Dec. 30, 1941. R. B. KINGMAN 2,268,402

DISPENSING CONTAINER

Filed Nov. 13, 1940 2 Sheets-Sheet 1

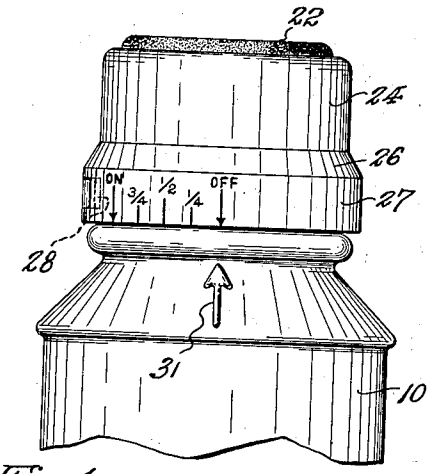


Fig. 1

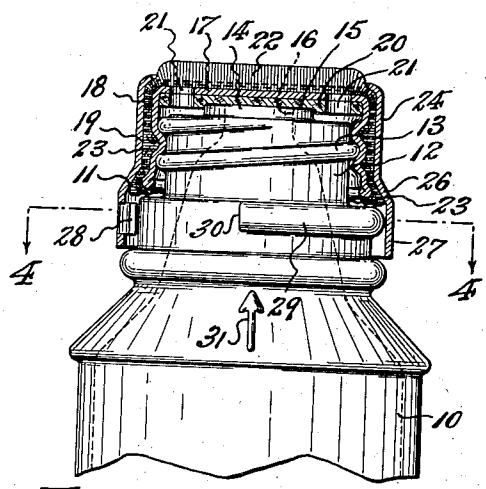


Fig. 3

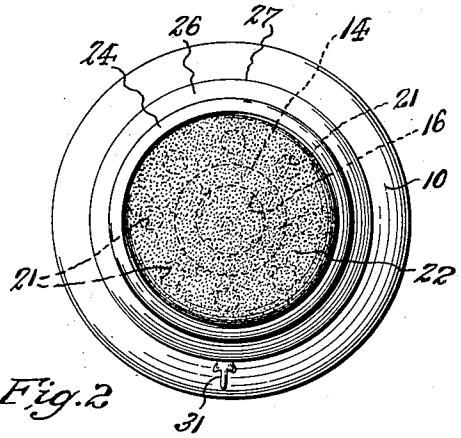


Fig. 2

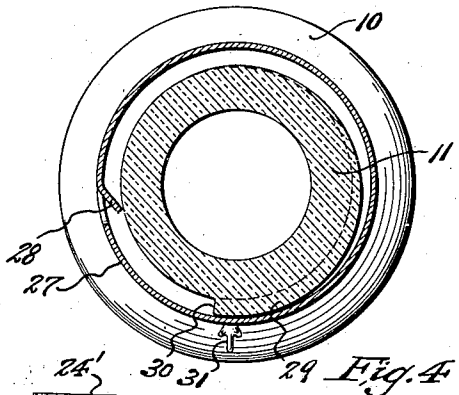
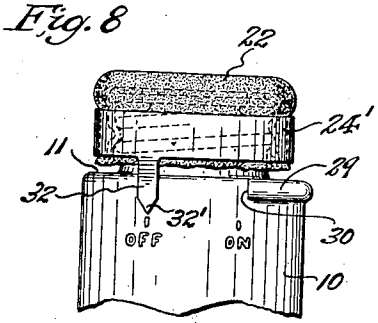


Fig. 4

Fig. 8



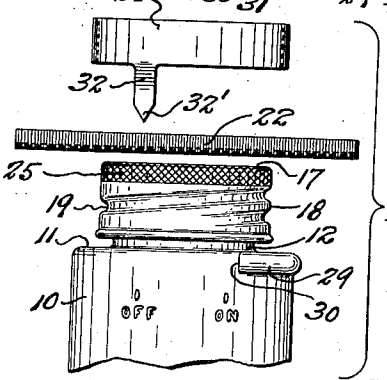


Fig. 9

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DISPENSING CONTAINER

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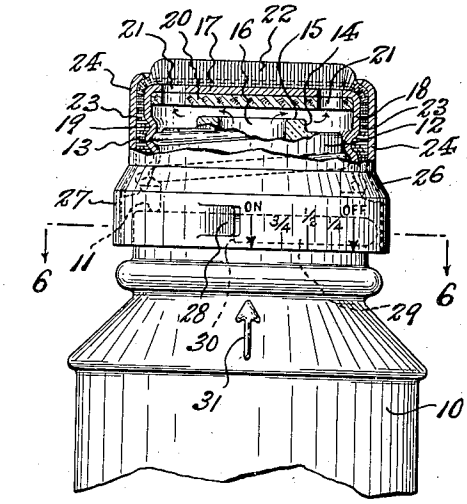


Fig. 5

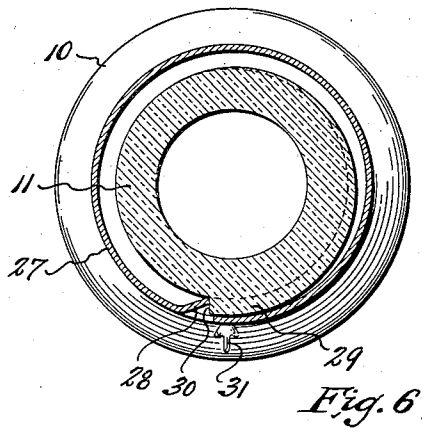


Fig. 6

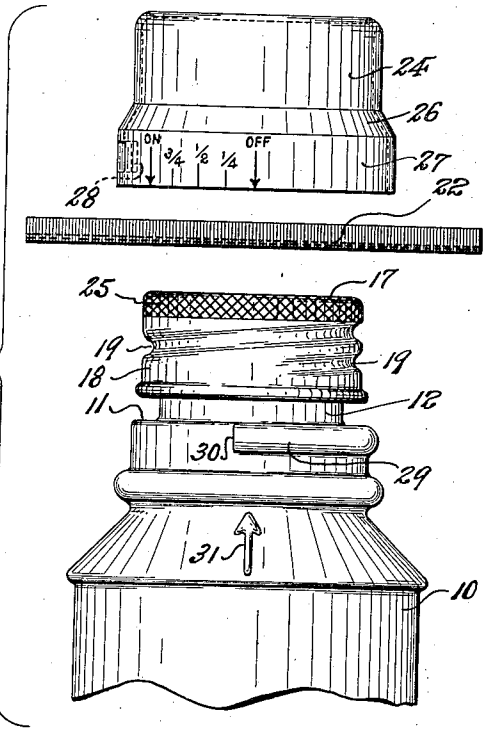


Fig. 7

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2,268,402

DISPENSING CONTAINER

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4 Claims. (Cl. 15—133)

This invention relates to improvements in dispensing containers and manipulatable closures therefor.

An object of this invention is to provide a novel container of the dispensing type having a rotative closure member including a sealing disc to open and close the discharge mouth of the container and vent means to emit the content of the container permitted to discharge through the container mouth when open; said closure member being further provided with an externally exposed saturatable applicator member and fastening means to secure the same in fixed enveloping relation to said closure member, said fastening means and container body having cooperative means to both indicate open and closed positions of the closure member as well as to limit the opening movement of the latter; and said fastening means being of such form and arrangement as to permit its assembly with the applicator member and closure member after the latter has been applied to the container in tightly closed sealing relation to its discharge mouth, whereby to accurately predetermine the closed position indication of said closure member.

Other objects and advantages of this invention will be subsequently set forth in the following detailed description of the same.

Illustrative embodiments of this invention are shown in the accompanying drawings, in which:

Fig. 1 is a front elevation of the upper end portion of a dispensing container equipped with a closure member made according to the principles of this invention, and shown in its closed and sealing relation to the container discharge mouth, and with such closed condition so indicated; Fig. 2 is a top end view of the same; Fig. 3 is a view similar to that of Fig. 1, but with the closure member shown in vertical cross section; and Fig. 4 is a horizontal sectional view, taken on line 4—4 in Fig. 3.

Fig. 5 is a front elevational view of the upper portion of a dispensing container showing the closure member in its open relation to the container discharge mouth, said closure member being shown in part elevation and in part section; Fig. 6 is a horizontal sectional view, taken on line 6—6 in Fig. 5.

Fig. 7 is an elevational view showing the method of assembling the applicator member and its fastening means to the closure member after the latter has been applied to the container in closed and sealing relation to the discharge mouth thereof.

Fig. 8 is a front elevational view of the upper portion of a dispensing container and its closure member, the latter being equipped with a modified form of combined applicator member fastening means and closure member condition indicator; and Fig. 9 is an elevational view of the same showing the method of assembling the applicator member and its fastening means to the closure member after the latter has been applied to the container in closed and sealing relation to the discharge mouth thereof.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring to that illustrative embodiment of this invention shown in Figs. 1 to 7 inclusive, the reference character 10 indicates a dispensing container, and is adapted to hold a supply of fluent material desired to be dispensed. Illustratively, said material may be a liquid cleaning fluid such as commonly used for removing soil spots from garments and other materials; although it will be understood that fluent substances adapted for other uses may be packed in and dispensed from said container. The container 10 is shown in the form of a glass bottle or jar, but it will be obvious that the same may alternatively comprise a can, box or other receptacle form which may be made of metal, paper, plastics or any other suitable material.

The body of the container 10 may optionally be made in various design shapes, but preferably so as to terminate at its upper end portion in a top end shoulder portion 11 from which upwardly extends a neck portion 12 of reduced diameter having external screw-threads 13 formed thereon. Said neck portion 12 terminates in an upstanding mouth defining portion or flange 14 of further reduced diameter, said flange and neck portion being in concentric relation. The rim 15 of said flange 14 provides a seat to receive engagement of a sealing disc means operative to close and seal the open mouth 16 defined by said flange 14, as will presently appear.

Cooperative with the screw-threaded neck portion 12 of the container is a closure member. This closure member comprises a closure cap having a top wall 17 and an annular skirt 18, the latter being provided with screw threads 19, whereby the cap is threaded onto the container neck portion 12. Within the cap interior, and preferably affixed to and across the underside of its top wall 17 is a sealing disc 20 of a suitable fluid impervious material, the same being adapted to be carried down by the cap, when the latter is rotatively screwed down upon the container neck

portion 12, so as to bring its central portion into engagement with the rim 15, to seal against said rim in bridging and closing relation to the container mouth 16. Formed in the cap top wall 17 and sealing disc 20, in the portions thereof lying outwardly of the container mouth defining flange 14, i. e. between said flange and the annular skirt 18 of the cap, are one or more vents or emission openings 21.

Applied exteriorly over the top wall 17 of the cap so as to overlie the vent or emission openings 21 therein is an applicator member 22, the marginal or skirt portions 23 of which are folded down and gathered around the skirt 18 of said cap. Said applicator member is formed from a pervious material, fabric or the like; and is preferably made of textile pile fabric such e. g. as a mohair fabric. Means is provided for fastening the applicator member in the described assembled relation to the cap, the same comprising an external keeper ferrule or collar 24 of a diameter somewhat in excess of the external diameter of said cap. This keeper ferrule is pushed downwardly and telescopically over and around the skirt portions 23 of said applicator member thereby to tightly and immovably wedge the same against the skirt 18 of the cap, and so as to be firmly and securely gripped between said cap skirt and the embracing keeper ferrule 24. The corrugations provided by the screw-thread formations with which said cap skirt are provided afford a roughened or uneven surface into the depressions of which the material of the applicator member skirt portions 23 are wedged, thereby to securely and immovably hold the same in the described operative assembled relation to the cap. This gripping effect may be further enhanced by roughening, as by knurling 25 or the like, the unthreaded surfaces of the cap skirt.

In the embodiment of this invention shown in Figs. 1 to 7 inclusive, the keeper ferrule or collar is provided with stop means cooperative with complementary stop means with which the container is provided, whereby to limit the rotative manipulation of the cap to partially unscrew the same relative to the container neck portion 12, and thus lift and release the sealing disc 20 from normal closed and sealing relation to the container mouth 16. To this end, said ferrule 24 is provided, for extension from its lower margin, with an outwardly flared or offsetting portion 26 which terminates in an annular apron 27 disposed in outwardly spaced concentric surrounding relation to top end shoulder portion 11 of the container 10. Struck out of said apron 27, so as to extend circumferentially and in inwardly and preferably inclined direction toward the peripheral side of said container shoulder portion 11, is a stop tongue 28. Integrally formed in connection with the peripheral side of the container shoulder portion 11 is a stop member 29 terminating in a stop abutment 30 which is opposed to said stop tongue 28 carried by the ferrule or collar apron 27. Said stop member 29 is preferably in the form of an eccentric rib adapted to taper from its stop abutment end so as to merge in the peripheral side of the container shoulder portion 11. When the closure member is turned in clockwise direction to move downwardly on the container neck portion 12 to container mouth closing and sealing position, the stop tongue 28 is spaced away from the stop abutment 30 (see Figs. 2 and 4); but when the closure member is turned from such closed position in anticlockwise direction to move upwardly on the container neck portion 12 to container mouth opening position, the stop tongue 28 is moved to abut the stop abutment 30, thereby arresting and limiting the opening movement of the closure member (see Figs. 5 and 6). Since the stop tongue 28 is in the form of a lateral or circumferentially directed inwardly inclined portion of the ferrule or collar apron, its head-on engagement with the stop abutment 30 is very positive in its closure member arresting action, and strongly resists movement of the closure member beyond a desired predetermined limit of opening movement; in other words, tendency to disengagingly bend or to jump or be otherwise forced beyond the stop abutment 30 is avoided, for the stronger the applied force the more firmly will the extremity of the tongue 28 be jammed in the angle formed by the intersecting planes of the stop abutment face and the peripheral side of the container shoulder portion 11. As a consequence of this any tendency of complementary indicating marks, with which the closure member and container are provided as subsequently described, to be relatively moved out of predetermined operative coordination is effectively prevented.

Cooperative means are provided on the container body and on the ferrule or collar apron 27 for indicating the closed or "off" position of the closure member and intermediate and fully open or "on" positions thereof. Illustrative of one form of such means, the container body, or a label applied thereto, is provided with a fixed indicator mark 31, and the ferrule or collar apron, or a label applied thereto, is provided with "off" and intermediate and fully "on" indicator marks or graduations, as shown, for cooperation with and movement relative to said fixed indicator mark 31 on the container body. It will be obvious that the locations of such indicator markings may be reversed if desired; i. e. the single mark may be applied to the ferrule or collar apron and the graduated markings to the container body.

In dispensing containers wherein the closure member is movable to "off" and "on" positions, and which are provided with cooperative markings for indicating such positions, it has been a difficult problem to provide a closure structure which, in assembling application to the container, would permit easy, quick and accurate coordination of the cooperative indicating markings. One of the principal advantages of the above described dispensing container construction is that the parts may be easily and quickly assembled and the indicating markings accurately coordinated after the container has been filled and the closure cap per se has been screwed onto the container neck portion and tightly turned to container mouth closing and sealing position.

By reason of the provision of the applicator member clamping and retaining ferrule or collar 24 in a form adapted to be telescopically forced, with the applicator member 22, over and around the cap 17—18 into assembled relation thereto, and in connection with which ferrule or collar a closure member stop means, such as the stop tongue 28, is provided for cooperation with a complementary stop means 29—30 on the container, together with complementary indicating markings on said ferrule or collar and container, the cap 17—18 may be first screwed down upon

the container neck portion 12 to container mouth closing and sealing position, as shown in Fig. 7. After the cap 17—18 is thus applied and closed, the applicator member 22 is centrally superposed on the cap, and the ferrule or collar is thereupon aligned with the cap in such position as to dispose the "off" indicating mark thereof in accurate alignment or register with the fixed mark 31 of the container, thereby to position the stop tongue 28 in properly spaced away relation to the stop abutment 30. When the ferrule or collar is thus accurately positioned, by application, through suitable agencies, of perpendicularly applied down-thrusting force thereto, the same is telescopically forced down over the cap and applicator member into immovable relation thereto, and so as to firmly grip and clamp the downturned skirt portions 23 of the applicator member between the main body of the ferrule or collar 24 and the external surfaces of the cap skirt 18. Such assembling operations are quick and easy of performance, and serve to accurately predetermine the position of the cooperative stop means and indicating markings in necessary coordinated relation, and so as to assure that the "off" indicated position of the cap will be accurately related and maintained relative to the container mouth closing and sealing position of the cap. It will thus be apparent that, in the use of the dispensing container, when the closure member is turned to indicate "off" position, the cap will be tightly closed in sealing relation to the container mouth, and loss of the container content by leakage or evaporation will be well guarded against.

Referring to Figs. 8 and 9, there is shown thereby a somewhat simplified form of a dispensing container embodying the principles of this invention, wherein the container and cap portion of the closure member correspond to the above described details of construction thereof, but wherein a simple form of applicator member retaining ferrule or collar 24' is provided, in connection with which the flared portion 26 and apron 27 have been omitted, and wherein a combined indicator pointer and stop member 32 extends from the lower margin of said ferrule or collar 24' so as to overhang the peripheral side of the container shoulder portion 11 for cooperation with the stop member 29 and its stop abutment 30. In this arrangement the pointer extremity 32' of the combined indicator pointer and stop member 32 cooperates with "off" and "on" indicating marks with which the container is provided as shown. The method of assembling the applicator member 22 and cap 17—18 by means of said modified form of ferrule or collar 24', whereby desired and predetermined accurate coordination of the stop and indicating markings is obtained, is attained in the same manner and with the same advantages as already above described with respect to the first described embodiment of this invention.

In the use of the dispensing container of this invention, when it is desired to open the same to pass the content thereof to the operative portion of the applicator member 22 which is superposed on the exterior surface of the cap top wall 17, the closure member is turned anti-clockwise to cause the cap to ride upward on the screw-threaded neck portion 12, whereby the sealing disc 20 is removed from the rim 15 so that the container content may flow into the cap interior when the container is inverted, and thence through the vents 21 to the applicator member (see Fig. 5). Various degrees of such opening movement to control volume of content outflow from the container to the applicator member may be easily attained by regulating the degree of opening movement of the closure member by reference to the indicating marks denoting partial "on" positions of said closure member. To use the applicator member after it has been saturated with a portion of the container content, the inverted container is employed as a handle means whereby said applicator member may be applied to and rubbed over the surface or material desired to be treated by the container content.

It will be noted that the skirt portions 23 of the applicator member are carried down so as to overlap and surroundingly extend somewhat beyond the free margins of the cap skirt 18. This is of advantage since should there be any slight leakage of the container content between the container neck portion 12 and the cap skirt 18, the same will be caught and absorbed by the adjacent applicator member skirt portions, and thus prevented from flowing or dripping onto the exterior surfaces of the container body with risk of soiling the same or labels mounted thereon, or with risk of soiling the hands of the user.

Inasmuch as the ferrule or collar embraces and covers the skirt portions of the applicator member, so that only that part of said member which overlies the top end of the cap is exposed, there is no risk of the user touching the applicator member and thereby soiling the hands when manipulating the closure member, since to manipulate the closure member it is but necessary to grasp the clean outer surfaces of said ferrule or collar. This is very desirable in cases where the substance dispensed is of staining character, such e. g. as a shoe cleaning or polishing preparation or the like.

Having now described my invention, I claim:

1. A dispensing container comprising, a container body having an externally screw-threaded neck portion and a shoulder portion at the juncture of said body and neck portion, said neck portion terminating in a container mouth of reduced diameter, a closure cap to screw onto said neck portion, said cap having an internal sealing disc to close and seal said container mouth when said cap is screwed down on said neck portion to closed position, said cap having vent means spaced outwardly from the margins of said container mouth, a pervious applicator member superposed upon said cap, said applicator member having skirt portions folded down around the sides of said cap, a tubular keeper ferrule telescopically engaged over said applicator member skirt portions so as to grip and immovably clamp said portions between the same and said cap sides, a stop means connected with said ferrule for movement along the periphery of said body shoulder portion, and said body having a stop projection extending from the periphery of its shoulder portion with which said ferrule stop means cooperates to limit rotative movement of said cap in direction to open said container mouth, said ferrule being adapted to be selectively positioned and then operatively assembled with said cap and applicator member after the cap is screwed down to container mouth closing and sealing position, whereby to dispose said ferrule stop means in predetermined spaced relation to said body stop means under such closed cap condition.

2. A dispensing container comprising, a con-

tainer body having an externally screw-threaded neck portion and a shoulder portion at the juncture of said body and neck portion, said neck portion terminating in a container mouth of reduced diameter, a closure cap to screw onto said neck portion, said cap having an internal sealing disc to close and seal said container mouth when said cap is screwed down on said neck portion to closed position, said cap having vent means spaced outwardly from the margins of said container mouth, a pervious applicator member superposed upon said cap, said applicator member having skirt portions folded down around the sides of said cap, a tubular keeper ferrule telescopically engaged over said applicator member skirt portions so as to grip and immovably clamp said portions between the same and said cap sides, a stop means connected with said ferrule for movement along the periphery of said body shoulder portion, said body having a stop projection extending from the periphery of its shoulder portion with which said ferrule stop means cooperates to limit rotative movement of said cap in direction to open said container mouth, said ferrule and container body having complementary means for indicating closed and open conditions of said cap, said ferrule being adapted to be selectively positioned and then operatively assembled with said cap and applicator member after the cap is screwed down to container mouth closing and sealing position, whereby to dispose said ferrule stop means in predetermined spaced relation to said body stop means and said complementary indicating means in accurately coordinated relation under such closed cap condition.

3. A dispensing container comprising, a container body having a shoulder portion and an externally screw-threaded portion of reduced diameter rising therefrom, said neck portion terminating in a container mouth of further reduced diameter, a closure cap to screw onto said neck portion, said cap having an internal sealing disc to close and seal said container mouth when said cap is screwed down on said neck portion to closed position, said cap having vent means spaced outwardly from the margins of said container mouth, a pervious applicator member superposed upon said cap, said applicator member having skirt portions folded down around the sides of said cap, a tubular keeper ferrule telescopically engaged over said applicator member skirt portions so as to grip and immovably clamp said portions between the same and said cap sides, an outwardly offset apron dependent from said ferrule to overhang said container shoulder portion, said shoulder portion having on its periphery a stop abutment, and said apron having an inwardly projecting stop tongue opposed to said stop abutment for cooperation therewith in limitation of rotative movement of said cap in direction to open said container mouth.

4. A dispensing container comprising, a container body having a shoulder portion and an externally screw-threaded neck portion of reduced diameter rising therefrom, said neck portion terminating in a container mouth of further reduced diameter, a closure cap to screw onto said neck portion, said cap having an internal sealing disc to close and seal said container mouth when said cap is screwed down on said neck portion to closed position, said cap having vent means spaced outwardly from the margins of said container mouth, a pervious applicator member superposed upon said cap, said applicator member having skirt portions folded down around the sides of said cap, a tubular keeper ferrule telescopically engaged over said applicator member skirt portions so as to grip and immovably clamp said portions between the same and said cap sides, an outwardly offset apron dependent from said ferrule to overhang said container shoulder portion, said shoulder portion having on its periphery a stop abutment, said apron having an inwardly projecting stop tongue opposed to said stop abutment for cooperation therewith in limitation of rotative movement of said cap in direction to open said container mouth, and said ferrule apron and container body having complementary means for indicating closed and open conditions of said cap, said ferrule being adapted to be selectively positioned and then operatively assembled with said cap and applicator member after the cap is screwed down to container mouth closing and sealing position, whereby to dispose said stop tongue and stop abutment in predetermined spaced relation and said complementary indicating means in accurately coordinated relation under such closed cap condition.

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