

May 17, 1960

R. H. DAMON

2,936,769

VISIBLE CASH CHANGER

Filed Dec. 21, 1956

3 Sheets-Sheet 1

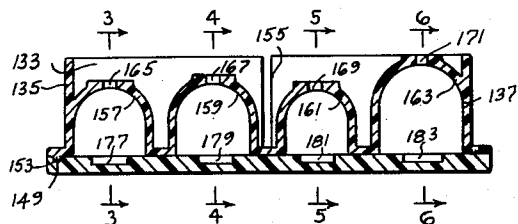


Fig. 2

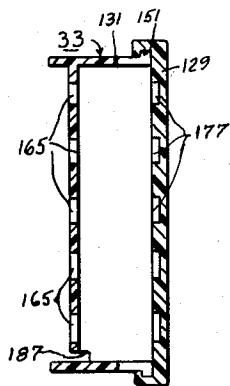


Fig. 3

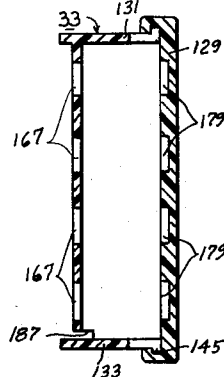


Fig. 4

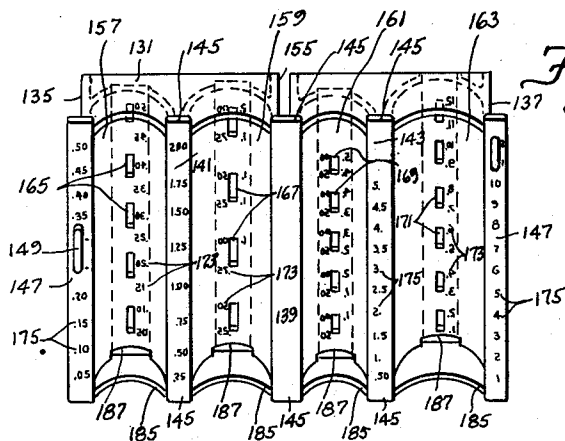


Fig. 1

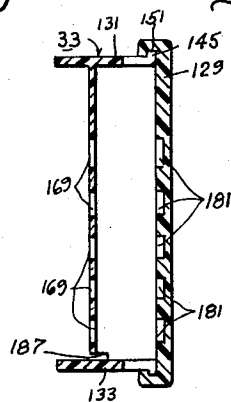


Fig. 5

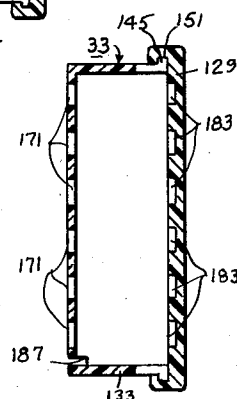


Fig. 6

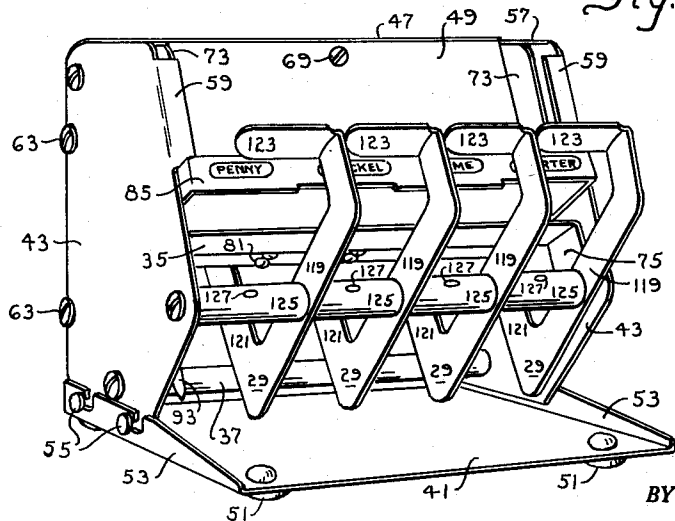


Fig. 7

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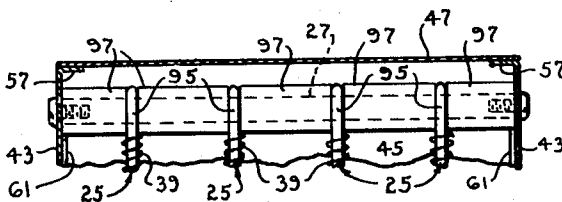
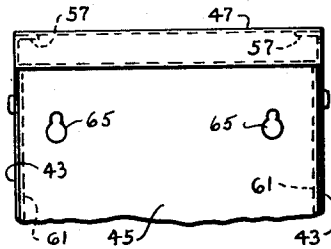
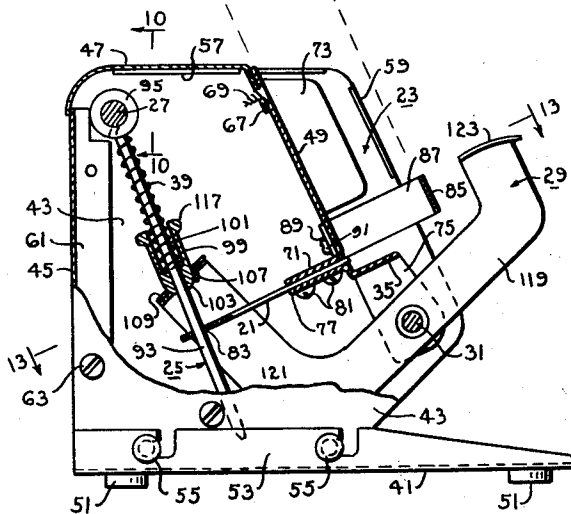
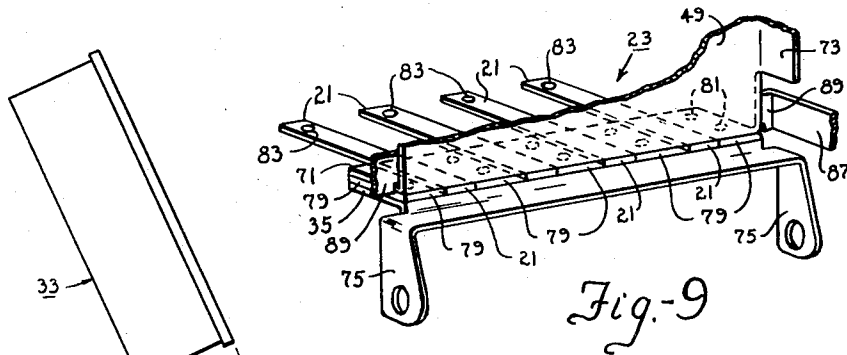
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3 Sheets-Sheet 3

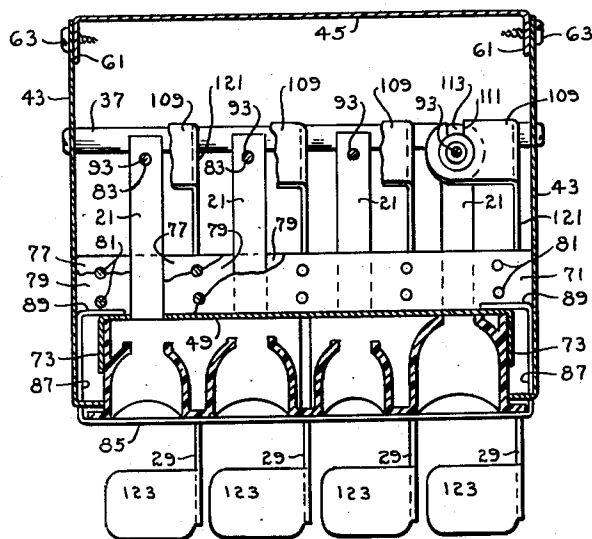


Fig.-13

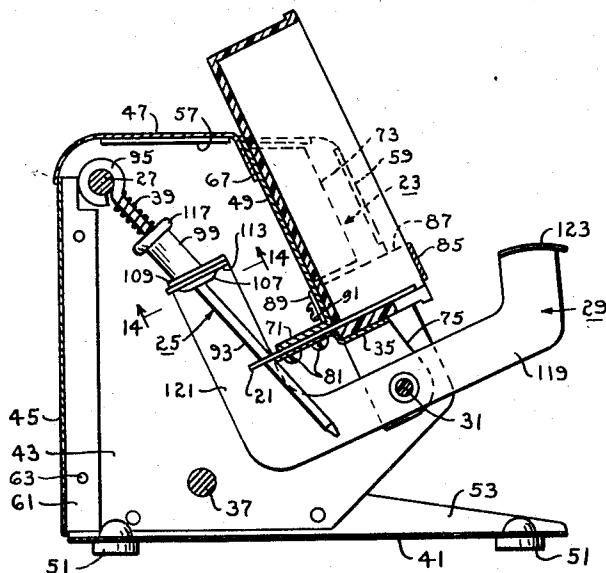


Fig.-12

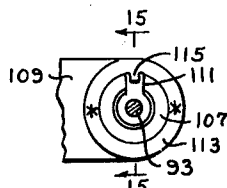


Fig.-14

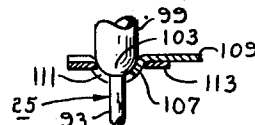


Fig.-15

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1

2,936,769

VISIBLE CASH CHANGER

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Application December 21, 1956, Serial No. 629,934

2 Claims. (Cl. 133—5)

The invention relates generally to dispensers and more particularly is directed to a machine for dispensing coins of different denominations or values.

The machine embodying the subject invention may be designed and constructed in various ways but is preferably made to accommodate a cartridge or case containing coins of different values, such as cents, nickels, dimes and quarters, in a manner whereby any coin can be readily individually released for use by merely actuating a lever. In other words, a lever is provided for each denomination so that one or any number of levers can be manipulated separately or jointly to obtain the coin or coins desired.

One of the principal objects of the invention is to provide a machine comprising, among other things, a housing, a plurality of ejectors for selectively projecting coins from the machine, a plurality of pivotally mounted actuators operatively connected to the ejectors, and a plurality of manual levers for operating the ejectors through the agency of the actuators.

Another object of the invention is to provide a machine in which the housing includes a base and a plurality of walls which are detachably connected together in a unique manner to impart stability to the housing and afford support for the components of the operating mechanism.

A specific object of the invention is to provide a housing having a base and back wall which are readily detachable from the remainder of the machine in order to obtain access to the mechanism. The back wall is provided with means, preferably in the form of keyhole openings to facilitate attachment of the machine to a vertical support.

A significant object of the invention is to provide a machine in which the side walls thereof provide a support for an upper horizontal shaft which carries the actuators, a lower horizontal shaft carrying the levers, and a horizontal stop or abutment means for the actuators.

An important object of the invention is to provide resilient means preferably carried by the actuators for urging the levers in a direction to cause the actuators to engage the stop to maintain the ejectors in retracted positions and automatically return them to such positions following actuation thereof.

A specific object of the invention is to provide each lever with a concave seat and each actuator with a sleeve engaged by the resilient means for maintaining a convex portion on the sleeve in the seat to provide a smooth acting slidable connection between the sleeve and actuator and a rockable or pivotal connection between the sleeve and lever.

Also an object of the invention is to provide a setup whereby the levers and ejectors are both pivotally and slidably connected to the actuators and the points of connection between the levers and actuators are located

2

intermediate the points of connection between the ejectors and actuators.

Another important object of the invention is to provide a subassembly, preferably comprising a front wall of the housing and a member which are detachably secured together to provide a guide means for slidably receiving the ejectors and receiving means for accommodating the receptacle of the coin case. More particularly in this regard, the member also serves as a rest for the coin receptacle and the front wall includes a base wall and side walls to form a channel constituting the receiving means just referred to. A bracket is preferably detachably affixed to the front wall to assist in holding the receptacle in position and thereby prevent outward displacement thereof when coins are ejected.

A particular object of the invention is to provide a guide means of the character above described in which spacers are detachably mounted between a lower flange on the front wall and a flange on the member to form in combination therewith a plurality of individual guideways for the ejectors.

Additional objects of the invention are to provide a machine which offers advantages with respect to costs, manufacture, assembly, durability and efficiency.

A further object of the invention is to provide a coin case embodying imprint principles of design and construction.

Other objects and advantages of the invention will become apparent after the description hereinafter set forth is considered in conjunction with the drawings annexed, which exemplify a preferred embodiment thereof.

In the drawings:

Figure 1 is a pictorial view of the receptacle of a coin case;

Figure 2 is a transverse sectional view taken through the case to illustrate certain structural characteristics thereof;

Figures 3, 4, 5 and 6 are sectional views respectively taken on lines 3—3; 4—4; 5—5; and 6—6 of Figure 2 illustrating additional details of construction;

Figure 7 is a perspective view of the machine;

Figure 8 is an elevational view of the machine shown in Figure 7, with portions broken away to illustrate its internal mechanism;

Figure 9 is a partial perspective view of a guide frame, with portions broken away to depict the operative relationship of coin ejectors therewith;

Figure 10 is a partial elevational view taken substantially on line 10—10 of Figure 8 showing pivotally mounted actuators constituting components of the mechanism;

Figure 11 is a transverse section taken through the base of the machine showing one of a plurality of resilient pads therefor;

Figure 12 is a vertical sectional view of the machine showing the coin case operatively associated therewith and a lever in an operative position as distinguished from its inoperative position shown in Figure 8;

Figure 13 is a view taken substantially on line 13—13 of Figure 8 illustrating other features of the mechanism;

Figure 14 is a transverse section taken substantially on line 14—14 of Figure 12;

Figure 15 is a transverse sectional view taken substantially on line 15—15 of Figure 14; and

Figure 16 is a partial elevational view of the back or rear wall of the housing provided with openings to facilitate attachment of the machine to a vertical wall or support.

The machine illustrated in Figures 7 through 15 of the drawings which supports the coin case will be described

first. The machine, among other things, includes a housing, a plurality of ejectors 21 carried by a guide frame generally designated 23, a plurality of actuators, generally designated 25, pivotally mounted on an upper horizontal shaft 27 and operatively connected to the ejectors, a plurality of manually operable levers, generally designated 29, pivotal on a lower horizontal shaft 31 and operatively connected to the actuators for imparting movement to the actuators to actuate the ejectors so the latter will be caused to selectively kick coins outwardly from the receptacle of a case, generally designated 33, mounted on a support or rest 35 associated with the frame 23, a stop 37, and resilient means 39 respectively carried by the actuators for urging the levers to retracted or inoperative positions and the actuators against the stop to normally maintain the levers in such positions and the ejectors in normally retracted or inoperative positions, all of which will be described more in detail subsequently.

Considering with greater particularity the character of the housing, it is preferably box-like in shape and includes a base 41, a pair of corresponding side walls 43, a back wall 45, a top wall 47, and an inclined front wall 49. The base 41 is preferably of channel shape and includes a planar portion of a size to extend forwardly a sufficient extent to stabilize and prevent tipping of the machine when operated by manipulating any number of the levers. The planar portion of the base is preferably provided with a hole adjacent each corner so as to detachably receive pads preferably in the form of grommets 51, in a conventional manner, in order to resiliently support the machine to reduce noise and prevent the marring of a surface upon which the machine may be mounted. The base also includes upturned side flanges 53, each flange preferably being provided with a pair of bayonet slots for respectively detachably receiving pairs of bayonet projections 55 carried by the lower extremities of the side walls 43 of the housing as depicted in Figures 7 and 8. The base is thus readily detachable from the remainder of the machine and affords access to its interior.

The corresponding side walls 43 of the housing are substantially planar and each is formed to provide a forwardly substantially triangular portion, which portions jointly support the lower horizontal shaft 31 carrying the levers 29. The lower extremities of the side walls support the stop 37 for the actuators 25, as above referred to, and their upper extremities are provided with inturned horizontal flanges 57 and inclined flanges 59. The ends of the top wall 47 are preferably secured upon the horizontal flanges 57 by spot welds and the inclined flanges 59, among other things, assist in locating the frame 23 in a manner which will be later described.

The back wall 45 of the housing is planar and provided with inturned side flanges 61 which extend between the side walls and are secured thereto by pairs of screws 63. The upper portions of the flanges are provided with clearance notches as shown in Figures 8 and 12. The back wall is also preferably provided with a pair of key-hole openings 65 through which headed members carried by a vertical mounting wall may be extended for supporting the machine on the wall in lieu of on its base. Thus, dual means are provided for supporting the machine on either of two different mountings. Detachment of the back or rear wall also affords ready access to the interior of the machine.

The top wall 47 of the housing may serve as a mounting for a name plate and includes a rear curved depending flange overlapping the back wall and portions of the vertical marginal edges of the side walls 43, and an inclined depending flange 67 which serves as an abutment for the front wall 49.

The front wall 49 is preferably detachably secured against the inclined flange 67 of the top wall by a screw 69. The front wall may be considered as a component of the frame 23 because the front wall includes a lower rearwardly extending flange 71 which serves as an upper

complementary component of a guide means for the ejectors as depicted in Figures 8, 9 and 12. The front wall also includes a planar portion and a pair of corresponding forwardly extending flanges 73, disposed in juxtaposed relation to the flanges 57 and 59 on the side walls of the housing, and form with the planar portion a channel to provide means for detachably receiving the receptacle of the coin case 33.

The guide frame 23 also includes a bridge or support 10 having depending offsets 75 provided with apertures through which the lower shaft 31 extends to assist in mounting the bridge. Screws extend through the side walls of the housing and connect with the ends of the shafts 27 and 31 and the stop 37 for detachably securing same to the walls. The bridge includes a portion extending forwardly and substantially at right angles to the front wall to provide the rest 35 for the coin receptacle and an offset rearwardly extending flange 77 constituting a lower complementary component of the guide means. The flange 77 is secured in parallel relationship to the flange 71 of the front wall 49 by a plurality of spacers 79 and screws 81. More specifically in this regard, the spacers are preferably in the form of rectangular plates secured between the flanges at longitudinal spaced locations by the screws. The spacers are preferably of the same length as the width of the flanges and the end ones are preferably of different widths while those therebetween are of corresponding width. A pair of screws is utilized to secure each spacer in place. The screws extend upwardly through holes provided therefor in the lower flange 77 and spacers and threadedly connect with threaded apertures provided in the upper flange 71. Thus, it will be evident that the opposed flanges and spacers in combination provide a plurality of parallel guideways, which respectively slidably receive and guide the ejectors for movement in an inclined plane above the rest 35 as illustrated in Figures 8 and 12. The guideways are of a size to impart a smooth stabilized movement to the ejectors and prevent cocking or binding thereof when reciprocated by the actuators.

The ejectors 21 correspond with one another and each is preferably made in the form of an elongated relatively narrow flat strip having a front abutment for engaging a coin and a rear extremity provided with receiving means preferably in the form of an opening 83 as shown in Figures 8, 9 and 13.

The frame 23 also preferably includes a bracket 85 which extends above the rest and guideways and in a predetermined relationship to the front wall of the housing so as to assist in retaining the coin receptacle in the channel receiving means above referred to. This bracket includes a bar extending between and in advance of the side walls of the housing and above the levers 29. The bracket also includes a pair of rearwardly extending arms 87 abutting the lower edges of the inclined flanges 59, the arms having inturned offsets 89 bearing and secured against the rear surface of the front wall by screws 91. The inclined flanges 59 assist in locating the frame and also assist in closing off the spaces between the forward flanges 73 of the front wall 49 and the side walls 43 of the housing to improve the general appearance of the machine. The bar also serves as a support for suitable indicia, preferably in the form of decalcomanias, to indicate which levers will release the coin desired. The indicia, as shown in Figure 7, is so disposed above the levers that it is clearly visible when an operator is normally seated or standing in front of the machine. Obviously, the indicia can be placed at any other desirable location on the machine, levers or the receptacle, in lieu of on the bracket.

The mode of mounting the actuators 25 and their operative relationship to the levers 29 will now be described. The actuators may be designed and constructed in various ways, but as exemplified, each is preferably formed to include an elongated cylindrical rod 93 having

5

a tapered lower end and an upper loop providing an eye 95 or opening through which the upper horizontal shaft 27 extends as shown in Figures 8, 10 and 12. A plurality of cylindrical tubular spacers 97 are preferably carried by the shaft and interposed between the eyes of the actuators for maintaining the actuators in predetermined axial spaced relationship. The diameter of these spacers are preferably such that their opposed ends cooperate with the eyes of the actuators to stabilize their pivotal movement with respect to the shaft. It will be noted that the end spacers are of the same length and that the three intermediate spacers are of a different corresponding length.

A cylindrical sleeve 99 is slidably mounted on each actuator for engaging a lever. Each sleeve is provided with a recess 101 and a rounded nose or convex portion 103. Resilient means 39, preferably in the form of the helical spring, surrounds each actuator with one end bearing against the eye and its other end seated in the recess for urging the sleeve downwardly so that its nose 103 engages or is received in a concave seat 107 provided in the upper rear offset end 109 of a lever as depicted in Figures 8 and 12 through 15. Each seat is preferably made by forming a depression in the lever. A slot 111 preferably intersects each seat.

An annular washer 113 is preferably secured by welds to the underside of the inner offset end 109 of each lever in surrounding relationship to each concave seat to reinforce the offset end and seat as clearly depicted in Figure 14. Each washer is preferably provided with an inner radial projection 115 which extends a short distance into the slot 111 for locating purposes. An actuator extends through each concave seat, through the opening 83 in an ejector and a sufficient distance below the ejector so that the lower extremity of the rod of the actuator will engage the stop 37 to maintain the lever in inoperative position. Grease is preferably placed in the concave seats to promote efficiency of operation. In order to facilitate application of grease to the seats when required, each of the sleeves is preferably provided with an annular enlargement 117 which can be engaged to slide the sleeve upwardly to expose the seat.

Each of the levers preferably includes a long leg 119 disposed at an angle with respect to the horizontal and an inner upturned short leg 121 disposed substantially at right angles to the long leg. The short leg is provided with the offset end 109 above referred to and the fore extremity of the long leg has an upturned portion provided with an offset 123 serving as a handle or finger engaging portion to facilitate manipulation of the lever.

The long leg of each lever is preferably provided with an aperture through which the lower shaft extends and in order to stabilize the pivotal movement of each lever and maintain them in axial spaced relationship, one end of a cylindrical spacer tube 125 is preferably butt welded to one side of the long leg of each lever in axial alignment with the aperture therein. Each of these tubes is preferably provided with one or more transverse holes 127 substantially midway its ends as shown in Figure 7 so that a lubricant can be inserted for flow between the shaft and tubes.

In view of the foregoing, it will be evident that the sleeves, through the springs, force the levers in a direction to cause all of the actuators to engage the stop 37 to normally maintain the levers in an inoperative position and that when any lever is depressed it will pivot about the axis of the lower shaft 31 and relative to an actuator and cause the inner offset end of the lever and the sleeve mounted thereon to move upwardly along the actuator and compress the spring and at the same time pivot the actuator about the axis of the upper shaft 27 so that it will slide in the opening of an ejector and cam or drive the ejector forwardly as evidenced in Figure 12 to eject or flip a coin outwardly from the coin case.

The unique principles of design and construction em-

6

bodied in the coin case, as exemplified primarily in Figures 1 through 6 of the drawing, will now be described. The case generally designated 33 may be constructed in various ways but, as depicted, is preferably in the form of a rectangular box, comprising a receptacle or container and a cover 129 which are detachably connected together in a novel manner. The case is preferably made from a transparent moulded plastic material and of a size to promote convenience in handling.

The receptacle of the case includes, among other things, corresponding top and bottom walls 131 and 133, substantially corresponding side walls 135 and 137, and what may be considered three parallel front walls disposed in the same plane. More particularly in this regard, there is a center front wall 139 and front walls 141 and 143 disposed on opposite sides of and parallel to the center wall. The center wall 139 is preferably slightly greater in width than the other walls and wall 141 greater than wall 143 and spaced apart farther from the center wall than wall 143. These front walls are joined to and extend laterally predetermined distances beyond the top and bottom walls of the receptacle to form projections 145. The side walls are provided with flanges 147 joining top and bottom walls. These flanges extend outwardly from the side walls in the same plane as the front walls and laterally beyond the top and bottom walls the same extent as the front walls to form projections corresponding to the projections 145. The left flange 147 is preferably provided with a boss 149.

The cover 129, among other things, includes a pair of corresponding longitudinal walls provided with opposed grooves 151 which slidably receive the rows of projections 145. The cover is also provided with a recess 153 which receives the boss 149 to detachably secure the receptacle and cover together. Release of the cover is effected by merely forcing the cover away from the boss so the latter will clear the recess. An opening (not shown) is provided in the cover adjacent the recess to facilitate entry of a finger or tool to release the boss from the aperture. Obviously, other means suitable for the purpose can be employed for effecting a snap connection and the relationship of the boss and recess could be reversed.

Attention is directed to the fact that the top and bottom walls 131 and 133 of the receptacle are preferably split transversely of their length at locations opposite the center wall as indicated at 155 so that the receptacle is more or less divided into a pair of sections which are resiliently hinged or connected by the center wall 139 which is common to both sections. This unique structure offers a setup whereby the receptacle may be more easily piloted and/or inserted into and removed from the receiving means of the machine and so that it will be held firmly in place on the machine by its inherent resiliency.

The receptacle of the case is preferably moulded to provide a plurality of parallel receiving means preferably in the shape of generally semi-cylindrical formations 157, 159, 161 and 163, which are adapted to respectively receive coins such as cents, nickels, dimes and quarters. The rear surface of the base portion of each formation is preferably planar and the base portions of the formations 157, 159, 161 and 163 are preferably respectively provided with a series of vertically aligned slots 165, 167, 169 and 171 as illustrated to provide windows or sight openings. The number and lengths of the slots and distances therebetween in each formation vary to provide a predetermined appropriate setup so that one may readily determine, for example, in multiples of five, the value of the coins stacked in each formation. In other words, the arrangement is preferably such that the length of each slot in formation 157 is the equivalent to the combined thickness of five cents and the length of each slot in formations 159, 161 and 163 are respectively equivalent to the combined thickness of five nickels; five dimes and five quarters; or if desired, the distance from

the bottom wall 133 to the upper or lower marginal end edge of each slot may serve as a gauge to determine, in predetermined multiples, the value of the coins in each stack.

In order to further assist in determining the values the rear surface of each formation is preferably provided with suitable indicia of graduated values as indicated at 173 corresponding to the values indicated by the slots and corresponding indicia 175 for the same purpose is also preferably provided on the front walls 141 and 143 and on the flanges 147 on the receptacle as clearly exemplified in Figure 1 of the drawing.

Also, as clearly illustrated in Figures 2 through 6, the inner sides of the cover 129 of the case is preferably provided with four rows of generally rectangular recesses 177, 179, 181 and 183 constituting windows or sight openings. The rows of recesses respectively cooperate with the formations and the recesses in each row correspond with one another and with the slots or windows in each formation. In other words, when the receptacle and cover are assembled, the recesses in the covers are disposed directly opposite the slots or windows in the formations. More specifically in this respect, the widths of the recesses in each row respectively correspond to the lengths of the slots or windows opposite thereto.

The bottom wall 133 of the receptacle serves as a support or seat for the coins when the receptacle is placed in the machine and this wall is interrupted by a plurality of arcuate openings 185 the size of which increase in accord with the size of the formations. These openings facilitate manual removal of coins from the receptacle. The base of each formation is provided with a generally rectangular notch 187 adjacent the bottom wall 133 and forms in combination therewith an opening of a size to substantially receive an ejector.

To use the case, the cover is removed and the receptacle loaded with coins is merely placed into the receiving means of the machine as illustrated in Figures 8, 12 and 13, so that the notches 187 in the lower extremities of the formations for the coins are respectively aligned with the guideways for the ejectors so the latter will selectively eject coins whenever the levers are operated.

Having thus described my invention, it is obvious that various modifications may be made in the same without departing from the spirit of the invention, and, therefore, I do not wish to be understood as limiting myself to the exact form, construction, arrangement, and combination of parts herein shown and described.

I claim:

1. A device of the character described comprising a housing having an inclined front wall, and side walls, a transparent coin box having a slot therein adjacent its lower end, said front wall having inturned flanges forming receiving means for said transparent coin box, a flat coin ejector, having an opening adjacent one end thereof, extended through said slot, a shaft extending transversely between said side walls below said slot, an elongated L-shaped actuator having an intermediate portion of one leg pivotally mounted on said shaft, the other leg of said actuator extending upwardly interiorly of said housing behind said coin box and above said opening in said ejector, a second shaft parallel to said first-mentioned shaft extending transversely across said housing adjacent the top thereof and rearwardly of said box and above the extremity of said other leg of said L-shaped actuator, a rear upper offset end on said extremity of said

other leg of said actuator, an apertured indentation in said offset leg, a cylindrical sleeve having a rounded lower end with a bore therethrough, said rounded lower end seating in said indentation for swivelling movement relative thereto, and an actuator rod pivotally mounted at its upper end on said second-mentioned shaft, said actuator rod extending downwardly, through said apertured lower end of said sleeve, said apertured indentation, and said opening in said ejector, whereby pivotal movement of said one leg of said actuator about said first-mentioned shaft, through movement of said offset end, slides said sleeve upwardly on said actuator rod to pivot said actuator rod toward the front wall of said housing about its axis on said second-mentioned shaft to extend, through its engagement in said opening, said ejector forwardly in said slot to eject a coin from said coin box.

2. A device of the character described comprising a housing having an inclined front wall, and side walls, a transparent coin box having a slot therein adjacent its lower end, said front wall having inturned flanges forming receiving means for said transparent coin box, a flat coin ejector, having an opening adjacent one end thereof, extended through said slot, a shaft extending transversely between said side walls below said slot, an elongated L-shaped actuator having an intermediate portion of one leg pivotally mounted on said shaft, the other leg of said actuator extending upwardly interiorly of said housing behind said coin box and above said opening in said ejector, a second shaft parallel to said first-mentioned shaft extending transversely across said housing adjacent the top thereof and rearwardly of said box and above the extremity of said other leg of said L-shaped actuator, a rear upper offset end on said extremity of said other leg of said actuator, an apertured indentation in said offset leg, a cylindrical sleeve having a rounded lower end with a bore therethrough and an upper socket, said rounded lower end seating in said indentation for swivelling movement relative thereto, an actuator rod pivotally mounted at its upper end on said second-mentioned shaft, said actuator rod extending downwardly through said socket, said apertured lower end of said sleeve, said apertured indentation, and said opening in said ejector, whereby pivotal movement of said one leg of said actuator about said first-mentioned shaft, through movement of said offset end, slides said sleeve upwardly on said actuator rod to pivot said actuator rod toward the front wall of said housing about its axis on said second-mentioned shaft to extend, through its engagement in said opening, said ejector forwardly in said slot to eject a coin from said coin box, and a spring having one end seated in said socket and the other end abutting said second shaft surrounding said actuator rod, biasing said sleeve downwardly, to return said ejector to retracted position.

References Cited in the file of this patent

UNITED STATES PATENTS

483,973	Adams	Oct. 4, 1892
587,599	O'Donnell	Aug. 3, 1897
682,740	Peters	Sept. 17, 1901
851,303	McKenzie	Apr. 23, 1907
1,172,607	Jones	Feb. 22, 1916
1,398,299	McGill	Nov. 29, 1921
1,454,392	Loyd	May 8, 1923
2,594,907	Gassaway	Apr. 29, 1952
2,703,907	Newell	Mar. 15, 1955

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,936,769

May 17, 1960

Robert H. Damon

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 42, before "substantially" insert -- extending --; column 5, line 19, after "recess" strike out the hyphen; column 7, line 12, for "Frigure" read -- Figure --; line 14, for "sides" read -- side --.

Signed and sealed this 25th day of October 1960.

(SEAL)

Attest:

KARL H. AXLINE

Attesting Officer

ROBERT C. WATSON

Commissioner of Patents