

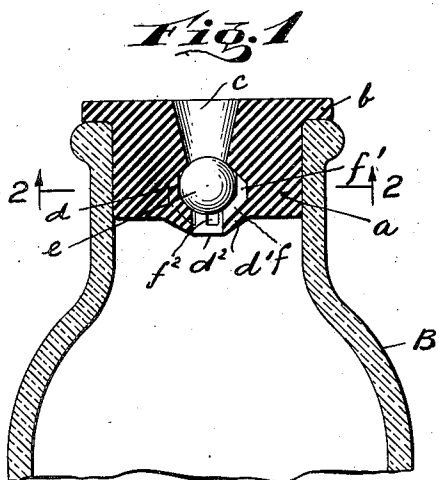
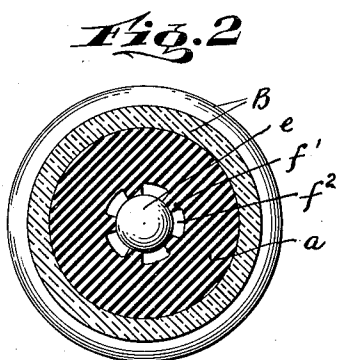
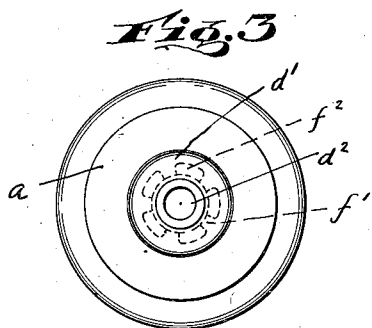
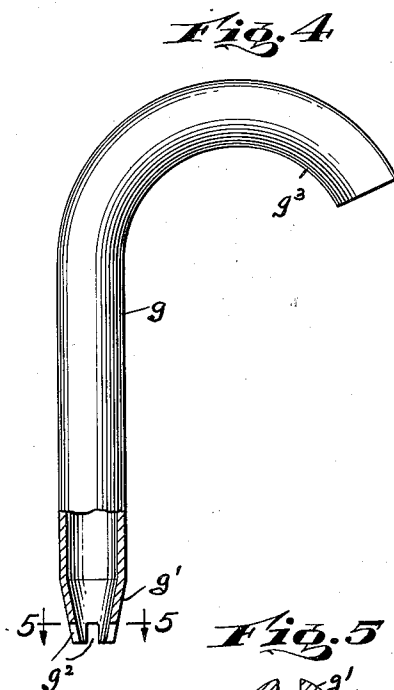
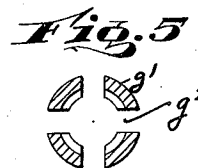
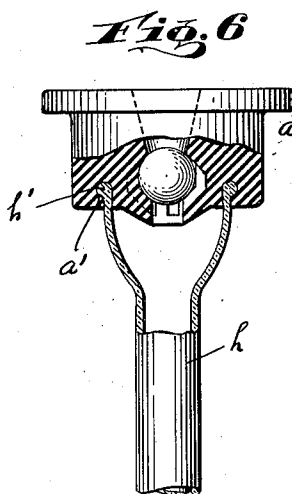
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ATTACHMENT OR DEVICE FOR BOTTLES OR OTHER CONTAINERS

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ATTACHMENT OR DEVICE FOR BOTTLES
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Application May 24, 1935, Serial No. 23,181

11 Claims. (Cl. 215-75)

This application is a continuation in part of the application filed March 16, 1935, bearing serial No. 11,386. This invention relates to devices for bottles, jars or other liquid containers and more specifically to stoppers, and has for its main and primary object to provide means which will serve as an effective automatic or self-closing air-tight stopper and also permit a repeated dispensation of the liquid while preventing the rest of the contents from being exposed to incoming air and from deterioration thereby.

A still further object of this invention is to provide a device of simple construction for liquid containers which will serve both as stopper and dispenser and which can be used in lieu of the relatively expensive syphon heads on bottles containing aerated or mineral waters or liquids subjected to pressure by injected compressed air or by gas naturally developing therein.

A still further object of this invention is the provision of a stopper which will permit the refilling of the container without removing the stopper.

Another object is to provide such simplified and inexpensive construction of a combined stopper and dispenser that it will not be worth the trouble of removing it from the container for further use but may be thrown away with the container when the latter is emptied.

With these and other objects in view, my invention consists in the construction, combination and arrangement of parts as will be hereinafter more fully described and defined in the appended claims.

In the accompanying drawing, which forms part of this specification, and in which similar reference characters denote corresponding parts, Fig. 1 is a vertical section of the stopper shown as applied to a bottle;

Fig. 2 is a cross section on line 2-2 of Fig. 1; Fig. 3 is a bottom view of the device shown in Fig. 1;

Fig. 4 is a sectional elevation of a tool to be used for opening the stopper;

Fig. 5 is a cross section on line 5-5 of Fig. 4; and

Fig. 6 is a sectional elevation of the device shown in connection with a syphon tube.

Referring to the drawing, the device comprises a cylindrical body or plug *a* which may be made of any suitable material, preferably of contractible, elastic or resilient material, such as rubber or the like, and which is formed at its upper face with an annular flange *b* and is adapted to be tightly fitted in the mouth end of the bottle B.

This body is provided centrally with a duct *c* which preferably may be conical, tapering downwardly. At the lower end of said duct I provide a substantially cylindrical pocket or chamber *d* somewhat wider than said duct, for the reception of a globular or otherwise suitably shaped valve body *e*. If the body *a* is made of contractible material, as is assumed in the present example, the bottom *d'* of said pocket is relatively thin and provided centrally with a circular opening *d²* concentric with said duct *c*. Provided on the inner face of said bottom are a plurality of radial reinforcing ribs *f* which are extended vertically into the chamber to project from the inner cylindrical face thereof, as at *f'*. The valve body *e*, when lodged in said pocket is adapted to bear on said ribs *f*, *f'* projecting from said bottom and wall of said pocket. In height, the pocket is slightly smaller than the diameter or height of said valve body, as a result of which the latter, when inserted into the pocket, will distend the pocket longitudinally thereby depressing said bottom *d'* against its natural force of resiliency. This force, in its turn, will press said valve *e* against the upper face of the pocket *d* closing the duct tightly. Said upper face of the pocket *d* may be tapered toward the constricted end of the duct to form a seat for the valve body *e*.

Owing to the resiliency of the bottom, it will be possible to open the duct by pressing the valve body *e* down from its seat so that the liquid which will enter the pocket through the channels *f²*, formed between the ribs *f* and *f'*, will be allowed to flow out through the opened duct when the container is held upside down.

The depression of the valve body can be effected by the finger or any suitable tool to be inserted through the duct. I prefer, however, to use a tubular tool *g* for this purpose, which, at the same time, may serve as a dispensing nozzle. This tool may have its lower part *g'* tapered and is provided at its lower end with a number of recesses *g²* to form passages through which the liquid will be discharged into the nozzle or tube *g* when the latter is inserted into the duct *c* and pushed inwardly to depress the valve body.

The cylindrical portion of the tube is so ad-measured in width that it will fit tightly in the constricted end of the duct *c* so that when it is pressed inwardly until its recessed end will unseat the valve body *e*, the liquid entering the tube or nozzle from the pocket *d* through the channels *f²* will pass into the nozzle *g* only through the passages

g^2 . The tube may be formed at its opposite end to a gooseneck g^3 .

This device may be used in connection with a syphon tube h as shown in Fig. 6. To this end, the tube may, at its upper end, be formed with a bead h' to engage an annular groove a' provided in the plug body a , into which groove the bead may be easily slipped. If the plug a is made of rigid material the bottom of the pocket may bear a spring or it may be made in form of an elastic ring suitably attached to the plug.

Various other modifications may be made in the construction of my device without departing from the spirit of my invention. I, therefore, do not wish to restrict myself to the details shown and described.

What I claim is:

1. A dispensing stopper for bottles and other containers comprising a resilient body adapted to tightly fit in the mouth end of the container, said body being formed with a longitudinal duct having a constricted part at an intermediate point and being longitudinally channeled below said constricted part, a valve body movably borne in the channeled portion of said duct, said body being formed with means below said valve body adapted to normally hold said valve body against said constricted portion of said duct so as to close it against the unchanneled portion thereof, and on being pressed downwardly to open said duct and permit the dispensation of the contents.

2. A dispensing stopper according to claim 1, in which said duct is widened at an intermediate portion to form a pocket or chamber to receive said valve body.

3. A dispensing stopper according to claim 1, in which said duct is widened to form a pocket or chamber extending from an intermediate point to a point near the bottom of said body and a relatively thin annular resilient flange forming the bottom of said pocket, said valve body being of such dimension that when stored in said pocket said annular flange, by its resiliency, will normally tightly press said valve body in closing position.

4. A dispensing stopper according to claim 1, in which the inner wall of said duct is provided with longitudinal ribs or flutes extending from an intermediate point to and over the bottom of said body and on which said valve body bears, the spaces between said ribs forming channels whose communication with the discharge end of said duct normally will be closed by said valve body until depressed.

5. A dispensing stopper for bottles or other containers comprising a resilient body having a duct, a pocket and resilient ribs and a valve body adapted to bear on said ribs, the inner end of said pocket, due to resiliency of said body, tending to normally force said valve body against the upper end of said pocket and thereby close said duct.

6. A dispensing stopper for bottles or other containers comprising a body having a duct and

a ribbed pocket within said duct whose bottom is formed by a relatively thin annular flange provided with radial ribs extended over the walls of said pocket and a rigid globe serving as a valve body and movably borne on the ribs in said pocket, the said bottom by its elasticity normally holding said valve body in closing position to cut off communication between the discharge end of said duct and said pocket, but adapted to yield downwardly when pressure is exerted on said valve to open said duct.

7. A stopper for bottles or other containers of a substantially cylindrical body of resilient material adapted to tightly fit in the mouth end of the container, said body being formed centrally with a substantially conical passage tapering downwardly and a substantially cylindrical pocket or chamber into which said passage terminates, the bottom of said chamber being formed by a relatively thin annular flange, a plurality of radially disposed reinforcing ribs on said annular flange extended vertically along the inner wall of said pocket to form channels therebetween and a rigid ball constituting a valve body contained in said chamber or pocket to bear on said ribs and so admeasured that when contained in said pocket said flange, by its force of resiliency, will hold it tightly in closed position.

8. A dispensing stopper for bottles or other containers according to claim 1 in which a syphon tube is suspended from the bottom of said resilient body.

9. A dispensing stopper for bottles or other containers according to claim 1 in which the said body is formed at its bottom with an annular groove and a syphon tube formed at its mouth end with a bead to engage said annular groove.

10. A combination stopper and dispensing device for bottles and other containers, comprising a body having a duct extending longitudinally through said body and formed intermediate its ends with a ribbed or fluted pocket, a valve body contained in said pocket and adapted to bear on the ribs or flutes of said pocket and capable of tightly closing the said pocket at the outer end thereof, the inner end of said pocket being resilient and tending to force said valve body into closing position.

11. A dispensing stopper for bottles or other containers, comprising a resilient body having a duct reduced at its inner end and which has longitudinal channels or ribs extending from an intermediate point through said end, and a valve body borne in said channelled portion of the duct, the resiliency of said body and ribs being adapted to force said valve body against the unribbed part of said duct and thereby into closing position.

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