

July 13, 1954

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2,683,554

PILL DISPENSER

Filed April 21, 1951

2 Sheets-Sheet 1

FIG- 1

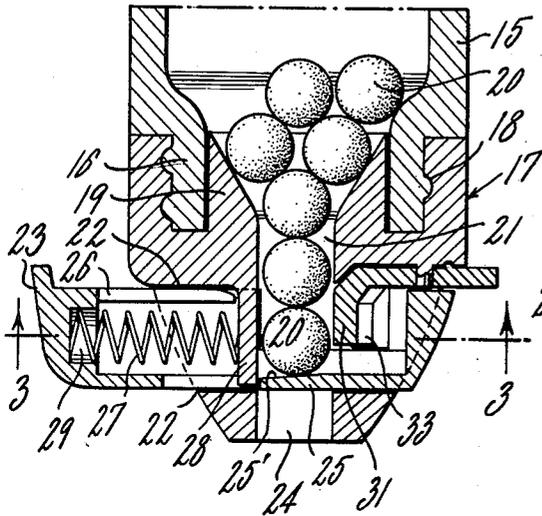


FIG- 2

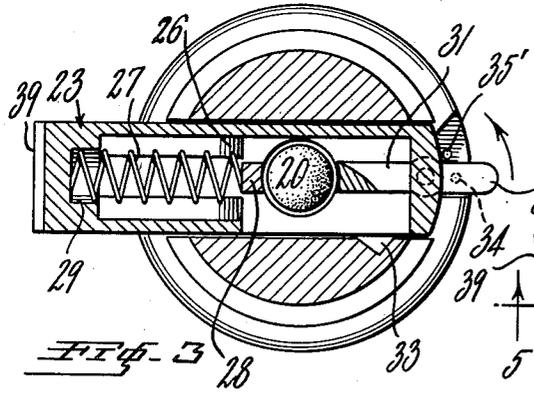
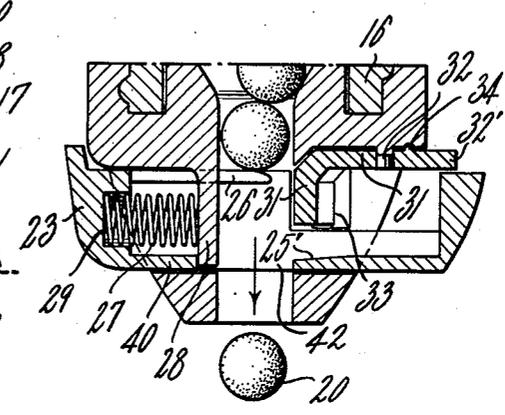


FIG- 4

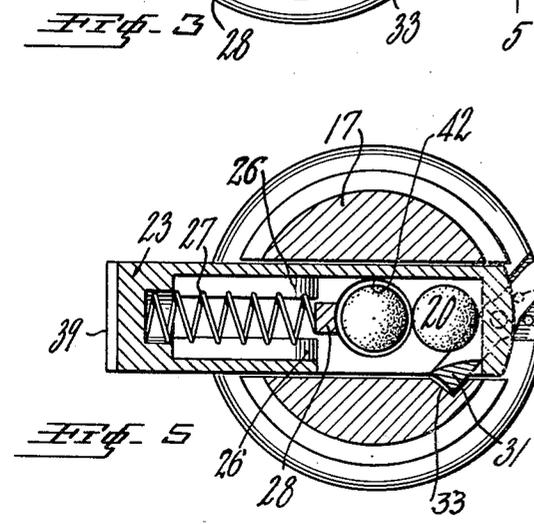
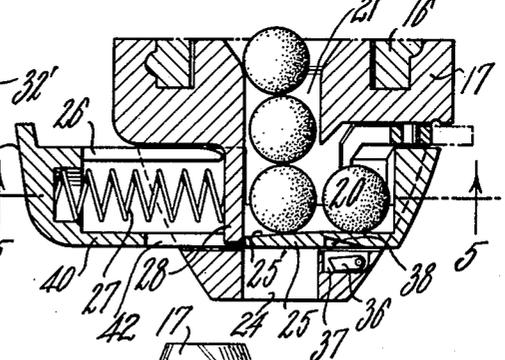
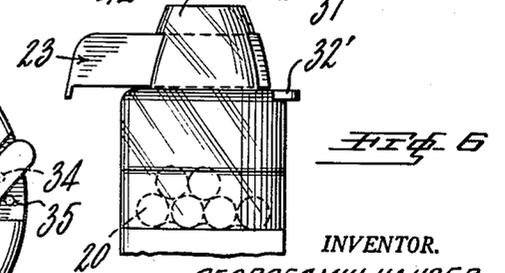


FIG- 6



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Fig. 7

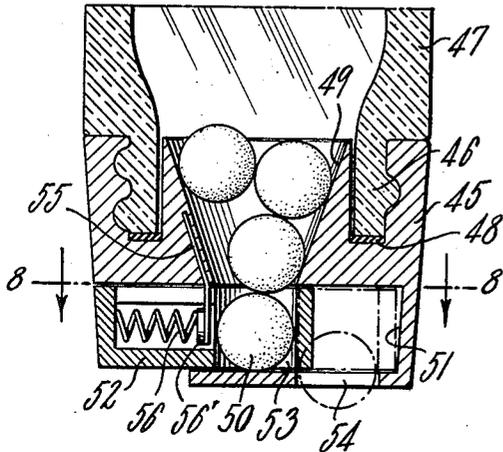


Fig. 10

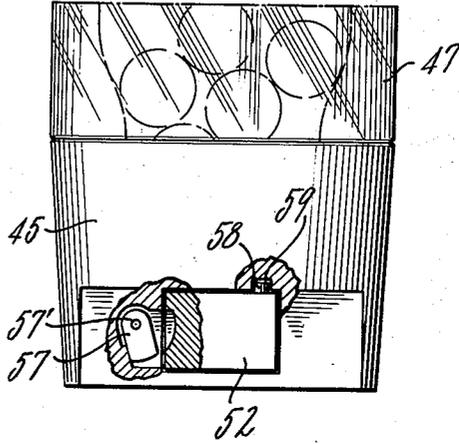


Fig. 8

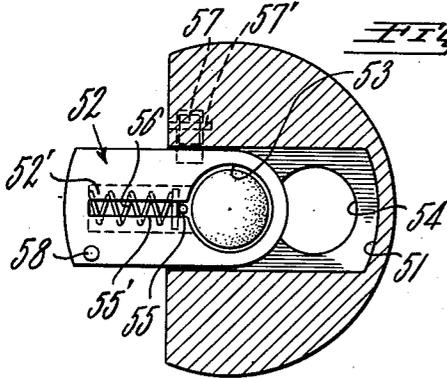


Fig. 11

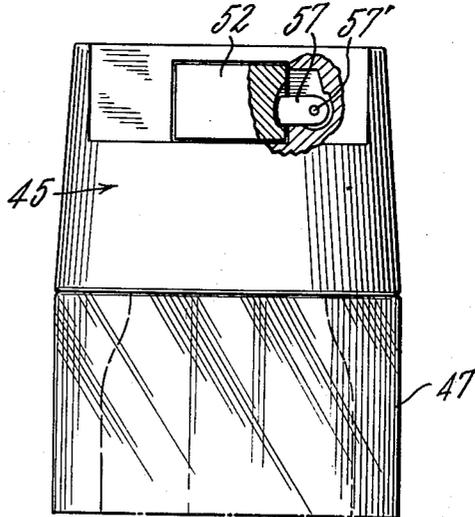
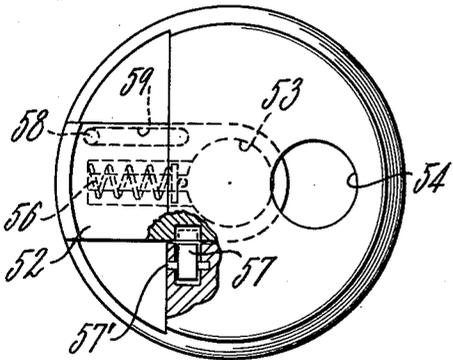


Fig. 9



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# UNITED STATES PATENT OFFICE

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## PILL DISPENSER

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5 Claims. (Cl. 221-152)

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This invention relates to dispensing devices and more particularly to dispensing parts of bottles and similar containers for dispensing pills, tablets and similar compressed or substantially solid products.

It is one of the objects of the present invention to provide means affording successive discharge of pills and like products from a container or the like.

It is another object of the present invention to provide means permitting, selectively, the discharge from a container of a predetermined dose or doses, quantity, number of pills and like articles and in predetermined sequence (one or more at a time).

It is still another object of the present invention to provide means ensuring the function of the dispensing means only when the container is placed in a predetermined position other than its normal, upright position.

Yet a further object of the present invention is the provision of means causing discharge of a pill, tablet and like article from within a container by manipulation of a simple push button, lever or slide so that the remainder of the contents of the container will not be brought into contact with a person's hand which is usually the case with conventional containers if one or more pills or the like are to be removed from within the container.

Still another object of the present invention is to provide means rendering the possibility of selling the container together with the dispensing means therefor in sealed condition in order to prevent tampering with the contents thereof.

Yet another object of the present invention is to provide means conducive to a simplified operation of the dispensing means which will cause discharge of the contents of the container only if the operating or push button connected therewith is moved from inoperative position to operative position.

A still further object of this invention is the provision of means preventing substantially any re-fill of the container or bottle equipped with a dispensing means made in accordance with the present invention.

With the above and other objects in view, the invention will be hereinafter more fully described and the combination and arrangement of parts will be shown in the accompanying drawing and pointed out in the claims which form part of the specification.

In the drawings:

Fig. 1 is a vertical sectional view of a dispenser

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made according to one form of the invention and shown in a position preparatory to dispensing the pills successively therefrom.

Fig. 2 is a vertical sectional view similar to that of Fig. 1 but in a position in which a pill is being dispensed.

Fig. 3 is a transverse sectional view taken along line 3-3 of Fig. 1.

Fig. 4 is a vertical sectional view of the dispenser of Fig. 1 somewhat modified to permit, selectively, discharge of one or two pills (doses) simultaneously with one manipulation of the dispenser.

Fig. 5 is a transverse sectional view taken along line 5-5 of Fig. 4.

Fig. 6 is an elevational view of the pill dispenser of Figs. 1 to 5 secured to the neck of a bottle (part of which is broken away and shown on a reduced scale).

Fig. 7 is a sectional view of a modified dispenser made according to the invention.

Fig. 8 is a transverse sectional view taken along line 8-8 of Fig. 7, looking in the direction of the arrows thereof.

Fig. 9 is a plan view of the dispenser of Fig. 7 (as seen in the direction of the discharge end) with portions broken away to show the interior construction thereof.

Fig. 10 is a vertical elevational view of the dispenser shown in Fig. 7 with portions thereof broken away.

Fig. 11 is a vertical elevational view of the dispenser disposed in an upright manner and with the latch in a position to prevent refilling of the bottle.

Referring now more particularly to the drawings, in Figs. 1 to 6, 15 represents a portion of a bottle having a threaded neck 16 for engaging the dispenser body 17. This dispenser body 17 has an internally threaded skirt portion adapted to engage with the neck of the bottle as indicated at 18, and a central funnel-like portion 19 by which pills, tablets and the like can be directed through channel or opening 21 to the hand of one who may desire a pill. In the body 17 there is provided a transversely extending slot 22 in which a transverse operating slide 23 is worked to receive the pill 20 from the opening 21 and to intercept the column flow of the pills while dropping the pill received by the slide to discharge or outlet end 24 of the opening 21.

The slide 23 has a bottom stop portion 25 with an inclined surface 25', downwardly over which the pill 20 will roll when the slide 23 is moved to the position shown in Fig. 2. Simultaneously,

as the slide 23 is moved inwardly to dispense the pill, a top finger or stop portion 26 is moved under the pill column to separate the pill to be dispensed from the other pills in the upper part of the opening 21. A spring 27 is compressed at this time against an abutment 28 which projects downwardly into the slide opening 22. The opposite end of the spring 27 lies in a recess 29 of the slide.

In order to adapt this slide for the dispensing of more than one pill, say, two pills, a stop member or abutment 31 is pivoted to be swung from a position shown in Fig. 3 to a position shown in Fig. 5. A pivot projection 32 depends from the body, and the stop member 31 is pivoted thereupon. When operating stop member 31 by means of handle 32', the stop portion of member 31 may be projected into a recess 33 in the side of the slide opening 22 as indicated in the adjusted position shown in Fig. 5. The pivoted member 31 may be provided with a detent 34 which can cooperate with either of two depressions 35, 35' in the body 17. Accordingly, two pills will roll off the inclined surface 25' of the bottom stop portion 25, as the slide is moved inwardly to the position shown in Fig. 5.

In order that the slide 23 be not operated while the bottle is in upright position, a gravity latch 36 is pivoted out of a recess 37 provided in the body (Fig. 4) and into a slot 38 extending in the portion 25. Automatically, as the bottle with the dispenser is inverted, the latch 36 will drop down to the position shown in Fig. 4 and out of the way to permit the easy sliding of the operating member 23. The operating member 23 can be depressed with the thumb engaging the extended outer end 39 thereof. A portion 40 will come to rest against the abutment 28 to properly register hole 42 in the slide with the outlet end 24 of the opening 21.

It will thus be apparent from this form of the invention that either one or two pills can be discharged from this dispenser by a mere setting of the stop member 31 to either one position or the other.

Referring now particularly to Figs. 7 to 11, there is shown a modified form of the invention which differs from the other form in that the pills are carried by the slide to the dispensing opening. This dispenser comprises a body 45 which is threaded upon neck 46 of the bottle 47 with a gasket 48 therebetween. Body 45 has a funnel portion 49 for receiving pills 50. This portion 49 projects into the neck 46 of the bottle.

The body 45 has a transverse opening 51 in which is operated a slide 52. This slide 52 has a central opening 53 adapted to receive a pill 50 and to carry the same laterally to the right of the opening 51, as seen in Fig. 7, and further to discharge the pill through a hole 54. A projection 55 extends from the body 45 downwardly into a slot 55' and supports the end 56' of a spring 56 that serves to return the slide 52 to a position away from the opening 54 and where opening 53 is blocked off by the body 55. This spring 56 will return the slide 52 after it has been pressed to discharge the pill 50 through the opening 54. The latch 57 falls down by gravity about pivot 57' to the position shown in Fig. 10 to release the slide 52 when the bottle and the dispenser are inverted.

When the bottle is in an upright position, the latch 57 will automatically fall to the position shown in Fig. 11 to retain the slide against lateral displacement and in order to prevent the bottle from being refilled with pills or with other

contents. A stop plug 58 extends upwardly from the slide 52 and travels in a guide slot 59 provided in the body 45 as indicated in Fig. 10. Upon the return movement of this slide 52, the pill 50 will be automatically received therein. The top face 52' of the slide 52 will, as the slide is moved to discharge the pill through the opening 54, prevent the downward movement of the pill column.

It is to be mentioned that the dispenser body 17 or 45 may be sealingly engaged with the neck of the bottle in any known and appropriate manner, so that the dispenser body cannot be detached from the bottle without breaking the latter. The invention further contemplates to produce dispenser body and bottle from one and the same material and to thus form a single unitary structure.

It is further contemplated in accordance with the invention to employ any tamper-proof seals to avoid detachment of the dispenser body from the bottle, if desired, so that the bottle equipped with the dispenser body will become substantially non-refillable in view of the latch mechanism 36 or 57 hereinabove referred, which in upright position of the container or bottle enters under gravity in a suitable recess of the operating slide 23 or 52, as the case may be.

It is obvious that means may be proposed which are equivalent to the aforesaid latch or lock mechanism, such as a ball or rectangular element freely movable in a groove extending respective predetermined distances into the slide and body of the cap, whereby the slide will be impaired in its operation in predetermined position of said element within said groove.

While various changes may be made in the detailed construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. A dispensing device for bottles comprising a cap body, said cap body having a central discharge opening with a discharge and a transversely extending slide opening intersecting the central discharge opening, a slide movable in the transverse opening and open at the top to receive a pill from the central opening, said slide having a projection operable when the slide is moved from an initial position to discharge position to thereby retain a column of pills above said discharge opening while the discharge of said pill received by said slide is being effected, spring means reacting between the cap body and the slide to return the slide to said initial position, said slide having a stop portion adapted to normally cover said discharge end and to move out of registry with said discharge and to permit the discharge of the pill as the slide is moved to discharge position, and an abutment extending from the cap body to the open top of said slide to hold the pill against lateral displacement as the stop portion of the slide is moved from under the pill, thus urging the pill through the discharge end.

2. A dispensing device for bottles comprising a cap body, said cap body having a central discharge opening and a transversely extending slide opening intersecting the central discharge opening, a slide adjustable in the transverse opening, and open at the top to receive a pill or like article from a column of pills when received

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in the central opening, said slide being provided with a projection operable upon the slide being moved to discharge position to thereby retain the pill column while the discharge of the pill received by said slide is being effected, spring means reacting between the cap body and the slide to return the slide to a position below said central opening, and a gravity latch pivoted upon said cap body, said slide having a recess for receiving said latch upon the bottle with said cap body being placed in an upright position, to thereby hold the slide against lateral displacement in the cap body and to prevent the bottle from being refilled.

3. A pill dispensing cap for pill bottles, comprising a cap body having a portion adapted to releasably fit the bottle and having further a central funnel opening for receiving the pills from the bottle, said central funnel opening terminating in a discharge end, said cap body having a transverse opening therein, a hollow slide movable in said transverse opening from an initial position, an adjustable abutment pivotally connected to the cap body and movable into registry with the wall defining the central funnel opening to thereby limit the filling of the slide with but one pill, said slide being provided with a stop bottom portion for retaining and supporting said one pill, said slide having a top stop portion adapted to enter the pill column between said one pill and the remainder of the pills to support the column while said one pill is discharged through the discharge end of the cap body, and spring return means acting between the cap body and the slide to effect the return of the slide to initial position after the discharge of said one pill.

4. A pill dispensing cap for pill bottles, comprising a cap body having a portion adapted to releasably fit the bottle and a central funnel portion for receiving the pills from the bottle, said central funnel portion having a central opening with a discharge end, said cap body having a transverse opening therein, a slide adjustable in said transverse opening, a laterally adjustable abutment pivotally connected to the cap body and movable into registry with the wall defining the central funnel opening to thereby limit

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the filling of the slide with but one pill, said slide having a stop bottom portion for retaining and supporting the pill, said slide having a portion adapted to enter the pill column between the lower pill and the remainder of the pills to support the column while said one pill is discharged through the discharge end of the cap body, spring return means acting between the cap body and the slide to effect the return of the slide after the discharge of said one pill, said adjustable abutment being pivoted upon the cap body and being adjustable to a position remote from the wall of the central opening thereby to allow more than one pill to enter the slide, and detent means for holding the pivoted abutment in either of its adjusted positions.

5. Dispensing means for bottles and like containers to discharge therefrom pills and like articles; comprising a dispensing body having a central, funnel-shaped opening coinciding with the axis of said bottle, a spring-actuated slide member guided transversely to said axis and said funnel-shaped opening and provided with an inclined wall defining a recess to receive therein at least one article forming part of the contents of said bottle, means on said slide member separating said article from the remainder of the contents of said bottle in predetermined position of said slide member relative to said funnel-shaped opening, a discharge end communicating with said recess when the remainder of said contents of said bottle is separated from said article, and means independent of said slide and pivoted to said body, said pivoted means being adapted to extend into said recess to thereby adjust the effective space for receiving one or more of said articles.

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