

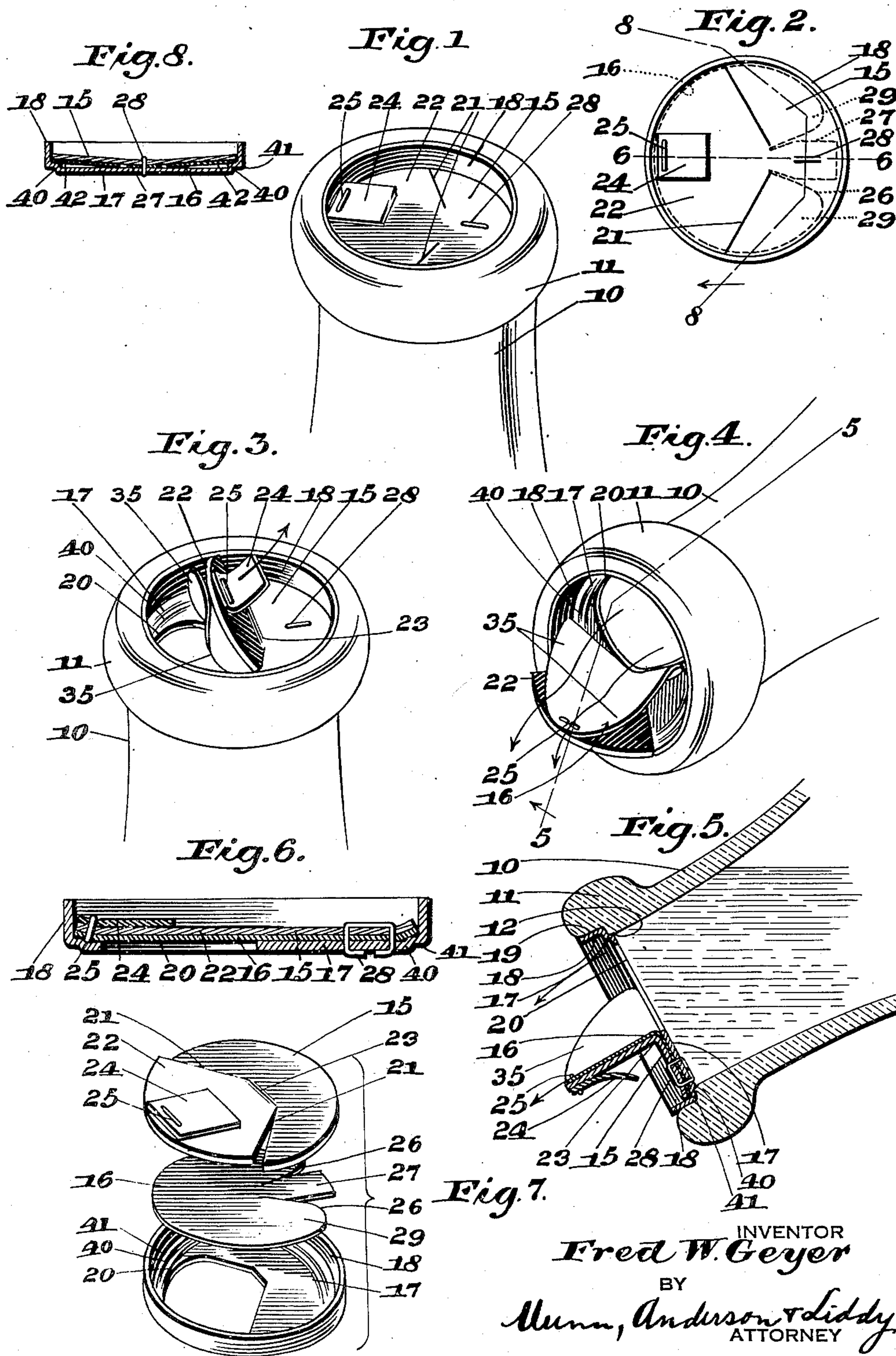
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MILK BOTTLE TOP

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## MILK BOTTLE TOP

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4 Claims. (Cl. 215—51)

This invention relates to bottle caps.

An object of the invention is the provision of a cap which may be readily forced in position on a shoulder formed in the usual open end of a milk bottle for completely sealing the open end against the loss of fluid while preventing the fluid from coming into contact with any of the exposed portions of the cap, the cap having a movable lip which when moved outwardly therefrom will form a spout at a discharge opening in the cap.

Another object of the invention is the provision of a cap adapted for particular use on a milk bottle although the cap may be employed for other types of bottles, the cap being composed of a plurality of superimposed discs which are connected together at one portion thereof, the innermost disc having a discharge opening which is normally closed by a lip cut from the body of the outermost disc and hingedly connected thereto, the intermediate disc being formed of flexible material and connected to the free end of the lip at a point which is diametrically opposite where the discs are connected together, said lip and flexible disc completely sealing the opening against loss of fluid with the intermediate disc forming a spout adjacent the opening in the lowermost disc when the lip is pulled outwardly to display the opening in said innermost disc.

A further object of the invention is the provision of a cap for bottles which is frictionally held in position on a shoulder formed at the open end of the bottle, said cap being composed of a pair of discs formed of relatively stiff material with a flexible disc located between the pair of discs, a securing means connecting all of the discs together, the innermost disc being provided with a discharge opening, the outermost disc having embodied therein a movable lip hingedly connected with said disc, a suitable connecting means securing the free end of the lip to the adjacent portion of the flexible disc at a point diametrically opposite the securing means, a tongue being formed integrally with the flexible disc by means of a pair of slots cut into said disc, said slots forming a freely movable wing at each side of the tongue, the outward movement of the lip causing that portion of the flexible disc which is secured to the lip to be pulled outwardly as will be the wings to form a spout at the opening in the innermost disc.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawing forming a part of the specification, nevertheless, it is to be understood that the invention is not con-

finer to the disclosure, being susceptible of such changes and modifications as define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a view in perspective of the top of a milk bottle showing a cap applied thereto constructed in accordance with the principles of my invention,

Figure 2 is a plan view of the cap,

Figure 3 is a view in perspective of the bottle cap showing the movable lip in open position and forming a spout at a discharge opening in the cap.

Figure 4 is a view in perspective of the top of the bottle showing the cap in open position whereby the milk may be poured from the bottle,

Figure 5 is a vertical section taken along the line 5—5 of Figure 4,

Figure 6 is a vertical section taken along the line 6—6 of Figure 2,

Figure 7 is a view in perspective of the cap showing the parts in displaced position, and

Figure 8 is a vertical section taken along the line 8—8 of Figure 2.

Referring more particularly to the drawing, 10 designates a milk bottle having an enlarged portion 11 at its upper open end. This enlarged portion has at its inner surface a depressed shoulder 12 upon which the usual cap or disc is frictionally forced and maintained in position.

The cap constructed in accordance with the provisions of my invention is formed of three discs 15, 16 and 17. The disc 17 is formed of relatively stiff paper or cardboard and is provided with an upstanding annular flange 18 which frictionally engages the side wall 19 of the depression at the outer end of the enlargement 11. The disc is of such a diameter that it must be forced into the depression so that the upstanding flange 18 will frictionally engage the side walls and maintain the disc in position. One portion of this disc is provided with an opening 20 through which milk or other liquid contained in the bottle is discharged.

The outermost disc 15 is also formed of relatively stiff paper or cardboard or any other suitable material and is of such a diameter that it will neatly fit within the flange 18 of the disc 17. The disc 15 is slotted, as shown at 21, to provide a movable lip 22 which has an integral hinge 23 with the body of the disc. A finger-piece 24 is stapled at 25 to the outer free end of the lip 22. This finger-piece at its free end may be raised and grasped for pulling the lip 22 outwardly from



the bottle. The disc 16 is made of relatively thin flexible material such as paper and this disc is water-proofed in any well known manner. A portion of this disc, as shown at 26, is cut away to form a pair of notches to provide a tongue 27. The disc 16 neatly fits within the flange 18 of the disc 17 and rests directly upon the said disc so that it will be located between the discs 15 and 17 and will aid in forming a complete seal for the opening 20 when the lip 22 is forced into closed position.

It will be noted from Figs. 5 and 6 that the three discs 15, 16 and 17 are secured together by means of the staple 18 and this staple passes through the tongue 27 so that only this portion of the disc 16 is connected to the discs 15 and 17. The wings 29 are unconnected with either the discs 15 or 17 and are therefore freely movable for a purpose which will be presently described.

The staple 25 not only connects the finger-piece 24 to the lip 22 but it also connects the disc 16 to the said lip at a point which is diametrically opposite the tongue 27. It will be noted that the staple 28 is located in a vertical plane which is at a right angle to the plane passing through the staple 25.

The operation of my device is as follows: When the three discs are connected together as described above, the innermost disc 17 which forms the base member of the cap will be seated upon the shoulder 12 of the bottle while the flange 18 will be in frictional contact with the wall 19 and the cap will be securely held in position.

When it is desired to pour milk or other liquid from the bottle the lip 22 is raised by the finger-piece 24 and since the flexible disc 16 is connected by the staple 25 to the lip this portion of the disc 16 will be raised and a pull will be exerted on the wings 29 and since they are unconnected they will slide freely between the discs 15 and 17 so that the portions 35 of the flexible member 16 will bend inwardly and form a spout as shown in Figs. 3, 4 and 5, thereby exposing the opening 20 in the disc 17.

When the bottle is placed in position as shown in Figs. 4 and 5 the milk or other liquid may be poured from the bottle and it will flow out over the spout and the portions 35 will prevent the fluid from running off the side edges of the spout.

When it is desired to replace the lip 22 and close the bottle it is only necessary to press inwardly on the lip whereby the wing portions 29 will slide back into position and the members 35 will flatten out against the outer face of the disc 17. When the lip 22 is forced down sufficiently the side edges of the lip will frictionally engage the walls of the slits 21 and maintain the lip in position. Furthermore, the outer free edge of the lip will engage the corresponding portion of the inner face of the flange 18 and will help to retain the lip in closed position.

The upturned flange 18 frictionally engages the wall 19 and securely grips said wall to prevent accidental displacement of the cap from the bottle.

It will be noted that the spout is formed from the intermediate disc 16 and when the lip 22 is pushed back into closed position that the spout moves inwardly and is positioned between the inner and outer discs so that at no time does it dip down into the bottle and become contaminated by the milk or other liquid housed within the bottle.

It will be noted from Figs. 5, 6 and 8 that the disc 17 has its central and greater portion depressed, as shown at 40, thereby providing a shoulder 41 which rests upon the shoulder 12 at the outer end of the bottle 10 so that the periphery of the of the intermediate flexible disc 16 will rest upon the shoulder 41 to provide a space 42 between the disc 16 and the depressed portion 40 of the disc 17 and the wings 29 of the disc 16 are freely movable in the space 42. The outer disc 15 normally presses the flexible disc 16 upon the shoulder 41 of the disc 17 so that the milk bottle cap completely seals the open end of the bottle 10.

I claim:

1. A bottle cap comprising a disc having an upstanding annular flange and an opening therein, a second disc having a movable lip closing the opening, a third disc formed of flexible material and having a portion adjacent the periphery connected to the outer free end of the lip, the third disc being housed between the first and second discs are provided with a tongue which is secured to said discs adjacent the peripheries thereof and at a point which is diametrically opposite the connection with the lip, the portions of the third disc at opposite sides of the tongue having their inner edges spaced from the side edges of said tongue and being freely movable between the first and second discs when the lip is moved either to open or closed position.

2. A bottle cap comprising a pair of discs formed of relatively stiff material, a third disc located between the pair of discs and substantially co-extensive therewith, one of the pair of discs having a hinged lip formed by radial cuts, the other disc of the pair having an opening below the lip connecting means between the lip and the third disc so that when the lip is raised the portion of the third disc adjacent the lip will be pulled out in the form of a spout, and securing means between the third disc and the pair of discs.

3. A bottle cap comprising a pair of superposed discs formed of relatively stiff material, one of the discs having an opening therein, the other disc having a movable portion forming a closure for the opening, the space between the remaining portions of said disc which embraces the opening forming a housing, a third disc of relatively thin and flexible material located between the pair of discs, means connecting the free end of the closure to an adjacent portion of the third disc, said third disc being provided with notches upon opposite sides of a diameter passing through the connecting means to form a tongue diametrically opposite the opening and also a freely movable wing at each side of said tongue, said wings being normally located in the housing and freely movable therefrom and means connecting the free end of the tongue to the pair of discs, said closure when moved outwardly from the second disc pulling the attached portion of the third disc and the wings outwardly from the housing to form a spout at the opening in the first-mentioned disc.

4. A bottle cap comprising disc adapted to be frictionally held in place upon the open end of a milk bottle and provided with a discharge opening, a second disc mounted on the first disc, formed of relatively stiff material and having a movable portion hingedly connected to said disc adjacent the center thereof, the space between the first and second discs forming a housing, a flexible disc disposed within the housing formed



between the first and second discs and covering the opening, means connecting the free end of the movable portion of the second disc to an adjacent portion of the flexible disc, said movable portion and the connected portion of the flexible disc forming a closure for the discharge opening, means connecting a portion of the flexible disc which is diametrically opposite to the first-mentioned connecting means to the first and

second discs, the sections of the flexible disc at opposite sides of the second connected means being located in the housing and freely movable therein so that when the closure is raised certain sections will be pulled outwardly to provide side walls of a pouring spout formed from the flexible disc.

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