

W. S. FARNSWORTH.
 COIN CONTROLLED LOCK.
 APPLICATION FILED MAY 4, 1910.

985,989.

Patented Mar. 7, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

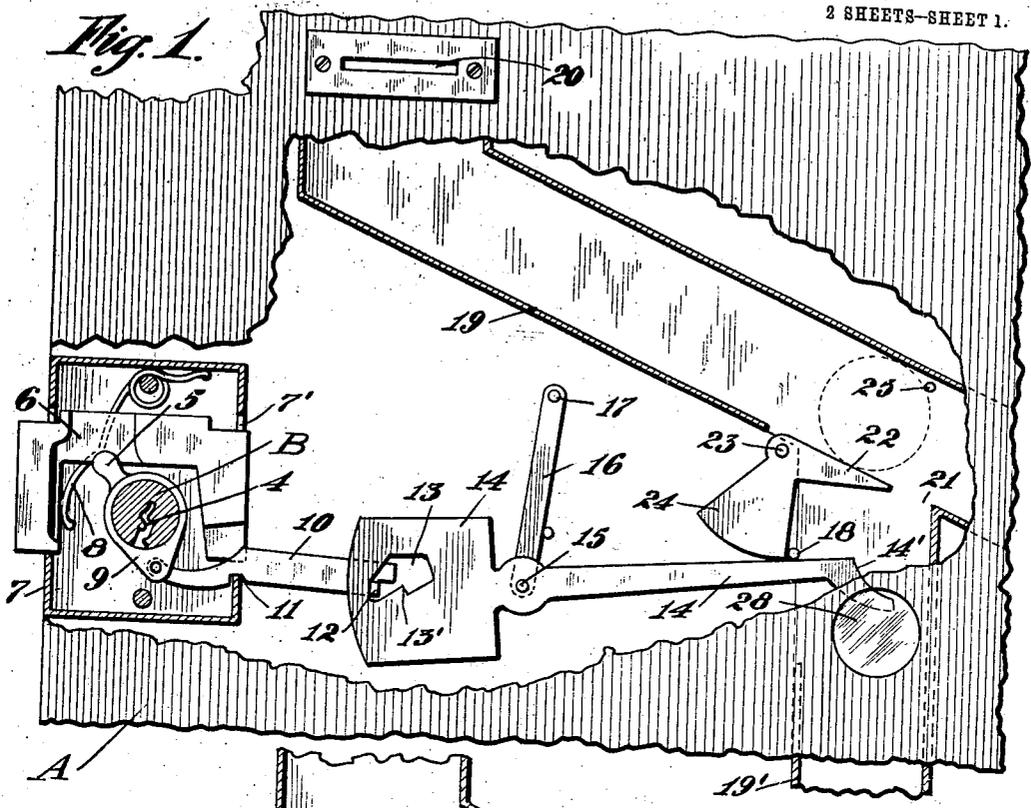
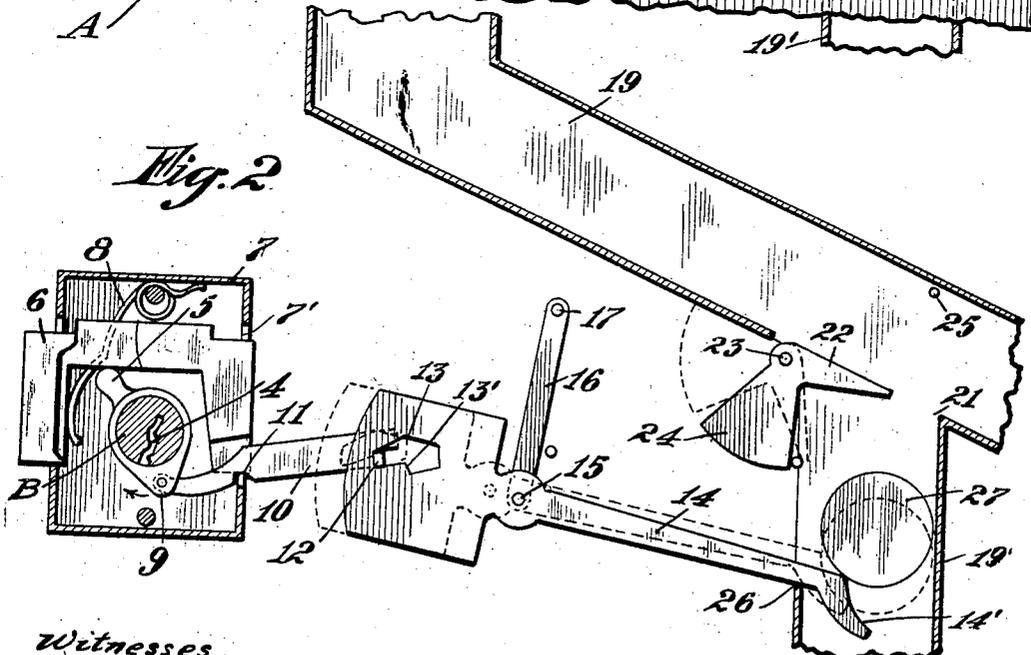


Fig. 2.



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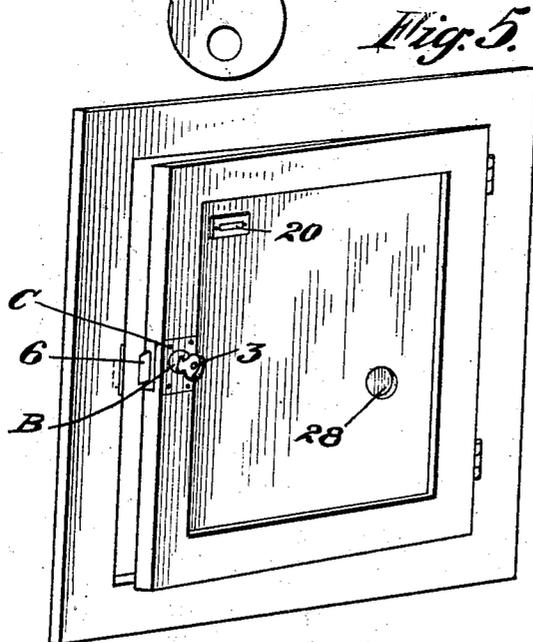
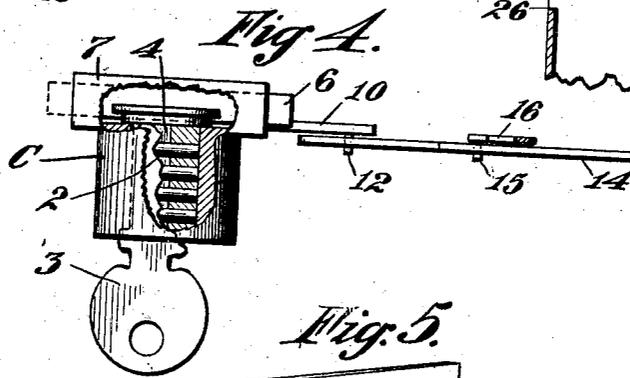
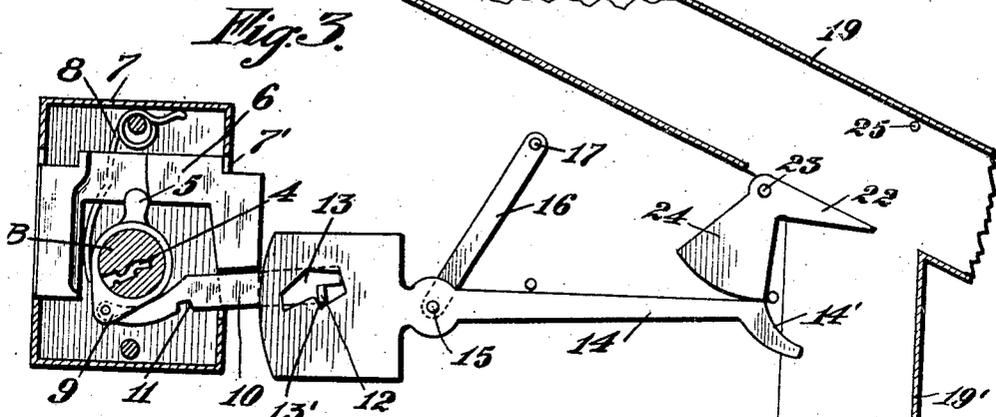
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIS S. FARNSWORTH, OF PETALUMA, CALIFORNIA, ASSIGNOR TO COIN CONTROLLED LOCK CO., OF PETALUMA, CALIFORNIA, A CORPORATION OF CALIFORNIA.

COIN-CONTROLLED LOCK.

985,989.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed May 4, 1910. Serial No. 559,360.

To all whom it may concern:

Be it known that I, WILLIS S. FARNSWORTH, citizen of the United States, residing at Petaluma, in the county of Sonoma and State of California, have invented new and useful Improvements in Coin-Controlled Locks, of which the following is a specification.

This invention relates to coin-controlled locks and particularly pertains to a device for controlling the operation of a lock by means of coins, slugs or other tokens.

It is the object of this invention to provide a coin-operated mechanism for controlling locks, by means of which the lock can be operated only by the depositing of a proper coin or token.

A further object is to provide a coin-controlled device which is adapted to be applied to the ordinary cylinder locks now in use, without altering the lock structure to any extent, and which is simple in construction, cheap, durable and efficient in operation.

Another object is to provide means, in a device of this character, by which the mechanism is prevented from becoming blocked through the depositing of more than one coin and which can be operated only by a coin of a certain diameter.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is an elevational view of a fragment of a door with parts broken away, showing the invention as applied and in normal operative position ready to be acted on by a coin or token. Fig. 2 is a front elevation of the invention, illustrating the positions assumed by the parts in the first and second stages of their operation following the deposit of a coin. Fig. 3 is a similar view, showing the third position of the parts.

Fig. 4 is a detailed view of a cylinder lock, depicting the manner in which the key is blocked and prevented from being removed. Fig. 5 is a perspective view of a door, showing an application of the invention.

This invention is especially designed for use on the doors of lockers, cabinets, closets and the like, where it is advantageous to collect toll for admission to or for the rental of the space behind the door. It is particularly applicable to use on lockers in hat and

cloak rooms, and other places where a number of safe-deposit boxes and the like are installed and where each separate door is provided with a special lock and key.

This device is so designed that the key cannot be removed from its respective lock until a certain coin has been deposited, nor a lock unlocked without the previous dropping of a coin, but when the required coin is deposited, the customer or user may unlock or relock the desired door and remove the key for opening the door at a future time. It is also so constructed that the locker can be used but once for a single coin.

In the drawings A represents a door which may be hinged and framed in any desired manner. B is the barrel of a cylinder lock of any suitable type mounted in a cylinder casing C and having the usual loose pins 2, which are actuated by the insertion of a key 3 in the keyhole 4 extending longitudinally through the barrel B. A bit or projecting pin 5 is suitably attached to the inner end of the barrel B and is adapted to work in a recess in one side of a latch bolt 6 and retract the latch bolt within the casing 7 when the barrel is rotated properly, as shown in Fig. 3. The latch bolt 6 is normally projected into its outermost position by means of a spring 8, which offers a resistance to any backward movement of the latch bolt.

My attachment comprises a crank clamped to the barrel B and to which a sliding and rockable rod 10 is pivotally connected. This rod 10 extends at right angles to the barrel B through a slot 7' in the casing 7 and is notched at 11 on its under side to normally engage the casing 7 when the bolt is in forwarded locking position, thereby preventing the turning of the barrel B while thus engaged.

12 is a lateral projection formed on the outer end of the rod 10, which projects into an irregular slot 13 stamped in the short arm of a lever 14. The lever 14 is pivotally suspended at 15 from a link 16, which is in turn pivotally mounted at 17 on the door. The slotted short arm of the lever 14 is constructed in the form of a plate, the weight of which overbalances the longer thin arm which is normally inclined upward from the pivotal point 15 and bears against a stop 18.

The outer end of the lever 14 projects into a downwardly extending branch of a coin runway 19 and has a semi-crescent

shaped head or end 14' for engagement with a coin, as later described. The coin chute or runway 19 is disposed at an incline on the back of the door A and is open at its upper end to a coin slot 20 suitably located in the door panel. The lower end of the chute 19 and the perpendicular branch 19' leads to any suitable till, receptacle or other device for the collection of coins.

A portion of the bottom of the chute 19 is removed, as at 21, leading into the coinway 19' directly above the outer end of the lever 14. Interposed across this opening 21 is a trap lever 22, which is pivoted at 23 and counterweighted at 24, the upper edge of the lever being on a plane with and in continuation of the bottom of the chute 19. The purpose of this weighted trap lever 22 is to allow only a coin or token of proper character and weight to fall onto the lever 14 and trip lever 10, so the lock can be opened, all as will be described shortly.

The operation of the invention is as follows:—Assume the parts to be in the normal position shown in Fig. 1 with the key 3 in the cylinder B and the door A closed and locked by the latch 6. In this position it will be seen that the door A cannot be opened or the lock unlocked by reason of the notch 11 in the lever 10 being engaged in the casing 7, which prevents the necessary turning of the cylinder B to draw the latch bolt 6. Neither can the key 3 be withdrawn from the cylinder B, by reason of the latter being slightly turned to one side when the lever 10 is in engagement. In this position the loose pins 2 are not in alinement with the pins (not shown) in the cylinder C, but bear against the walls inside the cylinder, as shown in Fig. 4, thus blocking the key 3 against removal. (It is understood that with locks of the Yale type a key can only be withdrawn when the keyhole and key stand in a certain position, usually vertical.)

It being desired to unlock the door A and remove the key 3, a coin of the proper value, for instance, a five cent piece, is inserted in the slot 20. This coin, traveling down the inclined chute 19, rolls upon the trap lever 22 and at this point is brought into contact with a stop 25 interposed near the top of the chute 19 over opening 21. The stop 25 arrests the forward movement of the coin and causes its entire weight to rest on the outer end of the trap lever 22, which acts to rock the latter on its pivot 23, allowing the coin to drop through the opening 21 into the coinway 19' and upon the outer end of the lever 14. The weight of the coin striking the lever causes it to rock on its pivot 15, until the outer end rests on a stop 26, as shown in full lines in Fig. 2. In this position the lock end of the lever 10 is lifted sufficiently to disengage the notch 11 from the casing 7, thus permitting the cylinder B to

be rotated by the key 3 in the direction of the arrow, Fig. 2, so as to draw the latch 6 into the casing 7 and unlock the door A, and permit of its being opened. On turning the cylinder B as just described, the swinging lever 14 is drawn forward by the pin 12 on the lever 10, so that the coin 27 will partially drop between the semi-crescent shaped head 14' and the opposite wall of the coinway 19', where it comes to rest and retains the swinging lever in the forward position shown in dotted lines in Fig. 2.

The door A may now be closed and locked in the usual manner, and the barrel B revolved so as to throw the keyhole 4 into a vertical position which permits of the removal of the key, as is well known in cylinder lock construction. In turning the barrel B back to this last position to relock the door, the lever is caused to move back a sufficient distance to cause the pin 12 thereon to travel back and upward in the cam slot 13 until it drops behind a shoulder 13' in the cam slot 13 of the lever 14, where it remains until the key 3 is again inserted and the barrel B turned to re-open the door A. This causes the link 10 to draw the swinging lever 14 forward a second step to release the coin 27, which drops from its grip between the curved end 14' of lever 14 and the opposite wall of the chute into any suitable receptacle; the position of the parts now being as shown in Fig. 3. On releasing the key 3, the swinging lever 14 swings back into its normal position, in Fig. 1, the weighted end of the lever dropping down to cause the pin 12 on the bar 10 to become disengaged from the notch 13' and return to its original position in the end of the slot 13.

A glazed opening 28 is formed in the door A directly over the point where the coin 27 is sustained by the lever 14, so as to enable the detection of the presence of a token or slug in the chute 19' and show whether the device is already in use. If pennies, dimes or other tokens smaller than a five cent piece are used, they will pass under the stop 25 and by reason of the velocity gained by rolling down the chute 19 will pass over the trap lever 22 and on down the chute 19, thus failing to operate the lever 14.

Should one or more coins be inserted in the slot 20, while a coin 27 is in position on the lever 14, the trap lever will be tilted downward by the coin following the operating coin 27 and hold it in that position, and other coins following will either pass on down the chute 19 or stack in line therein. In that event, when the lever 14 is withdrawn from under the coin 27, the coin or coins in the chute above will follow it on down the chute 19', the rapidly moving coins keeping the levers 22 and 14 in their open position, so that there is no chance for the device to clog.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a lock, the combination of a turnable part and means for operating said turnable part, a rod reciprocal by said turnable part, a lever with a shifting fulcrum with which said rod loosely engages, a coin chute into which said lever projects, and means by which said lever is given a two-step forward movement on the successive operations of said turnable part.

2. In a lock, the combination of a turnable part, a key for operating the same, a rod reciprocal by said part, a lever having a shifting fulcrum provided with a cam slot with which said rod engages, a coin chute into which said lever projects, said lever normally interposed in the path of the coin, and means whereby on the successive movements of said key-operated turnable part said lever is moved, first to allow the coin partially to drop and be locked between the lever and the wall of the chute, and on the subsequent movement of the lever to release the coin.

3. In a lock, the combination of a turnable part, a key for operating the same, a rod pivoted to and reciprocal by said turnable part, said rod having a notch, a detent engageable in said notch to prevent the operation of the key, and a lever having a cam slot with which a projection on said rod engages, the said lever operated by a coin to release said notched rod from its detent.

4. In a lock, the combination of a turnable part, means for operating the same, a

notched rod connected with said turnable part and reciprocal thereby, a detent with which the notch in said rod is engageable, a lever fulcrumed on a link, said lever having a slot in which a projection on said rod is operable, and a coin chute in which the opposite end of the lever normally projects.

5. In a lock, the combination of a turnable part, means for operating the same, a notched rod connected with said turnable part and reciprocal thereby, a detent with which the notch in said rod is engageable, a lever fulcrumed on a link, said lever having a slot in which a projection on said rod is operable, and a coin chute in which the opposite end of the lever normally projects, said coin chute having a weighted trap lever above the end of said slotted lever which projects into the chute, said trap lever operative to allow only coins of the right size and weight to drop into said chute.

6. The combination with a coin-controlled lock, of an inclined chute having a vertical branch, and coin-controlled mechanism, said mechanism including a lever having a notched part and a rod normally engaging the casing of the lock to hold the lock against movement, said rod connected to a member of the lock and movable therewith and said lever having an end portion projecting into the vertical branch of the chute.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIS S. FARNSWORTH.

Witnesses:

CHARLES A. PENFIELD,
CHARLES EDELMAN.