June 15, 1926. 1,589,134

U. J. EWING

CLOSURE FOR MILK BOTTLES

Filed May 20, 1924

Fig. 1.

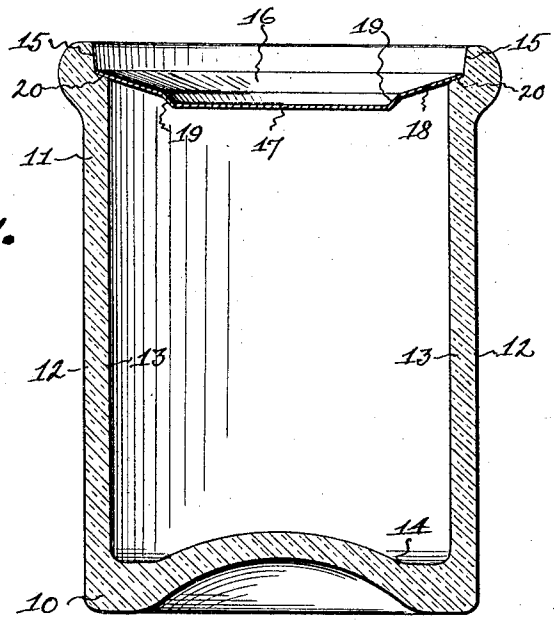


Fig. 2.

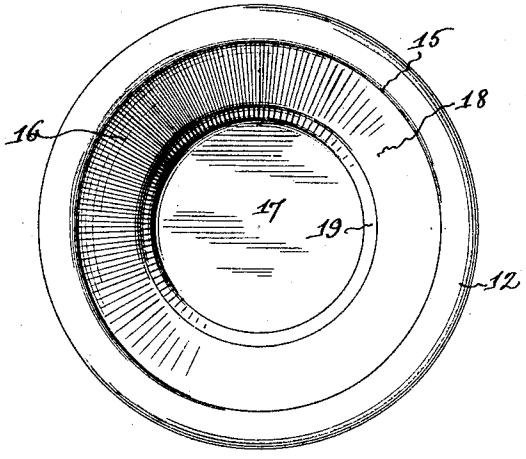
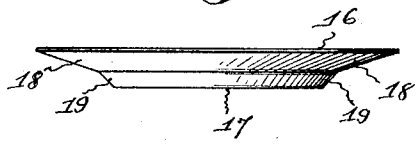


Fig. 3.



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CLOSURE FOR MILK BOTTLES.

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This invention relates to closures for milk bottles, and more especially to that type or class of closures which is made of paper and of disk-shape and intended for use in the business of supplying milk at retail in returnable and refillable bottles and said closures being discarded after the milk has been drained from the bottle or container.

The objects of the invention are:

First, to provide a closure or stopper of the character indicated which is cheap to manufacture, easily applied and quickly and readily removed from the bottle and of such shape, configuration and cross-section as to enable the closure to be firmly retained within the neck and seat of the bottle or receptacle either in upright or inverted position.

Second, to so form the closure or cap in configuration and cross-section as to prevent the same when applied to bottle or receptacle to slightly yield to pressure or weight of the contents within said bottle or receptacle to force the peripheral edges or rim of the closure or cap outwardly and more firmly against the vertical walls of the seat formed in the neck or top of the bottle.

Third, to form a closure or cap which is of such contour and cross-section as will enable the same to be nested in shipment, thereby permitting a maximum number of the same to be shipped in a minimu of space and at the same time prevent their shape or edges from becoming distorted or injured tending to make the closures or caps inoperative.

Fourth, to provide a closure or cap which is particularly adapted to be used in connection with a milk container or bottle in which the inner cylindrical wall is vertical and parallel to the outer wall whereby a construction of container is provided in which the interior is more easily cleaned than the present form of containers, a great saving of the wear and tear on the brushes is effected in machines usually employed for cleaning the containers, and the hand can easily enter into the interior of the bottle when it is desired to clean the same manually, and furthermore a receptacle can be made shorter than bottles now in general use, yet contain the same quantity, thereby enabling the use of shallow crates in hauling and dispensing the bottles and also a greater number of crates can be stored in the wagons and for delivering the containers.

Fifth, other advantages of construction and relation of the parts will be apparent and understood from the detailed description to be hereinafter disclosed.

The invention consists of structural characteristics and relative arrangement of features, which will be hereinafter more fully described and particularly pointed out in the appended claim.

In the drawings, in which similar reference characters indicate the same parts in the three figures:

Figure 1 is a central vertical and longitudinal section of a container or bottle with the improved cap or closure applied thereto.

Figure 2 is a top plan view of Figure 1, and

Figure 3 is a side elevation of the novel cap or closure.

Referring to the drawings, 10 is the bottom and 11 is the top or neck of the bottle or container, said top and bottom are preferably connected by the side of the vessel provided with the parallel outer and inner cylindrical walls 12 and 13, respectively. The inner wall 13 extends unobstructedly from the inner surface 14 of the bottom to the inner periphery of a flange, croze or seat 15, formed in the inner side of the section of the bottle for the reception of the improved cap or closure 16.

Said novel cap 16 is preferably dished as illustrated and made of thin paper and consists of a circular central plane or flat section 17 and an outer dished peripheral annular portion 18, which is integrally connected to said central plane section 17 by a smaller dished and annular section 19, as clearly shown in Figures 1 and 3, and said base portion 20 of the croze or seat 15 is preferably made to slightly incline towards the center of the bottle, as illustrated, for the purpose of conforming to the angularity which the extreme outer section of the peripheral annular portion 18 assumes when the cap 16 is placed in position in the seat or croze 15, as shown in Figure 1, after the container has been filled.

When the cap or closure 16 is in the position as illustrated in Figure 1, the interior of the container is perfectly sealed and the joint between the outer periphery or circular edge of the cap 16 and the walls of the seat or croze 15 is a tight one of large frictional contact and surface. It will also be seen owing to the cap or closure 16 being dished and of thin and yielding material, should the

container or bottle be upset or turned on its side or upside down the weight of the contents or fluid within the container would exert a pressure on the central plane section 17 and tend to press or push the same outwardly, which would in turn force the outer edge or periphery of the annular portion 18 outwardly and in closer frictional contact with the side wall of the seat 15 and prevent the cap 16 from becoming forced out of the seat 15 by the action of material within the container and thereby avoid any of the contents of the container from passing between the cap 16 and top opening or seat 15 and spilled from the bottle or container.

A further function of the dished formation of the cap 16 is that when said cap 16 is inserted into the position shown in Figure 1, the sections 18, 19 and 17 of the cap displace a greater portion of the air trapped between the cap 16 and contents of the bottle and container than the flat and common form of bottle cap closures and hence reduce to a minimum the unoccupied space within the container and trapped air between its contents and cap 16 and further assisting, due to absence of air within the container, in retaining the cap 16 in its seat 15 should the container be accidentally turned over or upset.

From the foregoing description of the structural characteristics and arrangement of elements, it will be seen that all the objects and advantages of the invention recited in the statement of invention have been efficiently carried out with a minimum use of material and cost of manufacture, and that a cap or closure is provided which automatically increases its grip or power to remain secured in its seat should the emergency arise when the container or bottle is accidentally tipped over, or rests on its side, and is adaptable to a container or bottle having its entire inner surface readily accessible by a mechanically operated brush or for manual cleaning, and no possible chance for any dirt or other impurities to enter the container and tending to contaminate the contents of the bottle or container.

What I claim is:—

A container comprising a hollow cylindrical body having parallel inner and outer cylindrical walls, an open top provided with an inner circular seat or croze flaring outwardly, and a cap or closure resting in said seat or croze comprising a circular thin flexible dished disk having a central depressible flat section integrally connected to and surrounded by an inner and narrow dished annular section and an outer dished annular section surrounding and integrally connected with and wider than said inner and narrow dished annular section, said cap or closure adapted to yield to pressure within the container and slightly force out radially from the center of the cap or closure the circular edge or periphery of the outer dished annular section against the side walls of the inner circular seat or croze of the container.

In testimony whereof I hereunto affix my signature.

URBANE J. EWING.