

[54] SECURITY MEANS FOR COIN
COLLECTING CONTAINER

[75] Inventor: Walter R. Bock, Chicago, Ill.

[73] Assignee: Zonaar Corporation, Elk Grove
Village, Ill.

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[51] Int. Cl. G07b 15/00

[58] Field of Search 232/7, 15, 16, 32, 60,
232/55, 64, 109, 194, 133

[56] References Cited

UNITED STATES PATENTS

2,815,166	12/1957	Sollenberger	232/16
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Primary Examiner—Bobby R. Gay

Assistant Examiner—Peter A. Aschenbrenner

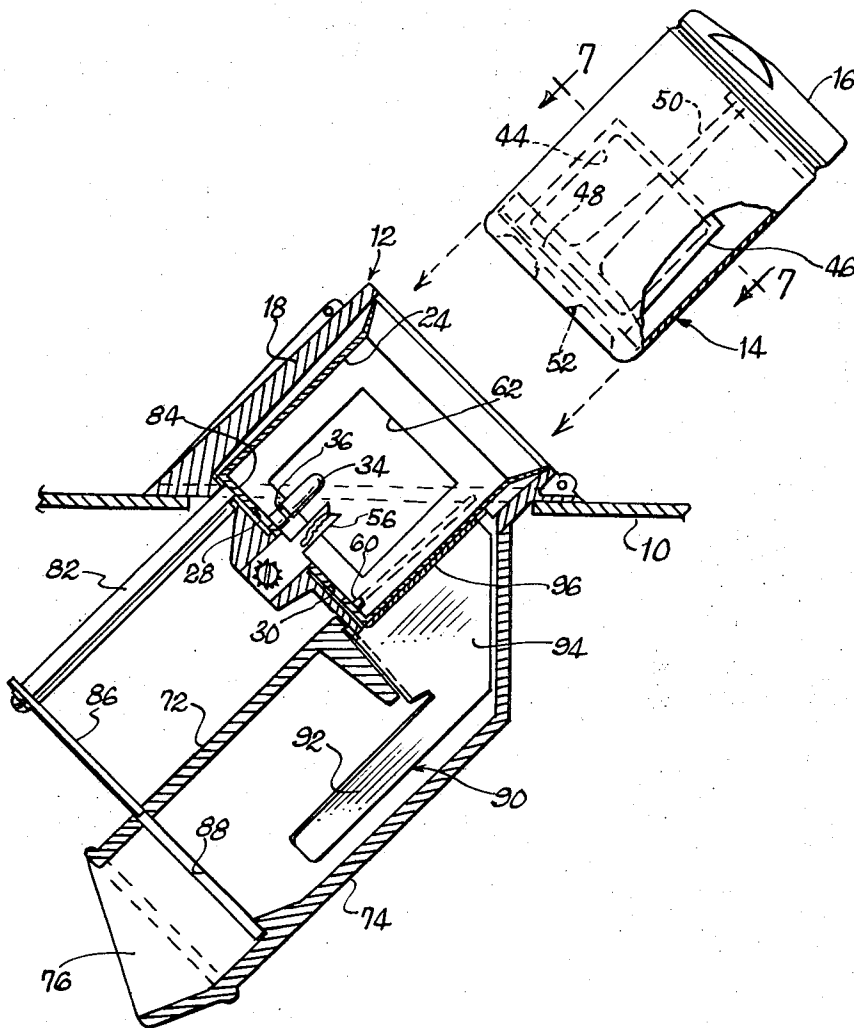
Attorney, Agent, or Firm—McDougall, Hersh & Scott

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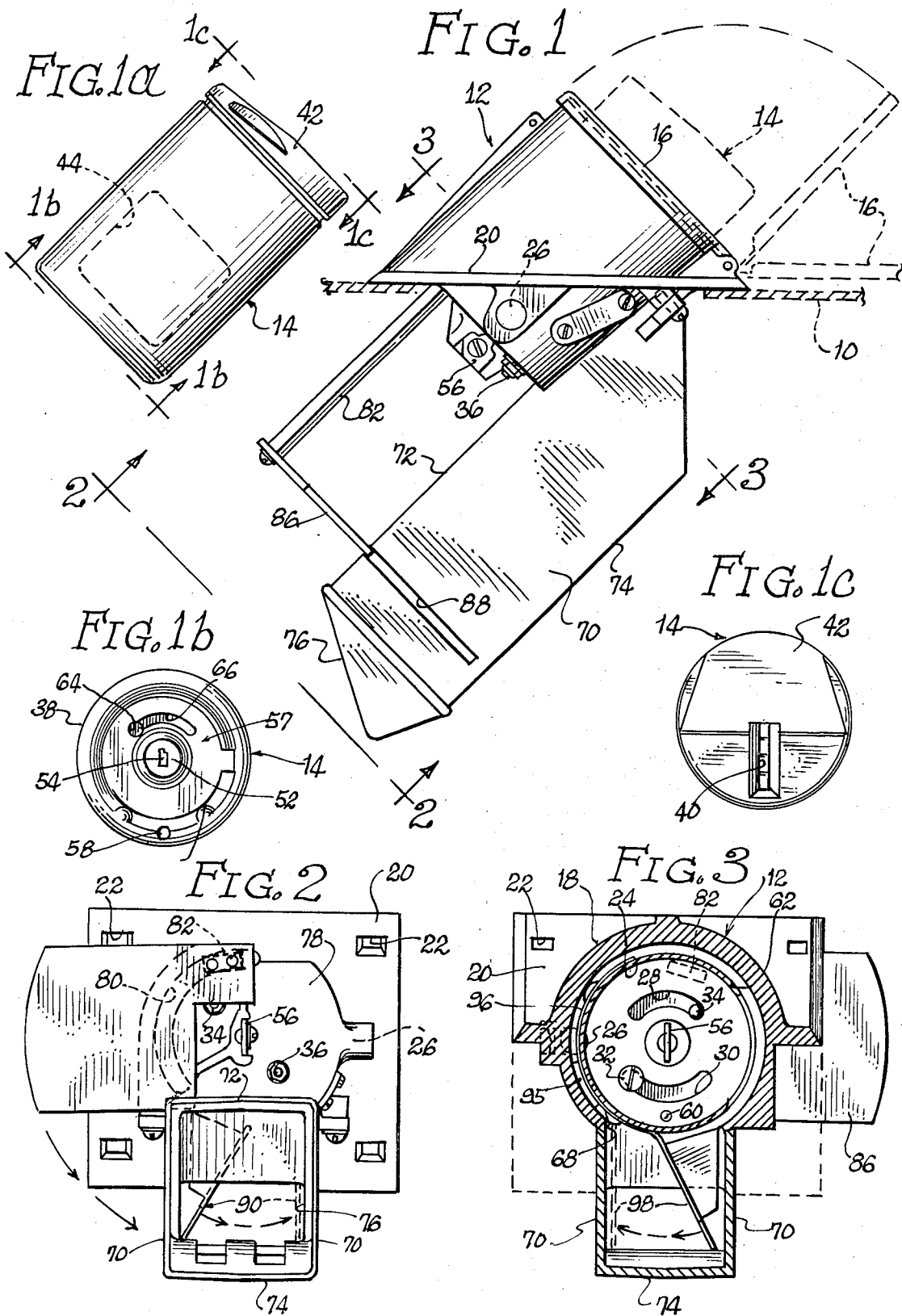
ABSTRACT

A coin handling apparatus including a coin container defining a receiver housing. A recess is formed in the housing for receiving a coin box, the box having a closure which opens upon movement of the box within the housing. A passage is associated with the housing whereby coins discharged from the box can be passed into the container. The improvements of the invention include means for clearing the passage in response to opening of the box closure, the clearing means comprising an arm which is driven across the passage upon movement of the box within the housing. A gate is also associated with the passage for blocking the movement of the coins through the passage while the coin box is in the open position. When the coin box is returned to the closed position, the gate is automatically opened to discharge the coins into the container.

8 Claims, 10 Drawing Figures



SHEET 1 OF 2



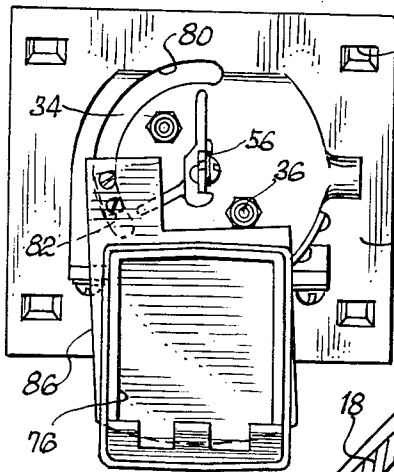


FIG. 4

FIG. 5

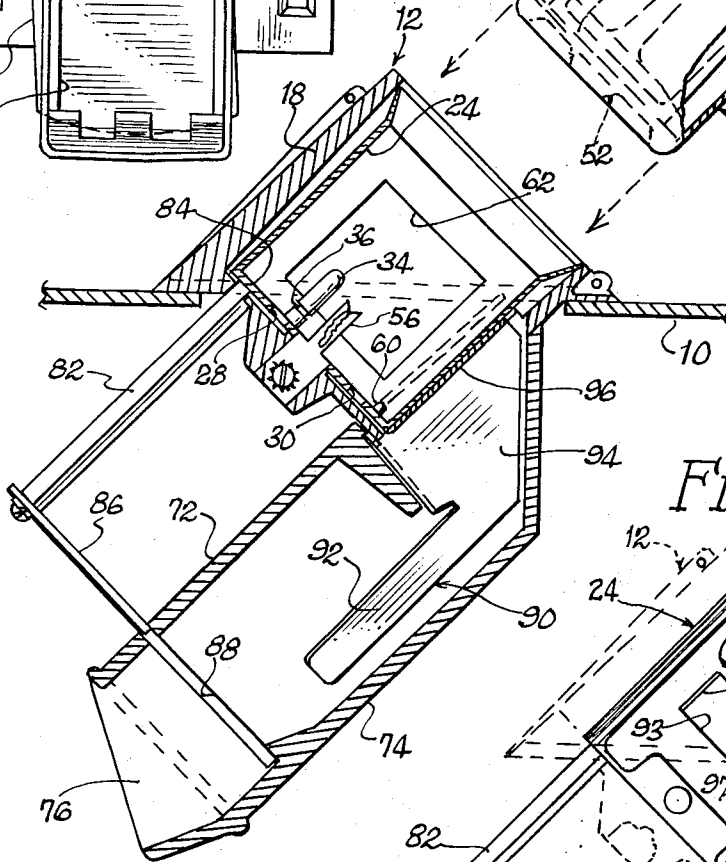
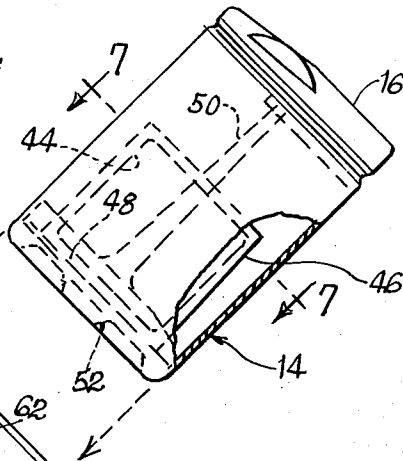
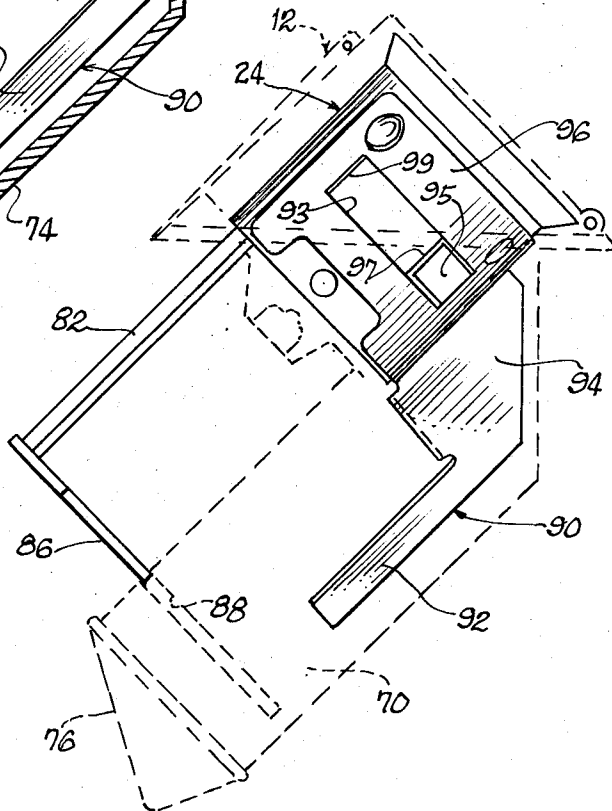
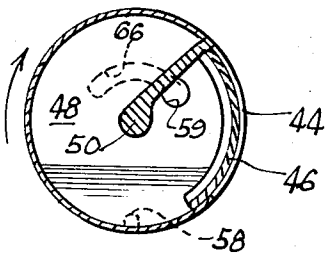


FIG. 6

FIG. 7



SECURITY MEANS FOR COIN COLLECTING CONTAINER

This invention relates to a coin handling apparatus. The invention is particularly concerned with a coin handling apparatus comprising a coin container and a receiver housing. The receiver housing is adapted to receive a coin box, and means are provided for discharging the contents of the coin box into the coin container.

Sollenberger U.S. Pat. No. 2,815,166 discloses a coin handling apparatus of the general type contemplated by this invention. This apparatus involves the use of a coin box receivable within a recess defined by a receiver housing of a coin container. A box closure is adapted to be opened upon rotation of the box within the receiver housing. When the closure is opened, the contents of the box are discharged into the container, and at this point, the box is removed. A movable wall of the receiver housing prevents access to the interior of the coin container when the coin box is removed.

Various schemes have been developed with a view toward improperly obtaining coins which should be delivered to the coin container. In particular, attempts have been made to locate articles, such as pieces of paper or cardboard, in the area of discharge of coins from the coin box. When these articles are located in that position, some of the coins discharged can be caught by the articles and thereafter retrieved. This retrieval can be accomplished by gaining access to the area adjacent the receiver housing, and schemes have been developed to gain such access even when the coin box has been removed from the receiver housing.

It is a general object of this invention to provide improved security means for constructions designed for the collection of coins from individual coin boxes.

It is a more specific object of this invention to provide means for displacing articles improperly located in the area of coin discharge from a coin box whereby free passage of coins from the coin box into a coin container can be achieved.

It is a further object of this invention to provide a means of the type described which will prevent normal operation of the coin box within a receiver housing in the event that any article disposed adjacent the collection area prevents clearing of this area by the means provided.

These and other objects of this invention will appear hereinafter and for purposes of illustration, but not of limitation, specific embodiments of the invention are shown in the accompanying drawings in which:

FIG. 1 is a side elevational view of a coin box receiver housing and associated coin passage as the receiver housing appears in conjunction with a coin container;

FIG. 1-a is an elevational view of a coin box of the type used in conjunction with the receiver housing;

FIG. 1-b is a bottom plan view of the coin box;

FIG. 1-c is a top plan view of the coin box;

FIG. 2 is a bottom plan view of the receiver housing assembly shown in FIG. 1;

FIG. 3 is a cross-sectional view of the receiver housing taken about the line 3-3 of FIG. 1;

FIG. 4 is a bottom plan view of the receiver housing shown with the blocking gate in the closed position;

FIG. 5 is a cross-sectional view of the receiver housing and illustrating the cash box construction, partly cut away;

FIG. 6 is a side elevation of the receiver housing assembly shown with the clearing arm in its extreme clearing position; and,

FIG. 7 is a cross-sectional view taken about the line 7-7 of FIG. 5.

The coin handling apparatus of this invention generally comprises a coin container having a receiver housing positioned on the container. The receiver housing defines a recess for receiving a coin box, and the coin box defines a closure which is opened upon rotation of the coin box within the housing. Under the proper conditions, opening of the coin box in this manner provides for the discharge of coins into the coin container.

The specific structure of this invention involves the use of a coin passage positioned in the area of the discharge of coins from a coin box. This passage is directly associated with the receiver housing, and coins, therefore, move through this passage prior to deposit in the coin container.

An arm is positioned within the coin passage and is adapted to be moved across the passage as the cash box closure is being opened for the discharge of coins. This results in clearing of the passage in the event that any obstructions are located in the passage prior to discharge of the coins. If for any reason the arm cannot be moved across the passage, for example due to the stiffness of an obstruction, then it is not possible for one to rotate the coin box within the receiver housing. In that event, coins will not be discharged from the cash box and are, therefore, not available for pilfering.

The structure of the invention also involves the use of a gate mechanism associated with the coin passage. This gate blocks the end of the passage whenever the receiver housing is in position for coin discharge. Accordingly, it is not possible for one to collect coins from the container by gaining access to the interior of the passage through the receiver housing. During proper collection, the gate temporarily blocks the passage, however, the gate means are automatically restored to permit passage of coins into the coin container after the coin box has been rotated back to the closed position.

The drawings illustrate an arrangement of the general type shown in the aforementioned Sollenberger U.S. Pat. No. 2,815,166. Thus, the mechanisms illustrated are associated with a coin container housing, the upper wall of which is shown at 10. A receiver housing 12 is mounted on this upper wall, and the receiver housing defines a recess dimensioned to receive coin box 14. A cap 16 is hinged to the receiver housing whereby the housing can be closed when not in use.

The receiver housing defines an outer wall 18 which is formed integrally with flange portions 20, these flange portions defining openings 22 to permit securing of the housing to the wall 10. A rotatable inner sleeve 24 is positioned within the housing, and the recess defined by this inner sleeve is dimensioned for receiving the cash box 14.

A spring-loaded detent ball 26 extends from the outer wall 18, and is normally positioned within an opening defined by the inner sleeve 24. This detent ball is depressed by a coin box inserted within the housing recess, and this frees the inner sleeve for rotation within the housing.

The sleeve 24 defines arcuate slots 28 and 30. The slot 30 receives the shank of screw 32, and this arrangement limits the degree of rotation of the inner sleeve. The slot 28 receives post 34, this post defining a reduced diameter portion 36.

The cash box 14 consists of an outer housing 38 defining a slot 40 in top wall 42 for receipt of coins. The side wall of the coin box defines a rectangular opening 44, and this opening is normally closed by means of a shutter 46. The shutter 46 is formed integrally with a horizontally extending wall 48 having a center post 50 mounted thereon. This shutter assembly is normally locked against rotation by means of a lock 52 defining keyway 54. As explained in the aforementioned Sollenberger patent, insertion of a proper key frees the outer housing 38 for rotation relative to the shutter assembly. When the housing is moved a sufficient distance, the opening 44 is exposed whereby the contents of the cash box are dumped out.

A key 56 is positioned within the recess defined by sleeve 24, and this key fits the lock 52. Accordingly, when the cash box is inserted within the recess and then rotated, the opening 44 is cleared. The cash box bottom wall 57 also defines a circular opening 58 which receives pin 60 mounted on the sleeve 24. This arrangement results in driving of the sleeve 24 along with the cash box housing whereby the sleeve is also rotated as the opening 44 is being cleared. As best shown in FIG. 3, the sleeve defines an opening 62 which upon rotation moves into alignment with the opening 44 whereby the contents of the cash box pass through the openings 44 and 62 during the operation described.

The necked-down portion 36 insures the proper positioning of the cash box within the sleeve 24 before rotation can be achieved. Thus, an opening 59 is defined by horizontal wall 48 and a normally aligned opening 64 is defined in the bottom wall 57 of the cash box. A slot 66 having a width narrower than this opening diameter forms a continuation of the opening 64. The openings 64 and 59 are large enough to permit entry of the post 34; however, rotation of the cash box housing 38 is not possible until the slot 66 is aligned with the reduced diameter portion 36. Thus, the remaining portions of the post 34 are too large to be received by the slot 66.

The wall 18 of the receiver housing 12 defines an opening 68 which communicates with a passage defined by side walls 70 and top and bottom walls 72 and 74. This passage terminates in an outlet end 76. The opening 68 is located whereby the opening 44 of the cash box, and the opening 62 of the sleeve 24, will be aligned therewith after rotation of the cash box. Accordingly, during normal operation of the system, rotation of the cash box results in dumping of coins through the openings 44, 62 and 68, and then through the outlet end 76 of the passage into the coin container.

Attempts have been made to pilfer coins which should be deposited within the container. For example, by pushing the detent ball 26 inwardly by means of an instrument other than the cash box, the inner sleeve 24 can be rotated whereby the opening 62 will expose the associated coin passage. With this access, tools could be devised whereby coins within the container could be retrieved. Alternatively, some obstructions, for example, cardboard, could be placed in the passage to form a barrier. Thereafter, when coins are discharged from the coin box, the barrier would prevent passage of coins into the container permitting access to the coins

upon removal of the cash box and rotation of the sleeve 24 with another instrument.

The construction of this invention provides an effective means for eliminating pilfering of the type described. These means serve to block access to the container interior when the inner sleeve 24 has been rotated to move the opening 62 into discharge position. Furthermore, these means provide an arrangement for insuring that coins will not be dumped into the passage if there is an obstruction in the passage which would prevent movement of the coins therethrough.

The bottom wall 78 of the housing 12 defines a slot 80 which receives arm 82. This arm is connected at one end to the bottom wall 84 of sleeve 24, and the other end is connected to blocking plate or gate 86. The plate 86 is movable with the arm 82 between the open position shown in FIGS. 1, 2, 3, 5 and 6, and the closed position illustrated in FIG. 4. A slot 88 is defined by the top and side walls of the coin passage for receiving the plate 86 when the plate is in the closed position. Movement of the plate is accomplished upon rotation of the sleeve 24. Accordingly, if one should rotate the sleeve 24 to align the opening 62 with the passage opening 68, this action would also move the plate 86 into blocking position. Therefore, there would be no access to the container, and coins could not be pilfered in that way.

The coin passage is also provided with a clearing arm 90 which includes an elongated end portion 92 and a main body portion 94. A connecting section 96 is provided on the clearing arm, this section being fit around the sleeve 24 whereby movement of the arm is controlled. Specifically, the section 96 defines an opening 93 which receives a driving tab 95 formed on the sleeve 24. Referring to FIGS. 3 and 6, the tab 95 moves with the sleeve 24 until the edge 97 of the tab engages the edge 99 of the opening 93. Continued rotation then drives the section 96 and associated arm 90 whereby the arm sweeps across the passage to clear any obstructions.

As indicated, in the event that an attempt is made to prevent the passage of coins through the passage by placing some blocking means in the passage, the arm 90 will engage these blocking means upon rotation of the coin box and corresponding rotation of the sleeve 24. If the blocking means are of relatively weak material, for example paper, the clearing arm will sweep this material aside whereby the movement of coins through the passage will not be impeded. On the other hand, if a relatively strong blocking means is employed, these blocking means will be engaged by the arm 90, and will prevent continued movement of this arm. Accordingly, full movement of the sleeve 24 and coin box will be prevented in which case, coins cannot be discharged.

It will be apparent that the mechanisms of this invention provide highly effective means for overcoming attempts at pilfering coins collected for deposit in a coin container. The structures described serve the dual purpose of blocking entry into the container while also preventing the illegal obtaining of coins by locating improper blocking means in a coin passage.

It will be understood that various changes and modifications may be made in the above described construction which provide the characteristics of this invention without departing from the spirit thereof particularly as defined in the following claims.

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That which is claimed is:

1. In a coin handling apparatus including a coin container, a receiver housing on the container, and a recess defined by said receiver housing for receiving a coin box, said coin box defining an opening whereby coins in said box can be transferred into said container, a closure for said opening, said closure being opened upon movement of said box within said housing, the improvement comprising a passage associated with said receiver housing for the movement of coins from the coin box into said container, means for clearing said passage to insure the movement of coins through the passage, said clearing means comprising an arm adapted to move across the passage area adjacent the opening of said box, and drive means for said arm operable in response to opening of said closure whereby said arm moves across said area as said closure is opened.

2. A construction in accordance with claim 1 wherein said cash box comprises a cylindrical structure, said recess being defined by a cylindrical housing area, said box being rotatable within said housing area.

3. A construction in accordance with claim 2 wherein said cylindrical housing area comprises an outer wall and a rotatable sleeve positioned within said outer wall, said cash box being engageable with said sleeve whereby rotation of said cash box results in simultaneous rotation of said sleeve.

4. A construction in accordance with claim 3 wherein said sleeve defines an opening rotatable into position

for communication with said passage, the opening for said cash box being movable with said sleeve opening for alignment therewith upon communication with said passage, a cash box shutter normally closing said opening and a lock normally maintaining said shutter in the closed position, and including a key positioned within said housing for unlocking said lock to permit movement of the cash box opening relative to the shutter.

5. A construction in accordance with claim 3 wherein said clearing arm is attached to said sleeve for movement of the arm upon rotation of the sleeve.

6. A construction in accordance with claim 5 wherein said passage comprises an enclosed body extending downwardly into said container for gravitational movement of coins therethrough, said clearing arm moving in a path between opposite walls of said body for clearing any obstructions in said body prior to the discharge of coins from a cash box.

7. A construction in accordance with claim 1 including a second arm movable with said sleeve, and a blocking plate attached to said arm for blocking passage of coins discharged from a cash box, said blocking plate being movable between a normal position out of blocking position relative to said passage, and a second blocking position achieved upon rotation of said sleeve.

8. A construction in accordance with claim 7 wherein the arm supporting said blocking plate is attached to the bottom wall of said container.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,807,628 Dated April 30, 1974

Inventor(s) Walter R. Bock

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Title page, change the spelling of the Assignee from
"Zonaar" to --Qonaar--.

Signed and sealed this 26th day of November 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents