Jan. 5, 1926. 1,568,769

F. J. ROWSE

COIN CONTROLLED LOCKING MECHANISM

Filed May 20, 1921 4 Sheets-Sheet 1

Fig. 1.

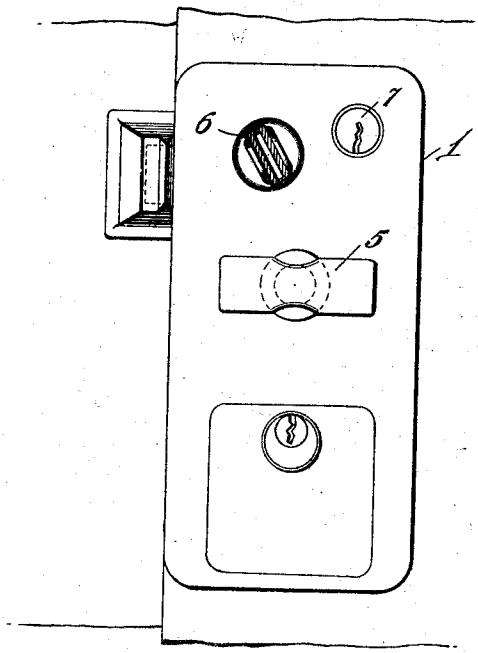


Fig. 2.

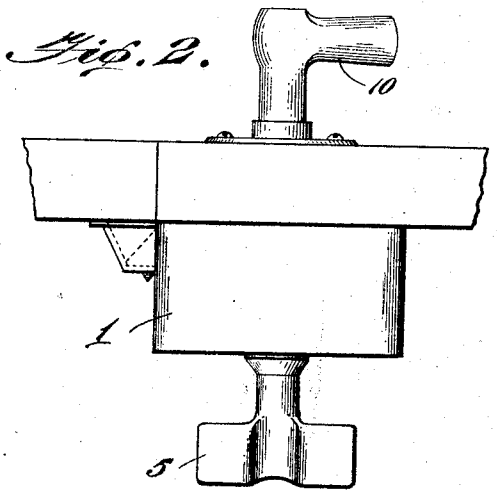
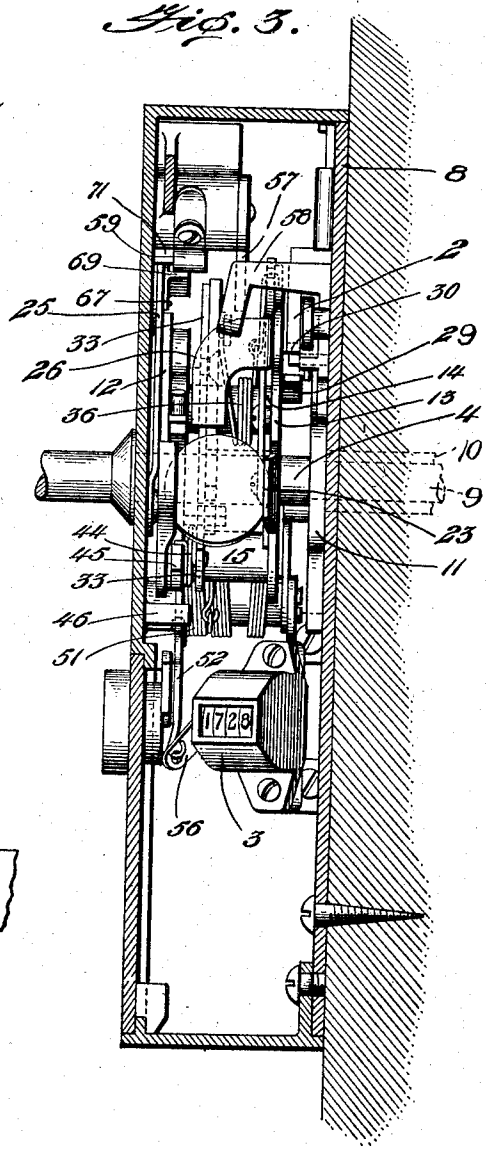


Fig. 3.



Inventor

Frank J. Rowse

By

Attorney

Jan. 5, 1926. 1,568,769

F. J. ROWSE

COIN CONTROLLED LOCKING MECHANISM

Filed May 20, 1921 4 Sheets-Sheet 2

Fig. 4.

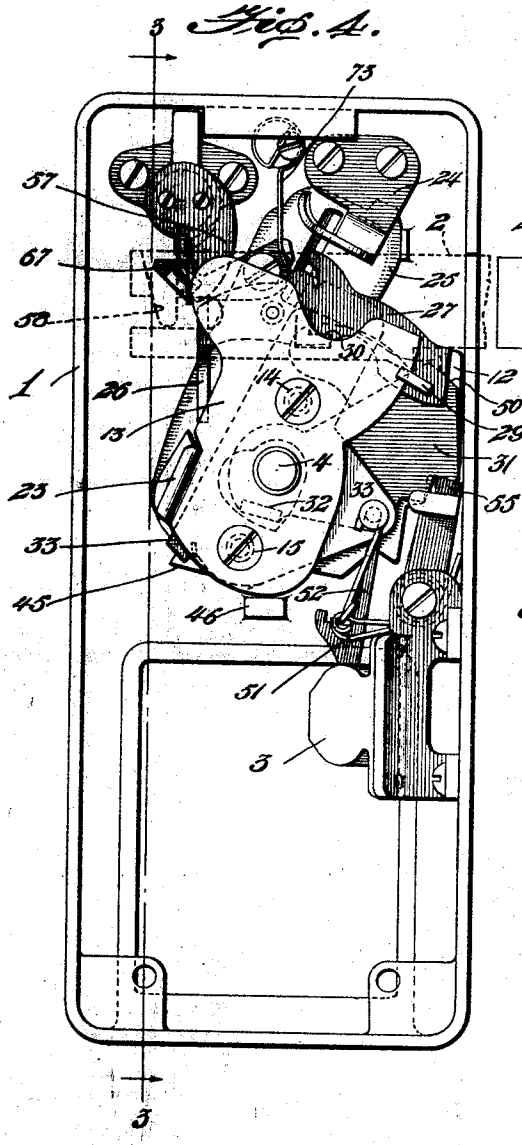
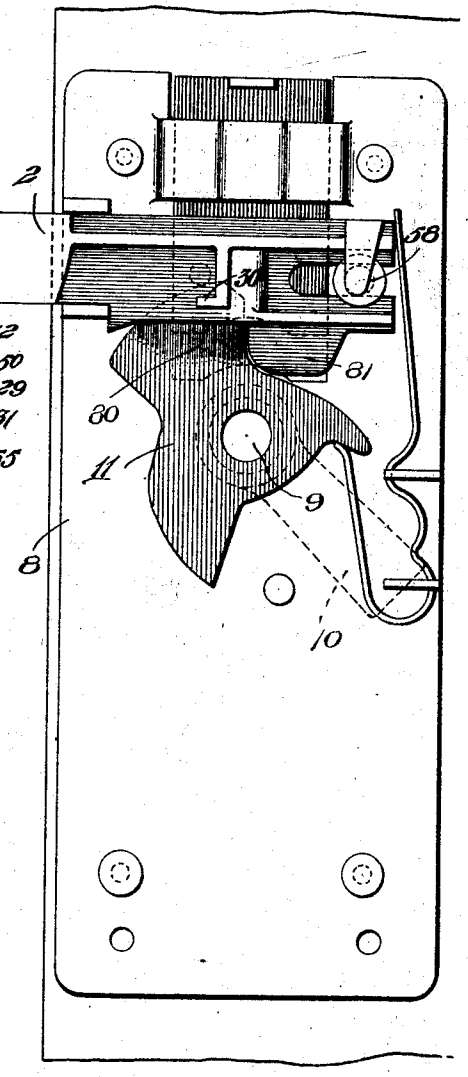


Fig. 5.



Inventor

Frank J. Rowse

By Louis C. Smith Attorney

Jan. 5, 1926. 1,568,769

F. J. ROWSE

COIN CONTROLLED LOCKING MECHANISM

Filed May 20, 1921 4 Sheets-Sheet 3

Fig. 6.

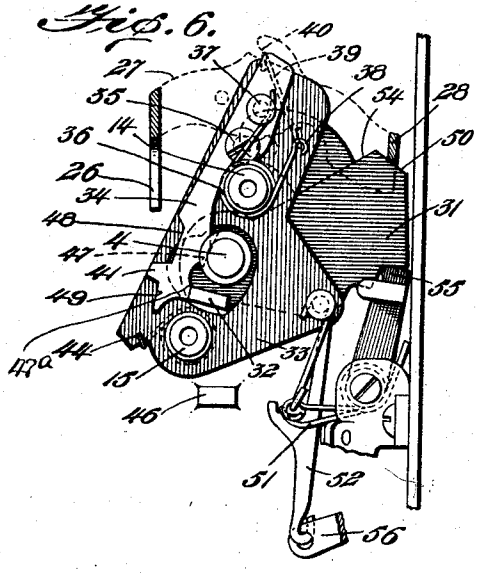


Fig. 7.

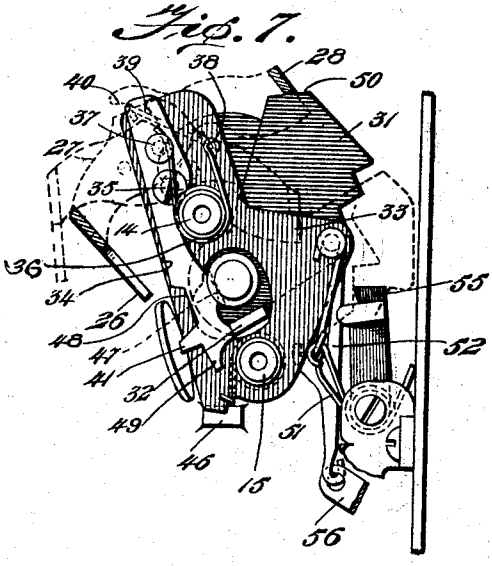


Fig. 8.

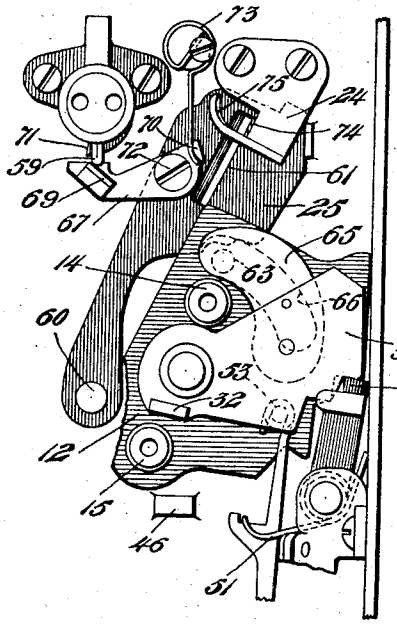


Fig. 13.

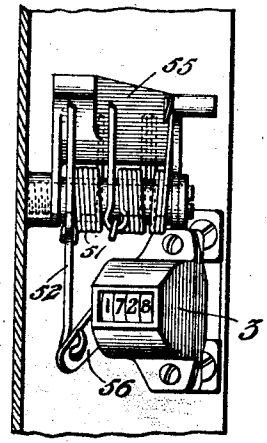
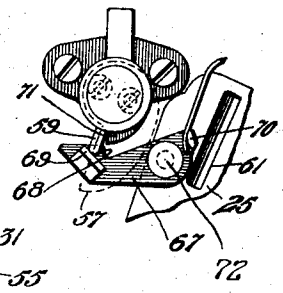


Fig. 14.



Inventor

Frank J. Rowse

By Edwin C. Smith Attorney

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F. J. ROWSE

COIN CONTROLLED LOCKING MECHANISM

Filed May 20, 1921 4 Sheets-Sheet 4

Fig. 9.

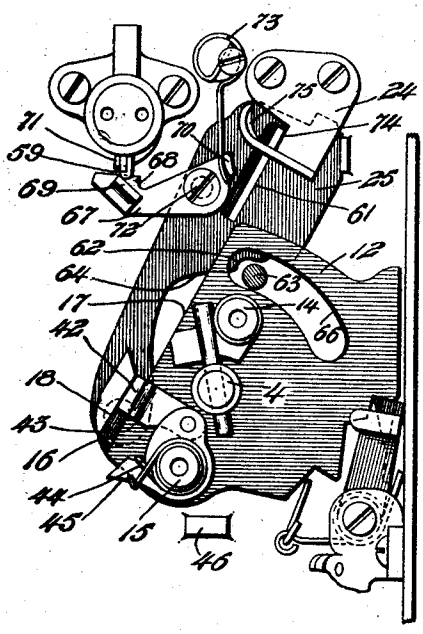


Fig. 11.

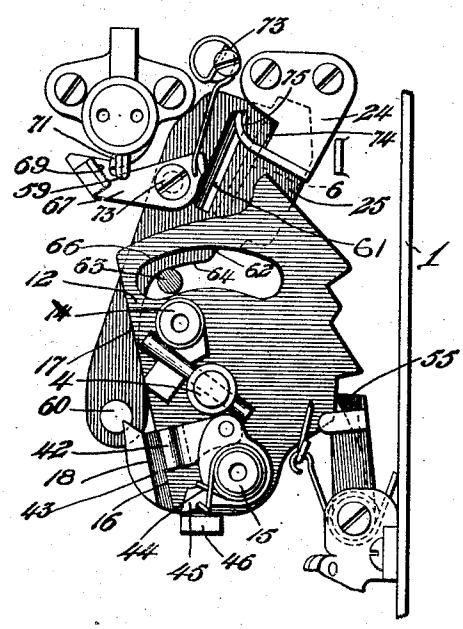


Fig. 10.

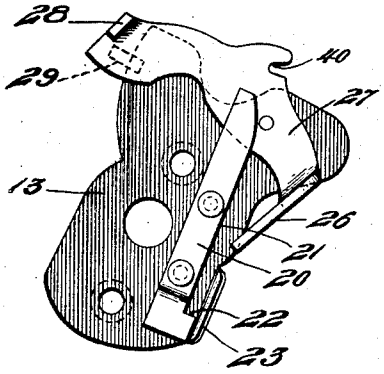
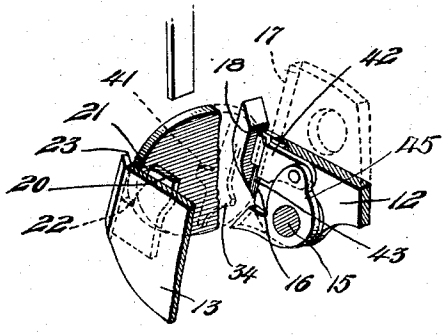


Fig. 12.



Inventor

Frank J. Rowse

By Edwin C. Smith.

Attorney

Patented Jan. 5, 1926. 1,568,769

UNITED STATES PATENT OFFICE.

FRANK J. ROWSE, OF PAWTUCKET, RHODE ISLAND.

COIN-CONTROLLED LOCKING MECHANISM.

Application filed May 20, 1921. Serial No. 471,172.

To all whom it may concern:

Be it known that I, FRANK J. ROWSE, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Coin-Controlled Locking Mechanism, of which the following is a specification.

My invention relates to improvements in coin-controlled locking mechanism of the general type disclosed in Letters Patent of the United States, No. 1,043,033, granted to me on October 29, 1912, comprising a bolt and its keeper, a coin control for the bolt, a key control for the bolt operatively independent of the coin control, a shutter for preventing the insertion of a coin while the thing or service controlled by the lock is in use, and a counter for recording the number of coins that have operatingly passed through the coin control; the objects of my invention are to simplify the construction and assembling of the various components, to render the counter accessible only to authorized persons, and to control the shutter by both the coin control and the key control so that when the locking mechanism has once been worked through the agency of a coin, it cannot again be worked until after the shutter has been reset by the attendant. This is particularly desirable in the case of "pay toilets" which are to be cleaned and re-supplied with toilet articles after each occupancy and before a new patron uses the apartment.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which,

Figures 1 and 2, are front, and plan elevations respectively of my device shown mounted on a door, a fragmentary portion only of the latter being shown.

Fig. 3, is a vertical sectional elevation taken on the line 3—3, Fig. 4.

Fig. 4, is rear elevation of the main body portion of the device, showing the various elements of the coin control mechanism in their normal or inoperative positions.

Fig. 5, is a face view of the back plate, which serves to removably secure the entire device to a door, showing in detail the locking bolt and means for operating same by the inner handle, independently of the coin control.

Fig. 6, is a fragmentary detail view showing the cam plate 31, the fixed plate 33— and co-acting parts in their inoperative position.

Fig. 7, is a view similar to Fig. 6, showing the position of the several parts at the moment of discharging the coin therefrom.

Fig. 8, is a fragmentary detail view, showing the side plate 12, cam plate 31— the shutter 25— and co-acting parts in their inoperative positions.

Fig. 9, is a fragmentary detail view, showing the side plate 12— and the shutter 25— in their inoperative position.

Fig. 10, is a detail view, of the side plate 13, showing the coin guide strip 20— and the bolt retracting element 27— mounted thereon.

Fig. 11, is a detail view similar to Fig. 9, showing the position of the several parts at the moment of discharging the coin therefrom.

Fig. 12, is a detail view, showing the manner in which the coin is retained in the coin carrier until proper moment of discharge therefrom.

Fig. 13, is a detail view, showing the return pawl 55, counter 3— and the several tension springs employed.

Fig. 14, is a detail view, showing the manner of releasing and resetting the shutter by use of the attendant's key.

Similar characters refer to similar parts throughout the several views. For conciseness and clarity of expression the following terminology will be employed. The subject of the invention will be termed a coin lock. Placed coin will define the proper coin for working the coin control, seated in operative position in the coin carrier. Coin control will define the group of mechanism by which retraction of the bolt is secured through reaction of a placed coin. Coin carrier will define the composite member in which the placed coin is seated for the purpose of reacting upon the bolt and coordinated parts. Coin width expresses a width between elements substantially identical with the coin diameter but permitting free movement of the coin. The shutter for the

coin slot will be described as closed when covering the coin slot, and open when uncovering the coin slot. Key control will define the device whereby the lock bolt is retracted by use of a key independently of the coin control, to admit an attendant or other authorized person. Washer means any spurious article inserted to work the lock in lieu of a coin such as a washer, having a central opening.

Referring to Figures 1, 2 and 3, my coin lock comprises, in a case 1, the bolt 2, the "key control" and the "coin control," the counter 3 for recording the number of coins deposited, and the various connections which coordinate these associated groups in one unitary mechanism. The lower portion of the case is a depository for coins to which access is provided by any suitable means. The operating spindle or shaft 4 projects through the front of the case, carrying the entrance handle 5. In the front of the case are a coin slot 6 through which the coin is placed in the "coin control," and the scutcheon 7 of the "key control," by which the attendant operates the coin lock independently of the coin control. The case 1 is open at the back and is formed to fit over a back plate 8 which is secured to the door to be locked. Through the door and back plate a spindle 9 extends, to one end of which the exit handle 10 is secured, and on the other end of which there is the disk 11 having the function of operating the lock bolt 2 from the exit handle. Turning the exit handle presses the projection 80 of the disk 11 against the lug 81 of the bolt 2, retracting the latter.

Upon the shaft 4 (Fig. 9) there is secured a plate 12, being one of the two side plates of the coin carrier. The other plate 13 is secured to the plate 12 by two spacing posts 14 and 15, which maintain the plates at a fixed distance apart. The two plates 12 and 13 are so formed and related as to provide a coin seat. In the lower portion of the plate 12 a channel is cut, rectangular of form and of a width corresponding to coin thickness. The wall 16 of the channel, corresponds and alines with the edge 17 of the plate 12 and serves to support and guide the coin. The wall 18 constitutes a retaining ledge which engages the placed coin with restraining effect. The coin seat or stop is formed on the plate 13— preferably by the attached strip 20— whose upper edge 21— supports and guides the coin, as do the edges 16 and 17 of the plate 12. A shoulder 22— on the strip 20— forms the coin stop or seat by reducing the space between plates 12 and 13 to a distance less than the diameter of the operating coin, and by projecting into the path of and contacting said operating coin, at a point just below the horizontal center thereof. The portion 23 of the plate 13 is bent inward toward the plate 12, to constitute a retaining ledge corresponding to the retaining ledge 18, but differing in that it is inclined to the face of the plate 13 and to the face of the coin. When a coin is inserted in the coin slot 6, it is guided by a guard 24 into the space between the plate 13 and the shutter 25 which lies close to the plate 12 and between the plate 12 and the front of the case. The coin slides down the edge 17 of the plate 12 and the top 21 of the ledge or strip 20 into the coin seat where it is stopped by the shoulder 22. In its way from the coin slot to the coin seat, the coin passes under the finger 26 of the element 27, which finger acts to guide the coin.

The element 27 is mounted on the plate 13, swinging on a suitable stud or bearing. The portion to the opposite side of the stud is provided or formed with two projectures, one 28 extending inwardly toward the interior of the coin carrier; the other 29 extending outwardly into a plane where it will if properly guided, engage the bolt 2 by the angular projection 30.

To control the element 27, a cam plate 31 is mounted on the shaft 4, next adjacent the side plate 12 of the coin carrier, and free on the shaft so that movement of the shaft will not cause movement of the cam plate, except through the reaction of a placed coin as will be explained. On the cam plate, near the shaft, 4, is a projection 32 which extends away from the plate 12, and sufficiently to extend substantially beyond a fixed plate 33 next adjacent the cam plate. The plate 33 is fixed with relation to the coin carrier and the shaft 4, being mounted on the spacing posts 14 and 15 which have shoulders on which the plate is seated. Separating collars between the side plate 13 and fixed plate 33 hold the latter to the shoulders of the posts. In the plate 33 is a clearance opening to permit oscillation of the plate 33 without contact with the cam plate projection 32 which extends through and beyond the plate 33. Mounted on the plate 33 is a coin presser lever 34 pivoted at 35, its working arm resting on the projection 32 of the cam plate. This engagement is maintained by a spring 36 mounted on the spacing post 14 with one arm pressing on a projection 37 of the lever 34 and the other arm, hooked at 38, engaging a link 39 (Fig. 6 and Fig. 7) which in turn engages a hooked or equivalent formation 40 on the element 27.

The working end of the coin presser lever 34 is cut away leaving a projection 41 against which a placed coin bears, reacting against the lever to press the latter upon the cam plate projection 32 to turn the

cam plate with the coin carrier and with its shaft.

The coin is retained in its seat in the coin carrier to secure such reaction by a slide 42, the extremity of which works in a channel cut transversely of the coin channel in the plate 12 and entering it. The width of coin seat as formed in the coin carrier, which is to say, the distance between the bottom 43 of the coin channel in the plate 12 (Fig. 12) and the plate 13 exceeds coin width; also, the distance from the channel bottom 43 in the plate 12 to the nearest portion of the inclined ledge 23 likewise exceeds coin width. The distance between the retaining ledges 18 and 23 is less than coin width, so that a coin cannot escape them unless it has sufficient lateral movement to first escape one of the ledges. The extent of inturn of the inclined ledge 23 is such that a coin which is held to the plate 13 cannot escape from the coin seat even under pressure of the resistance of the cam plate to movement. By interposing the slide 42 between the bottom 43 of the coin channel in the plate 12 and the edge of the coin, the latter is thus retained in its seat, and at the predetermined point in the oscillation of the coin carrier, is discharged by withdrawal of the slide 42. The slide 42 is interposed between the walls of the coin seat by the spring 44, (Fig. 9) which is mounted on the spacing post 15 acting on the lever 45 and anchored on the plate 33. On the same post is mounted the bell crank lever 45 one arm of which engages the slide 42 while the other arm extends outward, impelled by the spring 44, beyond the plate 12 which carries it. On the case 1 is a projection 46, so located as to encounter the lever 45 when moved sufficiently by oscillation of the coin carrier. Continued movement of the coin carrier after the lever 45 has encountered the projection 46 causes movement of the lever on the plate 12 and with it, withdrawal of the slide 42 from between the coin edge and the bottom 43 of the coin channel. Pressed outward from the coin seat by the projection 41 on the coin presser lever 34, the opposite portion of the coin edge is forced against the inclined retaining ledge 23 shifting the coin laterally in the widened coin seat until the coin is forced past the retaining ledge and ejected. (Fig. 9 and Fig. 11.)

In case a washer were inserted in lieu of a coin, the projection 41 would enter the hole of the washer. As the coin carrier is turned, there will be no pressure of the coin presser lever 34 on the cam plate projection 32; hence the cam plate 31 is not turned with the ensuing actuation described, but the washer is ejected by the following described action. The coin pressure lever 34 has a cam face 47. Between this projection and the working face 47ª of the same member 34, which rests upon the cam plate projection 32 is an indentation or clearance. As the coin carrier is turned, the projection 32 enters this indentation which is of such contour that no radially outward movement of the lever 34 with respect to the shaft 4 ensues. The washer is thus retained in the coin carrier until the proper time for ejectment at which junction the cam face 47 encounters the projector 32 causing the lever 34 to move radially outward from the shaft 4, until the depressed surfaces 48 and 49 encounter the washer and eject it upon its release from the coin carrier through withdrawal of the slide 42, just as in the case of a good coin.

The cam plate 31 has a cam edge 50 upon which the projection 28 of the member 27 usually rests. If, under coin control, the coin carrier and cam plate turn together, the projection 28 remains on the cam edge 50, and the projection 29 remains in position to engage the bolt 2 by its angular projection 30 (Fig. 6). In case there is no coin placed in the carrier when the latter is turned, then the cam plate remains stationary, held by a spring 51 acting through a link 52 anchored to a projection 53 of the cam plate; the projection 28, impelled by the spring 36, through the link 39, acting on the element 27, follows the cam edge 50, depressing the projection 29 so it cannot engage the bolt 2, as shown by broken lines in Fig. 7.

Both the coin carrier and the cam plate are restrained by a pawl 55 from returning to initial position after having been coin operated, until after the inside or exit handle 9 has been worked. The means employed for this purpose, and the relation of those means to the present invention are so closely counterpart of what is disclosed in my U. S. Patent No. 1,043,033, as to require no further description here.

The link 52, through which the spring 51 returns the cam plate 31 to initial position extends below the point of spring engagement to the working arm 56 of the counter 3. Therefore, whenever the cam plate 31 is coin operated, the counter records the event.

The "key control" is a suitable lock, preferably of cylinder type equipped with an arm 57 to retract the bolt 2 by engagement with the shoulder 58, and a cam lug 59 to control the opening of the shutter 25. The latter swings on a stud or bearing 60 and has a slot or opening 61 normally registering with the coin slot 6 in the case. The edge of the shutter next to the coin carrier is formed at 62 as a cam, with which a follower 63 engages to move the shutter. At 64, the cam edge of the shutter is cleared away so that when the shutter has been moved its prescribed distance to close it,

further movement of the follower may be permitted, without any consequent movement of the shutter.

The follower 63 is a pin or roll connected with the cam plate 31 by an arm 65. The side plate 12 of the coin carrier is made with an opening 66 preferably of arcuate form, through which opening the follower 63 extends from the arm 65 to the cam edge 62.

Attached to the shutter is a latch 67 having a catch formation 68, a release portion 69 and a lug 70. A fixed detent projection 71 is established in any suitable way, near the catch portion of the latch and near the cam lug of the "key control." The detent is here shown as part of the casing of the "key control" secured thereby to the lock case 1. When the shutter 25 is open the release portion 69 of the shutter lies against the cam lug 59 of the key control, with the catch 68 disengaged from the detent 71. The latch is movable on a pin or fulcrum 72 and a spring 73 suitably anchored bears upon the lug 70 acting with dual effect, to hold the latch toward the detent 71 and the cam lug 59, and also to hold the shutter open. When the shutter is closed by action of the cam plate 31 through the follower 63, the catch 68— engages the detent 71, and the release portion 69 is projected into the path of oscillation of the cam lug 59 as will be seen by reference to Fig. 11. When the "key control" is operated to retract the bolt 2 through action thereon by the arm 57, the latch 67 is depressed by the cam lug 59 and the latch spring 73 opens the shutter 25.

Overhanging the top of the shutter is the coin guard 24 previously referred to. This is formed with a supporting edge 74 which receives the coin when it is inserted through the slots 6 and 61, preventing the coin from leaving its proper course, and directing it upon the supporting edges 17 and 21 of the coin carrier. Opposite the coin slots, the guard is formed as a hook with an inclined hooking edge 75, to receive the coin should it be tilted in entering the coin slot, and further guide it to its proper position and course.

The operation of my coin lock is as follows. A coin is placed by insertion through the slot 6 of the case. It passes the opening 61 of the shutter 25 and encounters the guard 24 by which it is directed in its proper course to the coin seat in the coin carrier, passes en route under the guiding finger 26. Entering the coin seat of the carrier, the coin interposes itself between the slide 42 and the plate 13, being stopped at and held in the right position by the shoulder 22 on the plate 13. Turning of the coin carrier by the entrance handle 5 presses the coin, which is held to its seat by the retaining ledges 18 and 23, against the projection 41 of the coin presser lever 34, thereby acting upon the cam plate projection 32 to turn the cam plate. The cam plate in turning maintains the element 27 in position for its projection 28 to encounter and work the bolt, and it also engages the follower 63 with the shutter to close it. The shutter in closing is locked shut by the latch 67 as explained.

Continued turning of the coin carrier brings the lever 45 in contact with the obstruction 46 turning the lever 45 on its fulcrum and withdrawing the slide 42, leaving the coin free to shift which it does under reaction of the inclined ledge 23 to pressure of the cam plate return spring 51 transmitted through the coin presser lever 34. Having moved laterally a sufficient distance to free itself of the inclined ledge 23, the coin is released and is ejected by the coin presser lever 34. The cam plate being now released from the coin carrier, returns under impulse of its return spring until restrained by the pawl 55. In returning the cam edge 50 recedes from the projection 28 permitting it to follow the cam edge 54, when otherwise free to do so. But, as in the coin lock of my U. S. Patent 1,043,033, the projection 28 is trapped by the angular projection 30 of the bolt 2 so that until the bolt is retracted independently of the coin control, as by its keeper in closing the door, the bolt can be retracted any number of times by working the handle 5. When the projection 28 is thus released it falls between the cam plate 31 and the fixed plate 33 upon the cam edge 54. This raises the coin guide or the finger 26 throwing the coin channel wide open and permitting any contraband material to drop out.

In the case of a pay toilet, the customer uses the exit handle 9 to open the door, working the bolt independently of the coin control through the disk 11, which also encounters the pawl 55 withdrawing it from the coin control and permitting the latter to return to initial position to be coin operated as described in my U. S. Patent 1,043,033, excepting, that the shutter is not opened to permit insertion of a coin. Before the toilet can be used by another customer it is to be cleaned by the attendant, who in order to gain access uses his key to open, the door. The action of, the key also serves to release and permit the shutter 25— to return to its initial position with the coin slot open.

What I claim is:—

1. In a coin lock, the combination with a coin carrier and an oscillatory shaft therefor, of a plate fixed with relation to the coin carrier and shaft and located between the sides of the carrier, a cam plate free upon the shaft, and means for locking the cam plate to the fixed plate by a placed coin, the

coin being interposed between said locking means and the coin carrier and acting directly to propel the cam plate when the coin carrier is moved.

2. In a coin lock, the combination with a coin carrier and an oscillatory shaft therefor, of a plate within the coin carrier fixed with relation thereto, a free cam plate within the coin carrier and adjacent the fixed plate, and means to lock the fixed plate to the cam plate thru a coin interposed between said means and coin carrier, the coin carrier acting upon the cam plate with propulsive pressure exerted thru said coin.

3. In a coin control for a coin lock, the combination with a coin carrier formed with a seat having side walls fixedly spaced and guide surfaces leading to said seat, of a slide interposed between the side walls to narrow the seat, and means to withdraw the slide to restore the seat to full width.

4. In a coin control for a coin lock, the combination with a coin carrier formed with a coin seat having fixedly spaced side walls and guides leading to said seat, of a slide interposed between one of said side walls and the coin to prevent lateral movement of the coin in its seat, and means mounted upon the coin carrier to withdraw the slide to permit lateral movement of said coin.

5. In a coin control for a coin lock, the combination with a coin carrier having a seat formed with fixedly spaced side walls and an inclined retaining ledge, and means to press the coin against said ledge, of a slide to hold the coin in retention by the inclined ledge and means to withdraw the slide to free the coin.

6. In a coin control for a coin lock, the combination with a coin carrier having a seat with fixedly spaced sides, a retaining ledge parallel with the face of the coin, a retaining ledge inclined to the face of the coin and an ejecting means that presses the coin against said ledges, by its face against the parallel ledge and by an edge against the inclined ledge, of a slide to hold the coin away from one of the sides and against the inclined ledge, and means to withdraw the slide to release the coin.

7. In a coin lock, the combination with a coin carrier and an oscillatory shaft therefor, of a cam plate loosely mounted upon the shaft, a plate fixedly connected with the shaft, and a movable arm carried by the fixed plate and normally against the cam plate and held against it by a placed coin within the coin carrier, thru which coin the coin carrier exerts propulsive action to move the cam plate.

8. In a coin lock, the combination with a coin carrier and a shaft to move the carrier, of a plate loosely mounted on the shaft and having a projection, a plate fixedly connected with the shaft and formed to permit the projection of the loose plate to extend beyond the fixed plate, and an arm, hinged upon the fixed plate and bearing upon the projection of the movable plate, reacted upon by a coin placed in the carrier to move the loose plate with movement of the carrier.

9. In a coin lock, the combination with a coin carrier, coin retaining means mounted on the coin carrier, a shaft to move the coin carrier and its coin retaining means and a plate fixedly connected with the shaft and coin carrier, of a cam plate loosely mounted on the shaft and a movable arm mounted on the fixed plate and normally against the cam plate but removable if unrestrained, the movable arm being restrained by a coin placed in the coin carrier and constrained by the propulsive action of the coin to move the cam plate with movement of the coin carrier.

10. In a coin control for a coin lock, the combination with the side plates of a coin carrier and spacing posts to join the side plates at fixed distance, of a shaft for turning the carrier, a cam plate within the carrier mounted freely on the shaft, a second plate within the carrier secured to the spacing posts, and means reacted upon by a coin placed in the carrier to operatively connect the fixed plate with the cam plate to turn the latter with the carrier.

11. In a coin control for a coin lock, the combination with a coin carrier, of a slide working in a groove thereof and interposed between the edge of the coin and one side of the carrier, a lever to withdraw the coin from between the coin and the carrier side, and means to move the lever.

12. In a coin control for a coin lock, the combination with a coin carrier having a coin seat wider than coin width, a slide insertable between the sides of the seat to contract the seat to coin width, a spring to maintain the slide in position to contract the seat width, and means to withdraw the slide to extend the seat width.

13. In a coin control for a coin lock, the combination with a coin carrier formed with a coin seat and ledges overhanging said seat the distance between the ledges being fixedly less than coin width, of a member to maintain a placed coin beneath the ledges to prevent it from leaving the seat means to withdraw the member, permitting the coin lateral movement so it can escape one restraining ledge and leave the seat, and ejecting means pressing against the coin to impart to it such lateral movement and further impel it to escape said restraining ledge.

14. In a coin control for a coin lock, the combination with a coin carrier and a shaft to oscillate the carrier, of a slide mounted between the sides of the carrier, a lever to work the slide oscillatable with the mem-

bers aforesaid and an obstruction projecting into the path of oscillation of the lever to encounter it and through it react upon and move the slide.

15. In a coin control for a coin lock, the combination with an oscillatory shaft, a plate loose upon the shaft, and means reacted upon by a placed coin to move the plate with the shaft, of a counter, a link connecting the plate with the counter and a spring acting upon the link to concurrently control both plate and counter when the plate is moved by a placed coin.

16. In a coin lock, the combination with its bolt, a coin control to retract the bolt, and a key control to retract the bolt and a case containing these elements having a coin slot leading to the coin control, of a shutter to close the coin slot, means worked by the coin control to engage and move the shutter to close the slot, a detent, a latch on the shutter to engage the detent and hold the shutter closed, and means actuated by the key control to release the latch to open the shutter.

17. In a coin lock, the combination with a bolt, a coin control and a key control therefor, and a lock case with coin slot leading to the coin control, of a shutter to close the slot, a latch mounted on the shutter, a spring acting upon the latch both to maintain it in engaging position and to maintain the shutter open, a detent, means worked by the coin control to close the shutter, engaging the latch with the detent to hold the shutter closed, and means worked by the key control to disengage the latch permitting the shutter to open under action of the spring.

18. In a coin lock, the combination with a bolt, a key control therefor, a lock case with a coin slot and a shutter to cover the slot, of a movable coin carrier to which the coin slot leads a shaft to oscillate the carrier, a cam plate free on the shaft, connections between the shutter and the cam plate, means to move the cam plate with the carrier through reaction of a placed coin and with it the shutter to close the coin slot, a latch and a detent coacting to hold the shutter closed, and means to release the shutter to uncover the slot worked by the key control.

19. In a coin lock, the combination with a case, having a coin slot, a shutter for the slot and a key control for the bolt, of a coin carrier comprising two spaced plates one of which has an arcuate slot, and posts for spacing the plates, a plate free on the shaft and a projection on the plate extending through the arcuate slot to contact with the shutter, means reacted upon by a placed coin to move the free plate and through action of its projection upon the edge of the shutter to close the latter.

20. In a coin lock, the combination with its bolt and an oscillatory shaft, of a plate movable with the shaft, an element constituting both a coin guide and a bolt retractor mounted on said plate, and means operated by reaction of a placed coin, directed to position by the coin guiding element, to cause the latter to engage and to throw the bolt.

21. In a coin lock, the combination with its bolt, an oscillatory shaft and a coin carrier, a plate fixedly connected with the shaft, an element constituting both a coin guide and bolt retractor mounted on the fixed plate, a cam plate rotatively free upon the shaft and engaged by said element which, following the edge of the cam plate avoids the bolt failing to withdraw it, and means operated by reaction of a placed coin for locking the fixed plate and cam plate to maintain said element in position to engage the bolt.

22. In a coin control for a coin lock, the combination with a bolt, a coin carrier, and means to release a placed coin from the carrier at a definite station in the movement of the carrier, of means for moving the carrier by a placed coin including a cam plate normally disconnected from the carrier, but controlling the bolt, of a lever on which a placed coin reacts to move the cam plate which lever has a projection to contact with a coin and to penetrate a washer, depressed surfaces adjacent the projection and a cam formation co-ordinated in action with the coin releasing means to eject a washer without operating the bolt, and connections to move the lever with the coin carrier.

23. In a coin lock, the combination with a bolt, a coin controlled admittance means, a key controlled admittance means, an exit means, a case for the lock and a slot in the case leading to the coin control, of a shutter for the slot free and independent of the exit means, means to move the shutter to close the slot through action of the coin control, and means to uncover the slot through action of the key control.

24. In a coin lock, the combination with a case having a coin slot, a shutter to close the slot and a bolt, of a coin control to both work the bolt and close the shutter, a key control to both work the bolt and cause the shutter to open, and an exit handle to work only the bolt.

25. In a coin lock, the combination with a case having a coin slot, a shutter to close the slot and a bolt, of a coin control to both work the bolt and close the shutter, a key controlled device to cause the shutter to open and an exit handle to work the bolt but not the shutter.

26. In a coin lock, the combination with a coin carrier and a shaft to move the car-

rier, of a plate loosely mounted on the shaft and having a projection, a plate fixedly connected with the shaft and formed to permit the projection of the loose plate to extend through and beyond the fixed plate, and an arm hinged upon the fixed plate formed with a working face 47^a through engagement of which with the projection of the loose plate the latter is moved by reaction of a good coin, and formed with a came face 47 through engagement of which with the projection of the loose plate the said arm is moved to expel a perforated washer without moving the loose plate.

In testimony whereof I affix my signature.

FRANK J. ROWSE.