July 19, 1938. J. E. MASBACH ET AL 2,123,905

DISPENSING CLOSURE

Filed Aug. 6, 1936

Fig. 1.

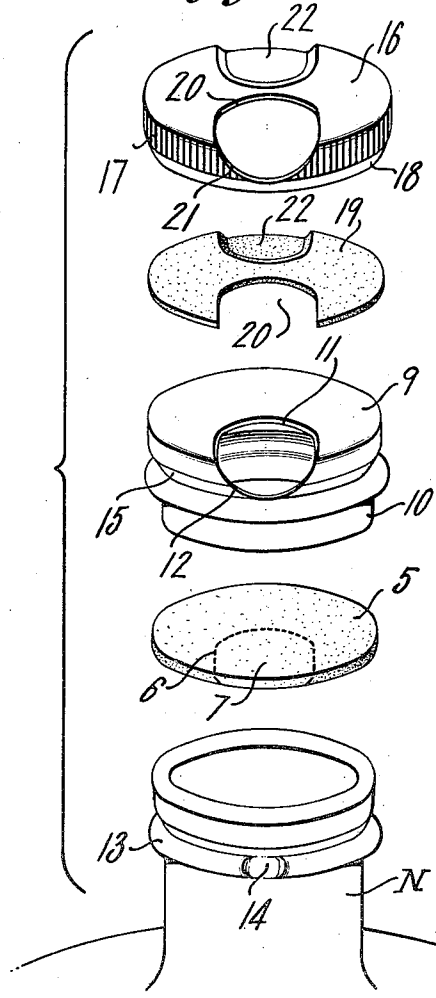


Fig. 2.

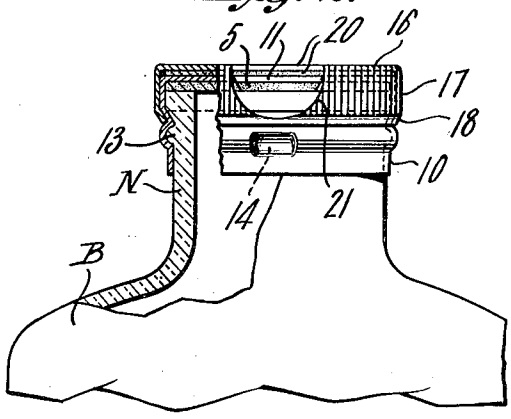


Fig. 4.

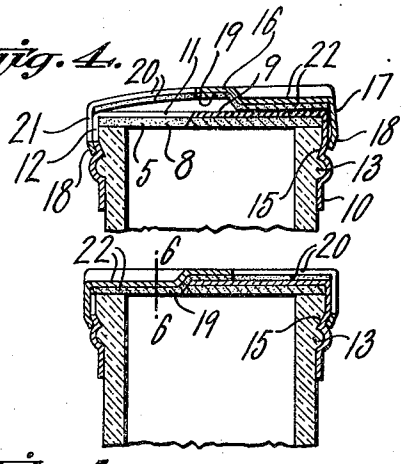


Fig. 5.

Fig. 7.

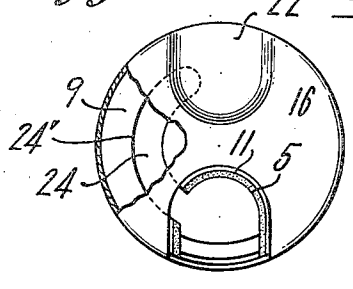
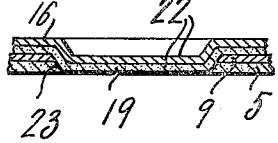


Fig. 6.



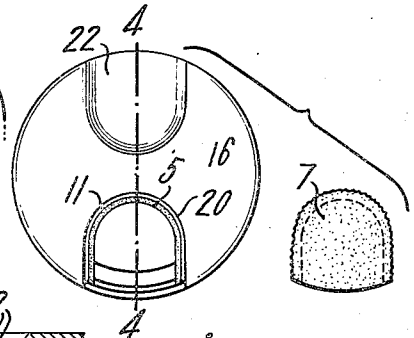


Fig. 3.

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DISPENSING CLOSURE

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Application August 6, 1936, Serial No. 94,554

7 Claims. (Cl. 215—76)

This invention relates to dispensing closures for bottles, cans and other containers or receptacles, and has for its primary object and purpose to provide a simply constructed device of this kind embodying means which affords a liquid tight seal for the container before and after it has been opened by the purchaser.

It is another object of the invention to provide a dispensing closure particularly designed for application to bottles or other containers of glass and which is so constructed that in dispensing the contents of the container, such contents will not contact with the metal parts of the closure.

An additional object of the invention resides in the provision of a dispensing closure which will effectually prevent the refilling of the container and the marketing of a substituted product therein without detection.

With the above and other objects in view, the invention consists in the improved dispensing closure and in the form, construction and relative arrangement of its several parts, as will hereinafter be more fully described, illustrated in the accompanying drawing and subsequently incorporated in the subjoined claims.

In the drawing, wherein we have shown one simple and practical embodiment of the invention and in which similar reference characters designate corresponding parts throughout the several views:

Fig. 1 is a perspective view showing the several parts of the device in disassembled relation.

Fig. 2 is a side elevation partly in section.

Fig. 3 is a top plan view showing the closure in open position and also illustrating the removed section of the sealing disk.

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a similar view showing the adjustable closure in position to seal the outlet opening in the sealing disk.

Fig. 6 is a detail sectional view taken on the line 6—6 of Fig. 5, and

Fig. 7 is a plan view, the adjustable closure member being partly broken away, and illustrating an alternative form of the sealing disk adapted for use in connection with a particular type of container.

In the accompanying drawing, we have elected to illustrate our new dispensing closure as applied to a glass bottle, indicated at B, having the usual outlet neck N. However, it will be understood as this description proceeds, that the device is capable of application as well to cans of metal, paper, fiber or other materials. In every case, the end opening of the container through which its contents are decanted, is preferably covered by a sealing disk 5 of cardboard, fiber or other suitable material having direct contact at its outer marginal portion upon the end edge of the container wall. As herein shown, this disk is provided with a line of perforations 6, terminating at each end upon the marginal edge of the disk, and defining an area or section 7 thereof which may thus be easily broken out and removed, to thereby provide a dispensing opening 8 in said disk through which the contents of the container may be poured in suitable volume.

The sealing disk 5 is inclosed within, and permanently confined against the end edge of the container wall, by a cap of sheet metal having a top portion 9 and a cylindrical skirt portion 10. The top portion 9 of the cap is provided with the opening 11, the edge of which registers with the line of perforations 6 in the disk 5, and this opening, at the outer edge of the top 9 of said cap, is continued downwardly in the skirt portion 10 thereof, as shown at 12, said vertically extending section 12 of said opening continuing downwardly below the end edge of the bottle neck.

Preferably, the line of perforation 6 extends transversely through the disk 5 at an oblique angle, and if desired, the disk material may be partially cut through from one side thereof, at such an oblique angle, so that when the part 7 is broken out, the edge of the resulting opening 8 will be beveled or inclined in the manner clearly shown in Fig. 6. The edge of the opening 11 in the top wall 9 of the cap member is similarly beveled for a purpose which will be hereinafter explained.

The skirt portion 10 of the metal cap may be permanently fixed or secured to the wall of the container or bottle neck in various ways. In the present instance, we have shown the neck of the bottle as being formed with a rib 13 upon its external surface, at a suitable distance below the end of the bottle neck. This rib, at one or more points, may be interrupted to provide a notch or recess indicated at 14. Thus, in applying the sealing disk and the metal cap to the neck of the bottle, by means of suitable dies, the skirt portion thereof is tightly compressed upon the rib 13 and into the notch or notches 14 to thereby permanently lock said cap to the bottle neck against either longitudinal or rotative movement with respect thereto.

Also, if desired, the inner surface of the cy-

lindrical wall of the cap may be coated with a suitable liquid cement.

Immediately above the rib 13, the outer surface of the bottle neck is outwardly beveled or inclined from the base of said rib, thereby providing a similarly beveled or inclined annular section 15 of the skirt 10 of said fixed metal cap.

A rotatable closure is superimposed upon the fixed metal cap above described, and also consists of a relatively thin sheet metal top wall 16 having the depending annular flange or skirt portion 17, the edge of which is inwardly inclined as at 18 to snugly contact with the inclined part 15 of the fixed metal cap, and thereby permanently hold the closure member in assembled relation with said fixed cap while permitting of its relative rotation. The top wall 16 of this adjustable closure member is provided with a thin liner sheet 19 of fiber, paper or other suitable material, said wall and the liner sheet having an opening indicated at 20 therethrough, and said opening in the closure member being extended downwardly into its skirt portion 17 as indicated at 21. This opening composed of the sections 20 and 21 in the adjustable closure member substantially corresponds in form and dimensions with the opening 11—12 in the fixed metal cap.

In diametrically opposed relation to the opening 20 in the top wall 16 of the adjustable closure member, said wall and its lining sheet 19 are depressed as indicated at 22, such depressed part of the closure member substantially conforming in shape to the opening 11 in the top wall of the fixed metal cap and the opening 8 in the sealing disk 5. The marginal edges of said depressed part 22 of the closure member are also obliquely inclined at substantially the same angle as the edges of the openings 8 and 11 so that, as shown at 23 in Fig. 6 of the drawing, when said closure member is turned or rotated from the position of Fig. 5, the depressed part 22 thereof will easily ride over the inclined edge of the fixed metal cap and upon the top surface thereof.

When the bottle or container is initially filled by the manufacturer, and the sealing disk 5 and metal cap member fixed thereto as above explained, the open end of the container is thereby tightly sealed against the escape of its contents. The adjustable closure member 16 is then applied, approximately in the position shown in Fig. 4 of the drawing. The top wall of this member being of thin flexible sheet metal, the part having the opening 20 therein will be displaced from its normal position into the arcuate form illustrated, while the depressed portion 22 extends in parallel relation to the top wall 9 of the fixed metal cap with its liner sheet 19 in contact therewith.

In order to dispense the contents of the bottle or container, the rotatable closure member is first adjusted to register the opening 20—21 thereof with the opening 11—12 of the fixed metal cap. The section 7 of the sealing disk 5 is then broken out as indicated in Fig. 3. When the contents of the bottle are now poured through the opening 8 of the sealing disk, it will flow over the exposed end edge of the glass wall of the bottle neck, through said opening and substantially without contacting with any of the metal parts of the fixed cap or the adjustable closure member 16. When a part only of the contents of the bottle or container is dispensed therefrom, the outlet opening 8 through the disk 5 may be tightly sealed by adjusting or rotating the closure member 16 on the fixed metal cap from the position shown in Fig. 4, until the depressed part 22 thereof registers with the opening 11. Then, due to the inherent resiliency of the top wall of the closure member, the arcuately curved section thereof returns to its normal position and the depressed section 22 enters the opening 11 while the liner sheet 19 is urged tightly upon the end edge of the wall of the bottle neck at the outer side of the opening 8, thus sealing said opening against the escape of the contents of the container.

When the closure member 16 is rotated from the position of Fig. 5 and the depressed part 22 thereof rides over the inclined edge of the opening 11 and upon the upper surface of the fixed metal cap, the skirt portion 17 of said closure member at the outer side of said depression will have a slight upward movement. The edge 18 thereof riding upon the inclined part 15 of the fixed metal cap member tends to position said skirt portion 17 at one side of the rotatable closure at a slight angle, thereby placing the same under tension. This action operates to frictionally hold the adjustable closure member against further casual rotation from the open adjusted position thereof as shown in Fig. 4 of the drawing.

Preferably, the outer surface of the flange or skirt portion 17 of the closure member is knurled so that it may be securely grasped and easily turned or rotated.

In Fig. 7 of the drawing, we have illustrated an embodiment of the device particularly adapted for application to mustard or pickle jars or similar containers in connection with which a spoon or other implement is used. In such case, the sealing disk 5 is provided with a slot 24 concentric with its periphery and terminating at one of its ends on one side of the line of perforation 6 in said sealing disk. The wall 9 has a similar slot 24', registering with the slot 24 and communicating with the opening 11. Thus, it will be understood that when the part 7 of the disk is broken out and removed, the slot 24 accommodates the handle or shank of the spoon or other implement when the closure member 16 is turned or rotated to its closed position. When the part 22 of the closure member is disposed in the position of Fig. 5, the spoon handle will be located in the closed end of slot 24 and project upwardly through the opening 20 in the closure member 16.

From the foregoing description, considered in connection with the accompanying drawing, the construction, manner of use and several advantages of our improved dispensing closure will be clearly and fully understood. It will be seen that the device consists of very simply constructed parts which may be readily assembled and applied to containers of various kinds. Obviously, by means of such a device, a spurious product cannot be vended in the original container without detection, since in order to dispense the original product from the container, it is necessary to first break out the part 7 of the sealing disk 5. As this disk and the metal cap are permanently secured to the wall of the container or bottle, the fact that the original contents have been removed and the spurious product substituted, would be instantly detected by mutilation of the disk 5 resulting from the removal of the part 7 thereof.

Since the depressed part 22 of the rotatable closure member reseals the opening 8 in the disk 5 after the contents of the container have been partially dispensed therefrom, the remainder of said contents will be protected against possible

contamination and leakage thereof prevented in case the container may be accidentally upset. Also, since by reason of our invention, the liquid as it is dispensed from the container does not contact with the metal parts of the closure, the possible deleterious effect upon the taste of the beverage or liquid is obviated. Of course, it will be apparent that in the application of our invention to various different kinds and shapes of containers such as are used in vending different commodities, numerous detail variations in the construction of the several parts may be required. Such changes may be readily made without substantially departing from the essential principles or sacrificing any of the advantages of our invention.

Accordingly, it is to be understood, that in the further development of our present invention, we reserve the privilege of resorting to all such legitimate changes in the form, proportions and relative arrangement of the several parts thereof, as may be fairly incorporated within the spirit and scope of the invention as claimed.

We claim:

1. In combination with a container open at one end, a metal cap and a sealing disk therein, superposed over the open end of the container, and said cap having top and skirt portions, the latter permanently fixed to the container wall, said disk having a weakened portion adapted to be broken out and removed to provide a dispensing opening therethrough, the top of the cap having an opening therein substantially of the same area as the removable portion of said disk, and said opening extending into the skirt portion of the cap and below the end edge of the container wall, and a rotatable closure member superimposed upon said metal cap, having top and skirt portions provided with an opening therein, substantially conforming in dimensions with the opening in the top and skirt portions of the cap, and adapted to register therewith in one position of the closure member, to afford access to the removable portion of said sealing disk, and through which the container contents is dispensed from the opening in the sealing disk, substantially without contact with the metal parts of the cap and closure member, and said closure member having a part, effective upon rotation of said member to another position, to substantially seal said opening in the sealing disk.

2. In combination with a container open at one end, a metal cap and a sealing disk therein, superposed over the open end of the container, and said cap having top and skirt portions, the latter permanently fixed to the container wall, said disk having a weakened portion adapted to be broken out and removed to provide a dispensing opening therethrough, the top of the cap having an opening therein substantially of the same area as the removable portion of said disk, and said opening extending into the skirt portion of the cap and below the end edge of the container wall, and a rotatable closure member superimposed upon said metal cap, having top and skirt portions provided with an opening therein substantially conforming in dimensions with the opening in the top and skirt portions of the cap, and adapted to register therewith in one position of the closure member, to afford access to the removable portion of said sealing disk, and through which the container contents is dispensed from the opening in the sealing disk, substantially without contact with the metal parts of the cap and closure member, a liner sheet on the top wall of said closure member, said wall and the liner sheet having depressed portions, and said wall being yieldable relative to the metal cap, whereby said depressed portions may move into and out of the opening in the top wall of the cap upon rotation of said closure member relative thereto, and said liner sheet on the depressed portion of said closure member adapted to seat against the end edge of the container wall and substantially seal the opening in said sealing disk.

3. In combination with a container open at one end, a metal cap and a sealing disk therein, superposed over the open end of the container, and said cap having top and skirt portions, the latter permanently fixed to the container wall, said disk having a weakened portion adapted to be broken out and removed to provide a dispensing opening therethrough, the top of the cap having an opening therein substantially of the same area as the removable portion of said disk, and said opening extending into the skirt portion of the cap and below the end edge of the container wall, and a rotatable closure member superimposed upon said metal cap having top and skirt portions provided at an opening therein substantially conforming in dimensions with the opening in the top and skirt portions of the cap, and adapted to register therewith in one position of the closure member, to afford access to the removable portion of said sealing disk, and through which the container contents is dispensed from the opening in the sealing disk, substantially without contact with the metal parts of the cap and closure member, a liner sheet on the top wall of said closure member, said wall and the liner sheet having depressed portions, and said wall being yieldable relative to a metal cap, whereby said portions may move into and out of the opening in the top wall of the cap upon rotation of said closure member relative thereto, and said liner sheet on the depressed portion of said closure member adapted to seat against the end edge of the container wall and substantially seal the opening in said sealing disk, and the edges of said openings in the top of the cap and said sealing disk and the edges of the depressed portions of said closure member and liner sheet being obliquely inclined and providing cam means facilitating the movement of the depressed part of the closure member out of said opening in the cap when the closure member is rotated to open position.

4. In combination with a container open at one end, a sealing disk disposed over the open end of the container and permanently secured thereto, said disk being weakened along a line terminating at its opposite ends on the periphery of the disk to provide a portion adapted to be broken out and removed to provide a dispensing opening through said disk, and said disk also having a slot therein terminating at one of its ends on said weakened line to communicate with said opening, and a superposed rotatable closure member having an opening, which, in one position of said member, affords access to said removable portion of the sealing disk and is adapted to accommodate the shank portion of an implement disposed in the container, to be moved by the closure member into said slot in the sealing disk as said member is rotated to its closed position, said member having a part, which, in the latter position of said member, substantially seals said opening in the sealing disk.

5. In combination with a container open at one end, a sealing disc permanently secured over said

open end of the container and having a removable edge portion, and a superposed closure member rotatably mounted on the container and having a resiliently yieldable top portion provided with an opening, through which said edge portion of the sealing disc is removable in one position of the closure member, and the top of said member having a part movable when said top portion is resiliently flexed into and out of the opening in the sealing disc, resulting from the removal of said edge portion, said part having sealing contact against the wall of the container in another position of said closure member.

6. In combination with a container open at one end, a metal cap permanently fixed to the container, extending over said open end thereof and having a dispensing opening, a closure member rotatably mounted on said cap and having an inner liner sheet of compressible material, and said closure member having a part constructed and arranged to coact with means on said cap, in the rotation of said member in one direction to vertically displace the closure member and liner sheet relative to the top wall of the cap and position the major portion of said liner sheet out of frictional contact with said cap wall as the closure member is moved towards its open position.

7. In combination with a container having a top wall provided with a dispensing opening, a rotatable closure member having a sealing part for said opening opposed to said top wall, and said closure member including a part constructed and arranged to coact with means on said container in the rotation of said member from closed to open position, to initially impart a vertical upward movement to the closure member relative to said top wall, and position the major portion of said sealing part out of frictional contact with said wall in the continued rotation of said member towards its open position.

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