Oct. 4, 1966 A. S. JOHNSON, JR 3,276,636

ARTICLE DISPENSER HAVING A ROTARY TRAP CHAMBER

Filed April 12, 1965

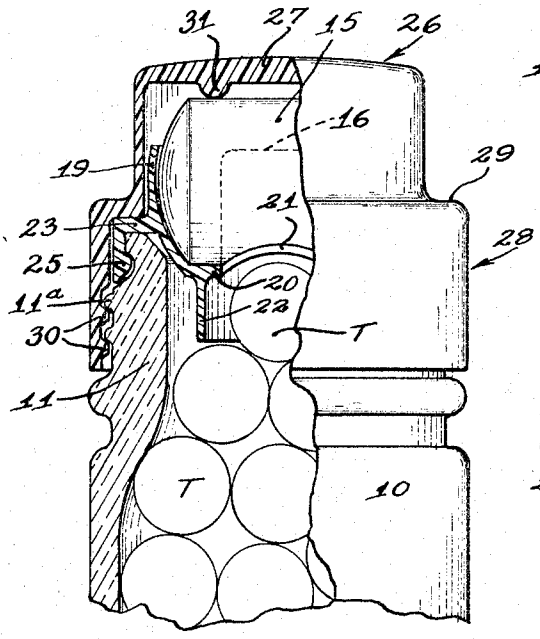


FIG. 1.

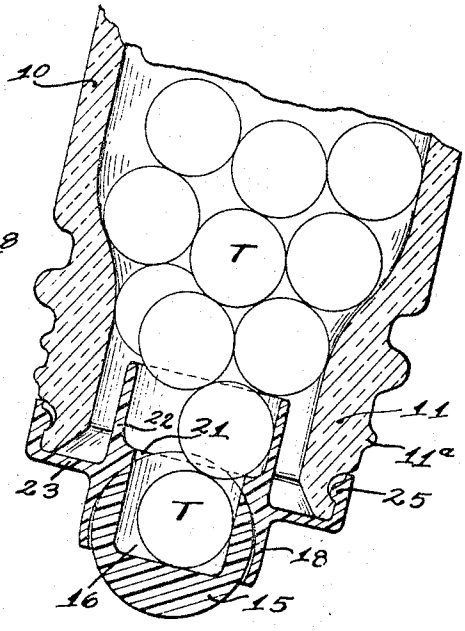


FIG. 2.

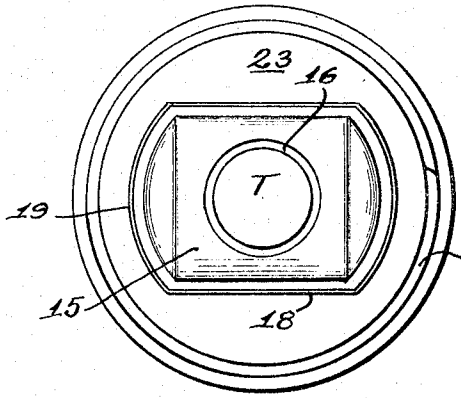


FIG. 4.

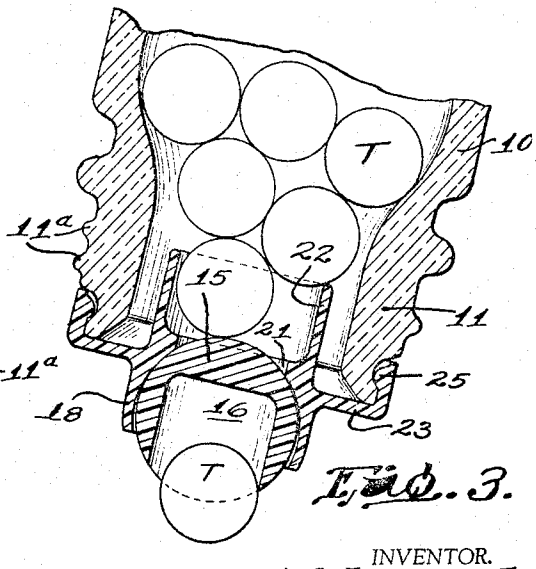


FIG. 3.

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ARTICLE DISPENSER HAVING A ROTARY TRAP CHAMBER

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2 Claims. (Cl. 222—368)

My invention relates to dispensers for pills or tablets and has for an important object the provision of a novel device attachable to the mouth-forming neck of a bottle, or similar container, and manually operable to reliably dispense pills or tablets, one at a time.

Another object of my invention is the provision of a dispenser of the above character in which a roller, having a pill accommodating cavity or recess in its side wall, is so mounted in the mouth of a pill-containing bottle that following inversion of the bottle and entry by gravity of a pill into the cavity, rotation of the roller, by rolling it across the palm of the hand, for example, will position the cavity to permit gravity escape of the pill therefrom.

It is also an object of my invention to provide a pill dispensing device of the above character which is mounted for free rotation in a holder which also functions as a part of the closure means for the pill container or bottle.

A further object of my invention is the provision in a roller-type pill or tablet dispenser of the above indicated character, a closure or cover cap which embodies novel means for applying pressure to the cavitied roller in such fashion as to press it into the discharge opening, thereby reliably closing the latter and holding the roller against premature rotation.

It is likewise an object of my invention to provide a dispenser of the above character in which a plastic fitment designed to accommodate a recess-embodying roller, is affixed to the mouth-end of a container neck in such fashion as to effectively close the mouth, with the exception of an opening through which pills or tablets may enter the reservoir from the container.

Finally, it is an object of my invention to provide a dispenser of the above character in which the roller holder is formed of polyethylene or a similar plastic material.

Other objects will be in part apparent and in part pointed out hereinafter.

In the accompanying drawings forming a part of my application:

FIG. 1 is a sectional elevational view showing a pill dispenser embodying my invention, affixed to the neck of a pill bottle.

FIG. 2 is a fragmentary sectional view showing the bottle tilted to effect gravity flow of pills into the reservoir of the dispensing roller.

FIG. 3 is a view similar to FIG. 2 but shows the roller following its rotation to the pill discharging position.

FIG. 4 is a top plan view of the dispenser.

In the illustrated embodiment of my invention it is shown attached to a bottle **10** including a neck **11** which has a mouth **12** at its outer end. The interior of the neck, at its mouth end, may be flared or tapered to provide the needed space to accommodate a part of the dispenser, as will be apparent. Externally, the neck **11** is formed with an annular channel **13**, the upper wall of which provides a retaining shoulder **14** for holding engagement with a

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part of the dispenser, as will be pointed out presently. Beneath the channel **13** the neck is provided with a screw-thread **11a** which aids in securing a closure or cover cap in place, such cover cap enclosing the dispenser, as will be explained hereinafter.

The dispenser itself comprises a rotatable roller **15**, having a reservoir **16**, or recess, in its periphery, such roller being mounted for free rotation in a holder fitment **17** and positioned with its axis normal to the axis of the bottle neck **11**. This holder fitment **17**, which may well be formed of polyethylene, or some plastic having similar characteristics, comprises an open-top partial cylinder or cavity created by a pair of elongated opposed side walls **18** curved transversely and of a height to accommodate and hold the roller against accidental displacement. End walls **19** interconnect these side walls. These end walls **19** are of concave-convex form and of the same height as the side walls, so that together they provide a roller receiving cavity of a depth slightly exceeding one-half the roller diameter. Thus the roller, once having been positioned in the cavity, will remain therein until intenionally removed. The plastic material is sufficiently elastic to permit ready insertion of the roller into the cavity. The floor **20** of the roller receiving cavity is formed with a discharge opening **21** which provides communication between the interior of the bottle and the recess **16** in the dispensing roller **15**. A depending collar **22**, coaxial with the discharge opening **21** aids in guiding pills, or tablets T, to said opening from the bottle proper.

The collar **22** or guide, and a substantial portion of the roller holding fitment are within the confines of the bottle neck and supported therein by a radial annular flange **23** which is molded as an integral part of the roller fitment. This flange **23** has a depending continuous attaching skirt **24** at its periphery and internally the skirt has an annular bead **25** intended for holding engagement with the aforementioned retaining shoulder **14** on the bottle neck **11**.

A closure **26**, or cover cap, is telescoped over the fitment **17** and secured to the bottle. This closure comprises a top **27** and a stepped, depending, attaching skirt **28**, the step **29** thereof being positioned to bear upon the aforementioned annular flange **23** of the fitment **17**. Screw threads **30** internally of the lower section of the skirt **28** engage the threads **11a** of the neck **11** and firmly press the flange **23** against the rim end of the bottle neck, thereby improving the sealing effectiveness of the flange. Depending from the interior of the top **27** of the closure is an annular rib **31** which, when the closure is being applied, presses firmly against the dispenser roller **15**, forcing the latter tightly against the floor **20** of the roller receiving cavity. Thus, the opening **21** is effectively sealed and the roller is held against any undesired rotation.

It is believed apparent that when one wishes to dispense a single pill or tablet, the closure cap **26** is removed and the bottle **10** then is inverted or inclined sufficiently to cause gravity movement of a pill into the collar **22**. If the roller **15** is positioned so that the recess **16** registers with the opening **21**, the pill will move on into the recess. Otherwise, the roller must be rotated sufficiently to effect such registration and rotation will be continued to bring the pill containing recess to its outermost position where it can fall into the consumer's hand. If desired, such roller manipulation can be obtained merely by rolling the device across the palm of one's hand, as is evident.

Modifications may be resorted to within the spirit and scope of the appended claims.

I claim:

1. In combination, a container having a mouth-defining neck, a pill dispenser attached to the neck and comprising a freely rotatable roller having a peripheral recess and positioned in part within the mouth of the container with its axis normal to that of the neck, said roller being rotatable through 360 degrees, a holder fitment of unitary form for the roller having a portion telescoped over and separably secured to the neck and having a roller accommodating cavity, said cavity defined by curved walls to confine the roller and having a bottom opening to establish communication between the container and recess in the roller, the means for attaching the fitment to the neck being a skirted flange encircling the walls forming said cavity, interengaging protuberances on the skirt and neck for releasably holding them together, and a collar-like pill guide depending from the fitment coaxially with the bottom opening and projecting into the neck.

2. The combination defined in claim 1, a closure cap telescoped over both the fitment and a portion of the neck and having a stepped attaching skirt contacting and applying axial pressure to the radial flange of the fitment, and means separably securing the skirt and neck together.

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