April 22, 1941. J. C. WAHL 2,239,435

COIN OR CHECK DISPENSER

Original Filed Aug. 24, 1938 4 Sheets-Sheet 1

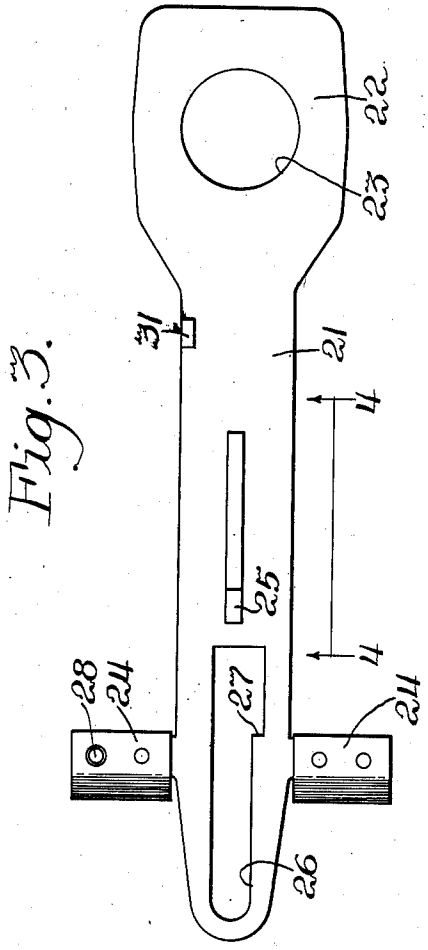


Fig. 3.

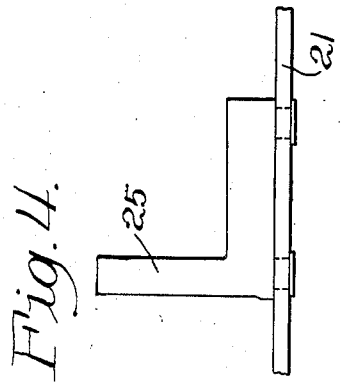


Fig. 4.

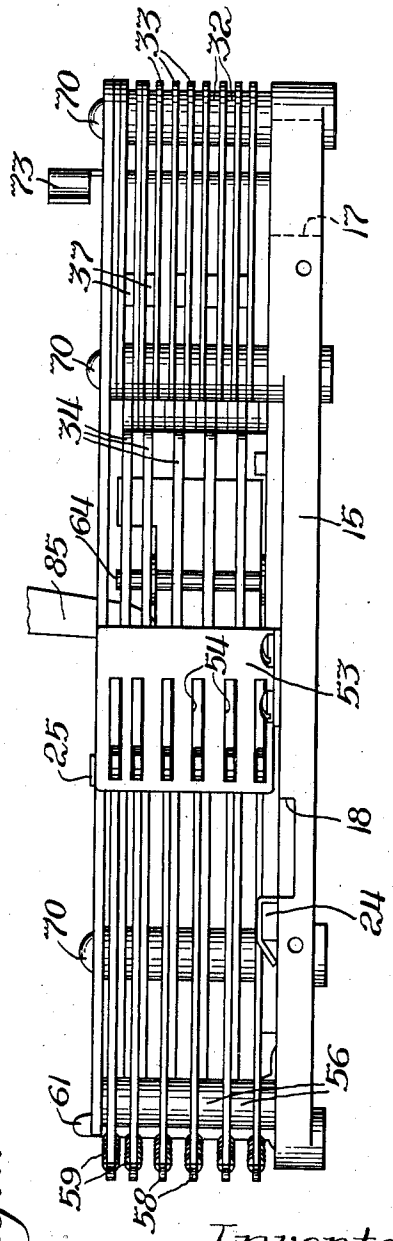


Fig. 1.

Inventor
John C. Wahl
By Paul O. Pippel
Atty.

April 22, 1941. J. C. WAHL 2,239,435

COIN OR CHECK DISPENSER

Original Filed Aug. 24, 1938 4 Sheets-Sheet 2

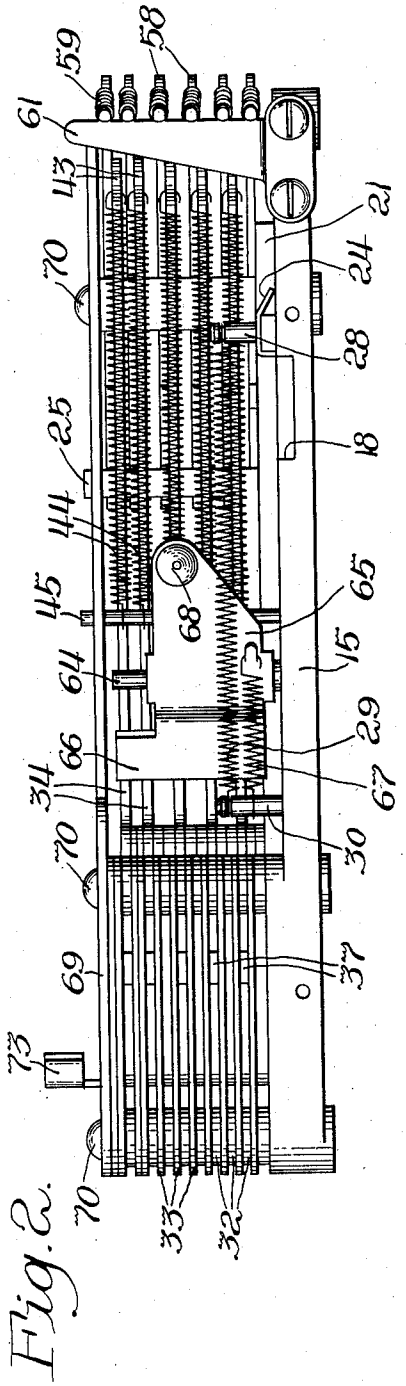


Fig. 2.

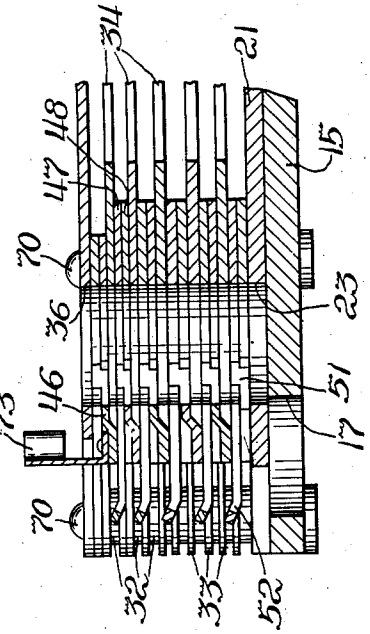


Fig. 7.

Inventor
John C. Wahl
By Paul O. Pippel
Atty.

April 22, 1941. J. C. WAHL 2,239,435

COIN OR CHECK DISPENSER

Original Filed Aug. 24, 1938 4 Sheets-Sheet 3

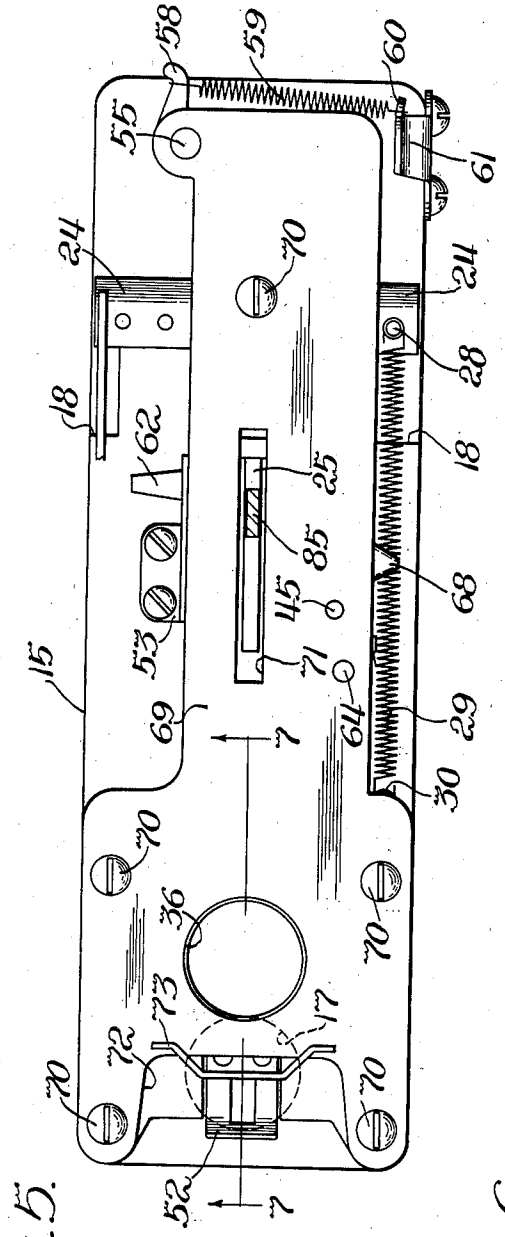


Fig. 5.

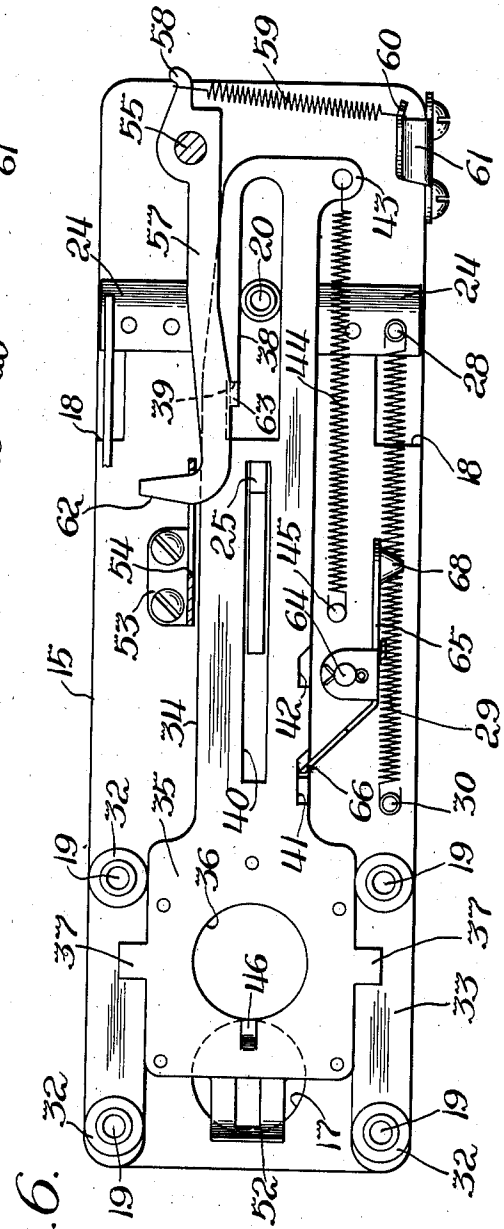


Fig. 6.

Inventor
John C. Wahl
By Paul O. Pippel
Att'y.

April 22, 1941. J. C. WAHL 2,239,435

COIN OR CHECK DISPENSER

Original Filed Aug. 24, 1938 4 Sheets-Sheet 4

Fig. 8.

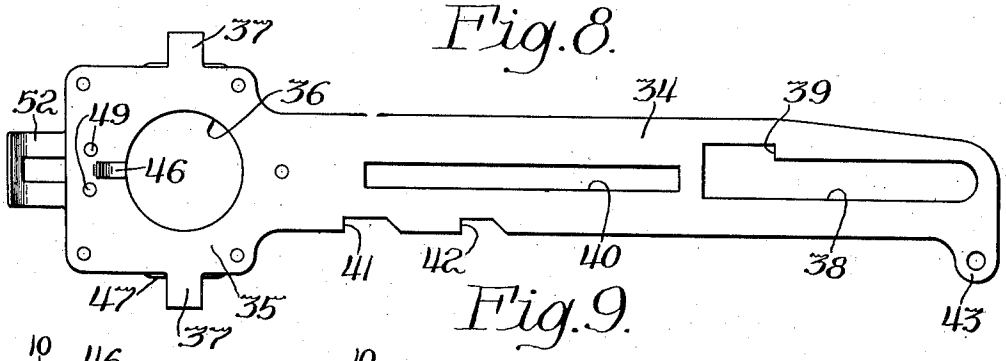


Fig. 9.

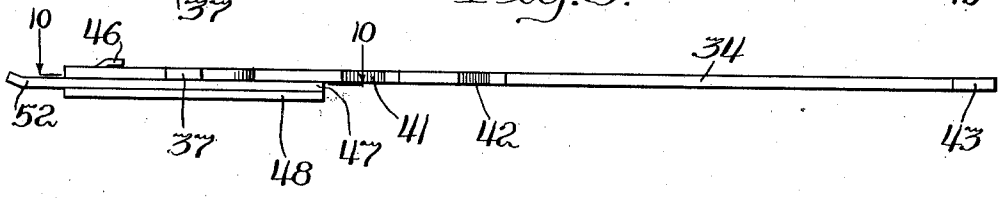


Fig. 10.

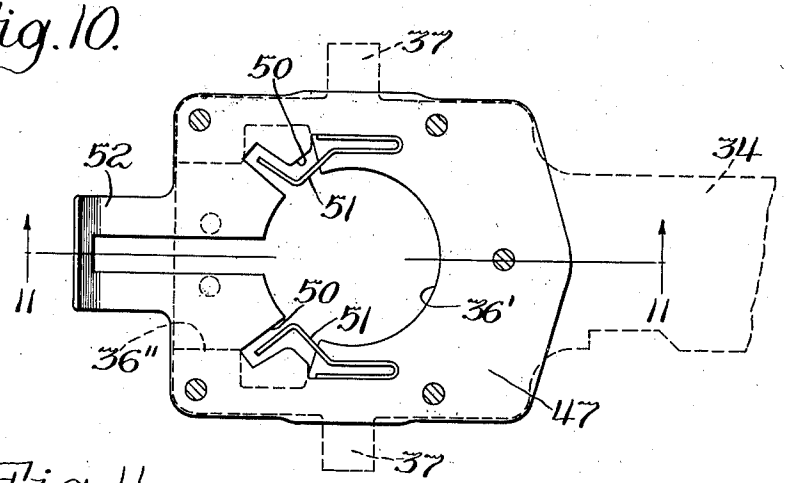
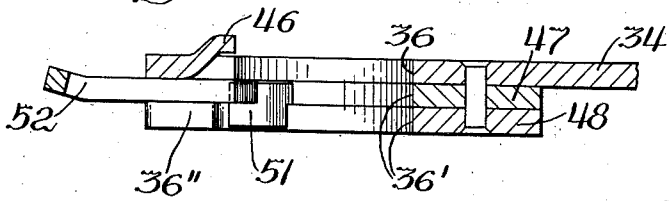


Fig. 11.



Inventor
John C. Wahl
By Paul O. Pippel
Atty.

Patented Apr. 22, 1941

2,239,435

UNITED STATES PATENT OFFICE

2,239,435

COIN OR CHECK DISPENSER

John C. Wahl, Chicago, Ill., assignor to Lion Manufacturing Corporation, Chicago, Ill., a corporation of Illinois

Original application August 24, 1938, Serial No. 226,437. Divided and this application June 28, 1939, Serial No. 281,679

11 Claims. (Cl. 133—5)

This invention relates to coin or check dispensers and the present application is a division of applicant's co-pending application, Serial Number 226,437, filed August 24, 1938.

These mechanisms, useful with coin handling apparatus such as change-makers, comprise a stack of horizontal, superimposed slides formed with vertically alined openings that serve to hold a vertical column of coins or the like which are to be dispensed upon movement of a selected slide or slides, taking them in order from the bottom up to vary the number of coins dispensed or ejected; it being understood that when a slide shifts a coin, said coin is dropped by gravity through an offset discharge opening.

More particularly the present invention relates to improvements for such type of dispenser; it being desirable to provide a simple fool-proof structure capable of easy production at reasonable costs; to provide novel operating mechanism for the slides to overcome certain difficulties heretofore encountered because the stack of coins in the alined slide openings did not remain in perfect column relationship; to provide means preventing jamming of the slides because of coin inequalities; and lastly, generally to improve the structure and operation of these mechanisms.

The main object of the invention is to provide such a pay out device having an improved construction of coin ejecting slides.

Another object of the invention is to provide improved means for preventing worn coins from accidentally jamming the slides as they are pulled to pay out position.

Other important objects will no doubt become known as the disclosure is more fully made.

Briefly, the improved dispenser comprises a base plate on which is carried for sliding movement, a lower or main pay out slide, and thereabove are positioned additional, independent pay out slides. All slides have a coin receiving opening which openings aline vertically to retain a column of coins or checks. Individual springs serve normally to pull the respective slides to ejector or pay out position, which position is offset from the position occupied by the vertical column of coins in the slides. Improved operating mechanism is initiated into action to engage a part on the lower slide which extends upwardly through slots formed in the upper slides, said part being very suddenly moved by the operating mechanism to shift all slides simultaneously to a cocked position. This sudden movement keeps the coins in the column from getting out of vertical line, since the coin openings in the slides are of greater diameter than the coins. The bottom slide is positively locked in cocked position by a part of the operating mechanism, and the upper slides are individually locked by respective pivoted latch levers. When the operating mechanism works, means forming part thereof causes release of the lower slide for spring pulled operation to dispensing position. The upper slides, considering them in order from the bottom up, may be selected for operation with the main lower slide when their respective latch levers have been released. In this manner the number of coins to be dispensed can be varied. Such variation is further accomplished by suitably varying the thickness of the coin moving ends of the slides. Each slide has a novel spring detent means associated with it to prevent accidental trailing or sloughing off of an extra coin with the slide when it pays out to prevent jamming and damage. Incidental features are the provision of slide guide means and the special sheet metal structure of the slides. So much will suffice for the time being in presenting a general understanding of the improved structure, which is illustrated in detail in the accompanying sheets of drawings, wherein:

Figure 1 is a general side elevational view of the coin or check dispenser, including a part of the operating mechanism therefor;

Figure 2 is a similar view taken from the opposite side;

Figure 3 is a detail, plan view of the lower or main slide.

Figure 4 is a side detail, elevational view of the same slide looking from the line 4—4 of Figure 3;

Figure 5 is a top plan view of the dispenser unit;

Figure 6 is a similar top plan view with the cover plate removed to expose to view the under parts;

Figure 7 is a sectional view taken along the line 7—7 of Figure 5, looking in the direction of the arrows;

Figure 8 is a plan view of an auxiliary dispenser slide;

Figure 9 is a side view of the same slide;

Figure 10 is an enlarged, plan sectional view of the auxiliary slide structure, taken along the line 10—10 of Figure 9, looking in the direction of the arrows; the superposed slide being shown phantomized to illustrate the relationship of the parts, and,

Figure 11 is a cross sectional view through the

slide structure taken along the line 11—11 of Figure 10, looking in the direction of the arrows, the superposed slide, however, being shown in full lines.

The unit comprises a base plate 15 of general rectangular shape having formed at one end a coin drop hole 17. Opposite edges of said plate 15 on its upper surface are notched as at 18.

Carried at the discharge end of said plate 15 are four corner posts 19 and at the opposite end thereof is a single central post 20. Slidably mounted on the base plate is a main pay out slide 21 shown in Figure 3, the same having a large head 22 formed with a coin receiving hole 23 and at its opposite end are provided opposite ears carrying blocks 24, normally positioned proximate the notches 16 in the base plate 15. At its center, as seen in Figure 4, the slide carries a rigid bar formed with an upstanding, sturdy post 25. The slide 21 is also formed with a long slot 26 including an abutment shoulder 27. One block 24 carries an upright pin 28 to which is connected a spring 29 having its other end connected to a pin 30 mounted rigidly on the base plate 15. It will be noted that the post 20 extends upwardly through the slot 26 in the main slide 21 when the latter is in position on the base plate. The slide 21 also carries an abutment block 31. This slide in practice may be of a thickness at its end 22, equal to the thickness of three coins so that its opening 23 may hold these three coins as will appear.

The corner posts 19 carry spacer collars 32 and side spacer bars 33, the height of the collars being varied as desired properly to space a series of superimposed auxiliary pay out slides 34, all of the type shown in Figures 8 to 11, inclusive. In the present form, five of such slides are utilized.

Each slide 34 has an enlarged head portion 35 with a coin hole 36 therein and opposite guide ears 37 which fit in between the side spacer plates 33 in an obvious manner. Each slide 34 is of light weight sheet metal construction and includes a long end slot 38 with an abutment notch 39 to correspond with a similar conformation in the main or bottom slide 21. Further, each slide 34 has a long central slot 40 through which the post 25 heretofore described extends upwardly. These slots 40 in all slides 34 register vertically. One side edge of each slide 34 has a pair of spaced notches 41 and 42. Further, each said slide 34 has a lateral apertured ear 43 at the end remote from its head end, and separate coil springs 44 connect respectively with each said ear 43 and a post 45 carried on the base plate 15. The side edges of the slots 38 guide in grooves formed in the post 20.

The head end of each slide 34 is specially constructed and includes a central upstanding tang or nib portion 46 at the front edge of the coin hole 36. Auxiliary head plates 47 and 48 are fastened by rivets 49 or by welding if desired, to the under side of the head part 35 as shown in Figures 9, 10 and 11. These extra plates have holes 36' formed in them in registration with the hole 36 in the slide 34, heretofore described. The hole 36' in the plate 48 as shown in Figures 10 and 11 has an extension slot 36'' slightly wider than the width of the coins used. On opposite sides of these holes 36' the plates 47 are notched as at 50 in which notches are positioned, flat detent springs 51 having portions provided by an angle in them, to extend slightly into the openings 36' and slot 36'' in such a manner that the two opposed angle portions in effect form yieldable obstructors across the slot 36'' and the front end of the holes 36'. This space between the angle portions of the springs in the slot 36'' is less than the diameter of a coin handled, so that in the event an extra, thin or worn coin has a tendency to creep along or be sheared off with the correct number of coins to be moved by a lower slide structure in the pay out movement thereof, it will have its movement yieldingly resisted and, in fact, stopped and held by these springs 51, acting pincher fashion, in the next preceding slide thereabove which is not released, so that such extra coin will on the return or cocking stroke of the slide be pushed from such yieldingly held position back into the column by the nib 46. This situation arises sometimes when a lower slide is moved to perform its dispensing operation and then the springs 51 in the slide next thereabove can function, as stated; that is, when such immediate upper slide is held locked and does not move to dispensing position. Thus, on the payout stroke, the relieved portion or slot 36'' permits a coin that is thin or tends to cock to enter the slot 36'' to be yieldingly held by the pincher action of springs 51 and on the return stroke the nib 46 frees the yieldingly held coin and moves it back into the column. Should a sheared or sloughed off coin be thus moved to a position over the discharge opening 17, such coin cannot be discharged because it is yieldingly held by the spring 51. Each plate 47 on each auxiliary slide includes a rigid front, slotted extension 52, the slots thereof being centrally located to form a space above each tang 46 on the next lower slide. This provides at all times for free relative sliding movement between adjacent slides.

At the side of the pack of slides, the base 15 carries an upstanding guide bracket 53 shown in Figure 1, which bracket has spaced lengthwise, parallel slots 54 formed therein, the slots generally being spaced to conform to the spacing of the auxiliary slides 34. This guide bracket occupies an intermediate position on the base 15, as shown. At the end of the base, remote from the coin discharge end thereof and on the same side as the bracket 53, the base carries a vertical shaft 55 with appropriate spacers 56 (see also Figure 6) for pivotally mounting intermediate their ends and in spaced relation, a series of latching levers 57, which are horizontally disposed.

Each latch lever 57 has a hooked end 58 to which is attached a pull spring 59 in turn connected to hook portions 60 on a bracket 61 rigidly mounted on the opposite side of the base 15. The other portions of said levers 57 extend alongside the respective slides 34 and include outwardly bent ends 62 extending respectively through the slots 54 in the brackets 53. In fact, the intermediate portion of each lever 57 overlies a slide 34 as shown in Figure 6. Each such portion of each lever includes a downturned abutment or boss 63 extending down into the slot 38 of the slide therebelow and by means of the springs 59 normally engaging and cooperating with the abutment notch 39 to lock the slide 34 against movement. A latch lever 57 is also provided similarly for the main slide 21.

On the opposite side of the slides from bracket 53 the base 15 at an intermediate portion carries a vertical shaft 64 on which is pivoted a lever 65 having a wide latch portion 66 to engage in the notches 41 and 42 of slides 34 and cooperate with boss 31 of the slide 21 to act as a stop, said lever latch being pulled to engaging position by a spring 67 connected between it and the base as

seen in Figure 2. The opposite end of the lever **65** carries a cam **68**.

The whole slide assembly is held together by a cover plate **69** shown in Figure 5, which plate is held down by screws **70** passed into the posts **19** and **20**, said plate having a coin receiving opening **36** to register with the holes **36** and **36'**, and also a slot **71** to register with the slots **40** so that the slide cocking post **25** may extend up through the cover plate **69**. The discharge or front end of the cover **69** is cut out as at **72** and the top slide **34** at said end carries an upstanding rigid bracket **73** extending above the cover **69** for a purpose to appear. The operating mechanism for the pay out structure is not herein described since it is covered in the co-pending application heretofore identified.

In use the main slide **21** is normally locked by an arm not shown engaging the boss **24**. When the boss is freed the operating parts not shown come into play and a lever part **85** thereof will engage the upright post **25** and build up pressure thereagainst. Eventually other means act on the cam **68** to release the latch **66** from the slide **21** as well as from the notches **41** in all of the upper slides **34**.

With all slides now released and the operating arm bearing strongly against the post **25** the slides **21** and **34** as a group are forcibly and quickly driven to cocked position, which position is shown in Figures 1 and 2, because the post **25** engages in the end of the slots **40** to move all slides together. When the slides are all in fully cocked position the portions **63** on the latches hook over the respective shoulders **27** and **39** of the slides to hold the slides latched in such cocked positions. At this time all of the springs **44** and **29** are stretched.

As has been said the coins are in a vertical column in the alined holes **36**, **36'** and **23** in the respective slides, the bore thus formed through the pack of slides being of greater diameter than the diameter of an alined stack of the coins in said bore. In other words, the coins are smaller in diameter than the coin receiving holes in the slides. Such stack of coins rests on the base plate **15** as can be understood from the showing in Figure 7. The slides **21** and **34** are releasable in successive order from the bottom up, said action being controlled by means not shown. Such means engages against the tails **62** of the latch levers **57**, whereby to move said levers inwardly to release the parts **63** thereof from the notch in the slides. This permits the drive spring **29** for the lower slide and the springs **44** for the upper slides to pull said slides to dispensing position over the hole **17** in the base **15** to drop the moved coins from the pay out device. Each slide in this disclosure at its coin carrying end is of a thickness to move three coins from the stack. The pay out stroke of each slide is limited by the end of the slots **26** and **38** striking the guide post **20**.

In the event a worn, thin coin tries to slough off between a moving slide and the locked slide immediately thereabove, the springs **51** and tang or nib **46** act to prevent such result, thereby further preventing coins from jamming. After one or more slides have been released to dispensing operation in order from the bottom up, the slides have to be reset to cocked position by again operating the coin machine mechanism disposed above the pay out device in the manner previously described.

When all slides are successively released to pay out position including the top slide **34**, then the bracket **73** is moved to engage some auxiliary means not shown for any purpose desired.

From the description above given it will now be clear that an improved structure for the purposes stated has been provided. It is the intention to cover herein all changes and modifications which do not depart from the spirit and scope of the invention as defined in the following claims.

What is claimed is:

1. A slide for pay out devices comprising a plate having a head portion formed with a coin moving hole, said head portion having opposed pockets formed therein on opposite sides of a slot formed in the head portion and leading in the direction of the length of the slide from one end of the hole, said slot having a width equal to at least the diameter of the hole in the plate, and spring detent members positioned respectively in said pockets and having portions extending into the slot adjacent the hole and spaced from each other a distance less than the diameter of the coin in said hole which is to be moved.

2. A coin dispenser comprising a stack of slides having coin holes respectively formed therein in registration to surround a stack of coins, each slide being movable with all slides in the stack therebelow, and a pair of spring detent members carried in a slot respectively formed in the slides other than the lowermost one and communicating with the holes, each said slot being at least as wide as the diameter of a coin present in the corresponding hole and running in the direction of the length of the slide, there being one such detent member disposed on each side of the slot adjacent an edge of the hole and projecting into the slot.

3. A coin dispenser comprising a stack of slides having head portions with coin holes respectively formed therein in registration to surround a stack of coins, each slide being movable with all slides in the stack therebelow, each head portion other than in the lowermost slide having on its under side a flat spring detent mounted therein on each side of a slot formed in the slide adjacent an edge of the hole, said slot extending from said edge of the hole in the length of the slide and having a width equal to at least the width of a coin present in the hole, the spring detents projecting into said slot, and a nib formed on the top side of the head portion at the center line of the slide and hole and adapted to be positioned substantially centrally between the sides of the slot in a coacting slide.

4. A slide for pay out devices comprising a plate having a head portion formed with a centrally disposed coin moving hole, said portion having formed on its under side a relieved portion at least as wide as a coin and extending from the coin moving hole in the direction of the length of the slide, and resilient detent means positioned in the head portion at opposite sides of the relieved portion adjacent the hole and projecting into said portion.

5. A slide for pay out devices comprising a plate having a head portion formed with a centrally disposed coin moving hole, said head portion having symmetrical plates fastened thereto to increase the thickness of the head portion whereby the coin opening of the thickened head portion is adapted to receive and move more than one coin, opposed notched portions being formed in the thickening plates proximate the coin opening in a relieved entrance portion substantially

as wide as a coin formed in the bottom thickening plate and leading from the coin moving opening in the direction of the length of the slide, and spring detent members positioned respectively in the notched portions and extending into the relieved portion.

6. A slide for pay out devices comprising a plate having a laminated head portion provided with a coin moving hole of a thickness to receive and move a plurality of stacked coins, said head portion having formed therein a relieved portion of a width equal to at least the diameter of a coin and extending from the coin opening in the direction of the length of the slide, and resilient means positioned to extend oppositely into the relieved portion.

7. A coin dispenser comprising a stack of substantially horizontally disposed slides having head portions with coin holes respectively formed therein in registration to surround a stack of coins, each slide being movable with all slides in the stack therebelow and the head portions being of a thickness to move more than one coin from the stack, each slide head portion excepting the lower slide having on its under side a relief passage of a width equal to at least the diameter of a coin and formed therein and extending from the coin hole in the length of the slide to receive a sheared off coin, and means positioned in the said head portions to extend into the relief passages adjacent the coin holes to resist such shearing off movement of a coin.

8. A coin dispenser comprising a stack of substantially horizontally disposed slides having head portions with coin holes respectively formed therein in registration to surround a stack of coins, each slide being movable with all slides in the stack therebelow and the head portions being of a thickness to move more than one coin from the stack, each slide head portion excepting the lower slide having on its under side a relief passage of a width equal to at least the diameter of a coin and formed therein and extending from the coin hole lengthwise of the slide to receive a shearing off coin, and means positioned in the said head portions adjacent the relief passages and coin holes to resist such shearing off movement of a coin, said means comprising spring elements having an angle bend in them and positioned respectively on opposite sides of each relief passage to extend thereinto at points closely adjacent the coin hole.

9. A slide for pay out devices comprising a plate having a head portion formed with a centrally disposed coin moving hole, said head portion being formed thick enough to move more than one coin, said portion having formed on its under side a relieved portion extending from the coin moving hole lengthwise of the slide and having a width equal to at least the diameter of a coin, resilient means positioned in the head portion on opposite sides of the relieved portion and closely adjacent the hole and extending thereinto, and an upstanding nib included in the upper surface of the head portion adjacent the coin moving hole and adapted to be positioned substantially centrally between the sides of the relieved portion in a coacting slide.

10. A coin moving slide adapted for horizontal movement and having a head at one end formed with a coin moving hole and being of a thickness to move more than one coin, said head formed on its under side with a relieved cut out portion at least as wide as the diameter of the hole and extending from the hole in the direction of the length of the slide, and resilient means carried in the head at the side edges of said cut out portion closely adjacent the hole, said last means extending into the cut out portions.

11. A coin moving slide adapted for horizontal movement and having a head at one end formed with a coin moving hole and being of a thickness to move more than one coin, said head formed on its under side with a relieved cut out portion at least as wide as the diameter of the hole and extending from the hole in the direction of the length of the slide, resilient means carried in the head at the side edges of said cut out portion closely adjacent the hole and extending into said cut out portion, and a nib portion carried on the head at its top side extending thereabove and positioned above said relieved cut out portion and adapted to be positioned substantially centrally between the sides of the relieved portion in a coacting slide.

JOHN C. WAHL.