W. F. KUSTER.

COIN CONTROLLED LOCK.

APPLICATION FILED MAY 31, 1910.

999,044. **Patented July 25, 1911.**

2 SHEETS—SHEET 1.

Fig. 1.

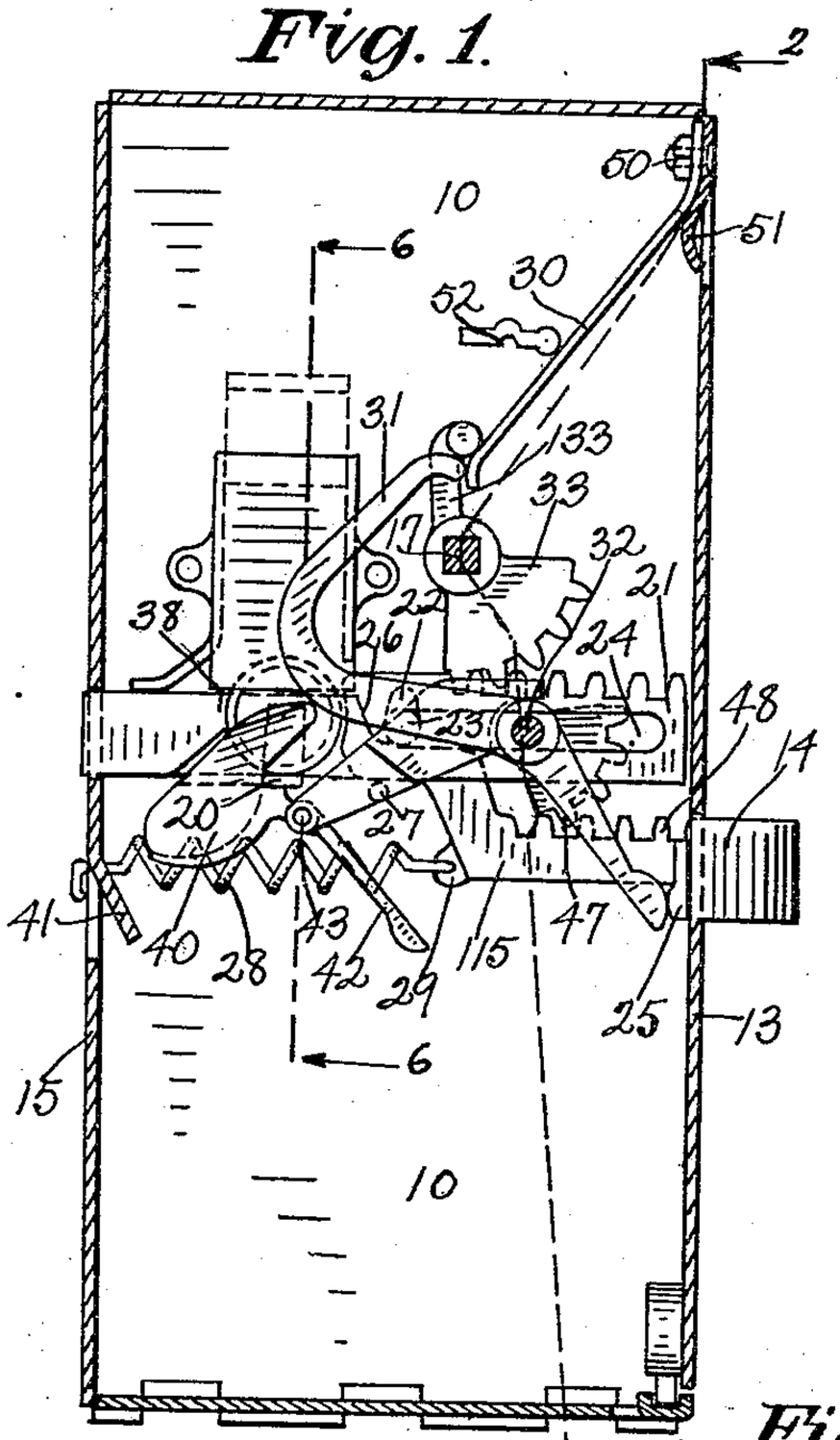


Fig. 2.

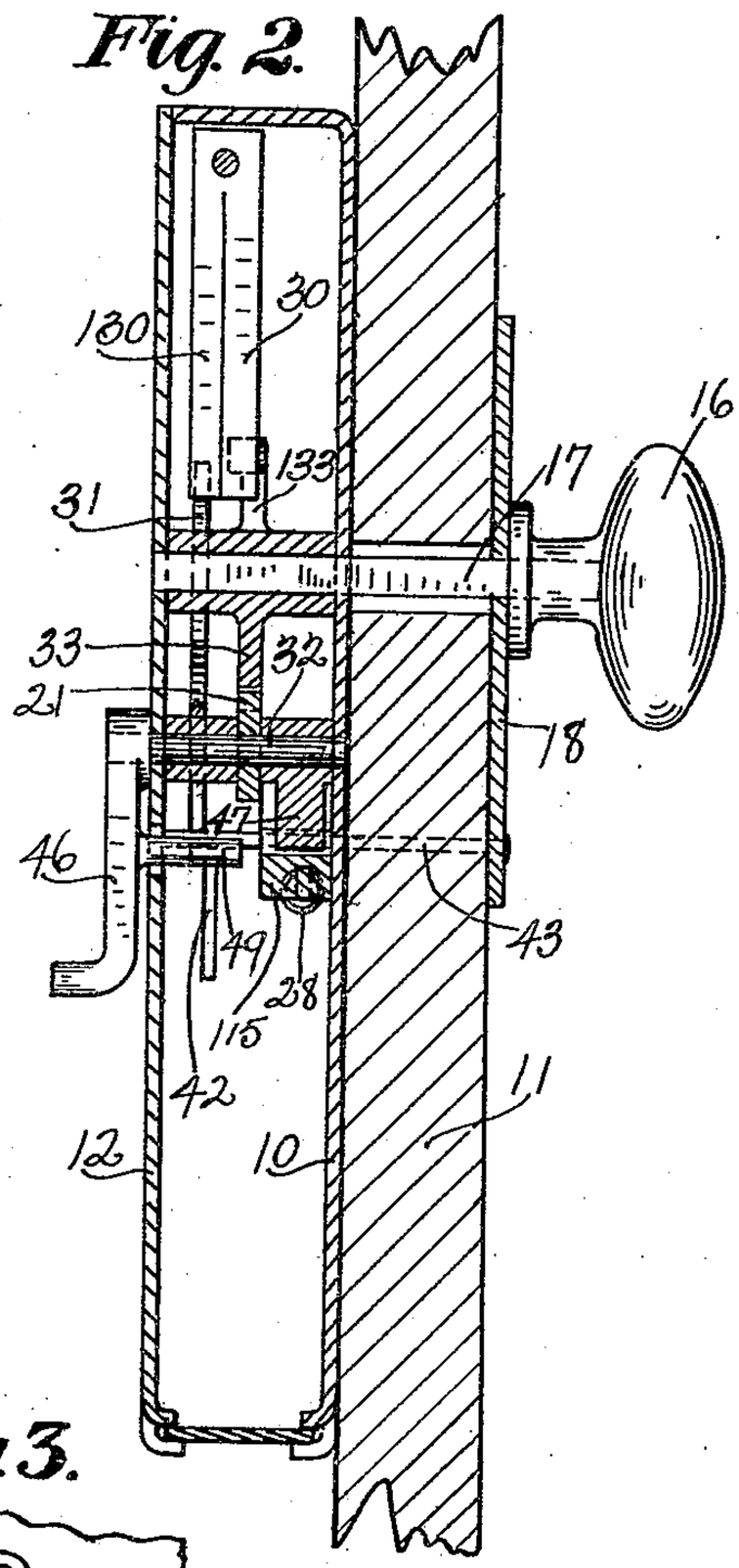
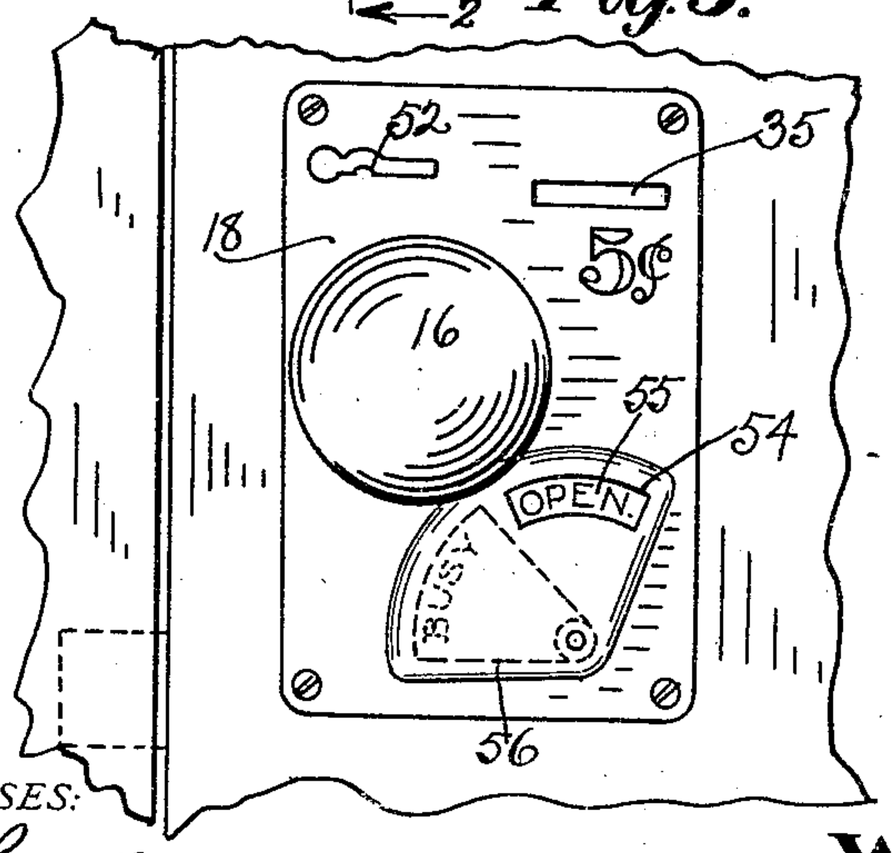


Fig. 3.



WITNESSES:

W. M. Gentle.

O. M. McLaughlin

INVENTOR.

William F. Kuster.

BY

W. H. Lockwood

ATTORNEY.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

W. F. KUSTER.

COIN CONTROLLED LOCK.

APPLICATION FILED MAY 31, 1910.

999,044.

Patented July 25, 1911.

2 SHEETS—SHEET 2.

Fig. 4.

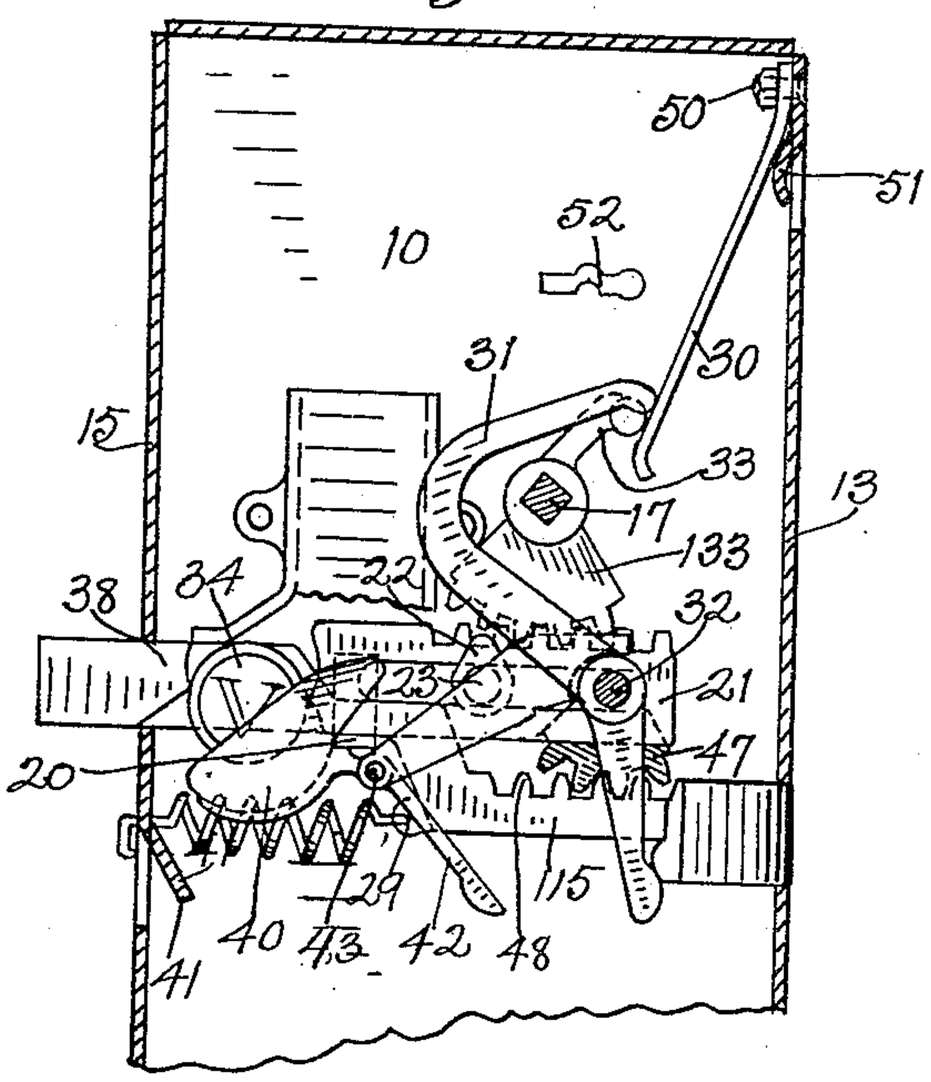


Fig. 5.

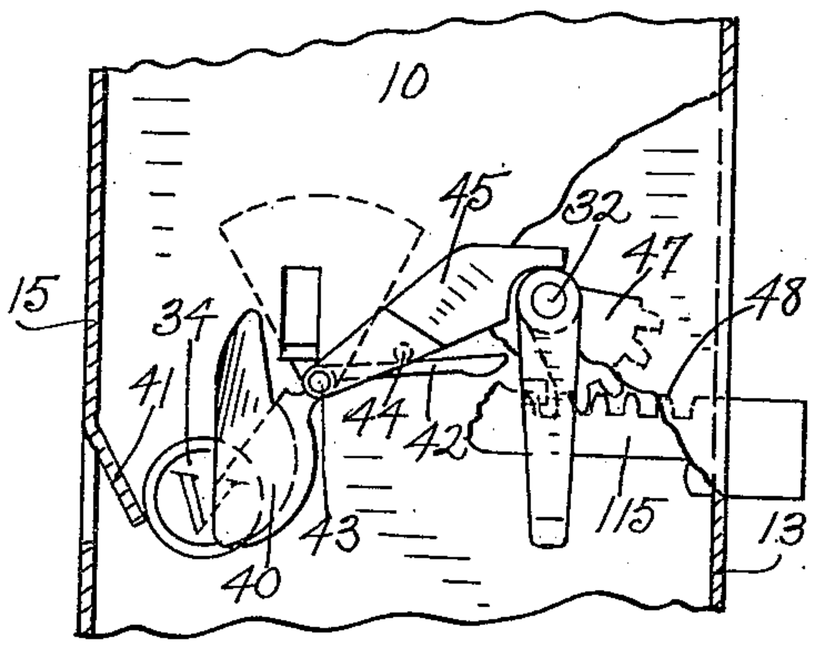


Fig. 6.

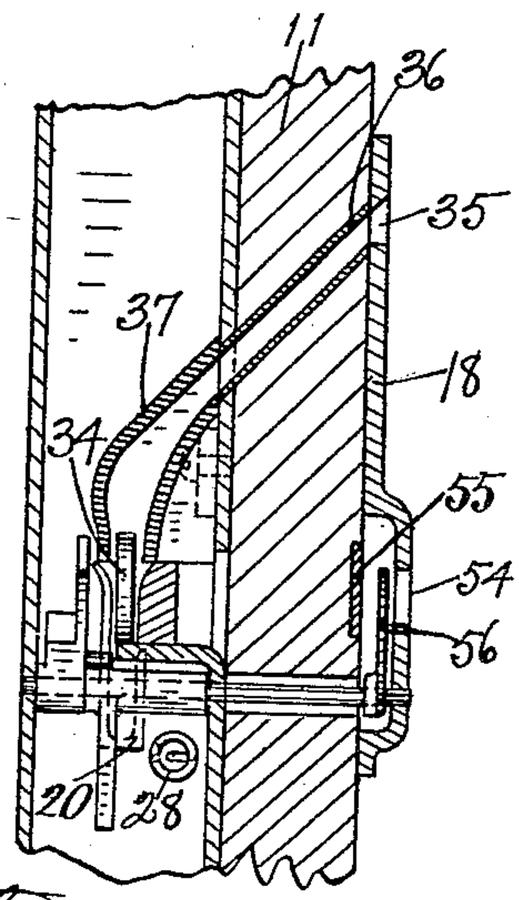
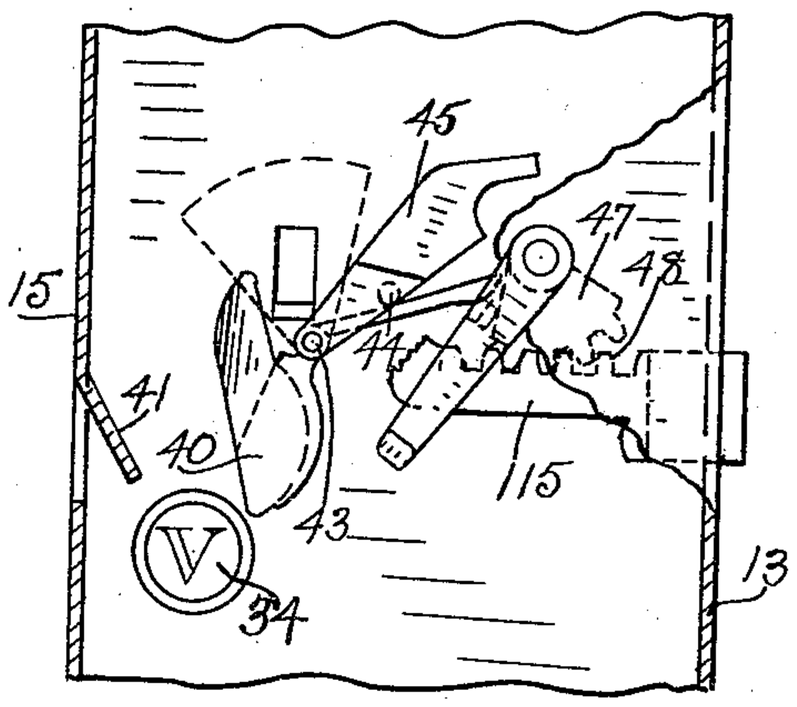


Fig. 7.



WITNESSES:

W. M. Gentle.

O. M. McLaughlin

INVENTOR.

William F. Kuster.

BY

W. H. Lockwood

ATTORNEY.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM F. KUSTER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO HIRAM J. RAFFENSPERGER, OF INDIANAPOLIS, INDIANA.

COIN-CONTROLLED LOCK.

999,044. Specification of Letters Patent. **Patented July 25, 1911.**

Application filed May 31, 1910. Serial No. 564,152.

To all whom it may concern:

Be it known that I, WILLIAM F. KUSTER, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Coin-Controlled Lock; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to provide an improved lock adapted to be opened from the outside only upon the insertion of a disk or coin, and which can be opened from the inside, and to provide also indicating means for showing whether there is a person inside or not; to provide practical means in connection with the other construction for opening the lock from the outside by a janitor's key, and means actuated by the coin for disclosing the condition of the lock.

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Figure 1 is a section through the lock just inside of the inside wall of the casing, showing the parts largely in elevation and in locked position. Fig. 2 is a section on the line 2—2 of Fig. 1, said section cutting through a portion of the door. Fig. 3 is an outside elevation of a portion of the door and adjacent casing, parts of the door and casing being broken away. Fig. 4 shows the upper part of Fig. 1 with the lock drawn inwardly by the use of a coin and the knob for opening the door. Fig. 5 is a similar section showing a part of what appears in Fig. 4, the parts being in the position occupied by them after the door has been opened from the outside and the bolt released so as to lock the door from outside entry. Fig. 6 is a section on the line 6—6 of Fig. 1. Fig. 7 is the same as Fig. 5 showing the position of the parts when the lock is opened from the inside, the coin then escaping from the coin holder.

In this lock 10 is a front wall of the casing which is secured to the door 11, 12 is the rear wall of the casing, 13 the side wall of the casing, through which the head 14 of the bolt 115 protrudes, and 15 is the other side wall of the casing, through which the other end of the bolt operates.

16 is the knob, 17 the knob shaft, and 18 a plate on the door behind the knob.

The foregoing parts, excepting the bolt, may be made in any desired form.

The bolt is an offset one, as shown in Fig. 1, the part having the beveled head 14 being on a lower level than the other end of the bolt, the two ends of the bolt being in parallel planes with the intermediate connecting portion being inclined. The front wall 10 of the two side walls 13 and 15 guide the bolt. The bolt is also guided by a pin or lug 20 on the plate 10 and by a superimposed rack bar 21 which is held down on the bolt 115 by an overhanging lip 22 of a pin 23 which extends up from the plate 10 through the slot 24 in the rack bar 21. The outward movement of the bolt is limited by a lug 25 on the inner face of the head 14 which comes in contact with the side wall 13 of the casing, and also by the shoulder 26 coming in contact with the pin 23. The inward movement of the bolt is limited by the pin 27 on the plate 10, which engages the rear surface of the inclined portion of the bolt.

The spring 28 tends to retract the bolt, it being connected at one end to a lug 29 on the bolt and at the other end to the side wall 15 of the casing. The spring 30 acting on the lever 31 tends to hold the bolt in its outer position. Said lever 31 is crooked and between its ends is fulcrumed loosely on a shaft 32 which has bearings in the plates 10 and 12 of the casing, see Fig. 2.

The knob shaft 17 carries a segmental gear 33 which meshes with the rack bar 21 and actuates it for opening the bolt through the intervention of a disk or coin 34. The coin is inserted through the slot 35 in the knob plate 18 on the outer side of the door, and it passes through a slotted conduit 36 downwardly through the door, and the slotted conduit 37 within the casing of the lock and the coin is deposited by gravity on the lug 20 between the rear end of the rack bar 21 and an elevated portion or bolt 38 on the bolt 115. If the knob is turned when the coin is in this position, it is obvious that the knob will open the bolt as the segmental gear 33 will push the rack bar 21 rearwardly and it will push the coin against the shoulder 38 and thus move the bolt rearwardly and unlock the bolt against the action of the spring 30. The parts will then be in the position shown in Fig. 4.

When the bolt has been forced rearwardly to the position shown in Fig. 4 and the knob is released, the coin will drop down from the position shown in said figure into the coin

receiver 40 and will overbalance said coin receiver and move it from the position shown in Fig. 4 to the position shown in Fig. 5, where the coin will lodge between said receiver and the tongue 41 punched in from the side wall 15 of the casing. The coin receiver 40 is secured on the end of a lever 42, which is pivoted between its ends on a pin 43 mounted in the plates 10 and 12 of the casing. The coin receiver is normally overbalanced by the other end of said lever 42 being weighted so that the weighted end will hold the coin receiver up normally, as shown in Fig. 4, to receive the coin in the first instance. When the coin drops into it, it overweights the weighted end of the lever 42 and moves the coin receiver down into the position shown in Fig. 5, and the other end of the lever 42 moves upwardly until stopped by a pin 44 in a bar 45, which is likewise fulcrumed on the pin 43 and the other end of the bar 45 has a notch that rests on the shaft 32. When a coin drops down into the position shown in Fig. 5, the spring 30 acting through the lever 31 throws the bolt outwardly so as to move it again into locking position, and the spring 130 acting on the projection 133 extending oppositely from the segmental gear 33, causes it and the rack 21 to return to their normal positions. The springs 30 and 130 are secured to the side 13 of the casing by bolt 50, and the springs are held inwardly by a tongue 51 in the casing. A person then is on the inside of the door and no person can open the door from the outside by the use of the knob alone, as there is no coin then lying between the rack bar 21 and the shoulder 38 on the bolt 115.

When a person inside wishes to unlock the door, he operates the crank 46, which is secured on the inner end of a shaft 32. That shaft carries a segmental gear 47, which meshes with a rack bar 48 on the upper side of the forward portion of the bolt 115. Therefore, by moving the lower end of the crank 46 rearwardly to the position shown in Fig. 7, it will open the door. The crank 46 has an inwardly extending finger 49, which when moved to the position shown in Fig. 7, engages the lever 42 and pushes it upwardly from the position shown in Fig. 5 to the position shown in Fig. 7, and that moves the coin receiver farther away from the plate or tongue 41, so that the coin can drop down into the lower part of the casing. When the crank 46 is released, the spring 30 will return the parts to their normal position.

If it be desired that the lock be opened by a janitor or any other person for any purpose by a key, a key-hole 52 is provided in the plate 10 of the casing which is located in such position that it will engage the spring 30 and release it from action against the lever 31 so that the spring 28 will throw the bolt and unlock the door.

The condition of the lock is indicated by the means shown in Fig. 3. The casing has a slot 54 and behind that slot the word "Open" is placed on the plate 55, which is secured to the door 11. On the pivot pin 43 a segmental fan-shaped plate 56 is pivoted On that plate the word "Busy" is printed so that when it is moved in front of the slot 54 the word will appear, and it is in that position when the coin throws the coin receiver down into the position shown in Fig. 5. The plate 56 returns to the obscured position indicated by dotted lines in Fig. 3 when the crank 46 is released and the parts returned to the normal position.

I claim as my invention:

1. A lock including a casing with a key-hole therein, a bolt, a spring which tends to withdraw and unlock the bolt, and another and stronger spring which tends to hold the bolt in the locked position and which spring is located with reference to said key-hole so that a key inserted in said hole may engage said last-mentioned spring and prevent its action, whereby the first-mentioned spring will unlock the bolt.

2. A lock including a casing with a key-hole therein, a bolt, a spring which tends to withdraw and unlock the bolt, a lever mounted so that one end thereof engages said bolt, and another and stronger spring which acts on said lever to actuate the same and cause it to hold the bolt in locking position and which latter spring is so located with reference to said key-hole that a key inserted in said hole may engage said last-mentioned spring and prevent its action, whereby the first-mentioned spring will unlock the bolt.

3. A lock including a casing, a bolt provided with a rack, a shaft, a segmental gear thereon which engages said rack for furnishing one means of unlocking the bolt, a rack bar separate from said bolt and adapted when operated to cause the unlocking movement of the bolt, a shaft, a segmental gear on said shaft for engaging said rack bar, and a spring for causing the return movement of said rack bar after it has been operated.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

WILLIAM F. KUSTER.

Witnesses:
G. H. Boink,
J. H. Wells.