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DRINKING VESSEL WITH SPILL PREVENTING CLOSURE

Original Filed May 31, 1962

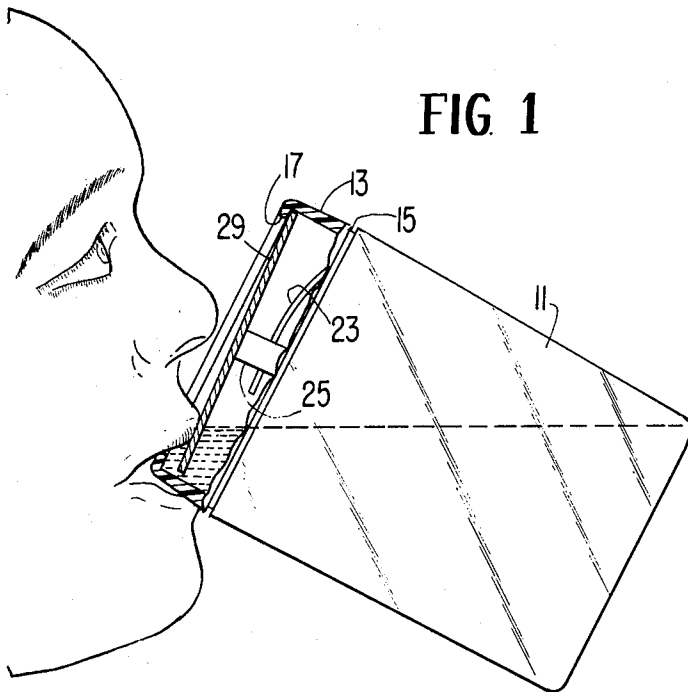


FIG 1

FIG 2

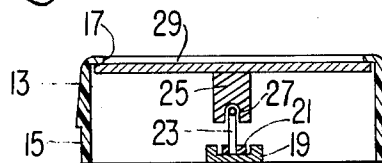


FIG 3

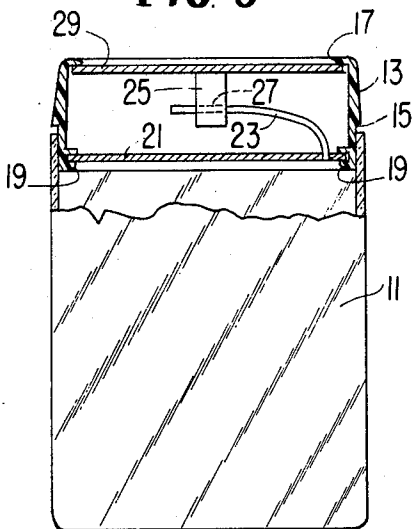
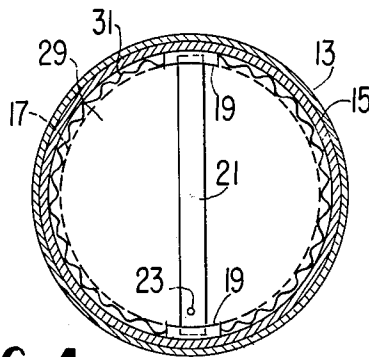


FIG 4



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DRINKING VESSEL WITH SPILL PREVENTING CLOSURE

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 Continuation of application Ser. No. 198,860, May 31, 1962. This application Mar. 3, 1964, Ser. No. 349,797

1 Claim. (Cl. 220—90.4)

This application is a continuation of my co-pending application Serial No. 198,860, filed May 31, 1962, now abandoned.

This invention relates to drinking vessels and more particularly to such a vessel which has a cover device to prevent spilling of its contents.

Traditional open top drinking cups and glasses are generally unsatisfactory for use by children and infants, passengers in some types of vehicles or picnickers and campers. For example, infants and children are quite apt to upset glasses of milk or other liquids. In addition, persons who have traveled in airplanes or automobiles have found that the sudden and erratic movements of the conveyance make the act of drinking difficult as well as hazardous. Persons who eat outdoors, such as campers and picnickers, often find particles of dirt and various insects in their open drinking vessels. For these reasons it is desirable to have a cover for such drinking vessels to prevent spilling of the contents thereof and to bar entrance of foreign materials.

A person who is bedridden because of illness or other incapacities may find it extremely difficult to drink liquids from a conventional cup or glass, especially if the person is unable to sit up. Therefore, a drinking vessel which can be tipped sharply and yet provide means for the user to control the flow of the contents of the vessel is desirable.

Accordingly, it is an object of this invention to provide a drinking vessel having a self-sealing top.

Another object of the invention is to provide a drinking vessel having a device thereon to permit simple control of the flow of liquids therefrom.

Another object of the invention is to provide a self-sealing drinking vessel of simple, low cost construction which is easy to assemble and clean.

A feature of the invention is the provision in a drinking vessel of a sealing disc and a removable retainer bar with a resilient arm thereon biasing the disc against an annular projection on the interior surface of the vessel to provide a resilient seal therefor.

Another feature of the invention is the provision on a drinking vessel of a detachable cover and a spring biased closure to be opened by the lip of a user, which closure has serrations on the periphery thereof of a depth less than the extent of a sealing shoulder on the inside of the cover.

In the drawing:

FIG. 1 shows the drinking vessel of the invention in use with part broken away;

FIG. 2 is a sectional view of the cover device of the invention;

FIG. 3 is a bottom plan view of the device as shown in FIG. 2; and

FIG. 4 is an elevational view of the drinking vessel, with the upper part broken away, and with the top closed.

The invention comprises a cover device fitted to the top of a drinking vessel. The device includes a housing, the upper end of which is flanged inwardly to form an annular shoulder. The housing also contains two inwardly projecting seat portions. A retainer bar supported at its ends by the seat portions has an upwardly extending resilient arm mounted thereon. A stop mem-

ber is removably mounted on the arm and a sealing disc, serrated about its periphery, is attached at its center to the stop member. The arm biases the disc against the under side of the annular shoulder of the housing which extends past the serrations to seal the vessel. When used as an ordinary drinking glass the upper lip of the person drinking presses the disc against the bias of the arm to permit liquid to flow from the vessel, the rate of flow being dependent on the distance the disc is displaced from the shoulder.

Referring to the drawing, FIGS. 1 and 3 show the cover device of the invention fitted over a container 11. The cover device and container can be made from a variety of materials. Polyethylene plastic especially lends itself to the economical manufacture of this type of item. The container and cover device could also be made of disposable material such as is used in the manufacture of the common paper cup. These materials especially lend themselves to use by airplanes or picnickers where it is preferable to use disposable dinnerware. Although a container made in this manner might not seal completely when turned over or on its side for any length of time, it would not leak or spill if turned right side up immediately after being pushed over.

The cover device consists of a cylindrical housing 13 having a recessed outer surface 15 around the lower periphery. Surface 15 is adapted to engage the inner surface of container 11 for a frictional fit therewith. The upper end of housing 13 is flanged inwardly to form an annular shoulder 17.

As best seen in FIGS. 3 and 4, two ridges or seat portions 19 extend inwardly at the lower end of housing 16. A retainer bar 21 is supported at each end by seat portions 19. A resilient arm 23 is attached at one end to retainer bar 21 and extends upwardly therefrom.

Referring in particular to FIG. 2, stop member 25 is removably supported on arm 23 by capturing arm 23 in recess 27. A closure member or sealing disc 29 is fixed to stop member 25 and is held against the lower side of shoulder 17 by resilient arm 23. Contact between disc 29 and shoulder 17 form an effective seal against the passage of liquid from within or foreign materials from without. As shown in FIG. 4, disc 29 contains a plurality of serrations 31 about its outer extremity. As shown in FIG. 4, these serrations 31 are of insufficient depth to prevent effective sealing of the disc against shoulder 17. Serrations 31 do, however, provide a certain advantage which will be explained shortly.

Referring now to FIG. 1, it may be seen that when container 11 is lifted to the mouth, the upper lip of the person drinking presses the disc 29 against the bias of resilient arm 23 allowing the liquid to pass from the inside of container 11 past the outer edge of disc 29 and also through serrations 31. Serrations 31 thereby provide a generous passage for easy outflow of the liquid. The rate of flow of the liquid can be easily controlled according to the distance which disc 29 is depressed. Stop member 25, upon sufficient depression of disc 29, will contact retainer bar 21 to prevent the opposite side of disc 29 from slipping out of engagement with shoulder 17 and jamming. Upon removing the container from the mouth, resilient arm 23 presses disc 29 lightly against shoulder 17 of housing 13 thereby sealing the liquid inside the container. Upon turning container 11 upside down or on its side, the weight of the liquid in addition to the light pressure of resilient arm 23 acts to seal the container liquid tight.

The cover assembly may be removed from the container 11 and disassembled into three parts for thorough cleaning. Retainer bar 21 is pushed toward disc 29 releasing the retainer bar from contact with seat portions 19. When retainer bar 21 is turned radially to clear

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seat portions 19, retainer bar 21 and disc 29 may be removed from housing 13. Assembly is accomplished in the reverse order.

It may therefore be seen that the invention as shown and described provides a self-sealing drinking vessel capable of controlled liquid flow which is low in cost and easily cleaned.

I claim:

A non-spillable drinking vessel including in combination, a liquid retaining bottom portion, a cover extending from the upper open end of said liquid retaining bottom portion and frictionally joined therewith, said cover having seat portions at the lower end thereof defining slots on the opposite side of the interior thereof, an annular shoulder on the interior surface of said cover near the upper end thereof, a retainer bar spanning said cover with the ends thereof held by said seat portions, a resilient arm fixed to and extending upwardly from said retainer bar, sealing disc means positioned against the underside of said annular shoulder and having a portion engaging said resilient arm so that said sealing

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disc means is spring biased into a closed position for said vessel, said disc means having a stop member extending downwardly therefrom and partially surrounding a portion of said resilient member to form a detachable coupling between said sealing disc means and said resilient member, whereby depression of said sealing disc means by a user of said vessel will permit liquid therein to flow from said vessel, said stop member being engageable with said retainer bar upon depression of said sealing disc to limit the depression of said sealing disc.

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