Aug. 9, 1960 R. K. HENSLEY, JR 2,948,379

KEY AND COIN COMBINATION LOCK

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Fig. 1

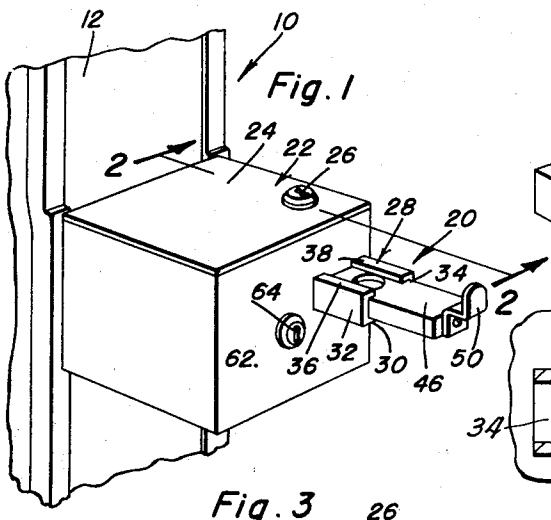


Fig. 10

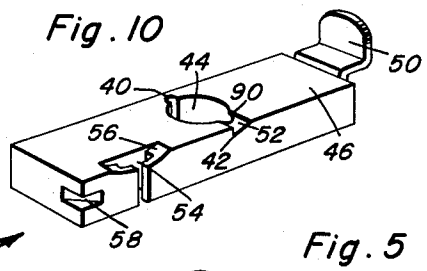


Fig. 5

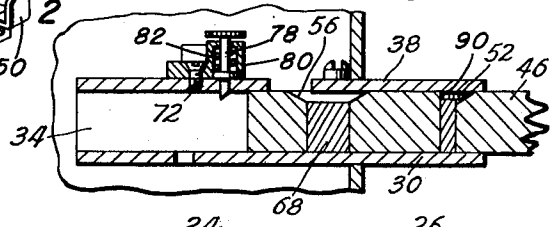
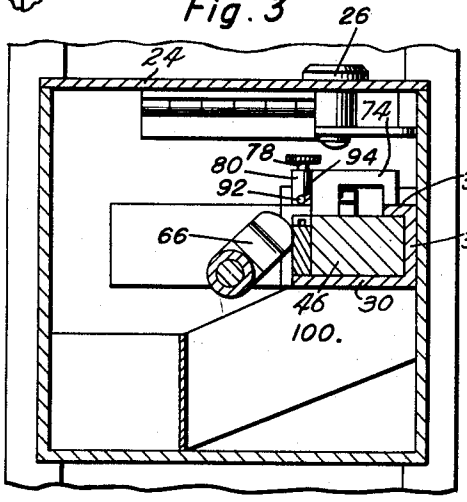


Fig. 3



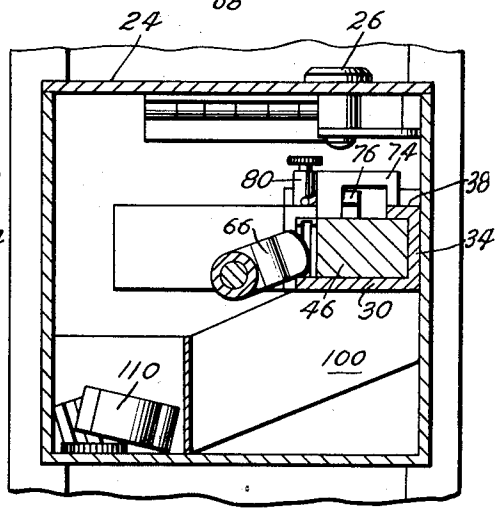


Fig. 9

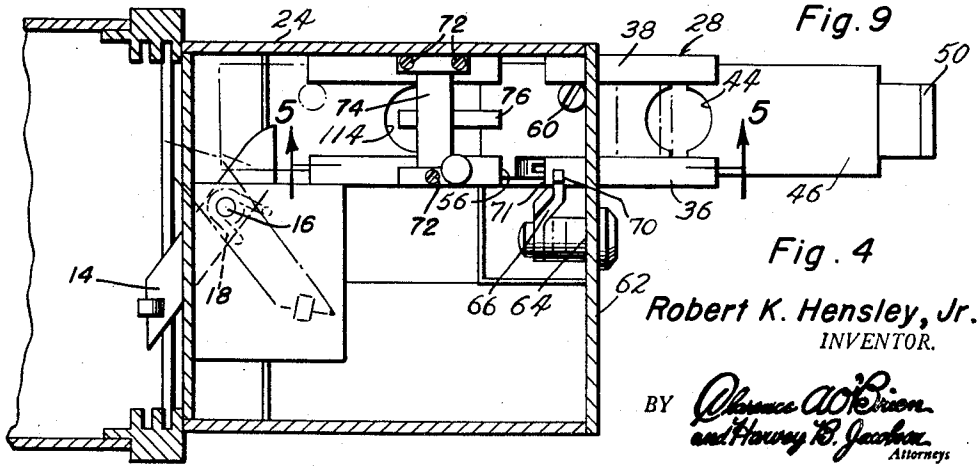


Fig. 4

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Fig. 2

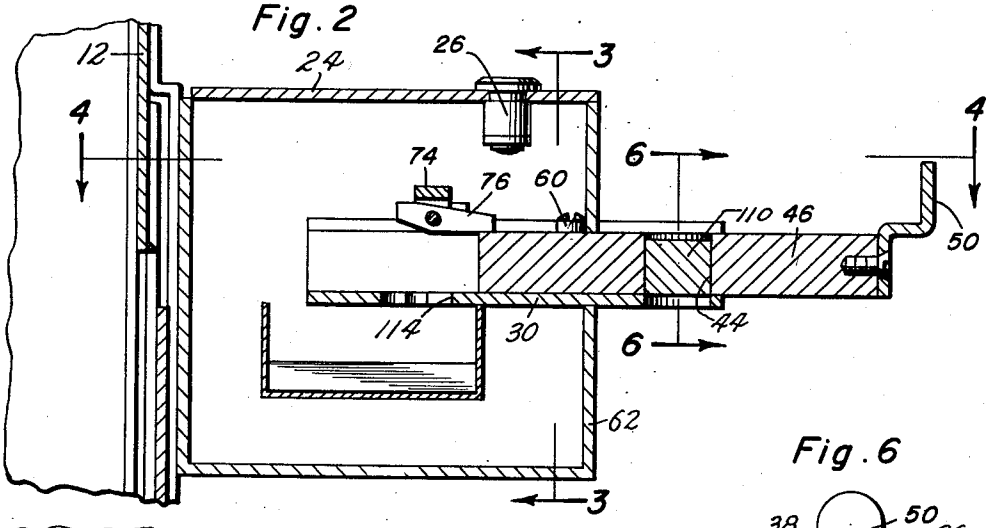


Fig. 6

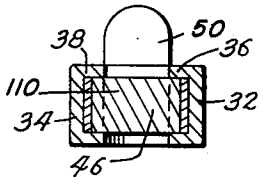


Fig. 7

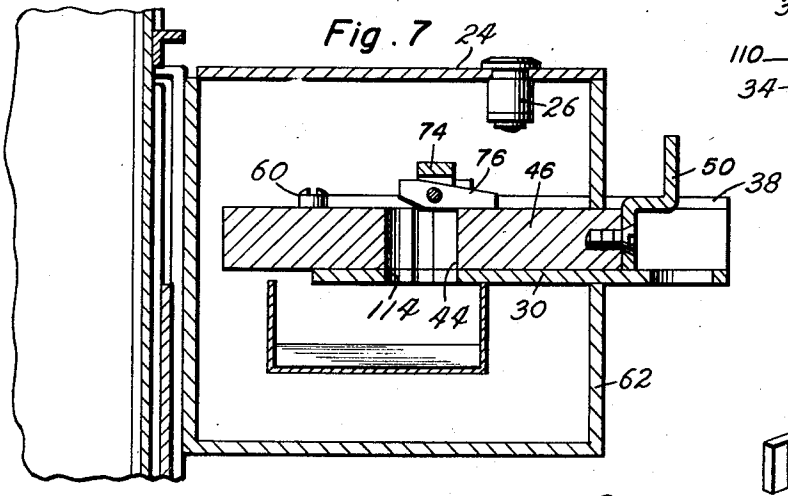


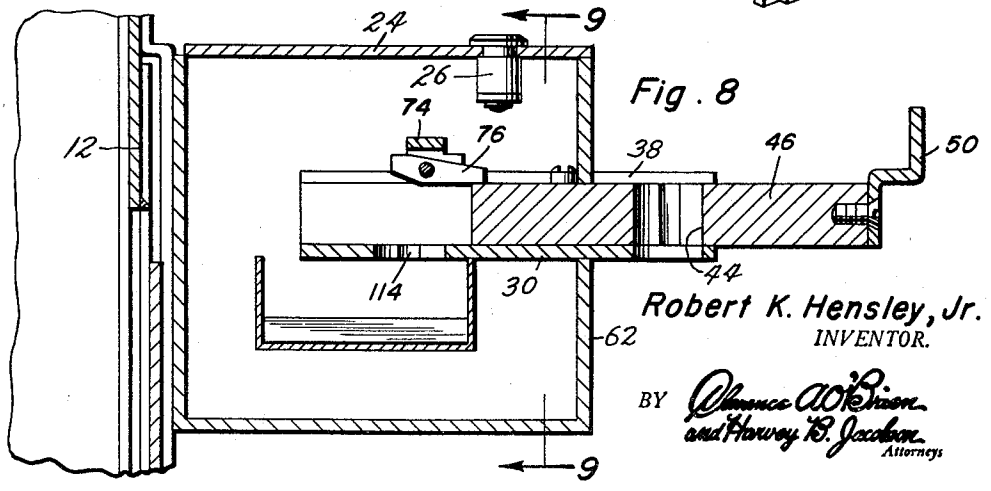
Fig. 11



Fig. 12



Fig. 8



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KEY AND COIN COMBINATION LOCK

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Filed Nov. 28, 1956, Ser. No. 624,886

6 Claims. (Cl. 194—92)

This invention relates to a key and coin or token combination lock.

The primary object of the present invention resides in the provision of a key and coin combination device for actuating a closing member, such as are used on lockers and the like whereby upon payment of an indicated amount, and with a person having possession of the required key, access into the interior of the locker through actuation of the closure member can be obtained.

Another object of the invention resides in the provision of an actuating device for a closure member in which the number of coins necessary to be inserted to open a locker can be easily controlled by utilization of removable slugs or the like which are held in position so as to be retained against unauthorized removal.

One of the advantages of this invention lies in the fact that the slide comprising one of the elements of the invention can be locked relative to the guide so as to prevent unauthorized attempted actuation of the mechanism.

Still another feature of the invention lies in the novel arrangement of a slide and channel-shaped guide having flanges overlying recesses for retaining slugs in position against unauthorized removal thereof so that the amount of coins necessary to actuate the mechanism can be easily pre-set.

Still further objects and features of this invention reside in the provision of a key and coin controlled actuation mechanism for a locker or other apparatus that is simple in construction, efficient in use, and which is especially adapted to be utilized in connection with a dry cleaning and laundering establishment for delivery of clothing and the like which have been cleaned without requiring a human attendant at the locality of pick-up and delivery of the clothing.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this key and coin combination actuating device, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a perspective view of the key and coin controlled actuation device shown in association with a portion of a locker;

Figure 2 is an enlarged vertical sectional view as taken along the plane of line 2—2 in Figure 1;

Figure 3 is an enlarged vertical sectional view as taken along the plane of line 3—3 in Figure 2 shown with a slug in position and latch in open position permitting actuation of the device;

Figure 4 is a horizontal sectional view as taken along the plane of line 4—4 in Figure 2 illustrating the construction of the slide and guide in detail and illustrating by means of phantom lines the operated position of the slide;

Figure 5 is a sectional detail view as taken along the plane of line 5—5 of Figure 4 illustrating in particular the construction of the slugs with respect to the slide, and of the locking pin utilized in the invention;

Figure 6 is a sectional detail view as taken along the plane of line 6—6 of Figure 2 illustrating further details in the construction of the slide and guide;

Figure 7 is a sectional detail view similar to that of Figure 2 but shown with the slide in its innermost position;

Figure 8 is a sectional detail view similar to that of Figure 7 but shown after the slide has been withdrawn after deposit of the slug and coin;

Figure 9 is a sectional detail view as taken along the plane of line 9—9 of Figure 8 illustrating the slugs and coin in a deposited position and with the latch in a locked position;

Figure 10 is a perspective view of the slide;

Figure 11 is a perspective view of one of the slugs used for predetermining the number of coins necessary to actuate the device; and

Figure 12 is a perspective view of a slug adapted to be inserted in the slide.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates a locker or other compartment which is adapted to be maintained closed except when opened by an authorized person. The compartment 10 is provided with a closure door as at 12 which is adapted to be held in a closed position by a latch 14, the latch being pivoted as at 16 and is spring urged by means of spring 18 to a latched position for holding the door 12 in closed relation.

The actuation device generally indicated at 20 is for the purpose of actuating the latch 14 so as to permit the opening of the closure door 12. The actuating mechanism 20 is for the main part mounted in a housing 22 having as its sole access door a hinged top 24 held in a locked position by means of a key actuated locking mechanism 26.

Extending through the front wall of the housing 22 is a channel-shaped guide 28 which has an integrally formed bottom 30, sides 32 and 34, and inturned flanges 36 and 38. The flanges 36 and 38 are adapted to partially overly recesses 40 and 42 communicating with an aperture 44 formed in a slide 46 which is adapted to be inserted within the channel-shaped guide 28 with the flanges 36 and 38 overlying the edges of the top of the slide. A handle 50 is provided for actuating the slide 46. The slide 46 is further provided with a generally wedge-shaped cam surface 52 as well as a T-shaped slot 54 which has a concave cam surface 56 communicating therewith. A recess 58 is provided in an end of the slide 46 into which the latch 14 is adapted to extend and to be seated. A stop 60 is secured to the slide 46 for preventing withdrawal of the slide 46 after the slide 46 has once been installed.

Rotatably secured in the front wall 62 of the housing 22 is a lock type latch mechanism 64 adapted to be actuated by a key and provided with a latching member 66 adapted to extend into the slot 54. A generally T-shaped slug 68 is seated in the slot 54 and when it is desired to prevent the latching member 66 from locking the slide 46 in a set position. The guide 28 is of course provided with a suitable opening as at 70, see Figure 4 in particular through which the latching member 66 can extend and a pair of notches 71 in flanges 36 and 38 to permit insertion of slugs in aperture 44.

Secured by fasteners as at 72 to the guide 28 is a bracket 74 which carries not only a pivotally mounted stop member 76 which is adapted to engage the slide and fit within the aperture 44 under certain conditions,

but a pin 78 is mounted within a casing 80 and normally spring pressed by means of a coil spring 82 downwardly into engagement with the slide and is adapted to lockingly engage the slide 46 by engaging against the shoulder 90 formed by the wedge-shaped cam surface 52. A bayonet-type locking arrangement is provided by means of a lug 92 secured to the pin 78 and a helical slot 94 provided in the casing 80 which upon rotation of the pin 78 will enable the pin to be locked out of engagement with the slide 46.

Disposed beneath the slide and the guide 28 is a coin receiving chute 100 adapted to receive coins and slugs from the slide 46.

A set of slugs having the cross sectional configuration of that shown in Figure 11 and indicated by reference numeral 110 is provided. The slug 110 may be formed of any suitable height so as to predetermine the number of coins that must be inserted in the space between the slug 110 and the top of the aperture 44 to form a level surface so as to prevent engagement between the stop member 76 and the slide 46 which would prevent movement of the slide 46.

This key and coin combination and closure actuating device may be used in many ways. When used in conjunction with a laundry establishment for receipt and delivery of clothing and the like which is deposited for cleaning without a human attendant at the locality, the slide is positioned as shown in Figure 2 with the slug 110 in position requiring the insertion of a particular coin or coins. Upon pressing inwardly of the slide, the stop 76 passes over the coin and the slide pushes against the latch 14 thus moving the latch to the position as shown in phantom lines in Figure 4 thus allowing the closure door 12 to be opened and access to be had to the interior of the compartment 10. Subsequently, the article to be cleaned is deposited in the compartment 10. Within the compartment 10 there may be provided a key or the patron of the establishment may have been provided a key therebefore for the operation of the latching means 64. Thus, after the slug 110 and slug 68 together with the coin has fallen through a suitable opening such as at 114, the slide 46 is withdrawn. It is noted that the pin 78 has been adjusted so as to be held out of engagement with the slide 46. After the slide 46 is withdrawn, the latching member 66 is actuated through the use of the key inserted into the lock type latch mechanism 64 and the latching member 66 is urged into the slot 54. This holds the slide 46 in position and prevents further actuation of the latch 14 thus holding the closure member 12 closed protecting the clothing stored for deposit.

When an attendant makes his rounds, by opening the top 24, he may then actuate the latch 14, to permit the door 12 to be opened, thus removing the clothing for subsequent cleaning after which it may be replaced. At the time of replacement, the attendant sets the pin 78 so that it will engage the slide 46, disposes a slug, such as the slug 110, within the aperture 44 by releasing slide 46 and pushing the same inwardly before setting pin 78, the slug 110 being of such height as to predetermine the number of coins necessary for insertion to provide a level surface over which the stop member 76 can pass, then, the patron, can remove the latching member 66 from the slot 54 by use of a key in mechanism 64 and deposit the necessary number of coins in the aperture 44 above the slug 110 after which the slide 46 may be pushed inwardly actuating the latch 14 and permitting access to the clothing stored within the compartment 10 after the closure door 12 has been removed. Pin 78 drops against shoulder 90 and prevents withdrawal of slide 46.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A key and coin controlled actuation device for closure means comprising a channel-shaped guide including a bottom plate having upwardly extending sides with flanges extending inwardly towards each other from the upper part of said sides, a slide movably positioned in said guide, said slide having an aperture therethrough, said slide having recesses therein communicating with said aperture, said flanges overlying said recesses, said guide having an opening in one of the sides thereof, said slide having a slot therein, and a key actuated latch pivotally mounted for movement into engagement with said slot in said slide, said latch extending through said opening, a slug receivable in said slot and supported by the bottom plate of said guide for preventing entry of the latch into the slot, said bottom plate of the guide having a hole therethrough through which said slug can fall after said slide has been moved all the way inwardly thereby allowing the latch to engage the slot when aligned therewith for locking the slide.

2. A lock device comprising an elongated slide, guide means slidably supporting said slide and including a longitudinal flange overlying a marginal edge portion of the slide, said slide including a depression area partially underlying the flange, a slug disposed, of predetermined size, in the depressed area and extending under the flange for preventing removal of the slug while the flange partially overlies the depressed area, gravity operated latch means engageable with said depressed area for limiting the movement of the slide in one direction, said slug being of less size than the depressed area thereby determining the number of coins required to completely fill the depressed area and render the gravity operated latch means ineffective thereby permitting movement of the slide in said one direction.

3. In a coin and key combination lock, a housing, a generally channel-shaped guide extending through a wall of said housing, a slide reciprocally mounted in said guide, said guide having an opening therein disposed interiorly of the housing, said slide having a groove therein for alignment with said opening when the slide is in the inner position, said slide having a coin receiving aperture therein movable from a position exteriorly of the housing to a position interiorly of the housing, said guide retaining coins in the aperture when the aperture is disposed exteriorly of the housing with the coins being deposited by gravity into the housing when the aperture moves interiorly of the housing, stop means supported from said guide in engagement with the slide for entering the aperture in the slide in the absence of coins therein for preventing movement of the slide completely to its inner position and preventing alignment of the groove in the slide with the opening in the guide, a release lever for a closure mechanism mounted in the housing and engageable and movable by the slide only when the slide moves completely to its inner position, and a swingable latch mounted on the housing and extendable through the opening, for locking engagement with the groove in the slide, said latch being key operated in both directions of movement, and a lock type latch mechanism connected with the latch and terminating exteriorly of the housing for operation of the latch from outside of the housing for preventing withdrawal of the slide after the slide is moved completely to its inner position by virtue of coins filling the aperture during movement past the stop means.

4. The structure as defined in claim 3 wherein said stop means includes a gravity operated pivotal stop member disposed above the slide and inwardly of the aperture in the slide when the slide is in the outermost position, said stop member having an overbalanced end slidably resting on the upper surface of said slide for dropping into the aperture in the absence of coins therein.

5. The combination of claim 3 wherein said guide is provided with a spring biased lock pin for locking engagement with said slide when the slide is in innermost position, and means interconnecting said pin and guide for releasably retaining said pin in retracted position whereby the slide may be selectively locked in its innermost position.

6. In a coin and key combination lock, a housing, a generally channel-shaped guide extending through a wall of said housing, a slide reciprocally mounted in said guide, said guide having an opening therein disposed interiorly of the housing, said slide having a groove therein for alignment with said opening, a release lever for a closure mechanism mounted in the housing and engageable and movable by the slide only when the slide moves completely to its inner position, and a swingable latch mounted on the housing and extendable through the opening for locking engagement with the groove in the

slide, said latch being key operated in both directions of movement, and a lock type latch mechanism connected with the latch and terminating exteriorly of the housing for operation of the latch from outside of the housing, means mounted on the guide for sensing presence of deposited coins and preventing inward movement of the slide when insufficient coins are deposited, and means carried by the guide for releasing the deposited coins upon inward movement of the slide after coins have been deposited.

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