

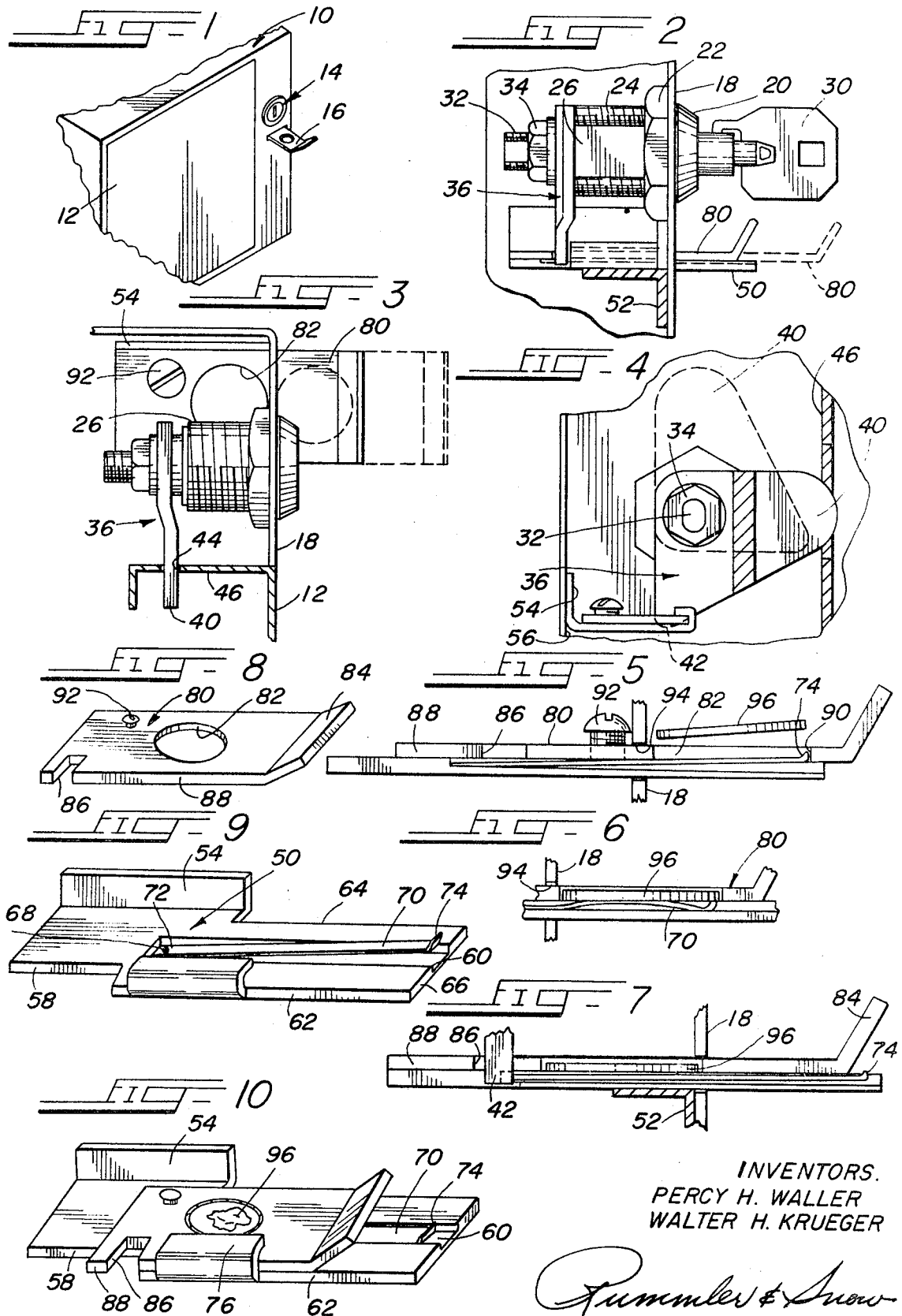
July 7, 1970

P. H. WALLER ET AL

3,519,114

COIN-OPERATED LOCK

Filed June 18, 1968



INVENTORS.
PERCY H. WALLER
WALTER H. KRUEGER

BY *Rummler & Snow*
77745

1

3,519,114

COIN-OPERATED LOCK

Percy H. Waller, Harbert, Mich., and Walter H. Krueger,
5228 N. Elston Ave., Chicago, Ill. 60630; said Waller
assignor to said Krueger

Filed June 18, 1968, Ser. No. 737,946

Int. Cl. G07f 5/26

U.S. Cl. 194—54

2 Claims

ABSTRACT OF THE DISCLOSURE

The disclosure describes a coin-operated lock in which the key is not removable except in fully open or fully closed positions of the lock pawl and further characterized by a coin-operated spring in the coin slot requiring insertion of a coin for release of the pawl from its unlocked position, a coin slide which retains the coin until and after the lock is turned, wherein the coin slide is also locked with the turning of the key and the coin is returned to the user when the key is inserted and the lock turned to unlocked position.

BACKGROUND OF THE INVENTION

Coin-operated locks are old in the art. Generally, such locks are adapted to retain the key in unlocked position and release the key only in locked position. Locks of this type are applied to metal cubicle lockers for use by the public. The locker doors remain open and the key is retained in the lock as a signal that the locker is not in use. The user places his articles in the locker, closes the door, inserts the required coin in the coin slot and pushes the coin slide, whereby the coin falls into a receptacle inside the locker framework and the pawl is released so that it can be turned to lock position by the key. The user then turns the key about 180° and the pawl locks the locker door and the key can now be removed. To open the locker, it is only necessary to again insert the key back to its original position at which time the pawl releases the locker door and the key is retained. The coin comprises the locker rental and of course assurance that the key is returned.

In many establishments such as private clubs, the extraction of a rental fee is not desirable, yet assurance that the key is returned is essential to the proper operation of the locker room system. Also it is desirable that the coin-operated slide be essentially theft proof and that the coin be retained for proper return to the use when the key is again used. To these ends the instant invention is directed by the provision of means engaged by the coin slot and locking the coin-slotted plate in its extended position but being adapted to be released by the placement of a coin in the coin slot. Also, the invention contemplates that the coin slot operate as a retainer for the coin when the locker is in use and the key removed, in combination with the means to limit the reciprocation of the coin-slotted plate and means to engage and lock said plate, such as the locking pawl, simultaneously with the locking of the lock or the locker door.

SUMMARY OF THE INVENTION

The invention concerns a coin-operated lock, having means to retain the key in unlocked position and release same in locked position, further characterized by coin slide means including a fixed plate which slidably supports a coin-slotted plate thereover for limited reciprocal movement of the coin-slotted plate, means engaged by the coin slot to lock the coin-slotted plate in the extended position, but being released by the insertion of a coin in the coin slot and means cooperating with the coin slotted

2

plate and engaged by the lock to hold the coin-slotted plate in its retracted position when the lock is in the locked position only. In one embodiment the coin-slotted plate has a recess on its inner end which recess is engaged by the locking pawl simultaneous with the locking of the locker door. The fixed plate has an elongated recess on its top surface open to the under side of the coin-slotted plate. This recess houses an elongated biasing means in the form of a leaf spring, the free end of which is up-turned as a tab which is partly hidden and acts as a lock for the coin-slotted plate. Other embodiments will be described and illustrated.

THE DESCRIPTION OF THE DRAWINGS

An embodiment of this invention is illustrated in a non-limiting manner by the drawings in which:

FIG. 1 is a fragmentary front perspective view of a locker showing the locker door, the lock and the coin slide;

FIG. 2 is a fragmentary side view showing the key in place in the lock, the principal parts of the lock mechanism and two positions of the sliding coin-slotted plate;

FIG. 3 is a top view, partly in section of the embodiment shown in FIG. 1;

FIG. 4 is a fragmentary view of the back side of the lock showing two positions of the locking pawl;

FIG. 5 is a fragmentary view of the coin slide means in its locked position as a coin is being dropped into the coin slot;

FIG. 6 is a fragmentary view of the coin slide means in its unlocked position after a coin has been placed in the coin slot and before the slide means has been pushed inwardly;

FIG. 7 is a fragmentary view showing the position of the coin slide means after the slide has been pushed in and the lock turned to the locked position of both the locker door and the coin slide;

FIG. 8 is an isometric view of the fixed plate forming a part of the coin slide means; and

FIG. 9 is an isometric view of the coin-slotted plate forming a part of the coin slide means; and

FIG. 10 is a view of the assembled coin slide means with the parts in the retracted or locked position.

THE PREFERRED EMBODIMENT

Referring to the drawings, the device of this invention is shown in detail to illustrate one embodiment as applied to a walled receptacle such as the locker 10 (FIG. 1) having a door 12 controlled by the lock 14 and the coin slide means 16. The lock 14 is shown immediately above the coin slide means, it being understood that the coin slide means 16 can occupy any radial position in relation to the lock and with a reasonable spacing.

The locker 10 has a front panel 18 (FIG. 2) through which the lock 14 is attached and held by means of the outer flange 20 and the lock nut 22 operating on the threads 24 of the lock cylinder 26. The key for the operation of the lock cylinder 26 is illustrated at 30. The cylinder 26 can be of any type having a rotatable shaft 32 operated by turning the key 30 to which is affixed, by means of the lock nut 34, for rotation therewith, a pawl 36. As shown in FIG. 4, the pawl 36 has two lobes or locking tips 40 and 42.

Referring to FIG. 3, the function of the lobe 40 is shown wherein, when the lock cylinder 26 has been turned to the locked position, the lobe 40 has passed into the slot 44 of the side flange 46 of the locker door 12, thus holding the door in locked position. The flange 46 is on the side of the door opposite the hinges, not illustrated. The unlocked position of the pawl 36 and the lobe 40, in relation to the door 12 and the slot 44 of the flange 46 is shown

3

by the broken lines in FIG. 4 and the locked position in relation to these parts is shown in full line.

Referring to FIGS. 2, 3 and 4 the coin slide means 16 is shown to comprise a lower fixed plate 50 which extends through the panel 18 and is supported by and affixed to the L-bracket 52 on the inner wall of the panel. Other means of support for the fixed plate 50 can be used to include the side flange 54 on the inner end which is attached to the side panel 56. The support means can be affixed by rivets, spot welding or the like. The use of bolts or screws is avoided to discourage theft.

The fixed plate 50 (see FIGS. 9 and 10), has an off-set 58 at the inner end and an elongated tapering slot 60 extending between the side edges 62 and 64. The slot 60 is slightly deeper at the end 66 of the outer end 66 of the plate 50 than it is at the inner end 68 where there is attached the biasing means or spring 70 by means of the spot weld 72. The free end of the spring 70 has an up-standing tab 74 for purposes to be described.

The side 62 of the plate 50 has a tab which is bent upwardly and inwardly to form a guide wall and overlapping flange 76, the inner end of which is spaced slightly from or flush with the off-set 58. FIG. 8 shows the coin-slotted plate 80 having the coin slot 82 at one end adjacent the upturned finger tab 84 and a slot 86 along the side 88 and located at the inner end thereof. The slot 86 is slightly wider than the thickness of the pawl lobe 42 to admit same in a locking position as will be described.

The flanges 54 and 76 on the fixed plate 50 form guide means for the slidable coin-slotted plate 80, in the assembled condition as shown in FIG. 10. With the key 30 in the lock 14 the coin-slotted plate 80 will be in the broken line position shown in FIG. 2. In this position, the leaf spring 70 is free to bias upwardly far enough to place the upturned tab 74 into the coin slot 82 where it impinges against the outer edge 90 (FIG. 5) and locks the plate 80 preventing its being pushed inwardly from the broken line position. The plate 80 is also provided with a stop member 92 in the form of a machine screw which is affixed to the top surface thereof and is normally positioned inside the front panel 18. The stop member 92 prevents the plate 80 from being withdrawn from the assembly. As supported by the bracket 52 the assembled coin slide means fits through the slot 94 in the panel 18 so that when released the coin slotted plate can be pushed inwardly, remaining axially aligned with the fixed plate 50.

To operate the device a coin 96 is placed in the coin-slot 82. This depresses the leaf spring 70 as shown in FIG. 6 so that the coin slotted plate and coin can be pushed inwardly to the position shown in FIGS. 7 and 10 wherein the slot 86 registers not only with the off-set 58 but also clears the flange 76 and is in radial alignment with the lobe 42 of the pawl 36. At any other position of the pawl 36 on lobe 42 on being turned from the broken line position of FIG. 4 to the full line position (FIG. 4) strikes the edge 88 on either side of the slot 86. The edge 88 is long enough to be in radial alignment with the lobe 42 when the coin-slotted plate 80 is in the position shown in FIG. 5. Once, however, the coin-slotted plate 80 is released by a coin 96 and pushed to the position shown in FIGS. 7 and 10, the pawl 36 can be turned to the locked position for both the coin slotted plate and the door 12. The coin is simultaneously placed partly under the flange 76 so that it is retained and can be retrieved by the user by insertion of the key and

4

unlocking the lock 14. The taper of the slot 60 allows sufficient freedom of motion of the spring 70 at its extended end so that the handle 84 can ride up over the tab 74 upon movement of the coin-slotted plate to the broken line position of FIG. 2.

It is apparent that a number of alterations can be made in the embodiment shown without departing from the invention. The biasing means 70 need not be a flat leaf spring and can be rod-like in shape. In this construction the slot 60 can be in the form shown or in the form of a groove large enough to accommodate the rod spring. Also the tab 74 can engage a separate indentation, other than the coin-slot 82 on the underside of the plate 80. The radial placement of the parts around the lock 14 can also be changed.

What is claimed is:

1. In a coin-operated key-actuated lock mounted on a wall member wherein the key is retained in unlocked position and released in locked position, the improvement comprising:

(a) coin slide means comprising a fixed plate slidably supporting a coin-slotted plate thereover;

(b) means to limit the reciprocation of said coin-slotted plate within an extended position with said coin slot exposed and a retracted position with said coin slot enclosed;

(c) an elongated slot in said fixed plate, on its top side open to the under side of said coin-slotted plate and open to said coin slot therein;

(d) one end of a leaf spring affixed within said slot at one end thereof and having its free end normally biased upwardly and abutting against the inner periphery of said coin slot in the extended position and adapted to be released by the placement of a coin in said coin slot and moved into said elongated slot and out of abutting relationship; and

(e) means on said coin-slotted plate engaged by said lock to hold said coin-slotted plate in the retracted position while said lock is in the locked position.

2. A coin-operated lock in accordance with claim 1 in which:

(f) said lock has a rotating pawl;

(g) said coin slide means extends through said wall member and is radially spaced from the axis of said rotatable pawl on the inner side of said wall member;

(h) said coin-slotted plate has a slot on the inner end;

(i) said pawl is adapted to be rotated by a key into said slot of said coin-slotted plate in the retracted position of said plate;

(j) a side flange is mounted on the inside surface of said wall member;

(k) said pawl of said lock has a lobe portion engageable with the slot in the side flange to be locked in said wall member; and

(l) a second lobe portion adapted to be engaged in said coin slide means simultaneously with the locking of said side flange.

References Cited

UNITED STATES PATENTS

1,998,602	4/1935	Anderson	194—1
2,948,379	8/1960	Hensley	194—92

SAMUEL F. COLEMAN, Primary Examiner