Feb. 3, 1931. P. E. MILLS 1,790,673

COIN COLLECTION APPARATUS

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FIG. 1.

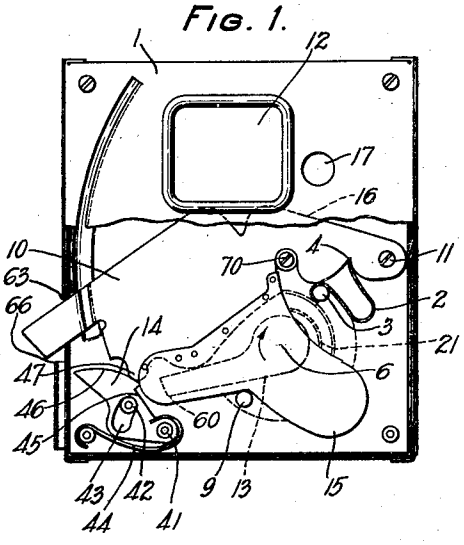


FIG. 2.

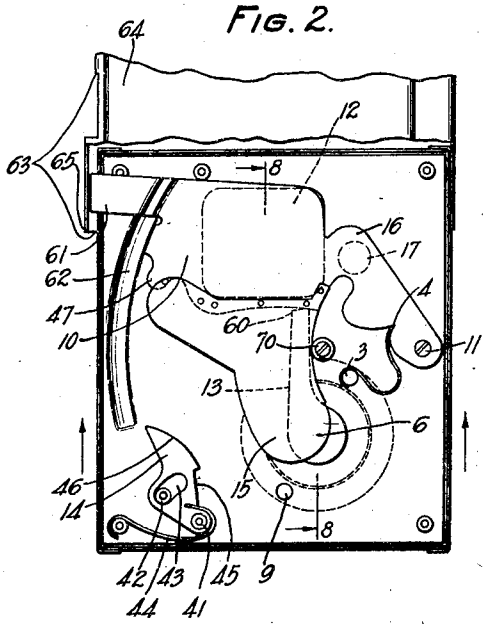


FIG. 3.

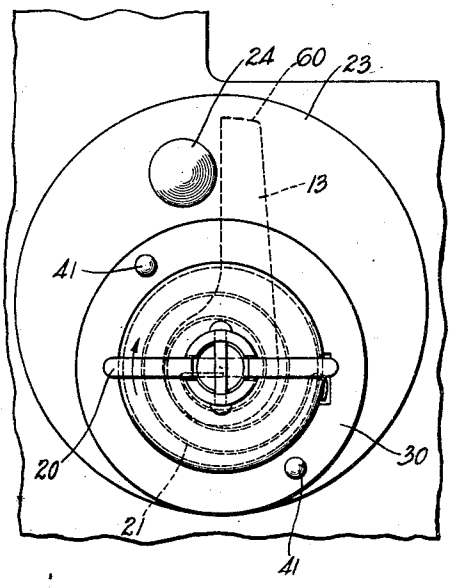
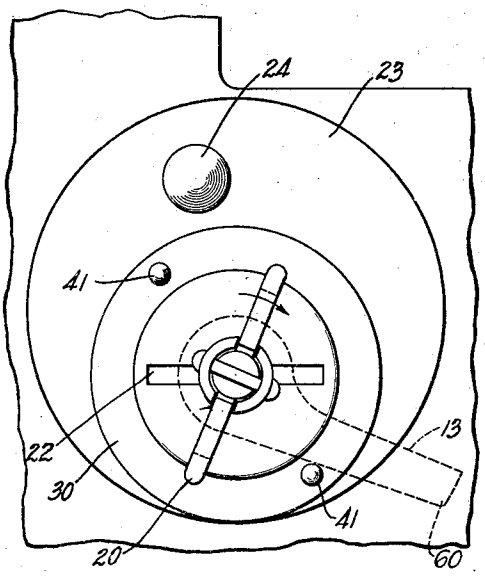


FIG. 4.



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FIG. 5.

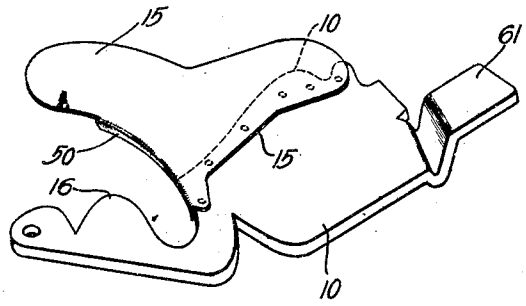


FIG. 8.

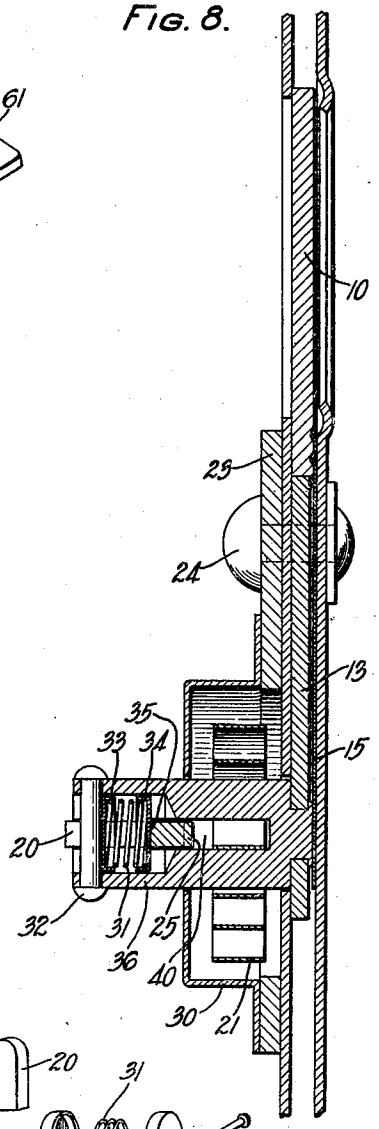


FIG. 6.

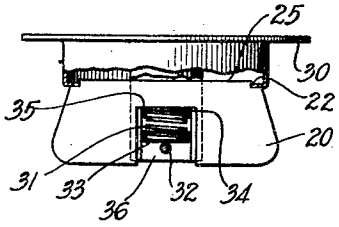
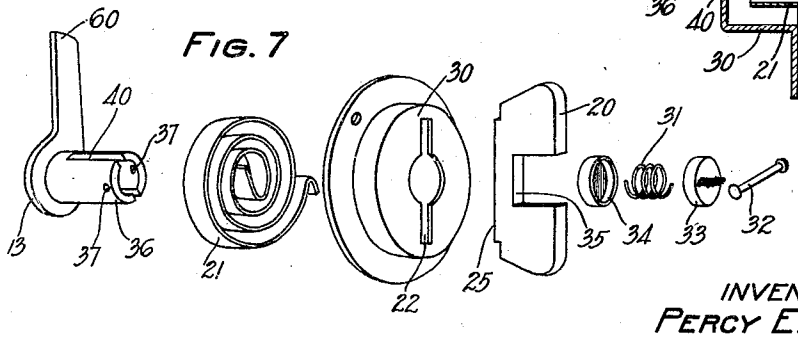


FIG. 7



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UNITED STATES PATENT OFFICE

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COIN-COLLECTION APPARATUS

Application filed March 30, 1928. Serial No. 265,960.

This invention relates to covers for coin boxes or receptacles and more particularly to covers for coin boxes used in telephone pay stations such as are described in U. S. Patent 1,121,063 issued December 15, 1914 to William O. Beck.

An object of this invention is to prevent the fraudulent withdrawal of the contents of coin boxes.

The covers for coin boxes used for coin collection at telephone pay stations are provided with coin receiving openings through which the collected coins pass to the coin boxes. The cover is placed in position on a coin box and is sealed to prevent removal except by an authorized person. Within the cover is a pivoted closure for closing the coin receiving opening. A holding member or locking pawl which is adapted to be released by a movement from inside the box makes contact with the pivoted closure holding it in closed position. The coin box is placed in position in the coin collection apparatus with the coin receiving opening uncovered, the pivoted closure being free to rotate due to the locking pawl being held by a latch which is released when the coin box is in the correct position in the coin collection apparatus for receiving deposited coins. When the coin box is removed from the collection apparatus, a guide rail in the apparatus forces the pivoted closure over the coin receiving opening and a spring member associated with the locking pawl causes it to follow up the pivoted closure to hold it in closed position. With the coin receiving opening thus closed, the pivoted closure cannot be rotated away from the opening due to the locking pawl bearing against it and the only legitimate method of entry into the box is the breaking of the seal and the removal of the cover. In coin box covers of this type there is provided a small hole, called the levelling off hole, in the top of the cover which is provided so that a pencil can be inserted to level off the peak of the mass of the deposited coins thus providing space for additional coins. When the coin boxes are full of coins they are taken by collectors from the coin collection apparatus to a cashier's office where the seal is broken, the cover removed and the coins extracted.

In coin box covers which have been used heretofore the device which rotates the locking pawl away from the pivoted closure is at all times free to rotate and does not restrain in any way the movement of the locking pawl with which it is associated.

According to one feature of this invention a latching device is mounted on the underside of the cover which automatically restrains any movement of the locking pawl after it has snapped into its locked position against the pivoted closure.

According to another feature of this invention an arm or extension extending over the area covered by the travel of the locking pawl is made a part of and moves with the pivoted closure.

These features are all provided to prevent the insertion of thin tools within the box for the purpose of moving the locking pawl from against the pivoted closure, uncovering the coin receiving opening and thus gaining illegal entry into the box.

Referring to the drawings, Fig. 1 is a view of the top of a coin box cover according to this invention with a portion of its upper surface removed to show the position of the pivoted closure and the locking pawl when the coin receiving opening is uncovered.

Fig. 2 is a plan view of the cover showing the position of the pivoted closure and the locking pawl when the coin receiving opening is closed, and a partial plan view of the receptacle for the cover.

Fig. 3 is a plan view of the latching device looking at it from the inside of the cover. This figure shows the latching device in its locked position.

Fig. 4 is a plan view of the latching device looking at it from the inside of the cover. In this view the latching device is shown out of its locked position and rotated so as to remove the locking pawl from its position against the pivoted closure.

Fig. 5 is a perspective view of the pivoted closure showing the arms or extensions provided to cover the travel of the locking

pawl and to cover the levelling off hole when the coin receiving opening is closed.

Fig. 6 is an enlarged side view partly in section of the latching device in its locked position.

Fig. 7 is an exploded view of the latching device.

Fig. 8 is an enlarged sectional view along the line 8—8 of Fig. 2 showing the details of the latching device, and showing a reinforcing plate which is mounted on the underside of the cover to reinforce same.

Referring to Fig. 1 of the drawings, there is shown a cover 1 for a coin box which may be of the type shown in the aforesaid patent to Beck. The cover 1 is provided with a coin receiving opening 12 through which deposited coins pass. Within the cover 1 is located mechanism for closing the coin receiving opening 12 when the coin box is removed from the coin collection apparatus. This mechanism comprises a pivoted closure 10 adapted to rotate about a pivot 11 and subjected to the tension of a spring 2. The spring 2 is held at one end by a pin 3 and at the other end engages a notch 4 in the closure 10 and tends to force the closure 10 under the coin receiving opening 12 as shown in Fig. 2. When the closure 10 is under the opening 12, it may be locked in this position by a pivoted locking pawl 13 which is pivoted at 6 and is under the action of spring 21 which tends to rotate it towards the pivoted closure 10 and in the direction of the arrow shown in Fig. 1. Stop 70 serves to prevent excessive rotation of the pawl 13. The locking pawl 13 is adapted to be manually retracted from its position against the pivoted closure 10 shown in dotted lines in Fig. 2 to the position shown in Fig. 1. The means for manually retracting the locking pawl is accessible only from the underside of the cover. Excessive retraction of the locking pawl 13 is prevented by stop 9. The latch 14 is pivoted at 41 and is under the tension of spring 44 which tends to move the latch 14 into the position shown in Fig. 2. Excessive movement of the latch 14 is prevented by pin 42 engaging the sides of slot 43 therein. The latch 14 serves to hold the end of the locking pawl 13 when it is retracted from against the pivoted closure 10. When the locking pawl 13 is manually retracted from against pivoted closure 10 and rotated against the pressure of spring 21 its end 60 rides against sloped portion 46 of the latch 14 forcing the latch 14 back against the pressure of spring 44 so that the end 60 of the locking pawl 13 falls into the slot 45 in the latch 14 where it is held due to the action of the spring 44 which presses the latch 14 against the end 60 of the locking pawl 13. With the locking pawl 13 thus held by latch 14 the pivoted closure 10 may be moved from under the coin receiving opening 12. When, however, the pivoted closure 10 is almost completely removed from under the coin receiving opening 12, the projecting portion 47 of its edge rides against the sloped portion 46 of latch 14 and as the pivoted closure 10 is further rotated to completely uncover the coin receiving opening 10, its projecting portion 47 pushes latch 14 back sufficiently to free the end 60 of the locking pawl 13 from the slot 45 in the latch 14. Then as the pivoted closure 10 is rotated to again cover the coin receiving opening 12 the locking pawl 13 under the action of the spring 21 rotates and follows up the pivoted closure 10. Fig. 1 shows the projecting portion 47 on the pivoted closure 10 releasing the locking pawl 13 from the latch 14. The latch 14 is held back in this manner by the pivoted closure until the locking pawl 13 has rotated sufficiently so as not to be caught again by the latch 14. With the locking pawl 13 thus released from the latch 14 it follows up the pivoted closure 10 and prevents it from being returned to again uncover the coin receiving opening. Pivoted closure 10 is provided with an extension 15 to cover the travel of the locking pawl 13 to make it difficult for a thin tool inserted from exterior the coin box to move the locking pawl from against the pivoted closure. Projection 16 on closure 10 serves to cover the levelling off hole 17 when the pivoted closure 10 is over the coin receiving opening 12 and is provided for the purpose of making it difficult for tools to be inserted through the levelling off hole.

Fig. 2 shows the coin receiving opening 12 covered by the pivoted closure 10 with the locking pawl 13 in locked position against the pivoted closure and against the stop 70. Extension 15 on the pivoted closure 10 covers the locking pawl 13 and the projection 16 on the pivoted closure 10 covers the levelling off hole 17.

Figs. 3 and 4 show enlarged views of the latching device which is one of the features of this invention and which serves to rotate the locking pawl 13 against the action of spring member 21 from against the pivoted closure. The positions of the latching device and the locking pawl 13 as shown by Fig. 3 are the positions of these members when the pivoted closure is over the coin receiving opening as shown by Fig. 2. In the position shown by Fig. 3 the latching device is in a locked position due to the butterfly key 20 extending into a slot 22 in spring barrel 30 where it is held by spring action. Since the locking pawl 13 rotates with the key 20, it is not possible to rotate the locking pawl 13 from against the pivoted closure while the key 20 is in its locked position. To release the key 20 from its locked position it is necessary to raise it against the action of the spring (shown in Fig. 6) until its lower portion is free from the slot in base member 30.

When this is done the key 20 can be rotated to move the locking pawl 13.

Figs. 4, 6 and 7 show more clearly the locking action and the method of release of the key 20.

Fig. 4 shows the slot 22 into which the lower portion 25 (shown in Fig. 7) of key 20 fits when in locked position. This figure shows the key 20 unlocked and rotated sufficiently to remove the locking pawl 13 from against the pivoted closure. The position of the locking pawl 13 in this figure corresponds to its position as shown by Fig. 1.

Fig. 6 shows a side view partly in section of the latching device in locked position and it is seen clearly how the lower portion 25 of the butterfly key 20 fits into slot 22 of spring barrel 30 where it is held due to pressure of spring 31. Spring 31 bears against recessed portion 35 of key 20 through cap member 34 and against the barrel portion 36 of the locking pawl 13 through cap member 33 and pin 32 which is adapted to extend through holes 37 in the barrel member 36.

Referring to Figs. 4, 6, 7 and 8 it will be seen how the key 20 is supported within the slot 40 of the barrel member 36 of the locking pawl 13 and is held within the slot 40 by the action of spring member 31. The spring barrel 30 is rigidly secured to the coin box cover by means of rivets 41 so that when the lower portion 25 of the key 20 is within the slot 22 of the spring barrel 30 it is impossible to rotate the locking pawl 13. To rotate the locking pawl 13 it is necessary to lift the key 20 against the pressure of the spring member 31 until the lower portion 25 of the latching device 20 is clear of the slot 22 of the spring barrel 30, whereupon the key 20 and with it the locking pawl 13 can be rotated until it is held by latch 14.

The pivoted closure 10 is provided with an end portion 61 which extends upwardly from the inside of cover 1 to the outside thereof through a slot 62 and then laterally beyond the edge of the cover 1. Integral or attached to the coin collection apparatus (not shown) is a retaining member 64 which through engagement with the cover 1 holds the cash box to which the cover is attached within the coin collection apparatus. At one side the retaining member 64 is provided with an opening 63 through which the end portion 61 of the pivoted closure 10 may extend. The opening 63 is partially closed by a laterally extending pocket 65 of the retaining member 64. The rear edge 66, shown in Fig. 1, of the pocket 65 is adapted to engage the portion 61 when the cash box with the cover 1 in place is being withdrawn from the retaining member 64, to rotate the closure 10 to a position under the opening 12.

The construction and adjustment of the various elements are such that when the coin box with its cover 1 is inserted into the retaining member 64 of the coin collection apparatus through the appropriate opening the portion 61 of the pivoted closure 10 projects through the opening 63 and passes inside the pocket 65. The projection 61 thereupon engages the rear edge of the opening 63 and as the cash box is forced back in place in the direction shown by the arrows in Fig. 2 the closure 10 is removed from before the opening 12. As the closure is further rotated the projection 47 on the closure 10 engages the sloped portion 46 of the latch 14 and releases the locking pawl 13 as has previously been explained. The cash box can not now be withdrawn without the complete closing of the opening 12 by the closure 10 and the locking of the closure in this position. The portion 61 of the closure 10 and the pocket 65 are so proportioned that the portion 61 projects too far through the opening 63 to allow the cash box to be removed from the retaining member 64 unless the closure 10 has been moved to a position such that the locking pawl 13 assumes a perpendicular position relative thereto as shown in Fig. 2. As the coin box is removed from the retaining member 64 the end portion 61 of the closure 10 is free from the rear edge of the opening 63 and the rear edge 66 of the pocket 65 engages the end portion 61 of the closure 10 and rotates the closure before the opening 12.

When the latch 14 is released due to the cash box being placed in its proper position within the coin collection apparatus the spring member 21 causes the locking pawl 13 to return the key 20 to its normal position over the slot 22 in the spring barrel 30. Due to the pressure of the spring member 31 the lower portion 25 of the key 20 is forced into the slot 22 of the spring barrel 30 and the key 20 is again in its locked position. It is thus seen that the locking pawl 13 can not be rotated from its position against the pivoted closure 10, without first unlocking the latching device by raising the key 20 until its lower portion 25 is clear of the slot 22 of the spring barrel 30. The retaining pin 32 is pivotally mounted in the center of the barrel member 36 of the locking pawl 13, so that if the key 20 is lifted at one of its ends by a tool inserted within the cash box, the other end of the key will tend to fall further into the slot 22 of the spring barrel 30. To release the key 20 from its normally locked position it is necessary to raise both its extremities at the same time thus making it more difficult to unlock the latching device by means of a tool inserted within the coin box.

The key 20 is tapered, as shown by Figs. 6 and 7, from its lower to its upper portion to make it easy for an operator at the cashier's office to lift the key 20 from its locked position and to rotate it.

The extension 15 in Fig. 5 may be riveted or welded to, or made an integral part of the

pivoted closure. A projecting or flange portion 50 has been provided on the extension 15 to make it difficult for a tool inserted within the cover to move the locking pawl. The flange portion 50 is located on that portion of the extension 15 which is adjacent the locking pawl 13 when the locking pawl 13 is in locked position against the pivoted closure 10.

What is claimed is:

1. A cover for a coin box having an opening therein, a closure for said opening, a holding member, a spring for tensioning said holding member, a spring barrel in which said spring is mounted, said barrel having a slot therein, a rotatable key secured to said holding member for rotating said holding member against the tension of said spring, a latch for holding said holding member after it has been moved under the tension of said spring, means for releasing said latch whereupon said spring tensioned holding member follows said closure to its closed position and rotates said key, and spring means for forcing said key in said slot.

2. A cover for coin boxes having a coin receiving opening therein, a closure therefor, a pivoted locking pawl for holding said closure over said opening and means for rotating said pawl from against said closure, said closure having an arm formed thereon for covering said pawl to prevent the rotation of said pawl except through said device.

3. A cover for coin boxes having a coin receiving opening therein, a closure therefor, a pivoted locking pawl for holding said closure over said opening, a device for rotating said pawl from against said closure, and an arm on said closure for covering said pawl throughout its rotation, said arm having a flange adjacent said pawl when said pawl is against said closure for preventing a tool inserted within said cover from moving said pawl.

4. A cover for coin boxes having a coin receiving opening therein, a closure therefor, a pivoted locking pawl for holding said closure over said opening, means for rotating said pawl against said closure, said closure having an arm formed thereon for covering said pawl to prevent its operation except through said device and means for locking said pawl in its holding position, said means being accessible only from the inside of the cover.

5. A cover for coin boxes having a coin receiving opening therein, a closure therefor, a pivoted locking pawl for holding said closure over said opening, means for rotating said pawl from against said closure, an arm formed on said closure having a flange adjacent said pawl when said pawl is against said closure for preventing a tool inserted within said cover from moving said pawl, and means on the inner side of said cover for maintaining said pawl in its holding position against said closure.

6. A cover for coin boxes having a coin receiving opening therein, a closure therefor and a lock for said closure comprising a rotatable member adapted to engage said closure, a stationary member, a key and means resiliently and pivotally supporting said key on said rotatable member and in engagement with said stationary member.

7. A cover for coin boxes having a coin receiving opening therein, a closure therefor, a lock for said closure comprising a pawl pivoted at one end, the other end being adapted to hold said closure over said opening, a key permanently associated with said pawl and movable therewith, and means for pivotally supporting said key for movement in a plane perpendicular to the plane of the movement of said pawl.

In witness whereof, I hereunto subscribe my name this 22 day of March 1928.

PERCY E. MILLS.