

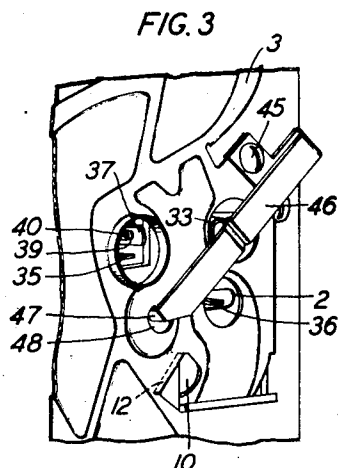
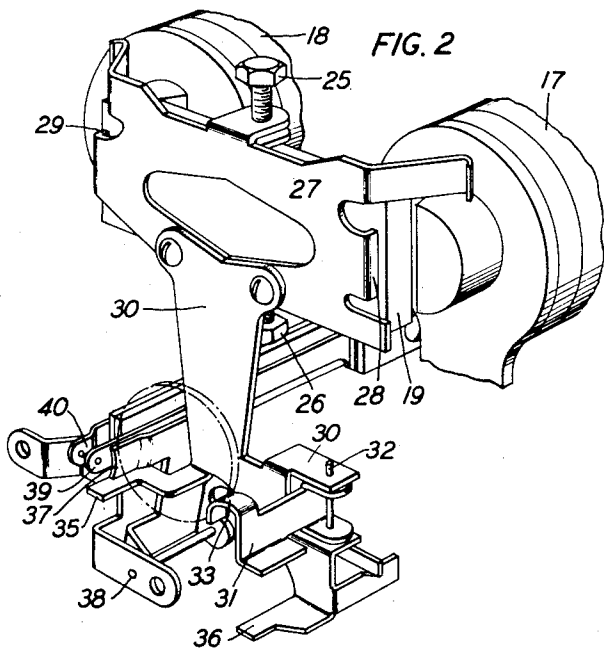
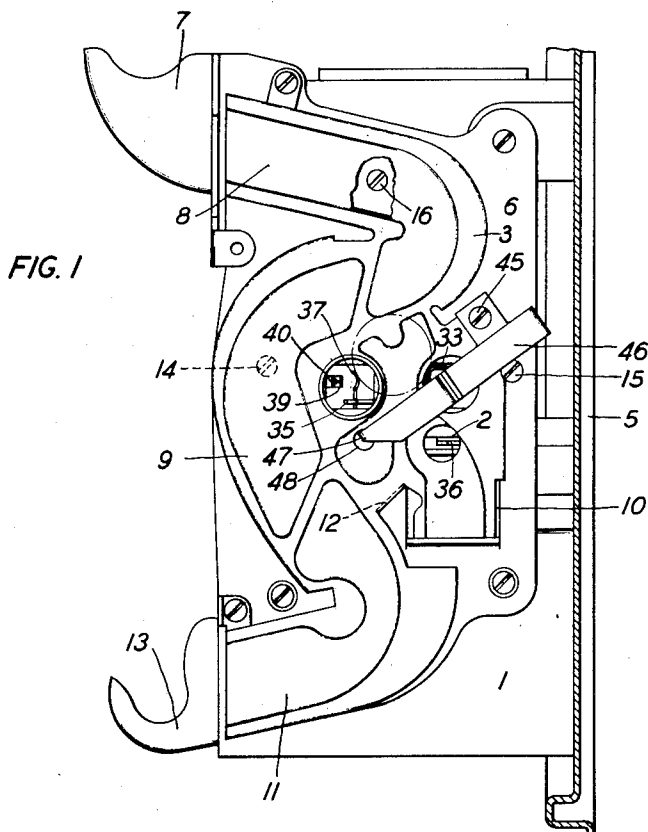
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1,940,095

COIN COLLECTOR

Filed March 8, 1932



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1,940,095

COIN COLLECTOR

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6 Claims. (Cl. 194—1)

This invention relates to telephone apparatus and more particularly to coin collector apparatus which is provided at the subscriber's station to receive coins deposited in payment for telephone service. In apparatus of this character the deposited coin is held temporarily in the collector under the control of the central office operator and finally is either deposited in the cash box or refunded to the subscriber according as the desired service is or is not rendered.

An object of this invention is to provide means whereby the coin cannot be fraudulently recovered after the subscriber has received the desired service.

A further object of this invention is to provide means whereby coins or slugs smaller than a predetermined size which are used in an attempt to operate the coin collector apparatus will automatically be deposited in the cash box.

In accordance with the above object this invention provides a coin collector having a coin chute which is divided into a refund passage and a collect passage. Mounted on one side of the coin chute just above the place of division is an electromagnet with which is associated a set of electrical contacts and a release plunger. The set of contacts and the release plunger are so located that they arrest the movements of coins above a predetermined size. Also associated with said electromagnet is a pair of pivoted arms which project through openings in the walls of the coin chute. These arms determine into which passage the arrested coin falls upon its release by the release plunger. Mounted opposite the electromagnet on the other side of the coin chute is a lever, the free end of which projects through an opening in the coin chute and normally blocks the return passage to coins or slugs of smaller than the predetermined size. This lever which is controlled by the release plunger is removed from the coin chute by said plunger when the operator desires to refund the subscriber's money.

Referring to the drawing,

Fig. 1 is a side elevation of the mechanism with the housing of the coin collector removed showing a deposited coin arrested by the electrical contacts and release plunger;

Fig. 2 is a perspective view of the arresting, circuit closing and coin directing mechanism; and

Fig. 3 is a perspective detail showing the lever which normally blocks the return passage associated with the coin directing mechanism.

For the purpose of illustrating the invention

it is shown as applied to a coin collector of the type shown and described in Patent 1,076,285 to W. Hosford, October 21, 1913, which provides means for collecting and refunding coins of the proper size, but permits under-sized coins or under-sized slugs to pass through the collector to the refund chute where they may be recovered, whereas the present invention provides means for normally blocking the refund passage so that under-sized coins and under-sized slugs will be automatically collected.

Attached to the backplate 5 by any suitable means is a coin receptacle housing 1, a portion of which is shown in Fig. 1. To the coin receptacle housing 1 and the backplate 5 is secured a coin chute 6 which consists of the usual coin gauge 7, zigzag channel 8, bypass 9, deposit channel 10 and refund channel 11 separated by a partition 12 carried by the outer wall of the coin chute, and refund cup 13. The coin receptacle is located in the coin receptacle housing 1 behind and below the deposit channel 10 and is not shown in detail in any of the figures since it forms no part of this invention. The coin chute, coin receptacle and mechanism hereafter described are enclosed in a protecting housing (not shown) fastened to the backplate 5.

A polarized electromagnet is firmly secured to the coin chute 6 by means of screws 14, 15 and 16 and comprises coils 17 and 18 and an armature 19 as shown in Fig. 2. The armature 19 is pivotally supported between the pointed screws 25 and 26 and is adapted to be turned in either direction about its axis depending upon the direction of current through the coils 17 and 18. A frame member 27 is likewise pivotally supported by the screws 25 and 26 and is provided with rearwardly projecting lugs 28 and 29. The frame member 27 is so located with respect to the armature 19 that the lug 28 or 29 is struck thereby after the armature has rotated slightly in one direction or the other. During the remainder of its movement the armature carries with it the frame 27. This construction allows the armature 19 to gain some momentum before picking up its load and makes the mechanism positive in its operation.

Firmly secured to the frame member 27 is a downwardly projecting arm or lever 30. This arm 30 carries a movable support for arresting the coin in its downward movement and a directing mechanism. The support consists of a forwardly projecting member or plunger 31 which projects through the rear wall of the

chute into the coin runway. The plunger 31 is pivotally supported and carried by a lever 30 through the agency of a pin 32 and is given a forward or backward movement depending upon the direction or motion of the armature. At the outer end of the plunger 31 is a curved projection 33 which normally lies in the coin runway and against which the coin rests. If the armature is so tilted that the right end thereof moves toward the front, the plunger 31 is pushed outwardly thereby moving the projection 33 out of the runway and allowing a coin to pass behind the said projection. If, on the other hand, the armature is actuated so that the right end thereof moves in a rearwardly direction the plunger 31 is pulled from the chute allowing the coin to drop in front of the projection 33.

In a horizontal line with the projection 33 of the plunger 31 is a lever 37 pivoted at 38. The projection 33 and the lever 37 are so situated and spaced that a coin of the proper size moving down the zigzag channel 8 from the coin receptacle 7 lodges between them and is held in this position until released by the operator energizing the coils 17 and 18. The weight of the coin rotates the lever 37 about its axis 38 and two contact springs 39 and 40 insulated from the frame and from each other, lie in such a position that the spring 39 is struck by the lever 37 in its movement about the pivot 38 and is moved into engagement with the spring 40.

The lever 37 may be insulated from the springs by an insulating material carried thereby. The springs 39 and 40 constitute a normally open contact in the signal circuit and it is evident that with this construction, the signal circuit does not pass through the coin but through the frame of the mechanism and that this circuit is consequently positively and dependably controlled.

On one side of the axial plane of the movable armature 19, the lever 30 carries the forwardly projecting pin 35 normally extending across the chute. On the other side of the axial plane of the armature 19, the lever 30 carries the forwardly projecting pin 36 which in its normal position extends through an opening 2 in the rear wall of the chute and is of such length as to be flush with the inner rear wall of the chute.

Attached by one end to the outer wall 3 of the coin chute by means of screw 45 is a light spring 46. At the free end of the spring 46 is a right angled projection 47 which normally extends through an opening 48 in the wall 3 of the coin chute to block the return passage to coins coming down the zigzag channel 8. By this structure any coin which is small enough to pass between projection 33 and lever 37 will be directed into the coin receptacle. Also any coin or slug which is of a size just sufficient to stick between the projection 33 and the lever 37 but which may be released by jarring will also pass to the coin receptacle when released.

When the armature is actuated so that the right end thereof moves in a forward direction, the plunger 31 is pushed outwardly thereby moving the projection 33 out of the runway and allowing coins to pass behind the said projection. Outward movement of the projection 33 forces the spring 46 away from the coin chute thus removing the projection 47 from the coin passage and leaving the return passage open for coins coming down the zigzag channel 8. The pin 36

is at the same time forced within the chute to guard the deposit channel 10 and the pin 35 is completely withdrawn from the chute thereby permitting the released coin to be deflected by the directing pin 36 to the left of the partition 12 into the refund channel 11 and as projection 47 has been removed from the return passage the coin proceeds to the refund cup 13. If on the other hand the armature is rotated so that the right end thereof moves in a rearward direction, the plunger 31 is pulled from the chute allowing the coin to drop in front of the projection 33. As the plunger 31 is pulled from the chute the spring 46 remains in the same position and the projection 47 continues to block the return passage to coins coming down the zigzag channel 8. The pin 35 moves into the chute to further guard the refund channel while the pin 36 is completely withdrawn from the chute permitting the released coin to be deflected by the directing pin 35 to the right of the partition 12 into the deposit channel 10 and thence to the coin receptacle. The spring 46 may be grooved as shown in Fig. 3 at a point adjacent the projection 33 to insure positive outward movement when the plunger 31 is moved outwardly by the armature. Other means may also be provided for the same purpose.

As stated above, in case a coin of a smaller size than that which is required is deposited, it will not be held between the supporting lever 37 and projection 33 but will pass between these and be deflected to the right of the partition 12 into the coin receptacle by projection 47 of the spring 46. If a coin is in the arrested position between the supports 33 and 37 and another coin is placed in the gauge 7 and released, it will strike the top of the arrested coin and be deflected into the bypass 9 to the refund channel 11 and refund cup 13.

What is claimed is:

1. In a coin collector, a coin chute having a refund passage and a collect passage, an electromagnet on one side of said chute, means associated with said electromagnet for arresting the movement of coins above a predetermined size, said means comprising a plunger, and means on the opposite side of said chute and controlled by said plunger to normally block said refund passage.

2. In a coin collector, a coin chute having a refund passage and a collect passage, an electromagnet on one side of said chute, means comprising a plunger associated with said electromagnet for arresting the movement of coins above a predetermined size, means comprising a lever on the opposite side of said chute blocking said refund passage to coins smaller than the predetermined size, said lever being controlled by said plunger so as to be removed from said passage and permit the refund of coins above the predetermined size.

3. In a coin collector, a coin chute having a refund passage and a collect passage, an electromagnet on one side of said coin chute, means comprising a plunger associated with said electromagnet for arresting the movement of coins in said chute above a predetermined size, said plunger being controlled by said electromagnet to release said arrested coin, a pair of pivoted arms associated with said electromagnet to deflect said released coin into said refund or said collect passage, means mounted opposite said electromagnet to normally block said refund passage, said means being controlled by said plunger so

as to open said refund passage when said released coin is deflected into said refund passage.

4. In a coin collector, a coin chute having a refund passage and a collect passage, an electromagnet on one side of said chute, means comprising a plunger associated with said electromagnet for arresting the movement of coins above a predetermined size, a resilient arm on the opposite side of said chute having two inwardly projecting lugs, one of said lugs extending through an opening in said coin chute to block said refund passage to coins smaller than the predetermined size, the other of said lugs forming a contact between said arm and said plunger, said arm being controlled by said plunger so as to remove said first lug from said coin chute and unblock said return passage.

5. In a coin collector, a coin chute having a refund passage and a collect passage, an electromagnet on one side of said chute, means associated with said electromagnet for arresting the movement of coins in said chute above a predetermined size, said means being controlled by said electromagnet to release the arrested coins,

a directing lever normally flushed with the inner wall of said coin chute, said lever being controlled by said electromagnet to block said collect passage and direct a released coin into said refund passage, and means associated with said electromagnet to normally block said refund passage to coins under a predetermined size, and said means being controlled by said electromagnet to open said refund passage when said directing lever blocks said collect passage.

6. In a coin collector, a coin chute having a refund passage and a collect passage, means for arresting the movement of coins in said chute above a predetermined size, means to normally block said refund passage, directing means normally flushed with the inner wall of said chute, and electromagnetic means to simultaneously operate said arresting means to release said arrested coin, remove said blocking means from said refund passage and move said directing means into the coin passage to block said collect passage and direct said released coin into said refund passage.

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25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150