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Werth et al.

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[54] **CONTAINER WITH CLOSURE TAB AND PRESSURE RELEASE TAB ON CLOSURE TAB**

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[73] Assignee: **Coors Container Company**, Golden, Colo.

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[52] **U.S. Cl.** **220/44**, 220/27

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

[58] **Field of Search** 220/27, 48, 53, 44; 222/541

[56] **References Cited**

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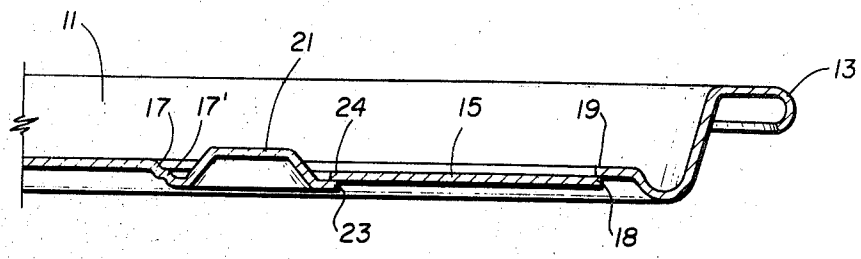
[57] **ABSTRACT**

A beverage container having an end or lid provided with an opening which serves as a pour opening, a pressure release vent and an air intake opening. The opening is covered by a depressible closure tab separable from the container end except at a hinge portion integrally connected to the container end. A pressure release vent tab, smaller in area than the closure tab, is located on the closure tab and hingedly connected to said closure tab. Manual pressure applied to the pressure release vent tab and transferred to the closure tab separates the release tab from the closure tab to open the release vent and facilitate easy separation of the closure tab from the container end to expose the opening in the end for simultaneous discharge of container contents and admission of air into the container. The pressure release tab may also function as a vacuum release means.

9 Claims, 4 Drawing Figures



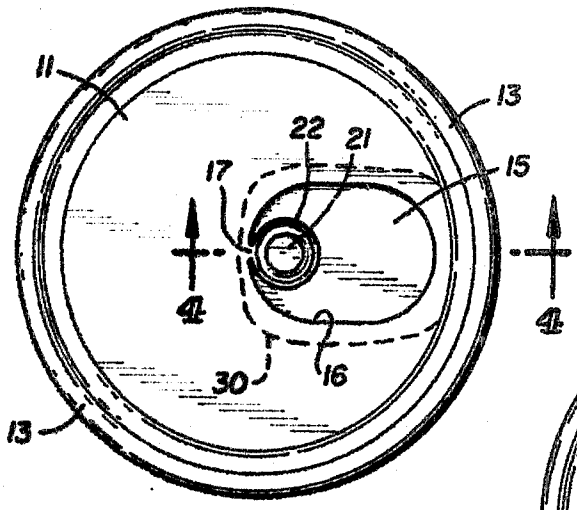


Fig. 1

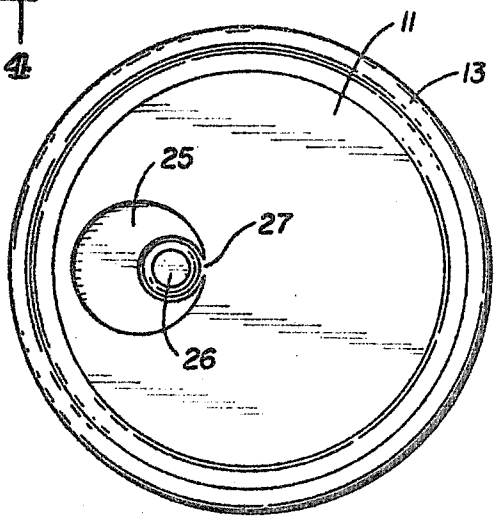


Fig. 2

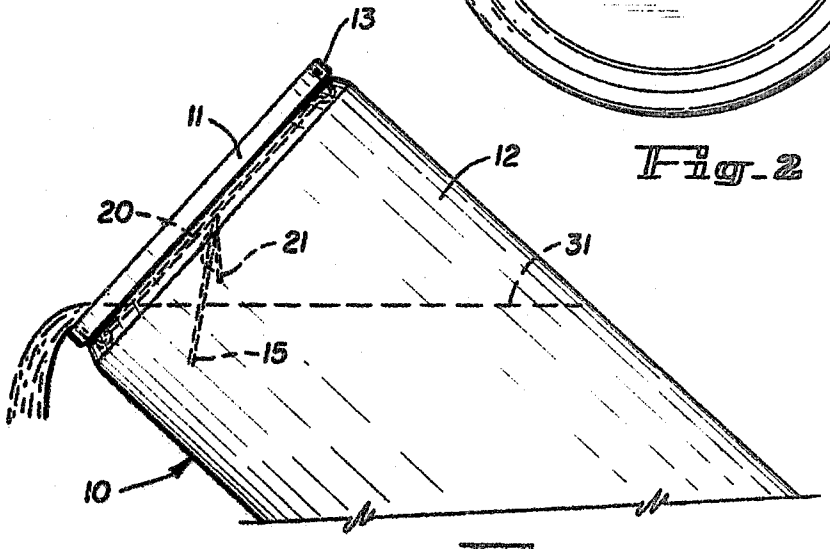


Fig. 3

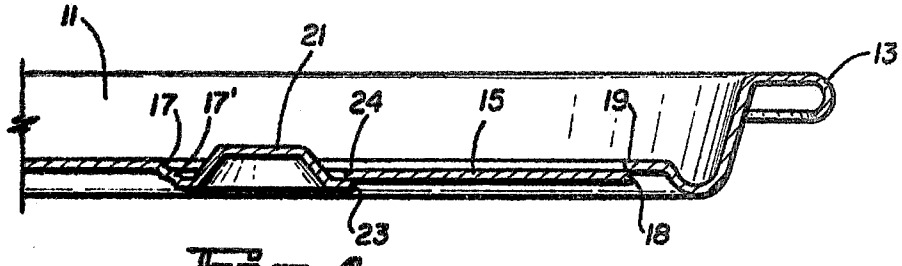


Fig. 4

CONTAINER WITH CLOSURE TAB AND PRESSURE RELEASE TAB ON CLOSURE TAB

This invention relates to a container having an end or lid provided with an opening which serves as a pour opening, a pressure release vent and an air intake opening, covered by a depressible closure tab hingedly connected to the container end and separable from the said end to expose the opening. A depressible release vent tab, smaller in area than the closure tab, is located on the closure tab, and is separable from the closure tab to expose part of the opening. Manual pressure applied to the pressure release vent tab is transferred to the closure tab to separate the release vent tab to open the release vent and facilitate easy separation of the closure tab from the container end to expose the opening for simultaneous discharge of container contents and admission of air into the container.

Pour opening closures of the depressible tab type and method of forming same have been described in an application for United States patent of Elmer D. Werth, Nelson E. Sipe and Clarence J. Carlson, Ser. No. 202,252 filed Nov. 26, 1971, under the title Frangible Closure for Container Lids and Method of Forming Same. Containers provided with closure members for pour openings and separate pressure release means have been described in an application for United States patent of Elmer D. Werth, Ser. No. 198,188 filed Nov. 12, 1971, under the title Container with Closure for Pour Opening and Pressure and Vacuum Release Means.

The object of this invention is to provide a container end or lid with a combined pour opening and release vent, and with a closure tab and a pressure release vent tab relatively small in area located on the closure tab. In this embodiment of the invention, the release vent when opened by depressing the smaller tab serves to release pressure within the container to facilitate easy separation of the pour opening closure, and to admit air to facilitate free pouring of the container contents through the pour opening when the larger closure tab has been depressed.

The advantage of locating the release vent tab on the closure tab in the construction of this invention is twofold: first, cost of manufacture is decreased substantially as compared to the construction described in the aforementioned application of Elmer D. Werth, where the release vent is separate from the pour opening, and the release vent tab is separate and spaced from the closure tab; and secondly, both the release vent tab and the closure tab are depressible by the pressure of the user's thumb applied to the release vent closure tab and transmitted to the closure tab in a single operation which first exposes the release vent and then the pour opening. This single operation consists of initially momentarily applying pressure on the release vent tab and transmitting the pressure to the closure tab.

The objects and advantages of the invention will become apparent from the drawings and following specification.

In the drawings:

FIG. 1 is a top plan view of a container end or lid provided with the combination pour opening closure and pressure release vent tab embodying the invention.

FIG. 2 is a top plan view of a container end provided with a modified form of closure members embodying the invention.

FIG. 3 shows an elevational side view of a container embodying the invention, in content pouring position, showing the release vent tab and the pour opening closure tab in their depressed positions.

FIG. 4 is a transverse vertical sectional view, on an enlarged scale, in the plane of the line 4—4 of FIG. 1.

The invention is shown herein as embodied in a can 10 of the type used for containing beer, fruit juices and other liquids. The can is provided with an end or lid 11 mounted on the cylindrical body 12 by a rim or chime 13.

As shown in FIG. 1, the end 11 of the container is provided with a pour opening closure 15 of the tab type, formed by cutting the lid 11 on the line 16 to make an opening which is a combination pour opening, pressure or vacuum release vent and air intake opening. The tab 15 is hingedly connected to the lid 11 by the uncut portion 17 of the metal, for example, aluminum, of which the container is made. The hinge 17 is located at one end of the elongated tab, toward the center of the lid 11 and removed from the rim 13. In the process of manufacture, the tab 15 is spread or enlarged after it has been cut on the line 16, to provide a marginal portion 18 designed to underlie the edge 19 of the lid 11 (FIG. 4) adjacent the opening 20 (FIG. 3).

A pressure and/or vacuum release vent which is the inner part of the pour opening 20, is closed by a closure 21 of the tab type integral with the closure 15. The release vent tab 21 is formed by cutting on the line 22 in the closure tab 15 except at the hinge portion 17. After the tab 21 has been severed from the tab 15, it is enlarged or spread to provide a marginal edge 23 which underlies the edge 24 (FIG. 4) of the tab 15. As shown in FIG. 4, the part of the hinge 17 of the closure tab 15 which merges into the release vent tab 21 is indicated at 17'. The pressure release vent and its closure tab 21 are located closely adjacent the inner end of the elongated closure tab 15, that is, near the center of the lid 11 and removed from the opposite end of the tab 15 that is closer to the rim 13.

After the closure tab 15 and the release vent tab 21 have been formed by cutting on the respective lines 16 and 22, and spread to enlarge them to the underlying positions shown in FIG. 4, an adhesive sealant 30 in the form of a coating or patch is applied to the underside of the lid 11 and tabs 15 and 21 to retain the underlying edges of the tabs in sealed relationship to the overlying surfaces.

In the modification shown in FIG. 2, the end or lid 11 has the combined pour opening, release vent and air intake opening closed by a closure 25 and a release vent tab 26, similar to the closure tab 15 and release tab 21, respectively, heretofore described, excepting as to the shape of the closure 25 which is circular instead of elongated. The release vent tab 26 is located in the closure tab 25 adjacent the hinge 27 which serves as a hinge connection between the tabs 25, 26, and the lid 11.

As shown in FIG. 3, the release vent tab 21 has been depressed manually to expose part of the opening 20 to release pressure in the container 10, and the closure tab 15 has been depressed to expose the larger part of the opening 20 to permit the container contents to be discharged or consumed directly from the can 10. The tabs 15 and 21 remain hingedly connected to the lid by the hinge portions 17, 17' (FIG. 1) and the tabs 25, 26 remain hingedly connected to the lid by hinge portions

27. In either modification, the release vent portion of the opening **20** serves to admit air while the can contents are being poured from that part of the opening **20** nearest the rim **13**. The broken line **31** in FIG. **3** indicates the beverage level in the container while the contents are being discharged, and shows the inner end of the opening **20**, initially closed by the release vent tab **21**, free to admit air into the container.

As shown in FIG. **4**, the upper surface of the pressure and vacuum release vent tab **21** is in a plane slightly above that of the upper surface of the closure tab **15**, so that pressure of the user's thumb initially applied to depress the tab **21** is automatically and practically simultaneously transmitted or transferred to the tab **15**. Thus the act of releasing pressure and thereby facilitating the easy depressing of the larger tab **15** for exposing the opening **20** are performed in one operation without withdrawing the thumb or other finger from the tab area.

It is to be understood that reference in the claims to pressure release means includes vacuum release means, depending on whether the container contents are under pressure or vacuum.

We claim:

1. A beverage container having an end provided with an opening that is a pour opening, a pressure release vent and an air intake, comprising

a. a depressible closure tab covering the opening in the container end separable from the container end except at a hinge portion,

b. a hinge integral with the closure tab and container end, and

c. a pressure release vent tab smaller in area than the closure tab located on the closure tab and hingedly connected to said closure tab, said release vent tab being depressible by manually applied pressure to expose part of the opening in the container end and to release pressure from the container, and the closure tab being depressible by said manually applied pressure to expose the opening for simultaneous pouring of the container contents and admission of the air into the container.

2. The container defined by claim **1**, in which the closure tab is elongated in a radial direction and the hinge connecting the closure tab to the container end is located at the closure tab end nearest the center of the container end.

3. The container defined by claim **1**, in which the pressure release vent tab is located on the closure tab adjacent the hinge which connects the closure tab to the container end.

4. The container defined by claim **2**, in which the pressure release vent tab is located on the closure tab adjacent the hinge which connects the closure tab to the container end.

5. The container defined by claim **1**, in which the part of the release vent tab which is hingedly connected to the closure tab merges into the hinge integral with the closure tab and container end.

6. The container defined by claim **1**, in which the closure tab is circular in form and separable from the container end on a generally circular line interrupted by the hinge integral with the closure tab and container end.

7. The container defined by claim **2**, in which the end of the elongated closure tab opposite the hinged end is located adjacent the rim of the container end.

8. The container defined by claim **1**, in which the container end has a sealant coating or patch applied to its under side to underlie the closure tab and release vent tab and maintain them in container sealing relationship to the container end.

9. The container defined by the claim **1**, in which the upper surface of the release vent tab is in a plane slightly above the plane of the exposed surface of the closure tab.

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