

March 15, 1966

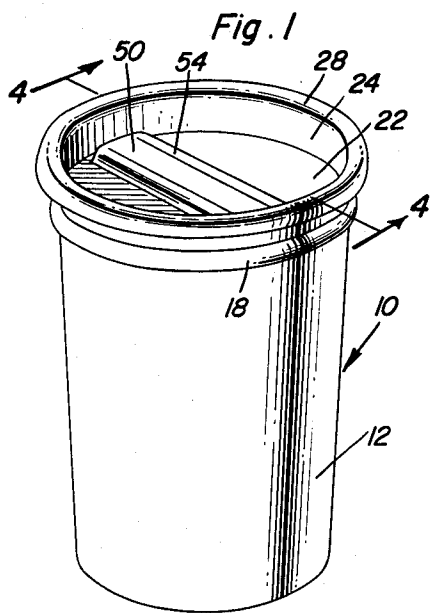
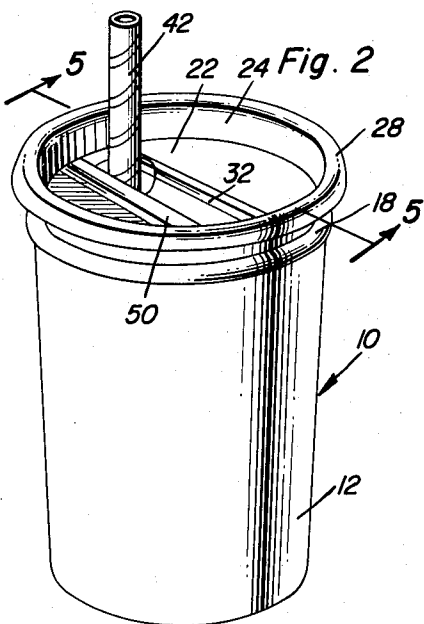
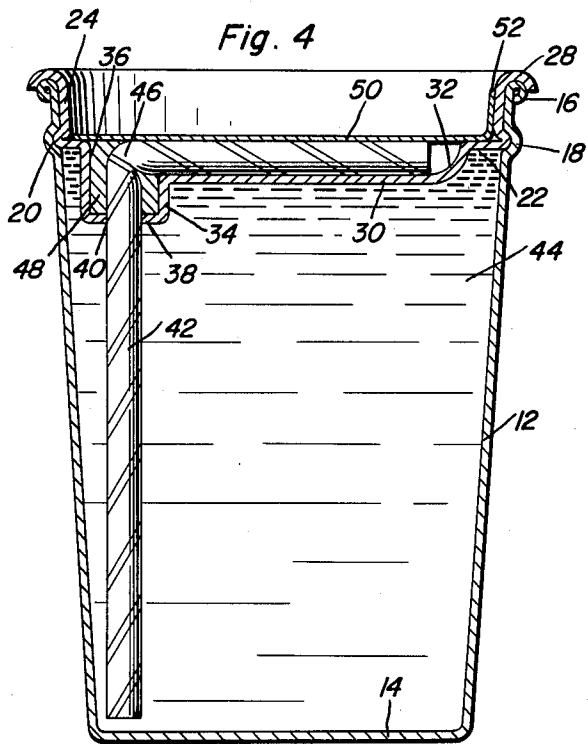
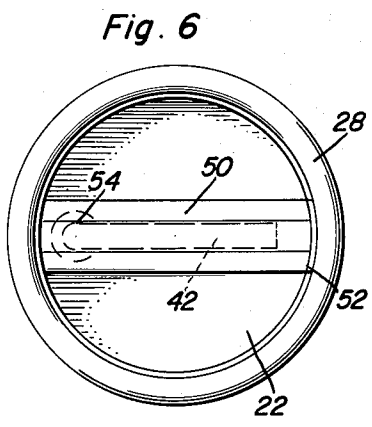
W. A. PUGH, SR

3,240,415

DRINKING CUP WITH STRAW INCORPORATED THEREIN

Filed March 3, 1964

2 Sheets-Sheet 1



William A. Pugh, Sr.
INVENTOR.

BY *Alvanice A. O'Brien*
and *Harvey B. Jackson*
Attorneys

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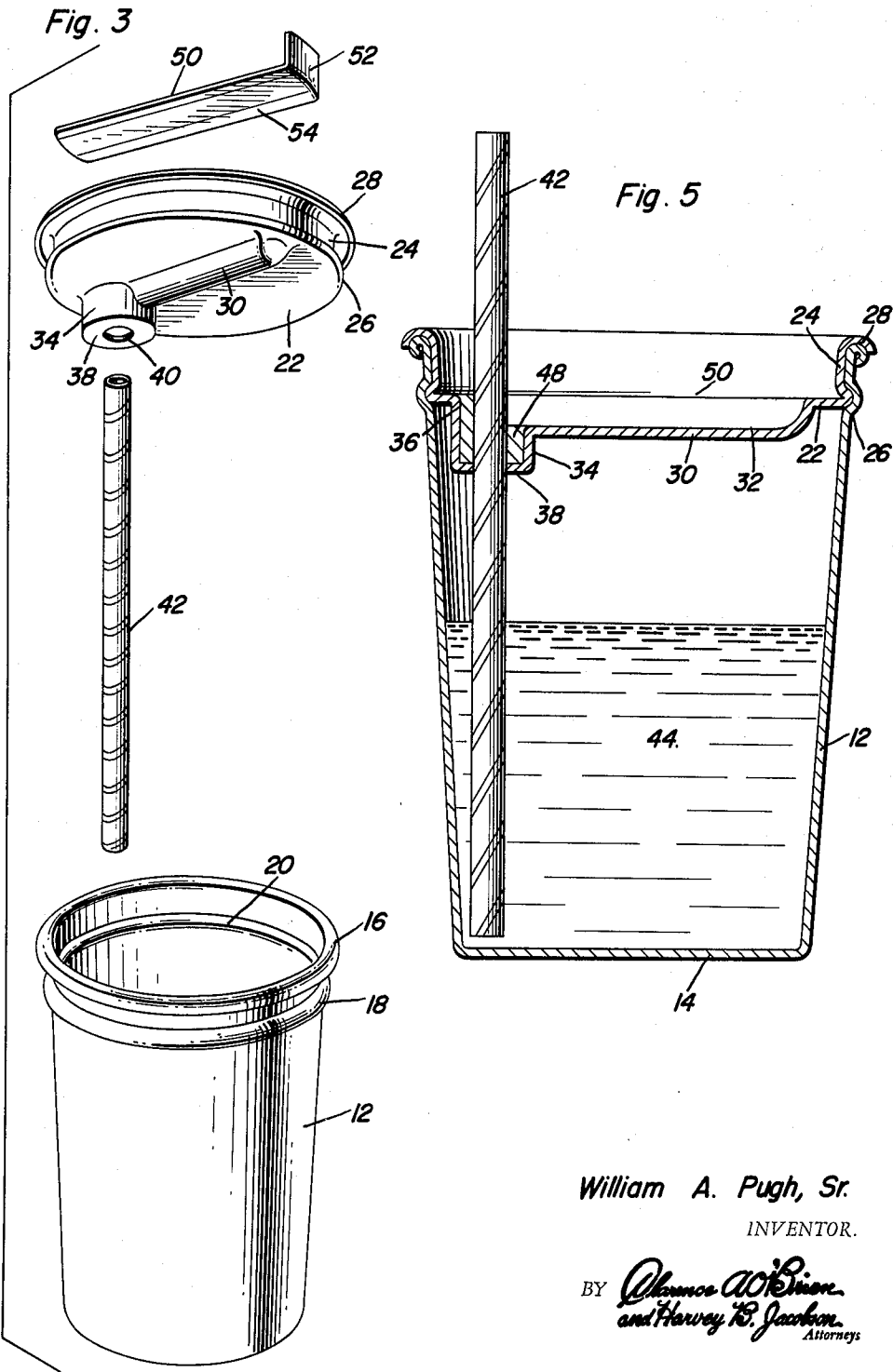
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DRINKING CUP WITH STRAW INCORPORATED THEREIN

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2 Sheets-Sheet 2



William A. Pugh, Sr.

INVENTOR.

BY *Almon A. O'Brien*
and Harvey E. Jackson
Attorneys

1

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DRINKING CUP WITH STRAW INCORPORATED THEREIN

William A. Pugh, Sr., 5200 S. Harper Ave., Chicago, Ill.
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6 Claims. (Cl. 229—7)

The present invention generally relates to a container particularly in the form of a drinking cup having a lid thereon with a sipper straw incorporated therein and the structure of the present invention represents an improvement on prior Patent No. 2,800,265, issued July 30, 1957, for Containers with Pressure Closed Self-Opening Sipper Straw.

An object of the present invention is to provide a container having a straw incorporated therein which has an upper portion folded into perpendicular relation to a lower portion with the upper portion received within a groove formed in the lid of the container and retained therein in a sealed manner with a removable cover together with a novel structure for sealingly receiving the straw where it passes through the lid thereby forming a completely sealed structure having the sipper straw constructed therein with the specific structure enabling certain economies in formation thereof to be readily attained.

A further object of the present invention is to provide a container in the form of a drinking cup having a slight taper therein for ease of nesting together with a lip at the upper edge thereof combined with a lid having a rim or edge portion overlying the rim of the cup so that it will act as a stop in the manufacturing procedure and will also facilitate dropping of the lids from the magazine of a production machine.

Another object of the present invention is to provide a container in accordance with the preceding objects in which the lid is provided with a well or reservoir for wax or hot melt plastic which anchors the straw to the lid with this well or reservoir being disposed as close as possible to the periphery of the lid thereby enabling the straw to be as long as possible within the conventional limitations of the container and lid.

Still another object of the present invention is to provide a drinking cup with straw incorporated therein which is simple in construction, easy to form with production machinery, effective for retaining the contents in the container in sealed condition and yet readily enabling the straw to be exposed for use so that the contents of the container may be readily consumed.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the container in the form of a cup constructed in accordance with the present invention with the cup being shown in sealed condition;

FIGURE 2 is a perspective view similar to FIGURE 1 but with the straw exposed in position for use;

FIGURE 3 is an exploded group perspective view illustrating the orientation of the structural features of the present invention;

FIGURE 4 is a vertical sectional view taken substantially upon a plane passing along section line 4—4 of FIGURE 1 illustrating the structural arrangement of the container when the straw is in folded and sealed position;

FIGURE 5 is a detailed sectional view taken substantially upon a plane passing along section line 5—5 of FIGURE 2 illustrating the orientation of the structural components of the invention when the straw is in position for use; and

FIGURE 6 is a plan view of the container illustrating the orientation of the cover for the straw.

Referring now specifically to the drawings, the numeral 10 generally designates the container of the present invention which is in the form of a drinking cup having a generally cylindrical wall 12 which may be slightly tapered for nesting of the container during storage and production so that the containers may be dispensed one at a time and yet the containers may be stored in a compact manner. The construction of the cup 10 may vary but in all instances, there must be provided a bottom wall 14 either integral with, sealed to or otherwise connected to the peripheral wall 12. The specific manner of constructing the cup and the specific shape, size and configuration thereof may vary as may the material from which the cup is constructed. The upper edge of the wall 12 is provided with a rolled rim 16 thereon and adjacent the upper end of the wall 12, there is defined an outwardly extending angular rib 18 which forms an interior groove 20 for receiving a circular lid 22 which has an upstanding flange 24 at the periphery thereof with the juncture of the flange 24 and lid 22 defining the peripheral projection or rib 26 which is received within the groove 20 in a sealed manner thereby retaining the lid 22 in position. The upper edge of the flange 24 is provided with an outwardly turned rib or cat's claw edge 28 which overlies the rim or bead 16 and which serves as a stop for limiting the insertion of the lid 22 during assembly of the lid 22 onto the cup 10. Also, the construction of the lid 22 is such that it facilitates dispensing thereof one-by-one in the producing operation and also to facilitate the single discharge of the lids during assembly with the cups.

The lid 22 is provided with a transversely extending downwardly depressed portion 30 defining a transverse groove 32 therein. One end of the depressed portion 30 adjacent the peripheral wall 12 is provided with a further downwardly depressed portion 34 generally cylindrical in configuration which defines a well or reservoir 36 communicating with the groove 32 and also communicating with the upper surface of the lid 22. The bottom of the depressed portion 34 is designated by numeral 38 and includes an aperture 40 therein which receives an elongated sipper straw 42 which has a lower portion extending downwardly into the cup and terminating at a position adjacent to but slightly spaced from the bottom 14. The upper portion of the straw 42 is capable of extending substantially above the rim 28 of the lid 22 for use in consuming liquid contents 44 in the cup 10 as illustrated in FIGURES 2 and 5.

Before the contents 44 are consumed by siphoning, the upper portion of the sipper straw 42 is received within the groove 32 with there being a bend 46 formed in the straw 42 at a point therein in alignment with the groove 32 as illustrated in FIGURE 4. The straw 42 is anchored to and sealed in relation to the depressed portion 34 by a sealing and anchoring material 48 which may be wax or hot melt plastic which fills the depressed portion 34 up to at least the level of the groove 30.

Overlying the groove 32 as well as the depressed portion 34 and the upper portion of the straw 42 when in its folded or stored condition is a cover member 50 having a tab 52 extending upwardly from one end thereof and provided with a pair of parallel score lines or weakened lines 54 spaced apart a distance generally equal to the outside diameter of the straw 42 as illustrated in FIGURE 6 so that when the tab 52 is pulled, the central portion of the cover 50 will be torn out thus exposing and releasing the upper portion of the sipper straw 42 so that it will pivot upwardly due to the natural resiliency of the straw and the bend 46. Of course, the straw may be completely orientated in straight line condition by

gripping the upper end portion thereof with the fingers and moving it to the position illustrated in FIGURES 2 and 5 so that the contents 44 of the container or cup 10 may be readily consumed.

The straw 42 along with the structure which receives the straw is orientated as close as possible to the periphery of the lid and container to give the straw more length within the confines within the dimensions of the container. Also, the straw should be striped to enhance the esthetic qualities of the container. The lid is a semi-cover all lid which has only one-half roll or a cat claw appendage at its upper edge to overlap the top rim of a cup but the roll does not cover the top roll or rim of the cup in its entirety thereby preventing any overhanging edge. The peripheral rib 26 on the lid snaps into the corresponding groove 20 in the container wall to effectively sealingly engage the wall. The cat claw edge 28 will override the rim of the cup and act as a stop in manufacturing and also dropping the lid from the magazine of the production machine.

The well or reservoir 36 receives the anchoring material which may be either wax or hot melted plastic with the reservoir being as close as possible to the periphery of the lid with just enough room being left to seal the cover 50 of plastic material over the embedded straw 42 when it rests within the confines of the groove 30. The pull-up tab 52 is anchored close to the opposite periphery with the tab being perpendicular to the line of coverage over the groove thereby elongating the groove to a point as close as possible to the opposite periphery of the lid to further enable an elongated straw to be used.

The well or reservoir is shaped so that it can be of any suitable configuration for blow molding or for deep thermoforming. The bottom of the cup may be provided with a raised bottom which will give the cup rigidity and a groove may be provided around the bottom of the cup to reinforce the cup bottom and also as a cushion shock when stacking and this also facilitates elimination of vacuum in nesting of the cups in manufacture. The two parallel crease lines or score lines in the cover 50 are generally parallel with the groove with the creases being substantially one-half of the way through the film thus forming parallel tear lines having a strength equal to approximately one-half of the strength of the film thereby enabling the central portion of the cover strip 50 to be easily torn away to liberate the straw. The transverse film or cover 50 will tear along the crease line 54 which generally are aligned with the edge of the groove 30 in the lid. The strip or cover 50 will be heat sealed to the lid and firmly anchored to the edges of the groove whereby the separation along the parallel lines 54 will be a clear tear.

While the container has been shown with a cylindrical cross-sectional configuration, it is pointed out that the shape thereof may be varied. For example, the container and the lid may be constructed of square or rectangular configuration as well as circular configuration. The round cup can be thermoformed at high speeds and it is very useful in vending locations such as at schools, drive-ins and the like. The containers may be formed from various polyesters, such as polystyrene and also may be formed from various foam plastics. In order to give rigidity to the bottom, a groove or rib may be formed therein which reinforces the side walls and prevents buckling thereof and the bottom which is reinforced may have an upward pitch thereof to give more rigidity. Also, the deformed portion 30 rigidifies the lid 22 to further rigidify this area of the container. The container may be constructed with platens or plates formed on the outside diametrical surface of the container to form a plurality of ribs from the bottom edge upwardly of the container to not only reinforce the container but eliminate vacuuming formed when the containers are stacked or nested and separated from each other. The straw of course will be a plastic striped straw

in sufficient sizes to enable the liquid contents of the container to be easily siphoned.

The reservoir 36 defined by the depressed portion 34 may be relatively shallow when using a hot melted plastic rather than wax as the anchoring material. For example, the depth of the reservoir may be approximately twice the depth of the groove when using the hot melt plastic.

The container's lid may be provided with a see-through transparency either as part of the structure or the container lid may be completely transparent or sufficiently transparent to enable the material and the sipper straw within the container to be readily observed thereby further enhancing the appearance characteristics of the container.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A container comprising a peripheral wall, a lid engaging the peripheral wall and forming a closure for the container, said lid having a transversely extending groove formed therein, a depressed well formed in said lid at one end of the groove, a sipper straw extending downwardly through the well to a position within the confines of the container, said straw having a substantially 90° bend in alignment with the groove in the lid with the upper portion of the straw being received in said groove thereby forming a closure for the sipper straw at the bend, a sealing cover overlying said groove and extending throughout the length of the groove and also overlying and covering the well for sealing the groove with the upper portion of the straw therein, said cover including a tab for enabling the straw to be exposed and enabling the upper portion of the straw to be folded into alignment with the lower portion for enabling the contents of the container to be consumed, said well being filled with an anchoring material which anchors the straw within the well in stationary relation to the lid and also seals the straw thereto.

2. A container comprising a peripheral wall, a lid engaging the peripheral wall and forming a closure for the container, said lid having a transversely extending groove formed therein, a depressed well formed in said lid at one end of the groove, a sipper straw extending downwardly through the well to a position within the confines of the container, said straw having a substantially 90° bend in alignment with the groove in the lid with the upper portion of the straw being received in said groove thereby forming a closure for the sipper straw at the bend, a sealing cover overlying said groove and extending throughout the length of the groove and also overlying and covering the well for sealing the groove with the upper portion of the straw therein, said cover including a tab for enabling the straw to be exposed and enabling the upper portion of the straw to be folded into alignment with the lower portion for enabling the contents of the container to be consumed, said cover is provided with a pair of parallel lines of weakening extending from the tab alongside the edges of the groove whereby pulling of the tab will tear the area of the cover between the weakened lines for exposing the straw and enabling it to be folded upwardly.

3. A container comprising a peripheral wall, a lid engaging the peripheral wall and forming a closure for the container, said lid having a transversely extending groove formed therein, a depressed well formed in said lid at one end of the groove, a sipper straw extending downwardly through the well to a position within the confines of the container, said straw having a substantially 90°

5

bend in alignment with the groove in the lid with the upper portion of the straw being received in said groove thereby forming a closure for the sipper straw at the bend, a sealing cover overlying said groove and extending throughout the length of the groove and also overlying and covering the well or sealing the groove with the upper portion of the straw therein, said cover including a tab for enabling the straw to be exposed and enabling the upper portion of the straw to be folded into alignment with the lower portion for enabling the contents of the container to be consumed, said lid is provided with a peripherally upwardly extending flange at the outer edge thereof, and outwardly extending rib at the juncture of the flange and lid, said container having an annular groove adjacent the upper end of the peripheral wall for snap engagement with the rib on the lid thereby sealingly engaging the lid with the container.

4. The structure as defined in claim 3 wherein said upwardly extending flange on the periphery of the lid is provided with an outturned rib overlying the upper end of the container to limit the insertion of the lid into the con-

6

tainer so that the rib on the lid will be properly oriented for engagement with the groove in the well of the container.

5. The structure as defined in claim 3 wherein said cover is of transparent material, said straw being constructed of resilient material having readily distinguishable spiral stripes thereon for ready observation through the transparent cover so that the consumer will immediately recognize that a straw is incorporated into the container.

6. The structure as defined in claim 5 wherein said tab extends upwardly along the inner surface of said flange for easy access to the tab.

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20 GEORGE O. RALSTON, *Primary Examiner*.

FRANKLIN T. GARRETT, *Examiner*.