

Dec. 9, 1952

G. A. HALE  
COIN COLLECTOR

2,620,971

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2 SHEETS—SHEET 1

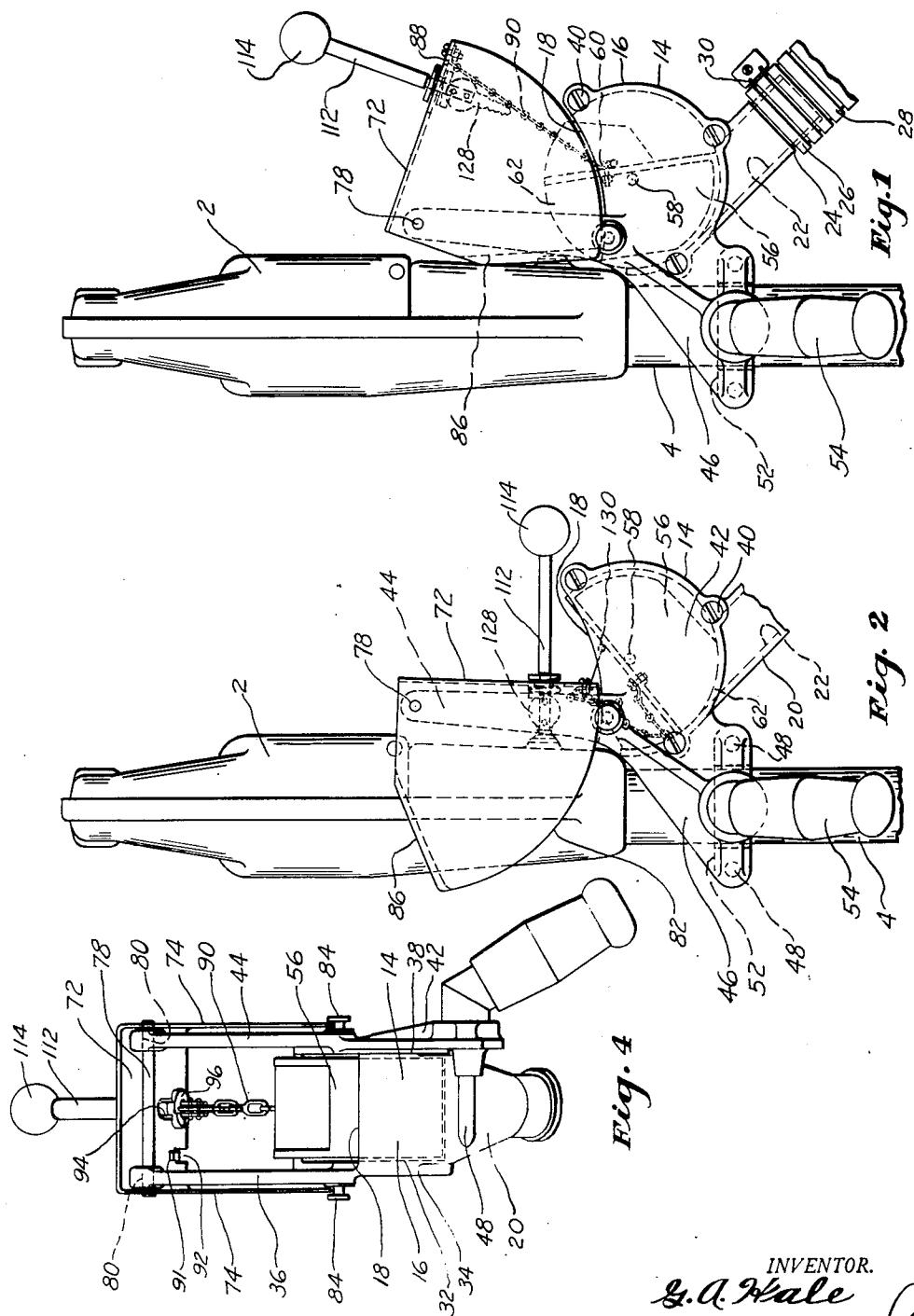


Fig. 4

Fig. 2

Fig. 1

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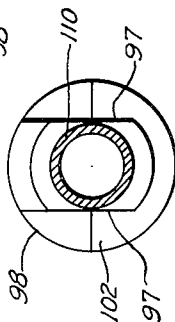
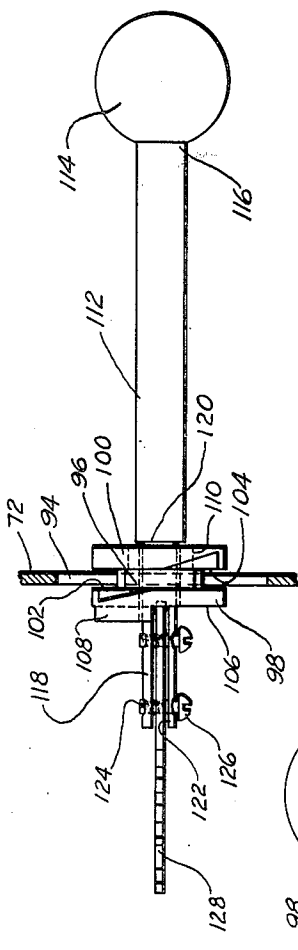
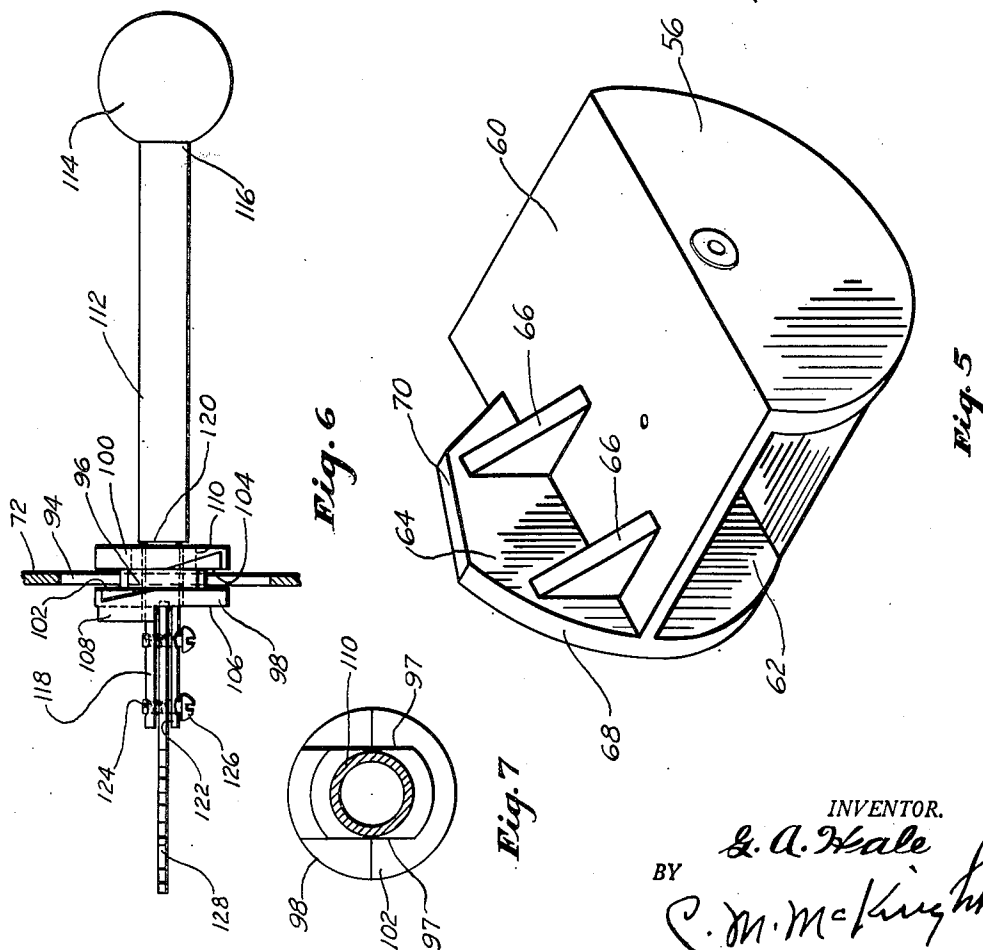
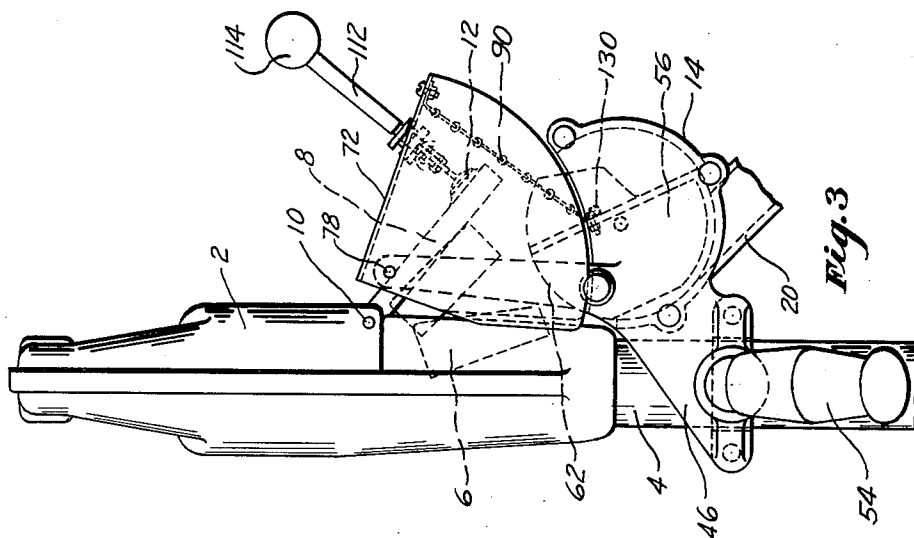
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2 SHEETS—SHEET 2



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## UNITED STATES PATENT OFFICE

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## COIN COLLECTOR

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7 Claims. (Cl. 232-16)

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This invention relates to improvements in coin collecting devices and more particularly, but not by way of limitation, to an improved device for collecting coins from a parking meter, or the like.

At the present time coins are generally collected from parking meters by opening the coin-retaining box attached to the meter and manually placing the coins contained therein into a portable coin collecting receptacle. When coins are collected in this manner, the municipality frequently loses a portion of the revenue since the collectors come into direct contact with the collected coins.

Another method of collection commonly used is to provide each meter with a removable sealed coin retaining box, and replacing the boxes at periodical intervals. This method necessarily involves a large amount of office work in storing and sealing the boxes, as well as a substantial number of man-hours in exchanging the coin boxes at the meters.

There has also been devised a type of coin collecting device having a head portion adapted to be attached to a parking meter, whereby the coins collected in the meter are transferred through the head portion and a communicating conduit into a locked portable container. In the majority of these devices, however, an obstruction may be inserted in the conduit between the head portion and the receptacle or in the head portion itself whereby the coins can be prevented from entering the receptacle, and shaken out of the head portion after it has been removed from a meter.

The present invention contemplates a coin collecting device having a collector or closure head adapted to be secured in a position abutting the coin box of a parking meter. The closure head is provided with a pivotable bucket or rotor for receiving the coins from the coin box and alternately dumping the coins through a coin chute in the head. The bucket is operated by a pivotable shield secured to the closure head above the bucket and having a swiveled key therein for operating the coin box lock. The shield is also provided with an arcuately shaped plate on each side thereof to enclose the bucket when the coin box is opened for preventing coins from being removed from the bucket. When the coins are dumped from the bucket, they fall by gravity through the coin chute and a communicating conduit into a sealed portable receptacle.

An important object of this invention is to provide a coin collecting device whereby coins inserted in the device cannot be prevented from

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passing into a locked receptacle without detection.

Another object of this invention is to provide a device for collecting coins from a parking meter whereby the coin box on the meter cannot be opened until the device is in place, and the device cannot be removed from the meter until the coin box is closed and locked.

Another object of this invention is to provide a coin collecting device from which coins cannot be removed without detection.

Another object of this invention is to preclude the collector from coming into contact with the coins during the collecting operation.

A further object of this invention is to reduce the man-hours presently required to collect the coins from a group of parking meters, as well as the office work incident thereto.

A still further object of this invention is to provide a simple and efficient coin collecting device.

Other objects and advantages of the invention will be evident from the following detailed description, read in conjunction with the accompanying drawings, which illustrate my invention.

In the drawings:

Figure 1 is a side elevational view of a novel coin collecting device illustrating the position of the device as it is coupled to, or uncoupled from, a parking meter.

Figure 2 is a side elevational view similar to Figure 1 illustrating the position of the device for locking or unlocking the coin box of a parking meter.

Figure 3 is another side elevational view similar to Figure 1, illustrating the position of the device when coins are being removed from a parking meter.

Figure 4 is a front elevational view of the coin collecting device.

Figure 5 is a perspective view of the rotor.

Figure 6 is a detail of the key swivel and stem.

Figure 7 is a vertical sectional view of the key swivel shown in Figure 6.

Referring to the drawings in detail, reference character 2 designates a conventional parking meter supported by a pipe 4 on a curb or sidewalk (not shown) in the usual manner. The meter 2 is provided with a coin box 6 (Figure 3) in the lower portion thereof, having a door or gate 8 hinged at its upper end 10 to the meter body. The door 8 has a lock 12 therein which cooperates with the meter body in the usual manner to retain the door 8 in a closed position. The lock 12 is preferably of the type from which

a key disposed therein cannot be removed when the lock is unlocked.

Adapted to be disposed adjacent the meter 2, when it is desired to remove the coins therefrom, is a coin collector head 14. The head 14 has a cylindrical body portion 16 provided with an opening 18 on the upper side thereof for purposes as will be hereinafter set forth. As clearly shown in Figure 4, the lower portion 20 of the body 16 converges downwardly and inwardly, substantially in the shape of a funnel to provide an inclined passageway or chute 22 in communication with the interior of the body 16. The lower end 24 of the portion 20 is adapted to receive one end 26 of a flexible conduit 28 (Figure 1). The conduit 28 connects the head 14 with a conventional portable receptacle (not shown) used to receive the collected coins. The end 26 of the conduit 28 is secured to the portion 20 by a clamp 30 preferably provided with a seal (not shown) to prevent the conduit from being detached without detection.

The body 16 is enclosed by a member 34 at one end thereof (Figure 4) and member 34 is provided with a vertical arm 36 for purposes as will be hereinafter set forth. The opposite end 38 of the body 16 supports, by screws 40, an end member 42 also having a vertical arm 44 directly opposite the arm 36. The end member 42 is also provided with an oblique extension 46 (Figure 2) having a pair of horizontally spaced pins 48 secured thereto extending transversely of the body 16. The pins 48 are adapted to be inserted in a pair of bores (not shown) provided in a clamp 52 secured on the pipe 4 and disposed in vertical spaced relation below the meter 2. Also secured to the extension 46 is a handle 54 for manipulating the head 14 into and out of position.

The body 16 is provided with a bucket or rotor 56 rotatably supported on a hinge pin 58 (Figure 2) secured at its opposite ends in the end members 34 and 42. The rotor 56 (Figure 5) is essentially semicircular in configuration to conform to the inner surface of the body 16, and has a flat top portion 60. One end 62 of the rotor is open for purposes as will be hereinafter set forth. Formed on one side of the top plate 60 and adjacent the end 62 is an upstanding plate member or cam 64 having a pair of spaced strengthening ribs 66. The leading edge 68 of the cam 64 is formed on the arc of a circle to provide a continuation of the main body portion 56, and the trailing edge 70 is of irregular configuration for purposes as will be hereinafter set forth.

Above the body 16 is provided a shield 72 having a pair of forwardly extending side plates 74 (Figure 4) disposed adjacent the outer sides of the arms 36 and 44. The side plates 74 are provided with aligned apertures for receiving a shield hinge pin 78 supported in aligned apertures 80 (Figure 4) provided in the upper ends of the arms 36 and 44. The lower edge 82 of each side plate 74 is formed on the arc of a circle having its center line in the hinge pin 78, to maintain a uniform opening between the side plates 74 and the end members 34 and 42 in all operating positions of the shield 72. The side plates 74 are also supported and guided at their lower edges 82 by guide members 84 secured in each of the end members 34 and 42. The side plate 74 (Figure 1) disposed on the side of the head 14 opposite the handle 54 is of shorter length than the opposite plate 74, and the upper or leading edge 86 of each plate 74 is tapered over a portion

of its length for purposes as will be hereinafter set forth.

Adjacent the lower end 88 of the shield 72, there is secured one end of a chain 90 connected at its opposite end to the top plate 60 of the rotor 56 forward of the rotor hinge pin 58. A portion 91 (Figure 4) of the lower end of shield 72 in line with the cam 64 of rotor 56 is folded upon itself to form a slot 92 for purposes as will be hereinafter set forth.

Provided in the shield 72 in spaced relation to the lower edge thereof is a longitudinal slot 94 containing an apertured swivel 96 (Figure 6). The swivel 96 (Figures 6 and 7) is provided with diametrically opposed flats 97 for allowing the swivel to move longitudinally in the slot 94, but to preclude the swivel from turning therein. The swivel 96 is also provided with circumferential flanges 98 and 100 on the opposite ends thereof. The sides of the inner face 102 of the flange 98 are tapered upwardly and outwardly from the center line of the flange, as clearly shown in Fig. 7. Similarly, the sides of the inner face 104 of the flange 100 are tapered downwardly and outwardly from the center line thereof. The swivel 96 may therefore be pivoted or tilted a limited extent in a clockwise direction from the position shown in Fig. 6. Provided on the outer face 106 of the flange 98 is an essentially V-shaped (not shown) extension 108 for purposes as will be hereinafter set forth. The swivel 96 may be provided with a cylindrical extension 110, and the flange 100 may be press-fitted thereon to facilitate the assembly of the swivel in the slot 94.

Rotatably disposed in the apertured swivel 96 is a key stem 112 having a handle or knob 114 threaded onto the outer end 116 thereof. The inner portion 118 of the stem 112 is smaller in diameter than the remaining body portion, to provide a circumferential shoulder 120 adjacent the outer face of the swivel flange 100 for purposes as will be hereinafter set forth. Provided in the portion 118 is a longitudinal slot 122 communicating with a pair of spaced transverse threaded apertures 124. In slot 122 is secured a key 128, held by a pair of screws 126 disposed in the apertures 124. The key 128 operates the coin gate lock 12.

It is readily seen in Figure 6 that when the key stem 112 is assembled in the swivel 96, the shoulder 120 will prevent the stem 112 from being removed from the swivel in one direction, and the key 128 will prevent the stem 112 from being removed in the opposite direction. The screws 126 are preferably provided with any suitable lead sealing or the like (not shown) to prevent the key 128 from being removed from the stem 112 without detection. It is apparent that the key 128 will be limited in its rotational movement by the V-shaped extension 108, thereby assuring that the key is in the correct position for insertion in the coin gate lock 12.

#### Operation

To place the collector head 14 in a coin collecting position on a parking meter 2, the shield 72 is first swung upwardly on the hinge pin 78 to the position shown in Figure 1. The pins 48 are then inserted from the side of the meter 2 into the clamp 52 on the pipe. As clearly shown in Figure 1, with the shield 72 in the upper position, the leading tapered edge 86 of side plate 74 will clear the face of the meter 2 when the pins 48 are inserted in the clamp 52 permitting the head 14 to be placed in the correct position. The

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shield 72 is then pivoted downwardly on hinge pin 78 (Figure 2), and the key 128 is inserted in the lock 12. The tapered faces of the swivel flanges 98 and 100 will allow the key 128 to be pivoted sufficiently when inserted into the lock 12.

By use of the knob 114, the key 128 is then turned in the lock 12 to unlock the coin gate 8, and the shield 72 is again swung upwardly. Since the key 128 cannot be withdrawn from the lock 12 when the lock is unlocked, the gate 8 will also be swung upwardly to the position shown in Figure 3 to open the coin box 6. The rotor 56 is also simultaneously rotated clockwise (Figures 1 and 2) about the rotor hinge pin 58 through the medium of the chain 90 into a coin receiving position as shown in Figure 3. The open end 62 of the rotor 56 is then directly below the coin box 6 for allowing the coins (not shown) contained in the box to fall by gravity into the rotor.

It is to be noted that in this position of the device, the shield plates 74 and the top plate 60 of the rotor 56 prevent any access to the coins contained in the rotor, and the device obviously cannot be removed from the meter 2. It will also be noted that the guides 84 prevent the shield side plates 74 from being bent outwardly to provide access to the coins.

To assist swinging the shield 72 upwardly, and to maintain the shield in the upper position, a spring (not shown) may be provided on the shield hinge pin 78 coacting with the arms 36 and 44 and the shield. A rubber tube or the like (not shown) may also be disposed on the shield hinge pin 78 to prevent the gate 8 from contacting the pin and scratching the finish thereon.

After the coins have fallen into the rotor 56, the shield 72 is swung downwardly to close the gate 8. The folded portion 91 of the lower shield edge contacts the trailing edge 79 of the rotor cam 64 on the downward movement of the shield, to move the rotor 56 into the coin dumping position as shown in Figure 2. The slot 92 permits the shield 72 to complete its downward movement over the cam 64 of the rotor 56.

As clearly shown in Figure 2, when the shield 72 is in a downward position, the open end 62 of the rotor 56 is in communication with the inclined passageway 22, allowing the coins contained in the rotor to fall by gravity through the conduit 28 into a portable receptacle (not shown).

The key 128 may then be turned to lock the gate 8, and the shield 72 may be swung upwardly, allowing the collector head 14 to be removed from the meter 2.

During rotational movement, the rotor 56 is prevented from moving beyond the coin receiving and coin dumping positions, by a stop pin 130 secured in the end member 42.

After the collected coins have been dumped in the portable receptacle, if the coin gate 8 is not entirely closed when the key is turned to lock the lock 12, the gate 8 will protrude beyond the face of the meter 2. The side plate 74 disposed opposite the handle 54 will then contact the gate 8 upon attempted movement of the handle 54 to preclude the head 14 from being removed from the meter 2. It is, therefore, readily seen that the coin gate 8 must be fully closed and locked before the device can be removed.

It is to be noted that in all operating positions of the rotor 56, the rotor precludes access to the conduit 28, therefore an obstruction cannot be placed in the conduit without materially altering the device. The extensive alterations required

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can obviously be easily detected when the device is returned to the office.

From the foregoing, it is apparent that the present invention provides a safe, simple and efficient coin collecting device which will materially reduce the overall cost of collecting coins from a large group of parking meters or other coin operated devices. It is also apparent that the key cannot be detached from the device without detection, and the key cannot be inserted into the coin box gate lock until the device is fully in position to receive the coins. In addition, coins cannot be removed from the coin collector when it is in position on a meter, and the coin collector cannot be detached from the meter until the coin box gate is closed and locked.

Changes may be made in the combination and arrangement of parts as heretofore set forth in the specification and shown in the drawings, it being understood that any modification in the precise embodiment of the invention may be made within the scope of the following claims without departing from the spirit of the invention.

I claim:

1. In a device for collecting coins from a parking meter coin box, comprising a closure head adapted to be secured adjacent the coin box, a coin chute in said head, a bucket pivotally disposed in said head for receiving coins discharged from the coin box when the box is opened, said bucket dumping the coins through said coin chute when the coin box is closed, and means for pivoting said bucket when the coin box is opened and closed.

2. In a device for collecting coins from a meter coin box having a lock therein, a collector head, means for removably securing said head to the meter, a key carried by said head for locking and unlocking the coin box lock, a coin chute in said head, a bucket pivotally supported in said head for receiving coins discharged from the coin box, and for dumping the coins through said chute, and means for pivoting said bucket simultaneously with the opening and closing of the coin box.

3. In a device for collecting coins from a parking meter having a coin box with a lock therein, a collector head, means for removably connecting said head to the meter adjacent the coin box, a shield pivotally supported by said head in front of the coin box door, a key swiveled in said shield for locking and unlocking the coin box lock, a coin chute in said head, and a bucket pivotally supported in said head and connected to said shield for receiving coins discharged from the coin box when the box is opened, and for dumping the coins through said coin chute when the coin box is closed.

4. In a device for collecting coins from a parking meter having a coin box with a lock therein, a collector head, means for connecting said head to the meter whereby said head may be removed in one direction only, a shield pivotally supported by said head adjacent the coin box, arcuate plates connected to said shield precluding access to said head when the head is connected to the meter, and preventing the head from being removed in said one direction when the coin box is unlocked, a key swiveled in said shield for locking and unlocking the coin box lock, a coin chute in said head, and means in said head precluding access to said coin chute.

5. In a device for collecting coins from a parking meter having a coin box with a lock therein, a collector head for receiving the coins, means for removably connecting said head to the meter

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adjacent the coin box, a shield pivotally supported by said head, a key swiveled in said shield for locking and unlocking the coin box lock, arcuate plates carried by said head cooperating with said shield to preclude access to said head when said head is connected to a meter, said plates also preventing said head from being removed from the meter when the coin box is unlocked, a coin chute in said head, and means in said head preventing access to said coin chute.

6. In a device for collecting coins from a parking meter having a coin box with a lock therein, a collector head, means for connecting said head to the meter whereby said head may be removed in one direction only, a shield pivotally supported by said head adjacent the coin box, arcuate plates connected to said shield precluding access to said head when the head is connected to the meter, and preventing the head from being removed in said one direction when the coin box is unlocked, a key swiveled in said shield for locking and unlocking the coin box lock, a coin chute in said head, a bucket pivotally supported in said head for receiving coins discharged from the meter coin box in a first position thereof and for dumping the coins into said chute in a second position thereof, and means for moving said bucket simultaneously with the opening and closing of the coin box.

7. In a device for collecting coins from a parking meter having a coin box with a lock therein, a collector head, means for connecting said head

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to the meter whereby said head may be removed in one direction only, a shield pivotally supported by said head adjacent the coin box, arcuate plates connected to said shield precluding access to said head when the head is connected to the meter, and preventing the head from being removed in said one direction when the coin box is unlocked, a key swiveled in said shield for locking and unlocking the coin box lock, a coin chute in said head, a bucket pivotally supported in said head for receiving coins discharged from the meter coin box in a first position thereof and for dumping the coins into said chute in a second position thereof, a cam plate on said bucket adapted to be contacted by said shield when said shield is pivoted in one direction whereby said bucket is moved from said first position to said second position, and a chain interconnecting said bucket with said shield whereby said bucket is moved from said second position to said first position when said shield is moved in the opposite direction.

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