45. The opposite or inner end of the rack-bar 45 is adapted to contact with a coin 37 in the chute-extension 33 when the bolt 16 is shot inwardly as previously described by the action of lever 23 as rocked by the knob 26.

Supported by the plate 14 and plate 43 is a spindle 50, and mounted on the inner end of this spindle is a pinion 51, the teeth of which mesh with the teeth of the rack-bar 45, whereby, when the rack-bar is moved longitudinally by contact therewith of a moving coin, as above described, the spindle will be rocked. The outer end of the spindle 50 has a squared socket to receive the square stem of a circular dial-plate 52. This dial-plate is mounted on the outer face of the door and is there retained by a covering plate 53, having a half-circle opening 54 through which a corresponding portion of the dial-plate 52 is exposed to view. The dial-plate 52 bears the inscription "In use" on one portion of its surface and the inscription "Open" on an opposite portion of its surface, and these inscriptions are brought alternately into view through the opening 54. When the mechanism is in the position shown in Fig. 5 the dial 52 will expose the word "Open" through the opening 54, and when the mechanism is arranged as shown in Fig. 7 the words "In use" will be visible through said opening. In order to prevent the excess movement of the dial-plate 52 the pinion 51 will have a blank 60 in its cogged portion to form a lock by contact with the rack-bar.

Located between the bolt 16 and the plate 43 is a bar 62 having a downwardly extended arm 63, the end of which is bent at right angles to form the part 64 which extends through the slot 47 in the plate 43 far enough to contact with the lower end of the pivoted lever 48. One end of the bar 62 extends outside of the lock-casing and is provided with a knob 65. The extension 17 of the bolt 16 has a longitudinal slot 66, through which the knob 65 is passed, and because of the slot 66 a limited movement of the bolt 16 is permitted without moving the bar 62. After the bolt 16 has been shot in to the position shown in Fig. 7, and the indicator mechanism moved substantially to the position there shown, the bolt will be returned by the action of spring 27 through lever 23, leaving the indicator mechanism undisturbed, and coins inserted in the chute while the room or booth is occupied will not effect the adjustment of the parts of the indicator mechanism. When the person in the room or booth desires to retire from same he will unlock the door by an outward movement of the knob 65. The first periods of this movement will be permitted without moving the bolt 16, due to the slot 66, but when the outer end of the slot 66 is reached the bolt will be moved so as to unlock the door, and at the same time the projection 64 by contacting with the lever 48 will return the rack-bar 45 to the position shown in Fig. 5 and return the dial to position exposing the "Open" inscription. The bar 62 will be returned to the position shown in Fig. 5, with the return of the bolt 16, by the action of spring 27. The indicator will then show at "Open" which proclaims that the room or booth is available for occupancy.

Having thus fully described my invention, what I claim as new and wish to secure by Letters Patent of the United States, is—

1. In a lock, a coin-carrying bolt, means by contact with a coin when carried by the bolt for shooting the bolt, a spindle adapted

to be moved only in a rotary direction carrying an indicator, a spindle carrying an indicator, a cogged wheel mounted on said spindle, and a movable member having teeth meshing with those of the cogged wheel and means for moving said movable member by the shooting of the bolt.

2. In a lock, a coin-carrying bolt, means by contact with a coin when carried by the bolt for shooting the bolt, a spindle carrying an indicator, a cogged wheel mounted on said spindle, and a longitudinally movable rack-bar having teeth meshing with those of the cogged wheel and means for moving the rack-bar by the shooting of the bolt.

3. In a lock, a coin-carrying bolt, means by contact with a coin when carried by the bolt for shooting the bolt, a spindle carrying an indicator, a cogged wheel mounted on said spindle, a longitudinally movable rack-bar having teeth meshing with those of the cogged wheel and adapted to be moved by the contact therewith of the coin in said movable bolt by the shooting of the bolt, a pivoted lever having one end in contact with said rack-bar, and a bar extending outside of the casing of the lock and terminating with a knob for the manual shifting of the bar, the inner end of said bar being extended into engagement with the lower end of said pivoted lever.

4. A lock casing, a coin-carrying bolt mounted in said casing and having an end projecting from the casing and longitudinally slotted, means by contact with a coin when carried by the bolt for shooting the bolt, a spindle carrying an indicator, a cogged wheel mounted on said spindle, a longitudinally movable rack-bar having teeth meshing with those of the cogged wheel said rack-bar being moved in one direction by contact with the coin carried by said bolt when the bolt is shot inwardly of the lock, a lever pivoted at its middle having one end in contact with the rack-bar, a plate mounted slidingly upon the bolt and having a knob which projects through the slot in said bolt, the inner portion of said plate having an extension which terminates in contact with the lower arm of said pivoted lever, said plate and lever being for the purpose of returning the rack-bar and indicator to the positions which they occupied before they were moved by the inward shooting of the bolt.

5. In a coin-controlled lock, the combination of a casing, a coin chute discharging within said casing, a bolt under the discharge end of the chute having a chute-extension which alines with the first chute when the bolt is in its outer shot position, means including a stop to expose a coin at the lower end of said chute-extension, an arm adapted to be moved to shoot the bolt inwardly by contact with said exposed coin, a spindle carrying an indicator, a cogged wheel mounted on said spindle, a longitudinally movable rack-bar having teeth meshing with those of the cogged wheel, a pivoted lever having its upper end in contact with said rack-bar and means for manually moving the pivoted lever in opposition to the movement imparted to it by the rack-bar.

6. In a coin-controlled lock, the combination of a casing, a coin-chute discharging within said casing, a bolt under the discharge end of the chute having a chute-extension which alines with the first chute when the bolt is in its outer shot position said bolt having a longitudinally slotted end which projects outside of the casing, means including a slot to expose a coin at the lower end of said chute-extension, an arm adapted to be moved to shoot the bolt inwardly by contact with said exposed coin, a spindle carrying an indicator, a cogged wheel mounted on said spindle, a longitudinally movable rack-bar having teeth meshing with those of the cogged wheel, a lever pivoted approximately at its middle having an end in contact with an end of said rack-bar, a plate slidingly mounted on that end of the bolt which extends outside of the casing of said plate having a knob or handle which projects through the slot in said bolt, and the inner portion of said plate being extended into contact with the lower end of the pivoted lever.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this eighth day of November, A. D. one thousand nine hundred and nine.

WILLIAM HERMAN KLUGE. [L. S.]

Witnesses:
F. W. WOERNER,
L. B. WOERNER.