

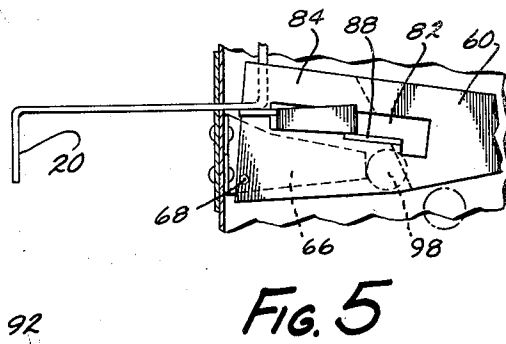
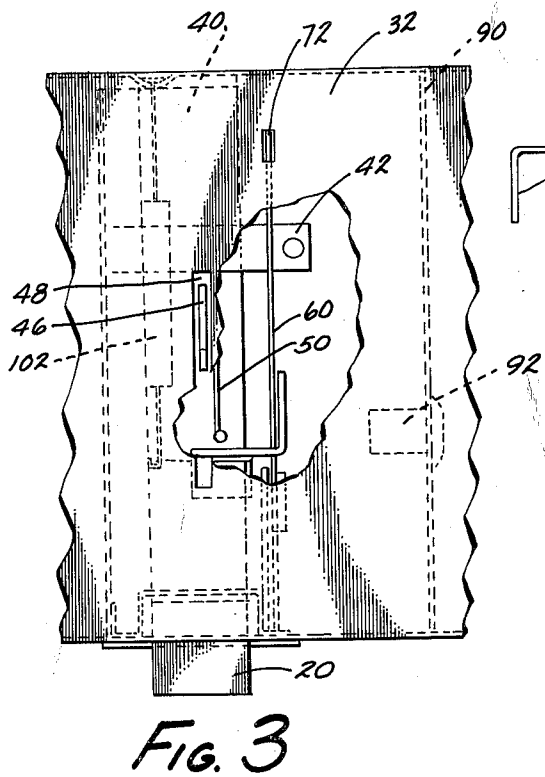
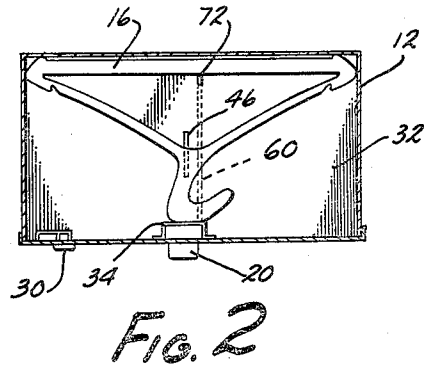
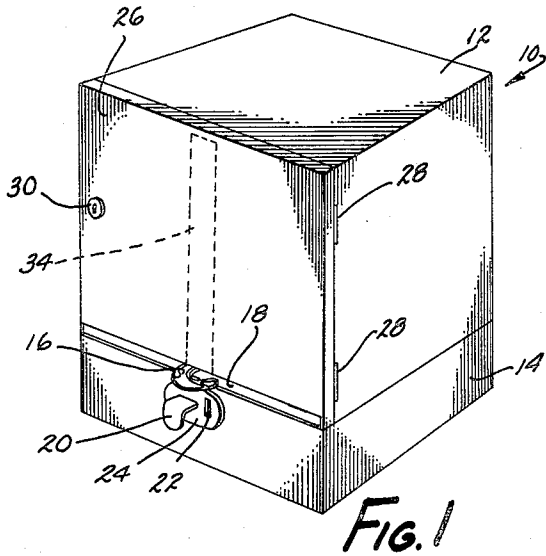
Aug. 20, 1963

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MANUAL DISPENSER

3,101,140

Filed Oct. 23, 1961

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

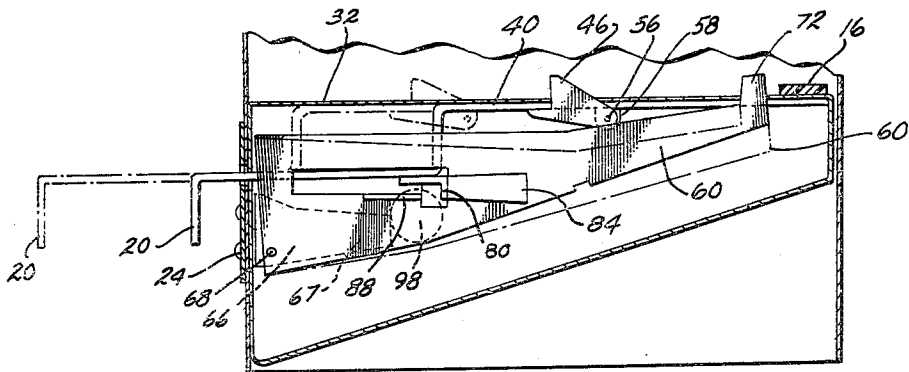


FIG. 4

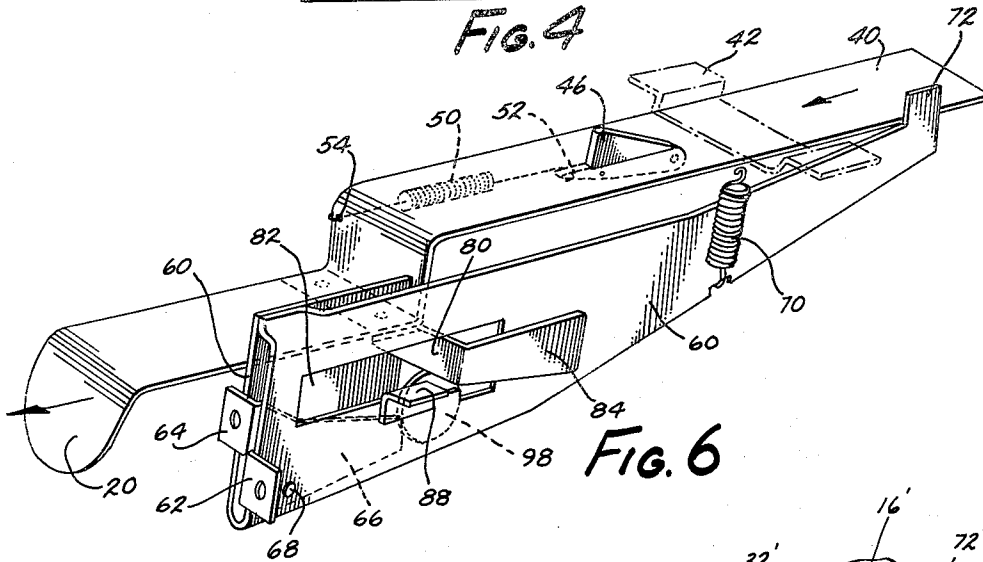


FIG. 6

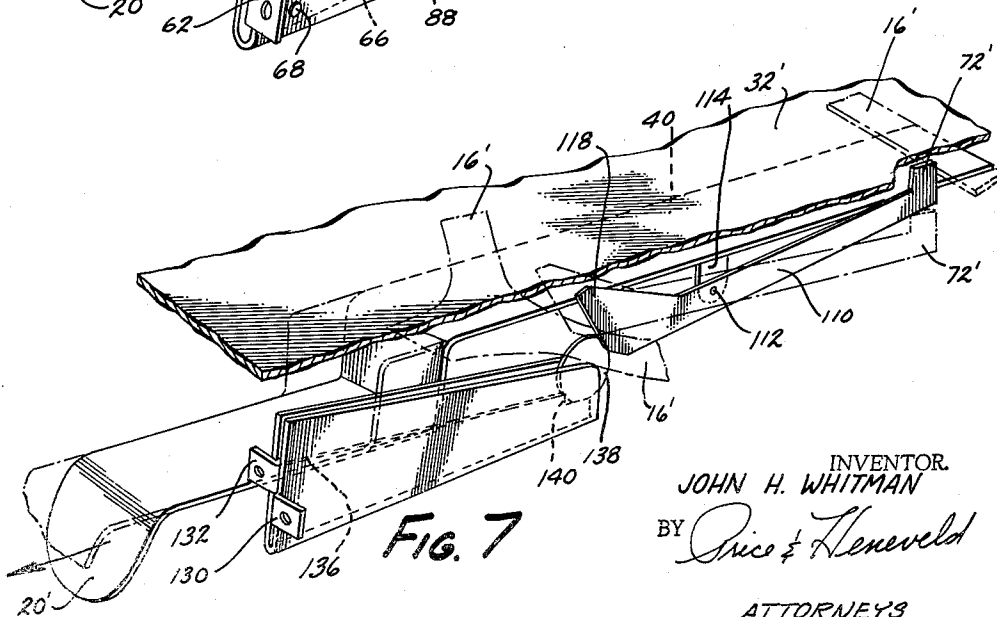


FIG. 7

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3,101,140  
**MANUAL DISPENSER**

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Filed Oct. 23, 1961, Ser. No. 146,756  
2 Claims. (Cl. 194-71)

This invention relates to dispensing mechanisms, and especially to a manual article dispenser of the coin-receiving type.

Conventional manual, coin-receiving, article dispensers are ordinarily limited to a few simple articles such as gumballs, trinkets, and candy bars. Pilfering of such dispensers is ordinarily prevented, if at all, by complex housing features or complex dispensing linkages. Generally these factors, among others, prevent the adaptation of simple manual dispensers to more complex articles.

There is needed in the art a manually operated coin-receiving article dispenser having only a few basic moving parts, having pilfer-proof characteristics, having excellent dependability, having structural simplicity to enable inexpensive manufacture thereof, and having the capability of dispensing complexly configured articles.

It is therefore an object of this invention to provide such a dispenser. The dispenser includes only a couple of moving parts. Moreover, these moving parts not only dispense the article but also act as a stop means to prevent pilfering. These moving parts are furthermore relatively inexpensive to manufacture due to their structural simplicity. Further the dispenser may be readily adapted for automatic operation, if desired.

It is another object of this invention to provide a dispenser wherein the moving parts utilize the peripheral surface of an inserted coin as a camming surface. In one form of the invention this is utilized to both enable the pilfer-preventing stop means to be moved from its stop position to an inactive position, and to inactivate a locking means or slide stop means for the dispensing means. In another form of the invention, the peripheral coin surface may act as a camming surface to shift a dispensing means into dispensing relationship with an article and to also shift the pilfer-preventing stop means into an inactive position.

These and other objects of this invention will be apparent from studying the following specification in conjunction with the drawings, in which:

FIG. 1 is a perspective view of one form of the novel dispensing apparatus as applied to garment hangers;

FIG. 2 is a top sectional view taken along plane II-II of the apparatus illustrated in FIG. 1 showing garment hangers in place in the dispensing apparatus;

FIG. 3 is an enlarged, fragmentary, plan view of the central portion of the apparatus illustrated in FIG. 2 and partly broken away to show the dispensing mechanism;

FIG. 4 is a side elevational, sectional view taken on plane IV-IV of the apparatus illustrated in FIG. 1;

FIG. 5 is a fragmentary, side elevational, sectional view of the apparatus illustrated in FIG. 4 in its dispensing position;

FIG. 6 is a fragmentary, perspective view of the dispensing mechanism; and

FIG. 7 is a fragmentary, perspective view of a modified form of the dispensing mechanism.

Basically, the invention comprises an article dispenser capable of utilizing the peripheral surface of an inserted coin to dispense an article and release the pilfer-preventing stop. The invention comprises a storage means for articles, such as a platform means, a shiftable dispensing means such as a reciprocating slide under the platform means, a dispensing means projectable into the storage means, and a pilfer-preventing article stop normally pro-

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jecting into the dispensing path of the article and cammable by the coin peripheral surface to an inactive condition.

In one form of the invention, the dispensing means includes an ear biased upwardly into the storage means and movable to a repressed position out of the storage means. The dispensing means is prevented from being operated by an interlocking slide stop means the parts of which are cammable by the coin surface to a spaced relationship with respect to each other to allow movement of the dispensing means. The pilfering-preventing stop means normally remains in the dispensing path of the article and prevents removal until cammed by the coin surface to its inactive position.

In the second form of the invention, the article dispensing means comprises an ear normally positioned out of the storage chamber and cammable into a projecting position above the platform into dispensing engagement with the article. In this form of the invention the article stop again is normally positioned in a protruding relationship through the platform in the dispensing path of articles. The article stop means is moved to its inactive position and the dispensing ear is moved to its active position by a camming action on the peripheral coin surface.

The invention will be understood in more detail by reference to the drawings. Referring to FIG. 1, in the form of the invention there illustrated, the dispenser 10 for dispensing garment hangers includes a storage housing 12 beneath which is a mechanism housing 14. Handle 20 is used to operate the mechanism after a coin is inserted through the coin-receiving slot 22 in the escutcheon plate 24. Slot 18 supplies the exit for the hangers 16, one of which is shown partly ejected.

The front of the storage housing may constitute a door 26 mounted on suitable hinges 38 and locked shut by latch 30.

The hangers to be dispensed are supported on a suitable platform means 32 like that shown in FIG. 2. This platform is shown to cover the entire floor of the storage chamber but it may constitute a mere peripheral shelf or a plurality of rods etc. The term "platform" is intended to include all such equivalent devices. The hangers 16 may be of plastic. They are preferably formed with a uniform thickness as, for example, like that set forth in patent application Serial No. 110,821, entitled, Garment Hanger, filed May 17, 1961, and assigned to the assignee herein. The ends of the hanger adjacent the base may abut the side walls of the housing 12, and the hook may abut a vertical spacer 34 to maintain accurate alignment of the stacked hangers in the storage container. The lower end of spacer 34 terminates adjacent the top of the dispensing slot 18 so that the desired number of hangers are sliced off from the bottom of the stack with each dispensing movement, as will be explained more fully hereinafter.

Beneath platform 32 is mounted the dispensing mechanism. This includes elongated slide 40 of which handle 20 protruding through the front of the cabinet is an integral part. Slide 40 reciprocates forwardly and rearwardly beneath the platform during dispensing and held aligned by its exit opening in the front of the housing and retaining strap 42 attached to the underside of platform 32. Projecting upwardly from this elongated horizontally positioned reciprocal slide 40 is a dispensing ear 46 which, in the first form of the invention, fits through slot 48 in platform 32. Its normal position is upwardly into the storage housing by the biasing action of spring 50 secured to ear 46 at 52 and to the vertical offset portion of slide 40 at 54. Ear 46 is pivotally mounted at 56 to tab 58 depending downwardly from slide 40.

Fixedly attached to the inside front of the cabinet by

tabs 62 and 64 is a coin guide track 66. A hollow coin-guiding chute 60 which communicates with the inlet slot 22 on the front of the cabinet is pivotally mounted to fixed track 66 at 68 so that its spaced side walls straddle track 66 to retain a coin on the track. One wall of this chute extends toward the opposite side of the dispenser to comprise a trigger 60' for the integral pilfer-preventing stop 72. This trigger is biased toward the platform 32 by a spring 70 secured at its lower end to the element 60 and at the upper end to the underside of platform 32 in front of the base of hanger 16, and thus in its dispensing path to prevent its being withdrawn by foreign articles inserted through slot 18. Stop 72 may be shifted downwardly beneath platform 32 by rotation of the trigger 60' around pivotal mounting point 68 as illustrated in phantom in FIG. 4. This allows a hanger to be ejected by the dispensing ear as explained hereinafter.

Mounted under the front portion of slide 40 is a supporting element 80 which projects laterally through opening 82 in trigger 60'. It includes a dog leg acting as a cam rider or follower element 84. Element 80 also serves as a stop means for slide 40 in abutment with tab 88 on chute 60. This provides an interlocking means preventing handle 20 from being pulled to its extended position and dispensing an article when no coin has been inserted. The bottom surface of follower leg 84 rides upon the peripheral surface of an inserted coin which has rolled down guide 66 and is retained between the front surface 67 of the guide and the leg 84. When handle 20 is pulled, cam 80 rides on and pushes the coin downwardly to thus rotate trigger 60' about point 68 to depress tab 88 out of the path of stop element 80. This downward pivoting thus disengages the locking means which prevents dispensing movement of the slide, thereby enabling handle 20 to be extended to allow ear 46 to push the front part of a hanger out of the cabinet.

Beneath the dispensing mechanism is a suitable coin box 90 with a fastening and locking mechanism 92 of any conventional type.

#### Operation

When it is desired to obtain a garment hanger from the apparatus 10, a coin of the proper predetermined denomination is inserted in slot 22. It rolls down the upper surface of coin guide 66 between the walls of coin chute 60 until it rests in a retained position adjacent the front surface 67 of guide 66. In this position it rests upon the bottom or floor of the hollow coin chute. This floor extends only slightly beyond this point to allow the coin to fall out of the chute when moved further. Member 80 retains the coin adjacent guide front 67 (see coin 98 in FIG. 4). Handle 20 is then pulled. This causes cam rider 80 to abut and ride up around the peripheral surface of the coin and cause the coin to act as a spacing means or a camming means to push trigger 60' downwardly, as illustrated in FIGS. 6 and 4. This allows the leg 84 to move up over the top of tab 88, as illustrated in FIG. 5. Dog leg 84 rides on tab 88 through this entire movement to prevent leg 80 from catching behind tab 88 after passing over the coin. As element 60 pivots downwardly, article stop 72 is also shifted beneath the platform 32 out of the dispensing path of the hanger base. When the handle is extended its full amount, the hook of the hanger will project from the cabinet, as shown in FIG. 1, allowing its removal. When the handle is released, spring 102 (FIG. 3), connected between the vertical portion of the slide 40 and the rear wall of the cabinet, returns the slide to its original position. When the hook is grasped and the hanger is pulled out, the hanger base will depress ear 46 as it passes over it to facilitate smooth dispensing. Since ear 46 is pivotally mounted, it will also pivot downwardly as it returns underneath the hook portion of the stack of hangers not yet dispensed upon return of the slide.

#### Modifications

In FIG. 7 is illustrated a modification of the apparatus illustrated in FIGS. 1 through 6. In this modification the dispensing ear 118 and the pilfer-preventing stop member 72' are formed on the same unitary rocker arm. This embodiment again utilizes a reciprocating slide element 40' mounted beneath platform 32', here shown partially broken away to illustrate the mechanism more clearly. Arm 110 is pivotally mounted at 112 to tab 114 depending from slide 40'. The forward portion of arm 110 constitutes an ejection or dispensing ear 118 normally positioned beneath the surface of platform 32' and out of the storage cabinet. It may be shifted above the surface to engage an article such as a garment hanger 16'. The rear portion of arm 110 constitutes stop means 72' normally held in a position projecting through platform 32' in the dispensing path of the base of the hanger 16'. Mounted to the front of the housing by a pair of tabs 130 and 132 is an integral coin guide and chute 134 generally U-shaped in configuration and including a central track 136. A coin 138 rolls on the track within the confines of the chute until it reaches the position illustrated in FIG. 7 where it may be retained by a step surface 140 in the track 136. The front edge surface of rocker arm 110 is in alignment with the coin so that it co-acts in a camming manner with the peripheral surface of coin 138 when handle 20' is pulled to dispense a hanger.

In operation, after a coin is inserted through the coin chute of the hanger housing and passes down surface 136 until it reaches the position illustrated in FIG. 7, handle 20' is pulled to shift slide 40' forwardly. Rocker arm 110 also shifts with the slide. The front edge surface of arm 110 abuts the peripheral surface of the coin and rides thereon to cam dispensing ear 118 above platform 32'. The ear catches behind the hook portion of lowermost hanger 16' to pull it forwardly out of the cabinet. Simultaneously, upon pivoting of element 110 about point 112, stop means 72' is pivoted downwardly beneath the platform 32', as illustrated in phantom in FIG. 7. The hook of the hanger may then be grasped manually and removed from the housing. The slide is then returned by a suitable biasing means, such as a spring, like the spring 102 shown in FIG. 3 with respect to the first embodiment. In order to cause arm 110 to assume its desired normal position with ear 118 repressed out of the storage chamber and stop 72' in the storage chamber, the forward end of arm 110 adjacent ear 118 may be counterweighted, or a spring may be connected between end 72 and the underside of slide 40', as desired.

In either form of the invention, the number of moving parts is minimal. Moreover, the movements are simple. Maintenance expense for such a mechanism is obviously almost nil. The type or number of articles dispersed each time may be varied. The apparatus as shown e.g. is intended to eject two garment hangers each time. The apparatus can readily be adapted to automatic operation by shifting slide 40 with a solenoid, for example. The solenoid may be activated by an electrical switch associated with the coin chute and moved by the inserted coin as it rolls down the coin guide.

Other obvious modifications will occur to those in the art upon studying the foregoing specification without departing from the spirit of the invention. These obvious modifications are deemed part of this invention which is to be limited only by the scope of the appended claims and the reasonable equivalents thereto.

I claim:

1. An article dispensing mechanism comprising: a shifting dispensing means capable of engaging and moving an article from a storage position to a dispensing position; a movable element adjacent said dispensing means and biased to one position and including a portion forming a stop means in the shifting path of said dispensing means and thereby normally preventing shifting of said

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dispensing means when said element is biased to said one position; said element also including a second portion forming a pilfer-preventing stop means in the path of an article to be dispensed and normally preventing dispensing movement of said article when said element is in said one position; said element being movable against the bias from said one position to a second position wherein said stop means in the shifting path of said dispensing means is moved out of said shifting path, and said pilfer preventing stop means is moved of the path of an article to be dispensed; coin receiving means capable of retaining a coin between said dispensing means and said element in such a position that with shifting movement of said shifting dispensing means, the peripheral edge of said coin acts as a cam between said dispensing means and said element to cause said element to be cammed from said one position to said second position to both allow dispensing movement of said shifting means and move said article stop to an inactive position.

2. An article dispenser comprising: support means for articles to be dispensed; a reciprocal slide under said support; an arm pivotally connected to said slide and movable therewith; one end of said arm including a dispensing ear capable of being moved into engagement with an ar-

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ticle; the other end of said arm including an article stop normally projecting into the dispensing path of said article; said dispensing ear being normally positioned out of engagement with said article; coin receiving means adjacent said arm capable of retaining a coin in a position to cause the peripheral surface thereof to be in alignment with said arm; said surface thus acting as a camming surface for said arm with reciprocation of said arm and said slide; and said reciprocation causing said arm to be moved about its pivotal connection to shift said ear into dispensing relationship with an article and to move said stop out of the path of said article.

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