

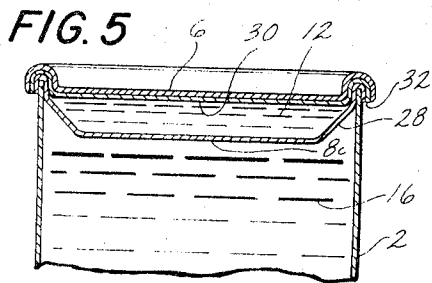
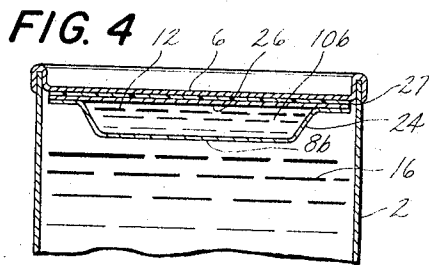
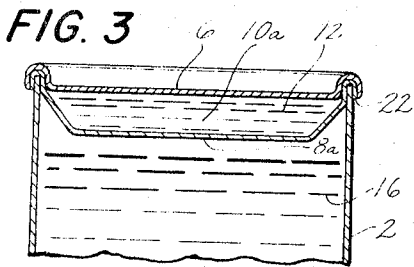
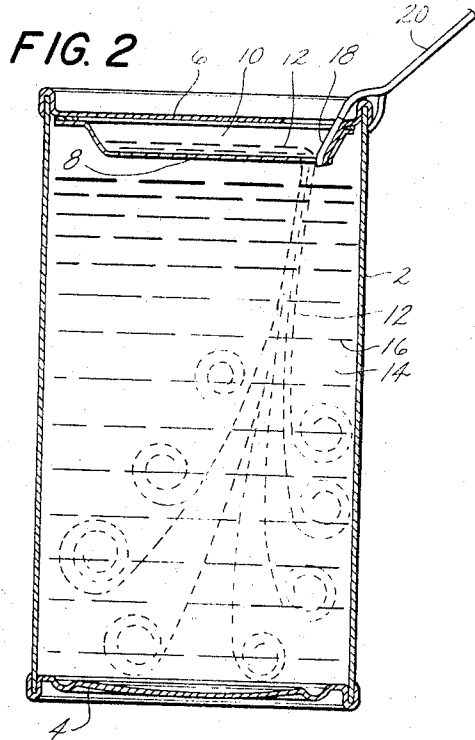
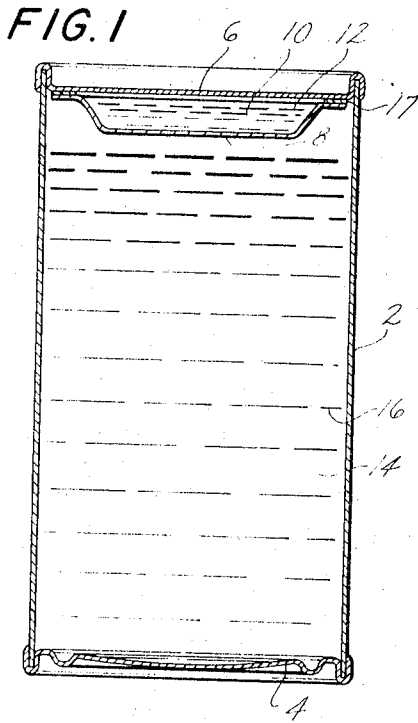
Feb. 21, 1967

J. G. BOURELLE

3,305,368

BEVERAGE PACKAGE

Filed Dec. 9, 1963



INVENTOR.
JOSEPH G. BOURELLE

BY

Peter S. Coster
ATTORNEY

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3,305,368

BEVERAGE PACKAGE

Joseph G. Bourelle, 33 Circle Drive,
Windsor Locks, Conn. 06096

Filed Dec. 9, 1963, Ser. No. 329,105

4 Claims. (Cl. 99—171)

The present invention relates to beverage containers and more particularly to compartmented containers for separating beverage components.

In preparing carbonated beverages, it is well known that many syrups, particularly those having a milk base, are sensitive to acid and react or curdle in the presence of carbonic acid during extended storage periods. Accordingly, it has been the practice to mix such acid-sensitive syrups with carbonated water immediately prior to consumption at restaurants and soda fountains but generally such difficulties in storage have limited the packaging of such beverages for facile home or shop use.

It is the aim of the present invention to provide a simple and relatively economical compartmented beverage container for separating an acid-sensitive syrup and carbonated water during storage but permitting the syrup and carbonated water to be easily and conveniently mixed immediately prior to use. A related aim is to provide such a container which may be easily fabricated from readily available materials and which is relatively inexpensive and relatively fool-proof in use.

Other aims and advantages will be readily apparent from the following detailed specification and the attached drawing wherein:

FIGURE 1 is a sectional view in elevation of a beverage container embodying the present invention;

FIGURE 2 is a similar view illustrating the opening of the container and rupturing of the compartment wall therein with a common can opener;

FIGURE 3 is a fragmentary sectional view in elevation of the cap portion of another beverage container embodying the present invention;

FIGURE 4 is a fragmentary sectional view in elevation of the cap portion of a further embodiment of the container of the present invention; and

FIGURE 5 is a fragmentary sectional view in elevation of the cap portion of still another embodiment of the container of the present invention.

It has now been found that the foregoing and related aims are readily attained in a sealed compartmented container having a top wall and a compartment wall underlying and spaced adjacent to the top wall. The compartment wall divides the interior of the container into an upper compartment thereabove for an acid-sensitive syrup and a lower compartment therebelow for carbonated water and the compartment wall provides a substantially gas- and moisture-impermeable seal for the syrup to isolate it from the carbonated water. The compartment wall is in sufficiently close proximity to the top wall to be rupturable by the blade of a can opener of the type having a blade portion at one end of a lever which hooks onto and pivots about the edge of a can, hereinafter referred to as a "common can opener," during puncturing of the top wall, thus permitting the syrup to flow into and mix with the carbonated water.

The compartment wall may be in the form of a generally dish-shaped member having a peripheral portion either bonded to the inner surface of the top wall of the container or crimped over the top edge of the side wall of the container under the crimped-over peripheral portion of the top wall to provide a substantially gas- and moisture-impermeable seal for syrup stored therein.

In one embodiment, an envelope may closely underlie the top wall with the inner wall thereof providing the

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compartment wall spaced from the outer wall thereof and the top wall. The walls of the envelope provide an upper compartment therebetween and the envelope may be bonded to the inner surface of the top wall or have a peripheral portion crimped over the top edge of the side wall of the container.

Referring now in detail to FIGURES 1 and 2 of the attached drawing, therein illustrated is a compartmented beverage container embodying the present invention and having a cylindrical side wall 2, a bottom wall 4, and a top wall 6 having its peripheral portion rolled over or crimped and sealed to the side wall 2 in accordance with conventional canning practices.

A generally dish-shaped compartment wall 8 underlies and is spaced adjacent to the top wall 6. The wall 8 divides the interior of the container into an upper compartment 10 thereabove having an acid-sensitive syrup 12 therein and a lower compartment 14 therebelow having carbonated water 16 therein. The compartment wall 8 is bonded about its periphery to the inner surface of the top wall 6 by any suitable means such as adhesive 17 to provide a substantially gas- and moisture-impermeable seal around the syrup 12. In this manner the syrup 12 is isolated from the carbonated water 16 and the carbon dioxide which may be released therefrom to enable the container to be stored for extended periods without curdling or other reaction or detrimental effects in the syrup 12.

As seen in FIGURE 2, the transverse portion of the compartment wall 8 is in sufficiently close proximity to the top wall 6 as to be within reach of the blade 18 of a common can opener 20 during puncturing of the top wall 6. As the blade 18 ruptures the compartment wall 8, the syrup 12 flows into the carbonated water 16, causing turbulence and mixing of the components. Further turbulence resulting from pouring the mixed beverage from the container completes the mixing and provides a substantially homogeneous carbonated beverage formed with an acid-sensitive syrup.

Turning now to the embodiment of FIGURE 3, the compartment wall 8a is provided with a peripheral flange portion 22 which is placed over the edge of the cylindrical side wall 2 prior to sealing the top wall 6 thereupon. After syrup 12 is placed on the dish-shaped compartment wall 8a, the top wall 6 is crimped over the top edge of the side wall 2 in the conventional manner, simultaneously crimping and sealing the flange portion 22 about the top edge of the side wall to form the sealed upper compartment 10a. As in the embodiment of FIGURES 1 and 2, the body of the compartment wall 8a must be sufficiently close to the top wall 6 to be rupturable by the blade of a common can opener during puncturing of the top wall 6.

In the embodiment of FIGURE 4, a sealed envelope generally designated by the numeral 24 underlies the top wall and the inner wall thereof provides the compartment wall 8b. The outer wall 26 of the envelope 24 is adhered to the inner surface of the top wall 6 by adhesive 27 or other suitable means with the envelope 24 providing a sealed upper compartment 10b. In this embodiment, the prefilled envelopes 24 are easily handled and readily bonded to the top wall 6 by any suitable means such as adhesive. The top wall 6 may then be sealed to the side wall of the container by conventional practices. The envelope 24 is configured and dimensioned to locate the inner or compartment wall 8b closely adjacent the top wall so as to enable the blade of a common can opener to rupture the compartment wall 8b during puncturing of the top wall 6.

In the embodiment of FIGURE 5, a sealed envelope 28 similarly provides an inner or compartment wall 8c and an outer wall 30. In this embodiment, a peripheral flange portion 32 of the envelope is fitted over the top edge of the side wall 2 and the top wall 6 is conveniently

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sealed thereover to the body 2 by conventional means to close the container end. As in the previously illustrated embodiments, the compartment wall 8c must be closely spaced to the top wall 6 so as to be within reach of the blade of a common can opener for convenient rupturing and mixing of the syrup 12 and carbonated water 16.

The material from which the compartment wall is fabricated must be non-toxic and resistant to corrosion by both the syrup and the carbonated water and must impart no noticeable taste to the beverage. Additionally, the material must be substantially gas- and moisture-impermeable to prevent spoiling of the syrup, and the material must also be strong enough to remain intact and rigid enough to remain within reach of the can opener blade under the weight of the syrup and under the normal impacts of handling and storage. The material should tear rather than fragment when ruptured by the can opener blade. When the compartment wall or envelope is provided with a peripheral flange for placing on the upper edge of the side wall prior to sealing, the material preferably is sufficiently rigid to enable the flange to support the weight of the envelope and the syrup until the top wall portion is crimped thereover.

The compartment wall and/or the envelope may be conveniently and economically fabricated from metallic foils such as aluminum or from such synthetic plastic materials as polypropylene and polystyrene. The aluminum foil may be readily formed by impact extrusion and synthetic plastics may be conveniently thermoformed in large quantities for relatively inexpensive and large scale production.

The compartment wall or envelope may be bonded to the inner surface of the top wall of the can by any suitable non-toxic adhesive which imparts no noticeable taste to the beverage and which also provides a substantially gas- and moisture-impermeable seal when the dish-shaped member is employed. If both the top wall and the compartment wall or envelope are fabricated from synthetic plastic material, they may be conveniently solvent-sealed or heat-sealed together.

As is readily apparent, the present invention is conveniently adaptable to high speed mass production methods. When the compartment wall is adhered to the top wall, the dish-shaped compartment wall may be filled with a predetermined amount of syrup in one stage and adhered to the top wall of the container in another stage. The top wall is then secured to the side wall in accordance with conventional techniques. Where the compartment wall is flanged, it is placed upon the can in one stage, filled with syrup in a second stage, and the top wall is sealed thereover in a third stage. Where an envelope is used, it is pre-filled with syrup and sealed in one stage, adhered to the top wall or, if flanged, fitted over the edge of the side wall in a second stage, and the top wall is sealed to the can in the third stage.

Thus it is seen that the present invention provides a simple and relatively economical compartmented container for separating carbonated water from an acid-sensitive syrup. The container is easily and conveniently assembled from readily available and relatively inexpensive material and is adapted to be filled and sealed on high

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speed assembly lines. The compartment wall is quickly and easily ruptured by a common can opener in the same motion with which the can is opened for easy and convenient admixing of the ingredients, thereby making readily available a carbonated beverage utilizing an acid-sensitive syrup.

Having thus described my invention, I claim:

1. A sealed, compartmented beverage container having a side wall, a bottom wall, and a continuous top wall having its periphery crimped over the top edge of said side wall in fixed engagement and extending in planar relationship between said crimped periphery, and a readily rupturable compartment wall member underlying said top wall generally coextensive therewith and dividing the interior of said container into an upper compartment thereabove containing acid-sensitive syrup and a lower compartment therebelow containing carbonated water, said compartment wall member providing a substantially gas and moisture impermeable seal for the syrup therein and isolating the syrup from the carbonated water, said compartment wall member having a bottom wall portion and a side wall portion extending upwardly from said bottom wall portion and sealingly engaged at its upper end with said top wall to define said upper compartment, said bottom wall portion being spaced from said top wall a distance less than the length of the blade of a common can opener so as to be rupturable during puncturing of said top wall by a common can opener engaged with the crimper periphery of said top wall portion to permit the syrup to flow into and mix with the carbonated water.

2. The container of claim 1 wherein said side wall portion of said compartment wall member has a peripheral flange portion at its upper end crimped about the top edge of said side wall under said peripheral portion of said top wall to provide the sealed engagement therebetween.

3. The container of claim 1 wherein said side wall portion of said compartment wall member has a flange at the upper end thereof adhesively bonded to the inner surface of said top wall to provide said sealing engagement therebetween.

4. The container of claim 1 wherein said compartment wall member has a top wall portion extending between said side wall portion to provide an envelope-like member.

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A. LOUIS MONACELL, *Primary Examiner.*

HYMAN LORD, *Assistant Examiner.*