

June 12, 1951

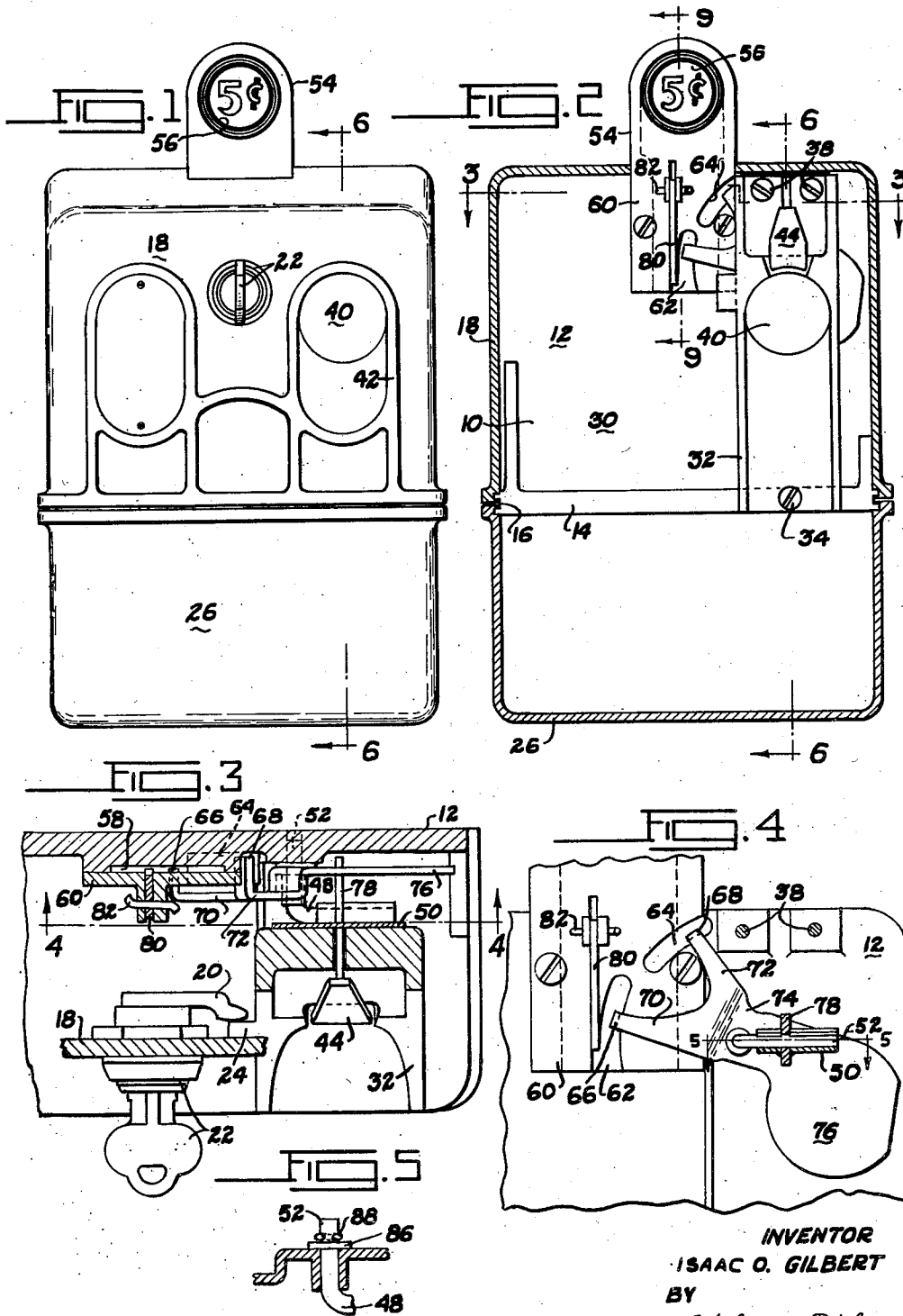
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2,556,268

COIN OPERATED BOTTLE OPENER

Filed March 27, 1948

2 Sheets-Sheet 1



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FIG. 6

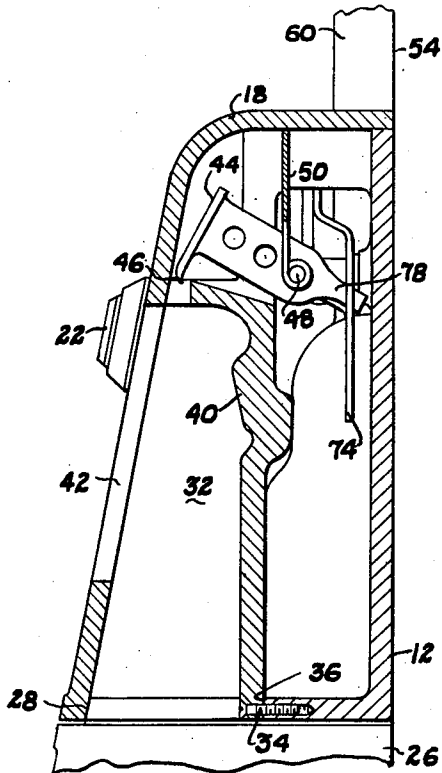


FIG. 7

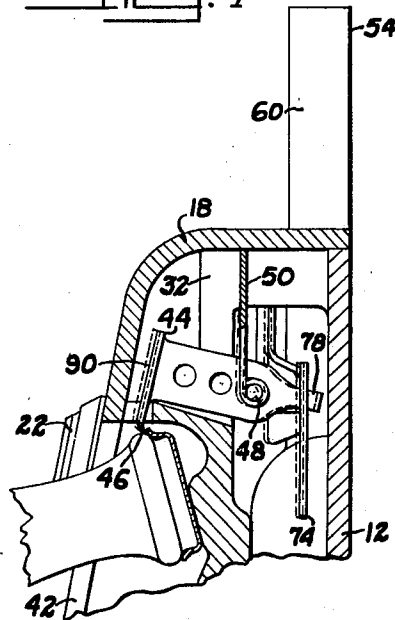


FIG. 8

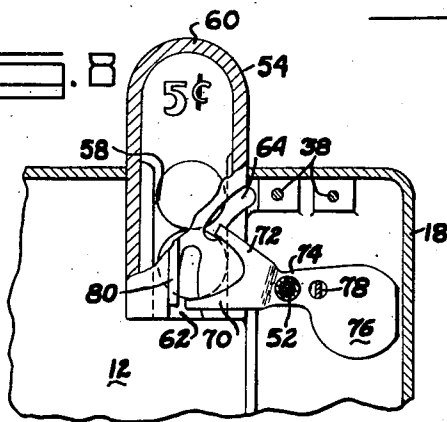
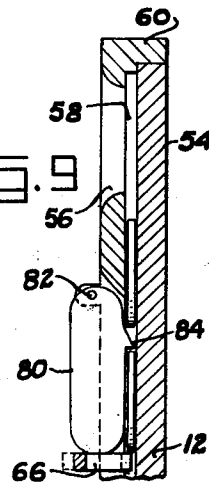


FIG. 9



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COIN-OPERATED BOTTLE OPENER

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14 Claims. (Cl. 81—3.1)

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This invention relates to coin operated bottle openers, and in particular to certain new and useful improvements in connection therewith.

Coin operated bottle openers, as such, are known in the art, but designs built heretofore have had certain inherent disadvantages, which are overcome by the instant invention.

The purpose of a coin operated bottle opener is to eliminate the installation of expensive dispensing equipment for small stores, garages, and the like, and to provide means whereby such establishments can maintain a supply of cold drinks and the like available to customers for self service, and in connection with which the coin operated bottle opener serves as a collecting means.

One of the primary objects of the instant invention is to provide a coin operated bottle opener which is more certain in action than bottle openers made heretofore and which substantially insures that the customer operating the device will not be able to remove the cap from the bottle before the coin placed in the machine drops therein.

Still another object is the provision of a coin operated bottle opener in which the removed caps are retained by a compartment directly associated with the said opener.

A still further object is the provision of a coin operated bottle opener which is easy to manufacture and assemble and is, accordingly, easy to service and replace worn parts therein.

A still further object of this invention is to provide a coin operated bottle opener in which the moving parts of the device are protected from contents which may spray from the bottles being opened or spill therefrom and which often are of a sticky gummy nature and which could easily cause the device to become inoperative.

It is also an object of this invention to provide a coin operated bottle opener having a relatively few number of parts and in which coil springs and the like are entirely eliminated.

A still further object is the provision of a coin operated bottle opener so constructed and arranged that a plurality of coins can be placed therein, but each one thereof will be successively operable to place the cap remover in operative condition and with no chance that the coins will pass into the coin receptacle without the opener having an opportunity to open a bottle for each one thereof.

These and other objects and advantages will become more apparent upon reference to the following description taken in connection with the accompanying drawings in which:

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Figure 1 is a front elevational view of a bottle cap opener constructed according to this invention;

Figure 2 is a view like Figure 1 but with the front cover of the device cut away to show the arrangement of parts on the inside thereof;

Figure 3 is a plan section through the device and is indicated by the line 3—3 on Figure 2;

Figure 4 is a partial vertical section through the device and is indicated by the line 4—4 on Figure 3;

Figure 5 is an enlarged fragmentary view through a portion of the device and is indicated by the line 5—5 on Figure 4;

Figure 6 is a vertical section indicated by the lines 6—6 on Figures 1 and 2 and is drawn at somewhat larger scale than these figures;

Figure 7 is a fragmentary view similar to the upper end of Figure 6 but showing the cap removing mechanism in operative position;

Figure 8 is a front view similar to the upper end of Figure 2 but showing coins in the coin chute of the machine; and

Figure 9 is a vertical section indicated by the line 9—9 on Figure 2 and shows a dog associated with the coin chute which prevents upward movement of the coins in the said chute.

Referring to the drawings, the device of this invention comprises generally a bottle cap removing mechanism having a part movable into effective or ineffective position and a coin operated mechanism interlocked with the bottle cap removing mechanism, such that upon insertion of a coin in the coin chute the said movable part of the cap removing mechanism is shifted to operative position.

Upon removing a cap from a bottle when the movable part is in operative position, the coin in the coin chute is released and falls into a receiving chamber, whereupon the movable part of the cap removing mechanism returns to its inoperative position.

The device comprises a frame part indicated at 10 in Figure 2 which consists of an upstanding back plate 12 and a horizontally extending shelf 14. The side edges of the shelf 14 are grooved as at 16 and slidable therein so as to enclose the upper part of the device which comprises a cover member 18 which is adapted for being locked in position by means of a latch 20 rotatable by a key and lock mechanism 22 into engagement with a lug 24.

Also slidable in the groove 16 is an auxiliary compartment 26 adapted for receiving the caps removed by the opening device. The compartment 26 is readily detachable at any time from

the device for disposing of the caps collected therein.

The cover member 18, as will be seen in Figure 6, fits closely against the front edge of the shelf 14 as at 28 and thus defines a compartment 30 in the upper end of the device for receiving coins deposited therein. It will be apparent that the locked on cover member 18 closes the compartment 30 but does not in any way interfere with the easy removal of the bottle cap compartment 26.

Referring to Figures 2, 3, 6 and 7 it will be noted that at one side of the device there is a channel member 32 which is secured at its bottom edge as by means of a screw 34 to the shelf 14, said shelf being recessed as at 36 for receiving the member 32. The upper end of the member is retained by a pair of spaced screws 38 against the upper end of the back plate 12 of the frame 10. Somewhat above the center part of the member 32 there is a projection 40 of the member 32 of a size to receive a standard bottle cap as indicated in Figure 7. This projection, which is bounded by the upper and side walls of the member 32 and by the opening 42 in the cover member 18, normally has no means for engagement with a bottle cap to remove the same from the neck of the bottle. However, pivotally mounted above the projection 40 is a movable part 44 having a bottle cap engaging edge 46 which, when the said part is moved into effective position as shown in Figure 7, provides means whereby a bottle cap can be removed from a bottle. The member 44 is pivoted on a pin 48 which is secured to the lower end of a leaf spring 50 which is clamped between the upper end of the member 32 and the pad standing up from the back plate 12 of the frame 10 and into which the screws 38 extend. The pin 48, as will be seen in Figure 5, is bent to form a right angle and a part thereof 52 extends rearwardly into a drilled hole in the back wall 12 of the frame 10.

Turning now to the coin operated mechanism, this will be seen to comprise a coin chute 54 secured to the frame 10 and extending up through an opening in the cover member 18 and having an aperture 56 into which coins can be placed. It will be understood that the term coin as used herein indicates any nominal denomination of coin in common usage or checks or tokens as the case may be. This term is thus generic and not in any way limited in scope.

The coin chute 54 has a vertical passage 58 therein opening at its bottom end into the coin receiving compartment 30. The front cover plate of the coin chute, indicated at 60, has a pair of slots 62 and 64 therein. The slot 62 extends only through the front cover as will be seen in Figures 2, 3 and 4, whereas the slot 64 extends through the said cover plate 60 and also into the wall 12 of the frame 10 behind the passage 58.

The slots 62 and 64 are for the purpose of receiving the turned-in ends 66 and 68, respectively, of a pair of arms 70 and 72 of a plate member 74 which is pivoted to the bent back part 52 of the pin 48. The plate 74 includes a counterbalancing portion 76 which normally urges the plate into the position indicated in Figure 4.

When the plate is in its Figure 4 position the turned back end 68 is positioned out of the path of a coin falling through the channel 58. The turned back end 66, however, is arranged so as always to intersect the said channel. Thus, a coin placed in the aperture 56 and falling down the channel 58 will pass the turned back end 68 but will strike the tip of the turned back end 66.

The counterbalance 76 is so arranged that the weight of a coin of preselected size falling through the chute 58 will rotate the said plate into the position shown in Figure 8. At this time it will be noted that the turned back end 68 has moved over into a position to engage and support the coin next behind the one which is resting on the turned back end 66.

The interlock between the above described cap opening mechanism and the coin operated mechanism consists of an extension 78 on the movable part 44 which extends through the counterweight side of the plate 74. When the said plate is in its Figure 4 position the movable part 44 will occupy its Figures 2 and 4 position. However, when a coin is deposited in the coin chute and moves the plate 76 to its Figure 8 position, the said movable part will be automatically moved to its Figure 7 position.

Means are provided for preventing upward movement of the coins in the coin chute. This means comprises a dog 80 pivoted at 82 to the front wall of the coin chute and having a detent part 84 extending through a slot in the said front wall. This detent part has a cam surface such that the weight of a coin of the proper size deposited in the chute will cause the dog to swing backwardly and permit the coin to pass thereby. However, when a coin reaches its lowermost and operative position within the chute the dog swings back and positively retains the coin in the chute against upward movement.

For releasing a deposited coin into the coin receiving compartment 30, the plate 74 is retained positively in position on the turned back part 52 of the pivot pin 48 by means of a washer 86 which is retained against the back surface of the said plate by the staked out parts 88 on the part 52 of the pivot pin, or by any other suitable means.

By this arrangement, when a bottle cap is engaged with the edge 46 of the member 44 and a thrust is exerted on the said member by the act of pulling the cap from the bottle, the said part 44 and its supporting pin 48 will move forwardly within the device to about the position indicated by the dotted line thereof at 90 in Figure 7.

At the same time, due to the connection of the plate 74 with the part 52 of the pivot pin 48, the said plate is also moved forward and to such an extent that the turned back end 66 will be pulled from beneath the coin resting thereon and permit the said coin to fall to the bottom of the coin chute.

The leaf spring member 50 is selected to be of sufficient stiffness that it requires a substantial thrust to release a coin from the coin chute, but at the same time is sufficiently resilient that the act of dislodging a bottle cap will insure that the said coin will drop.

As indicated in Figure 8 the coin chute may be made as long as desirable and, due to the turned back part 66, each and every coin placed in the coin chute will successively cause the movable part 44 to move into effective position. However, each time the said part 44 is subjected to sufficient thrust to dislodge a bottle cap the particular coin which has actuated it into effective position will be released into the coin receiving compartment. Thus it may be seen that turned back part 66 serves to actuate part 44 and turned back part 68 acting in conjunction with turned back part 66 serves to meter one coin at a time from the passage 58 into the retainer compartment 30 as successive caps are removed by part 44.

It is to be noted that the mechanism described

above consists of a relatively few parts and that these parts are very ruggedly constructed so that a long service life is obtained. Similarly, the device is easily serviced any time it should become necessary and the replacement of worn or broken parts therein is relatively inexpensive.

It is also to be noted that the device comprises two separate integral compartments, one for receiving coins and the other for receiving the removed bottle caps, and that the last mentioned of the said compartments is easily detached at any time to remove the caps. Also, the end of the bottle from which the cap is being removed is substantially isolated from the moving parts of the device, so that fluids that may be squirted or spilled therefrom have little chance of getting on the mechanism and destroying the balance thereof or gumming up the bearings.

It will be understood that this invention is susceptible to modification in order to adapt it to different usages and conditions and, accordingly, it is desired to comprehend such modifications within this invention as may fall within the scope of the appended claims.

I claim:

1. In a coin operated bottle opener; a frame, a projection of said frame to receive the capped end of a bottle, a cap engaging member movably mounted adjacent said projection and normally positioned outside the limits thereof, and means consisting of a coin guide and a lever in said guide interlocking with said cap engaging member and operated by the weight of a coin in contact with said lever for moving said member toward said projection to engage a cap on a bottle on said projection.

2. In a coin controlled bottle opener; a frame, a projection of said frame to receive the capped end of a bottle to be opened, a cap engaging member movably mounted adjacent said projection, a counterweight connected with said member and normally holding the member outside the limits of said projection, a coin chute in said frame and adjacent a part of said counterweight, and a finger on said counterweight extending transversely into said chute whereby the weight of a coin in said chute will move said counterweight and therethrough actuate said member into operative position on said projection.

3. In a coin controlled bottle opener; a frame, a projection of said frame to receive the capped end of a bottle to be opened, a cap engaging member movably mounted adjacent said projection, a counterweight connected with said member and normally holding the member outside the limits of said projection, a coin chute in said frame and adjacent a part of said counterweight, and a finger on said counterweight extending transversely into said chute whereby a coin will rest thereon and the weight of a coin in said chute will move said counterweight and therethrough actuate said member into operative position within said projection, said member and counterweight being supported on a resiliently mounted pin whereby the thrust of dislodging a cap by said member will move said pin and associated parts in a direction parallel to said transversely extending finger and said finger from beneath said coin and release the same from said chute.

4. In a coin controlled bottle opener; a frame, a coin chute extending into said frame from the top, a smooth walled projection of said frame at one side of said chute, a member mov-

able onto said projection from the top to engage the cap on the neck of a bottle placed on said projection, a plate extending across behind said member at right angles thereto and adapted to have the end of said member pass there-through and to be actuated thereby and having a part overlying said coin chute, a common pivot pin pivotally supporting said member and plate, resilient means supporting said pin, a slot in said chute, and a finger on the said part of said plate extending into said slot, said plate being weighted so as normally to hold said member out of said projection but when a coin is resting on said finger to be overbalanced thereby to move said member into cap pulling position.

5. In a coin controlled bottle opener; a frame, a coin chute extending into said frame from the top, a smooth walled projection of said frame at one side of said chute, a member movable onto said projection from the top to engage the cap on the neck of a bottle placed on said projection, a plate extending across behind said member at right angles thereto and adapted to have the end of said member pass there-through and to be actuated thereby and having a part overlying said coin chute, a common pivot pin pivotally supporting said member and plate, resilient means supporting said pin, a slot in said chute, a finger on the said part of said plate extending into said slot, said plate being weighted so as normally to hold said member out of said projection but when a coin is resting on said finger to be overbalanced thereby to move said member into cap pulling position, a second slot in said chute, and a second finger on said plate extending therein, said second finger being out of the path of a coin in said chute when said member is in inoperative position and lying in the said path when the said member is in operative position.

6. In a coin controlled device; a coin chute arranged generally vertically, a plate pivoted adjacent said chute, a first slot in said chute in the path of a coin therein and a second slot in said chute intersecting said path at one side, fingers on said plate extending into said slots, and resilient means interposed between the ends of said plate and pivotally supporting said same.

7. In a coin controlled device; a coin chute arranged generally vertically, a plate pivoted adjacent said chute, a first slot in said chute in the path of a coin therein and a second slot in said chute intersecting said path at one side, fingers on said plate extending into said slots, and resilient means pivotally supporting said plate, the one of said fingers extending into said first slot extending only part way across said chute, and the other of said fingers which extends into said second slot extending completely through said chute.

8. In a coin controlled device; a coin chute arranged generally vertically, a plate pivoted adjacent said chute, a first slot in said chute in the path of a coin therein and a second slot in said chute intersecting said path at one side, fingers on said plate extending into said slots, resilient means pivotally supporting said plate, the one of said fingers extending into said first slot extending only part way across said chute and the other of said fingers which extends into said second slot extending completely through said chute, and said plate being movable between a first position wherein the finger in said

second slot is disposed outside the path of a coin in the chute and a second position wherein the finger in the second slot is disposed in the path of a coin in said chute.

9. In a coin controlled device; a coin chute arranged generally vertically, a plate pivoted adjacent said chute, a first slot in said chute in the path of a coin therein and a second slot in said chute intersecting said path at one side, fingers on said plate extending into said slots, resilient means pivotally supporting said plate, the one of said fingers extending into said first slot extending only part way across said chute and the other of said fingers which extends into said second slot extending completely through said chute, and said plate being movable between a first position wherein the finger in said second slot is disposed outside the path of a coin in the chute and a second position wherein the finger in the second slot is disposed in the path of a coin in said chute, said resilient means being yieldable to permit the finger in said first slot to be moved from beneath a coin in the chute resting on the said finger.

10. In a coin controlled device for uncapping bottles; an uncapping mechanism including a part mechanically movable into effective or ineffective position; a guide in said device and a mechanism interlocked with said part and having a portion thereof extending into said guide operable normally to hold said part in ineffective position and to move said part to effective position when a coin is inserted in said guide and contacts as a weight the portion of said mechanism extending into said guide.

11. In a coin controlled device for uncapping bottles; a mechanism including a part for engaging the lip of the bottle cap movable horizontally and vertically between effective and ineffective positions; a guide in said device; a secondary mechanism including resilient means interlocked with said part, said mechanism having a portion thereof extending into said guide and operable upon insertion of a coin therein through the coin acting as a weight to move said part downwardly into effective position, said coin being released from said part in response to the horizontal force of the uncapping operation on said part and whereby said part will move backwardly under the force of said resilient means to ineffective position until another coin is inserted in said mechanism.

12. In a coin controlled device for uncapping bottles, a mechanism horizontally and vertically movable including a claw-like arm for engaging the lip of a bottle cap, a secondary mechanism including a counterweight interlocked with said arm and movable therewith and actuated upon the insertion of a coin on the side of said mechanism opposite said counterweight, said coin acting as a weight to move said arm to effective position, said coin being released in response to lateral displacement of the coin contacting por-

tion of said secondary mechanism during the uncapping operation whereby said arm will be returned to ineffective position by said counterweight, and separate compartments in said device for receiving the removed caps and the released coins.

13. In a coin controlled device for uncapping bottles, a mechanism horizontally and vertically movable including a claw-like arm for engaging the lip of a bottle cap, a secondary mechanism having resilient means and including a counterweight interlocked with said arm and movable therewith and actuated upon the insertion of a coin on the side of said mechanism opposite said counterweight, said coin acting as a weight to move said arm to effective position, said coin being released in response to lateral displacement of the coin contacting portion of said secondary mechanism during the exertion of the horizontal force of the uncapping operation and whereby said arm will be returned to ineffective position by said counterweight, and a locked compartment in said device for releasing said coin and a detachable compartment carried by said device for receiving the removed caps.

14. In a coin controlled device for uncapping bottles, a mechanism including a claw-like arm for engaging the lip of a bottle cap, a guide in said device, a secondary mechanism interlocked with said arm and having a portion of said secondary mechanism extending into said guide, said secondary mechanism being operable normally to hold said arm in ineffective position and to move said arm to effective position when a coin is inserted in said guide and contacts as a weight the portion of said secondary mechanism extending into said guide, and a wall between the effective position of said arm and said mechanisms to prevent fluids from bottles being uncapped from gaining access to said coin controlled mechanism.

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