United States Patent

Tower

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[54] UNIVERSAL CLOSURE

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[52] **U.S. Cl.** .....**220/42 A,** 215/100.5, 220/24 B, 220/42 E

[51] **Int. Cl.**.....**B65d 41/16**

[58] **Field of Search**.....220/23, 24 R, 42 A, 42 C, 42 D, 220/42 E, 24 B; 215/100.5

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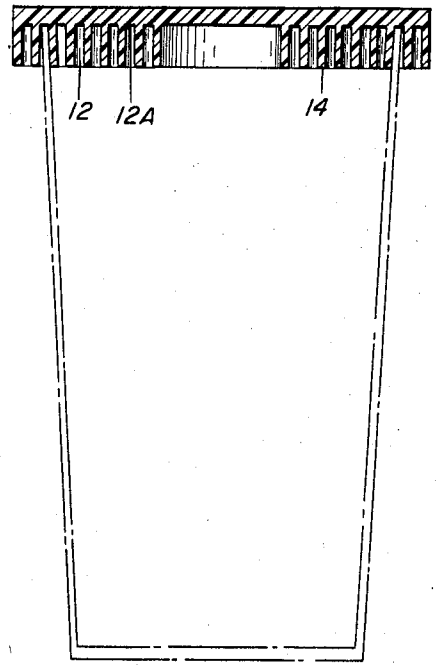
[57] **ABSTRACT**

A universal closure panel adaptable for use with a variety of different sized drinking glasses, jars, and other small household receptacles to form a liquid-tight seal, particularly when employing the receptacle as a utensil for mixing beverage ingredients by hand-shaking.

2 Claims, 5 Drawing Figures



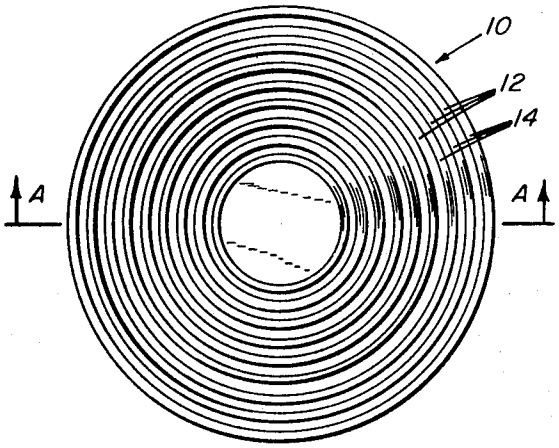


FIG. 1

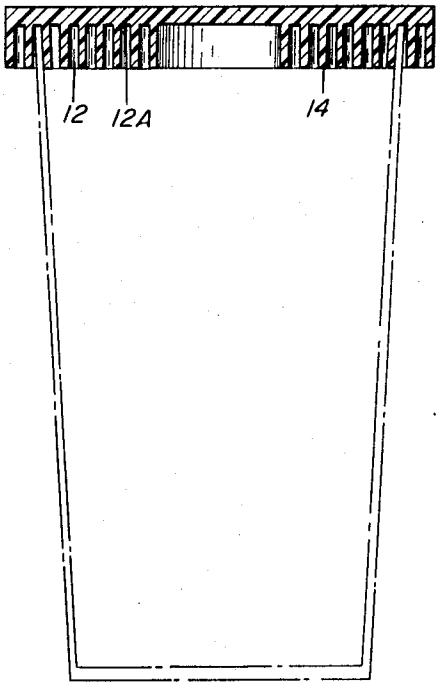


FIG. 2

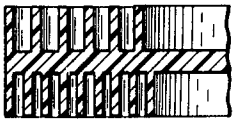


FIG. 3

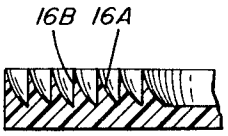


FIG. 5

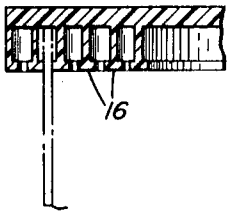


FIG. 4

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UNIVERSAL CLOSURE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates, in general, to closures for receptacles. In particular, the invention is directed to a panel-type closure which is adaptable to meet the varied size requirements to enclose the top opening of drinking glasses or other similar small household receptacles.

2. Description of the Prior Art

Frequently, in many households, it is desired to prepare a single serving of a beverage or other relatively small amounts of blended liquids. Chocolate milk, milk shakes, frozen orange juice, and eggnog are typical examples of such beverages which are at their best when consumed immediately after being thoroughly mixed by vigorous shaking. Heretofore, in order to obtain a single serving quantity of a thoroughly blended beverage, it has been necessary to mix the beverage contents in a shaker or blender and then transfer the mixture to the receptacle intended for drinking purposes. Thus, to obtain a small amount of blended beverage, it has required the inefficient use of a blender with a resultant clean-up chore of considerable magnitude.

One solution to the problem is to temporarily convert the tumbler or drinking glass to a shaker for mixing a single serving quantity of the beverage immediately prior to consumption. Unfortunately, not only do drinking glasses come in many styles and sizes, but they are not ordinarily provided with closures. There is, therefore, a need for a device which is designed and constructed to serve as a liquid-tight closure for a variety of different sized drinking glasses or similar small household receptacles, particularly for the purpose of converting these receptacles into small hand-held shakers to blend a beverage just prior to use or consumption.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the invention to provide a closure for drinking glasses, tumblers and similar small household receptacles.

It is another object of the invention to provide a closure which is adaptable to receptacles of different open-end size of a pre-determined range of openings, and which will effect a liquid-tight seal for each of these receptacles.

It is a further object of the invention to provide a resilient panel-type closure for converting drinking glasses and similar receptacles of various sizes within a pre-determined range of open-end size to hand-held shakers for mixing single serving amounts of beverages prior to consumption or for culinary or other household purposes.

Briefly, the closure of the invention is a panel or lid-type closure which, when placed and held over the opening of a container permits the container or receptacle to be vigorously hand-shaken without seepage or spillage of the contents therein. The salient feature of the invention is the multiplicity of concentric grooves or channels formed in the surface of the face of the closure. The plurality of grooves or depressions in the surface of the closure is constructed to assure a liquid-tight seal between the rim or lip defining the receptacle opening and the closure panel surface. The multiplicity of concentric grooves or depressions assures a mating of the closure and the container whereby one of the circular grooves corresponds sufficiently to the container opening dimensions to admit and cooperate with the lip or edge of the container to form a liquid-tight seal when the closure is hand-held to the container and the combination and liquid contents therein are hand-shaken.

The aforementioned and other objects and features of the invention will become manifest upon consideration of the following detailed description in conjunction with the accompanying drawing illustrative of preferred embodiments of the invention wherein like reference characters are employed to designate like parts in the specification and throughout the several views.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a plan view of the panel-type closure of the invention illustrating the plurality of concentric grooves in the surface of the closure which contacts the receptacle rim.

FIG. 2 is a fragmentary enlarged vertical section taken substantially along line A—A of FIG. 1.

FIG. 3 is a vertical section of an alternate embodiment of the invention illustrating a closure having a series of concentric grooves on one face of a different width than the concentric grooves on the opposite face.

FIG. 4 is a fragmentary enlarged vertical sectional substantially taken along the same line as line A—A of FIG. 1 but showing an alternate configuration of the grooves.

FIG. 5 is a fragmentary vertical section taken along substantially the same line as A—A of FIG. 1 and showing a second alternate configuration of the grooves in detail.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The closure of the invention consists of a semi-rigid panel of resilient material which fits snugly and removably over the lip defining aperature of a receptacle. When hand-held against the lip of the container, a liquid-tight seal is effected and the drinking glass or similar open-mouth vessel is converted to a shaker for mixing milk shakes or other recipes requiring shaking or agitation to ensure proper blending.

The closure is preferably constructed of material which is inert to foods generally and especially to liquid foods. Plastic materials, such as polyethylene, polystyrene, polyvinyl chloride, and polytetrafluoroethylene are among the materials suitable for constructing the panel closure of the invention. Other plastic or rubber-based materials which are used for conventional household equipment can also be used as materials of construction for the closure.

The term "semi-rigid" used in this specification is intended to mean a closure which may be slightly flexed when placed over the aperature of the receptacle and depressed at its center portion by finger pressure. The term "resilient" as used to designate the materials of construction of the closure of the invention is meant to mean a material which can be impermanently deformed to a degree sufficient to accommodate minor irregularities in the contacting surface of the rim or lip of the receptacle and also to accommodate slight mismatching of container rim dimensions with the geometry of the closest corresponding sized groove in the face of the closure contacting the receptacle as will be described in more detail hereinafter.

Referring now to the drawing, it will be seen that there is illustrated in FIG. 1 a panel-type closure which is generally designated as (10). FIG. 1 shows the container-contacting surface of the closure as being corrugated substantially throughout the entire surface with a multiplicity of channels (12) alternately disposed between narrow wall ridges (14).

As shown in greater detail in FIG. 2, the width of the grooves (12) is selected so as to be slightly smaller than the wall thickness of an average drinking glass. Since the grooves are in close proximity to each other, the walls (14) separating the grooves are relatively narrow. The narrow walls (14) of resilient material are, therefore, deformable to the extent the lip of the container to which the closure is applied, even though not exactly matching the closest correctly sized groove, can readily be accommodated by the deformation of the narrow resilient wall. In effect, the side walls (14) and the bight surface (12A) defining the groove (12) mate with the rim of the container to form a liquid-tight seal when the disc is held in place with a slight amount of force bearing on its upper surface.

The closure of the invention is sufficiently flexible to be affixed to the rim of the receptacle by a snap action of the walls defining the appropriate groove in the contacting face of the disc.

The overall thickness of the resilient material of construction of the closure and the thinnest of the walls defining the grooves in the corrugated face provide a flexibility to the clo-

sure which permits mating the closure and receptacle by placing it on top of the receptacle rim and slightly flexing the central portion. In so doing, the rim of the container will be admitted into the closest matching groove as one or both of the narrow walls defining the groove are slightly displaced and then snap back to snugly grip the rim.

FIG. 3 illustrates a closure according to the invention having the capability of accommodating a wider range of receptacle rim sizes than that of the embodiment shown in FIG. 2. The embodiment of the invention as shown in FIG. 3 is a panel closure with both face surfaces corrugated with a multiplicity of closely adjacent concentric grooves. The grooves located on one surface have a larger width than those on the opposing surface; thus, provision is made for the use of the closure with thick rimmed tumblers, jars, or similar thick walled small household receptacles as well as for receptacles having usual wall thickness.

An alternate method of configurating the wall structure separating the concentric grooves in the corrugated surface of the closure is shown in FIG. 4. As shown, the grooves are undercut such that each wall terminates in a flange (16) of flexible material which extends part way over the adjacent grooves. The flexible flange portion of the walls serves to further assure contact between the closure and the receptacle rim to make a liquid-tight seal, especially when there is a disparity between groove and container-lip geometry. In this construction of the invention, the grooves can be of sufficient width to accommodate the thickest walled receptacle anticipated to be closed and yet will form a liquid-tight seal with thin-walled receptacles because of the contacting action of the flexible flanges.

FIG. 5 illustrates a second alternate of closure groove formation. As shown, the corrugated surface of the closure is comprised of a multiplicity of concentric grooves having one defining wall (16A) beveled so as to intersect the adjoining vertical wall (16B) at its base. Preferably, the beveled wall (16A) is formed with a slight concave curvature. The arcuate beveled wall of the groove abuts the rim of the receptacle and, when pressed against it, is deformably wedged against the receptacle rim thereby assuring a liquid-tight seal.

While the foregoing has illustrated and described what is now contemplated to be the best mode of carrying out the invention, the constructions are, of course, subject to modification without departing from the spirit and scope of the invention, such as the panel being square or rectangular in overall dimensions and/or having a tab for hanging on a hook. Therefore, it is not desired to restrict the invention to the particular forms of construction illustrated and described, but to cover all modifications that may fall within the scope of the appended claims.

What is claimed and desired to be secured by Letters Patent is:

1. A one-piece universal closure for hand-held application upon the open top end of a receptacle, such as a drinking glass and adapted to meet varied requirements of receptacle aperture size comprising a lid in the form of a panel of semi-rigid resilient material having the receptacle rim contacting face thereof uniformly corrugated in a concentric pattern, the grooves of the concentric corrugations of the closure surface being formed by undercutting the adjacent walls whereby the walls terminate in a flat flange section.

2. A one-piece universal closure for hand-held application upon the open top end of a receptacle, such as a drinking glass and adapted to meet varied requirements of receptacle aperture size comprising a lid in the form of a panel of semi-rigid resilient material having the receptacle rim contacting face thereof uniformly corrugated in a concentric pattern, the grooves of the concentric corrugations of the closure face being formed by contacting one defining wall with an arcuate bevel terminating at the base of the opposite defining wall.

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