A beverage can cover includes a disk-shaped member with an aperture spaced radially from its center and conforming with a standard opening on an aluminum can for forming a seal with the upper portion of the can. The cover includes a plug sized to cooperate with the aperture to form a fluid-tight reusable seal, and the plug is tethered to the disk-shaped member with an integrally formed detachable strip mounted about a circumferential edge of the disk-shaped member. The tether and plug are separated from the cover when needed by tearing thin attachment means such as a web or tabs, releasing the plug from its stored position on the periphery of the cover for engagement with the aperture. In a preferred embodiment, the plug and aperture are tapered and include a cooperating groove and ridge to secure and seal the plug inside the aperture.
BEVERAGE CAN COVER AND SEAL COMBINATION

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to beverage can covers, and more particularly to a combination beverage can cover and a cooperating tethered plug detachably connected at a periphery of the cover.

2. Description of Related Art

The aluminum can has become the container of choice among a wide variety of beverage purveyors. Soft drinks, beers, teas, juices, and the like make up a large percentage of the over hundred billion aluminum cans produced each year in the United States alone. These ubiquitous cans are favored for their recyclability, their low cost, and the availability of aluminum for producing the cans. For these reasons, the aluminum beverage can has largely replaced all alternative metal beverage containers in the United States.

The predominant design of the aluminum can in the United States is one that favors convenience. The cylindrical container has a continuous, smooth wall that transitions seamlessly at the bottom of the can to a minor, concave base. The can’s lid is typically formed separately for the body of the can and comprises a substantially planar surface with edges that are rolled with the edges of the can side wall to form a raised bead around the perimeter of the top of the can. Also mounted on top of the can is a pull-tab secured to a fulcrum, where pulling the pull-tab prises a distal edge against a portion of the can’s lip until a portion of the lid separates along a pre-existing fault line created in the lid to define an opening. The force applied by the pull-tab bends the separated lid portion into the can’s interior leaving an opening sized to allow the user to consume the beverage directly from the can by placing his or her mouth over the opening against the upper surface of the can. In this manner, the beverage can be opened and consumed without any additional instruments or wares, adding to the convenience of the aluminum can.

One detriment to the design of the aluminum can is the exceptionally sharp edges that are formed at the opening as the metal lid is pried open along the pre-existing fault lines. These sharp edges have been known to cause accidents, especially to children who can poke their fingers into the hole and sustain injuries therefrom. A user may also sustain injuries when the user’s mouth is placed over these sharp edges as the beverage is consumed. Additionally, the surface of the aluminum can is very often the repository for dust, dirt, and other contaminants that accumulate during storage, packing, and transportation. This same surface is placed in immediate contact with the user’s mouth when the beverage is consumed directly from the aluminum can. This results in an unsanitary condition that can transfer germs, cause contaminants to be consumed, and lead to sickness and disease.

The convenience of the aluminum can, its availability, low cost, and ease of opening is also counterbalanced somewhat by the inconvenience of storing excess beverage not consumed immediately after the can is opened. That is, once the aluminum can is opened there is no convenient means for resealing the can to enjoy the beverage at a later time. Because many drinks, including colas, sodas, and beers lose their carbonation or flavor if left without sufficient sealing, unused portions of beverages served in aluminum cans are typically discarded rather than saved for future consumption. This leads to much unnecessary waste. The shortcomings of the inability to preserve unfinished beverage and necessity of immediate contact with dangerous and unhygienic surfaces of the beverage can are not adequately addressed by the prior art.

SUMMARY OF THE INVENTION

The present invention is a plastic overlay or cover for an aluminum can that reduces or eliminates exposure and contact with the can’s sharp edges and unsanitary surfaces. The cover of the present invention fits over the top of the aluminum can and preferably includes an annular skirt that fits over a top portion of the can with an inwardly directed rib that cooperates with a circumferential recess on the outer surface of the can to maintain the cover in engagement with the aluminum can in a sealing relationship. The cover includes a dispensing port that is placed over the aluminum can’s opening for pouring or drinking through. The dispensing port is preferably defined by a spout depending from a lower surface of the cover that fits into the opening on the can to provide fluid communication between the can’s interior and the dispensing port of the cover. In a preferred embodiment the spout includes a beveled catch projecting outwardly therefrom to capture the spout in the opening of the aluminum can and further secure the cover to the can. The cover thus provides a sanitary, protective barrier that shields the user from contact with the upper surface of the can and the sharp edges around the can’s opening.

The user’s oral contact with the can is replaced by contact with the cover, which is more sanitary and has no sharp edges to injure the user. The cover further preferably includes a plug sized to snugly fit into and close the cover’s dispensing port to seal the aluminum can and prevent a beverage from losing carbonation between uses. The plug and tether are preferably integrally formed and connected to the disk-shaped cover at a peripheral position around the cover, such as by a frangible membrane or series of tabs. The tethered plug is separated along its length from the cover prior to use by tearing the membrane or detaching the tabs connecting the tether to the cover while maintaining a permanent connection with the cover at the tether’s proximal end. The release of the tether allows the plug to be placed in the dispensing port of the cover while still attached to the cover via the tether. In a preferred embodiment, the plug is secured in the dispensing port by an annular ridge disposed on the plug’s side wall that cooperates with and engages a peripheral groove on the inner surface of the spout to snap the plug in the dispensing port.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevated, perspective view of a preferred embodiment of the present invention;

FIG. 2 is a lowered perspective view of the preferred embodiment of FIG. 1;

FIG. 3 is a plan view of the preferred embodiment of FIG. 1,
FIG. 4 is an enlarged, elevated perspective cross-sectional view of the preferred embodiment of FIG. 1 taken along lines 4-4 of FIG. 3;

FIG. 5 is an enlarged, lowered perspective view of the preferred embodiment of FIG. 1 taken along lines 5-5 of FIG. 3;

FIG. 6 is an enlarged, cross-sectional view of the preferred embodiment of FIG. 1 as employed on a beverage can;

FIG. 7 is an enlarged, elevated perspective view in cross-section taken along lines 5-5 of FIGURE of a second preferred embodiment; and

FIG. 8 is an enlarged, sectional plan view of a third embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is directed to a disk-shaped cover for an aluminum beverage can that forms a seal with the can and provides a shield against contact with the upper surface of the can and the exposed sharp edges of the can's opening. The cover 10 of the present invention is provided with an annular depending skirt 25 that encircles the upper circumferential edge of the can in a fitted manner. Projecting radially inward from the skirt 25 is a rib 30 that cooperates with the recess at the top outer edge of the can to provide a secure seal with the can. The cover 10 is snapped over the upper surface of the can to initiate the seal, and further comprises a tethered plunger 75 to cooperate with a dispensing port 70 on the cover to release the can after opening. The plunger 75 is tethered to the cover 10 so as to form an integral, unitary construction, where the tethers 20 are supported on a periphery of the cover 10 by a frangible membrane 35. When needed, the plunger 75 and tether 20 are partially separated from the cover by tearing the frangible membrane 35 while maintaining the proximal end 105 of the tether 20 connected to the cover as an anchor. The slack created by releasing the tether 20 enables the plunger 75 to be placed into the dispensing port 70 for a substantially fluid-tight seal to preserve the freshness of the beverage therein.

FIG. 1 illustrates a preferred embodiment of the present invention comprising a disk-shaped cover 10 sized to conform to the upper surface of an aluminum can. Radially displaced outward from the center of the can is an aperture corresponding to a dispensing port 70 that may be placed over the location of an opening on the can. The dispensing port 70 is defined by a wall that conforms with the shape of the can's opening and preferably extends as a mouth 45 below a lower surface of the disk for insertion into the can's opening and shaped to mate with the can's opening. A port 75 is tethered to the disk and shaped to conform with the dispensing port 70, and the tether 20 along its length is connected to the disk's circumferential edge by a thin membrane 35 that can be readily torn to separate the tether from the disk.

FIG. 2 illustrates the underside of the cover 10 to reveal the spout 45 depending from the cover's lower surface 41. The spout 45 defines the dispensing port 70 and includes an outer surface 55 and an inner surface 50. The spout's outer surface 55 conforms with the shape of the opening in the can to create a fitted engagement. To enhance the engagement of the spout 45 inside the can's opening, a beveled catch 65 is formed on the outer surface below the level of the can's edge portion 230 adjacent the opening (see FIG. 6). The beveled catch 65 is angled to facilitate ingress of the spout 45 through the opening of the can as the catch expands radially, but resist egress. Once inserted into the opening, the beveled catch 65 on the spout 45 helps to secure the cover to the can.

Also shown in FIG. 2 is the plug 75 including a top panel 85 and a side wall 90. The side wall 90 is preferably equipped with an annular ridge 60 that cooperates with a peripheral groove 80 on the inner surface 50 of the spout 45 to secure the plug 75 in the dispensing port 70. When the plug 75 is placed into the dispensing port 70, the annular ridge 60 on the plug 75 juts into the peripheral groove 80 on the inner surface 50 to capture the plug and create a greater sealing capacity as compared to an arrangement without the ridge/groove configuration. It should also be understood that the groove can be placed on the plug and the ridge formed on the inner surface 50 without departing from the scope of the invention.

FIG. 3 illustrates the preferred embodiment of FIG. 1 in plan view. The dispensing port 70 is shaped as a flattened crescent to conform with the standard opening of the most prevalent models of aluminum cans. Attached to a peripheral edge of the cover is the tether 20 that in turn is attached to the plug 75 sized to mate with the dispensing port 70. The tether 20 is preferably connected to the disk-shaped member by a thin frangible membrane 35 along a length of the tether. The proximal end 105 of the tether 20 is integrally formed with the cover to form a permanent connection, and the distal end 120 of the tether 20 is integrally formed with the plug 75 to form another permanent connection. The length of the tether is approximately one hundred eighty degrees of arc of the disk, measured at the periphery of the cover, although the length of the tether can obviously vary. In a preferred embodiment, the plug 75 may also be connected to the cover 10 by a frangible membrane 35 as shown.

FIGS. 4 and 5 are enlarged, cross-sectional views of the cover showing the various details of the spout 45, cover 10, and plug 75. The cover includes a skirt 25 depending from the circumferential lip 100 to encircle the top portion of an aluminum can. The skirt 25 includes an inwardly directed annular rib 30 that engages a recess on the aluminum can just below the raised bead 205 to grip the can. The raised bead is accommodated by a notch 95 formed in the cover at the juncture of the skirt and the circumferential lip 100. The shape of the plug 75 and the peripheral groove 80 on the side wall 90 are illustrated in FIG. 4. The annular ridge 60 shown in FIG. 5 cooperates with the peripheral groove 80 when the plug 75 is inserted into the dispensing port 70 to snap the plug in position and enhance the sealing function of the plug 75. The plug 75 can also be tapered to correspond with a matching taper in the dispensing port 70 as shown in FIG. 6.

FIG. 6 illustrates the interaction of the cover 10 on an aluminum can 200. The can includes a raised bead 205 that is received by the notch 95 of the cover, and the rib 30 fits into the annular recess just below the raised bead 205. A well 210 is formed around the upper edge of the can to capture any spilled beverage. This well 210 often collects dirt and contaminants, and the present invention overlays the
The cover encircles the outer upper portion of the can as the skirt 45 engages and cooperates with the raised bead 205 and the recess to form a seal with the can. The cover overlays the upper surface of the can to insulate the can’s surface from the user. The dispensing port 70 replaces the can’s opening as the location for pouring and drinking the beverage, where the surface of the cover is more easily controlled and sanitized in comparison with the upper surface of the can. As further shown in FIG. 6, the plug 75 can be inserted into the dispensing port 70 to close and seal the passage. As the tapered plug is lowered into the dispensing port, an annular ridge on the inner surface 50 of the spout 45 contacts the side wall 90 of the plug 75, providing some resistance against the plug. At the predetermined location, the annular ridge 60 encounters the peripheral groove 80 on the side wall 90 to position the plug in the dispensing port 70. The mating of the groove and ridge further enhances the fluidic seal of the plug and thereby resists spillage of the beverage when the plug is so located.

In an alternative embodiment, the spout 45 can include a mesh or screen 115 as shown in FIG. 8. The screen is suited for keeping bees and other insects out of the can should the can be left unattended, and also provides a measure of safety when pull-tabs are deposited into the can. A pull-tab can be accidentally ingested and cause choking if placed inside the beverage can while beverage remains in the can. The protective screen 115 of FIG. 8 precludes any object larger than the mesh or screen opening from passing from the can’s interior to the consumer.

In another alternative embodiment, the frangible membrane 35 can be replaced by a series of breakable tabs 110 as shown in FIG. 7. The tabs are easily torn as the tether 20 is pulled away from the cover to release the tethered plug 75.

The cover of the present invention when placed over a beverage can insulates the user from the surface of the can and the sharp edges formed when the can is opened. The dispensing port 70 of the cover replaces the can’s opening as the location where beverage is poured or drank from. The spout 45 provides a conduit to the can’s interior where beverage can flow through to the user, and a locking beveled catch on the spout secures the spout to the edge of the can’s opening. A plug 75 is provided to cooperate with the dispensing port 70 and seal the beverage can after opening to preserve the freshness and carbonation of the beverage. The cover is easily sanitized or may be considered a disposable item for single use. The location of the plug along the cover’s periphery facilitates stacking, shipping, and packaging and leads to a more efficient design. The tear-away tether assures that the cover and plug combination will retain their planar configuration until the plug is required. The plug also includes a complimentary groove to the annular ridge of the spout to fix the plug inside the spout and promote resistance to spillage. The seal may be enhanced by tapering the plug 75 to match a corresponding taper in the dispensing port 70.

The description of the preferred embodiments are illustrative only and should not be construed as limiting the scope of the invention. One of ordinary skill in the art can deviate from the just-described embodiments without departing from the spirit of the invention. Thus, the scope of the present invention should not be limited by the descriptions above, but rather the scope of the invention is defined solely by the words of the claims presented below.

What is claimed is:
1. A beverage can cover comprising:
   a disk having an upper and lower surface and a circumferential edge, and a dispensing port disposed between a center of the disk and the circumferential edge;
   a plug shaped to fit into said dispensing port to form a leak-proof seal; and
   a tether having a length, and said tether connecting said disk and said plug, and said tether integrally formed with said disk as a single unit and detachably connected to said disk for the length of the tether along said circumferential edge of the disk.
2. The beverage can cover of claim 1 further comprising:
   a groove spaced from an upper surface of the plug and extending around the plug; and
   a cooperating ridge on a wall of the disk that defines the aperture, whereupon said ridge engages and mates with said groove when the plug is placed into the dispensing port to secure said plug in said dispensing port.
3. The beverage can cover of claim 1 further comprising:
   a ridge spaced from an upper surface of the plug and extending around the plug; and
   a cooperating groove on a wall of the disk that defines the aperture, whereupon said ridge engages and mates with said groove when the plug is placed into the dispensing port to secure said plug in said dispensing port.
4. The beverage can cover of claim 1 further comprising:
   a frangible membrane joining the circumferential edge of the disk with the tether, the frangible membrane integrally formed with the tether and the disk, and the frangible membrane having a thickness less than a thickness of the tether.
5. The beverage can cover of claim 1 further comprising a plurality of tabs joining the circumferential edge of the disk with the tether, the tabs integrally formed with the tether and the disk, and the tabs having a thickness less than a thickness of the tether.
6. The beverage can cover of claim 1 wherein the tether spans approximately one hundred eighty degrees of arc of the disk at a radial distance where the tether is detachably connected to the disk.
7. The beverage can cover of claim 1 wherein the dispensing port of the disk is defined by a continuous wall substantially perpendicular to the upper surface and extending downward below the lower surface of the disk for...
insertion into an opening in said beverage can, the dispensing port having a generally crescent shape.

8. The beverage can cover of claim 1 further comprising an inwardly projecting rib below the upper surface on the circumferential edge of the cover for engaging a recess in a beverage can to secure said cover to the can.

9. The beverage can cover of claim 1 further comprising an elevated lip circumscribing the upper surface of the disk at the circumferential edge.

10. The beverage can cover of claim 1 further comprising a protective screen across said dispensing port that allows fluid to pass through.

11. The beverage can cover of claim 1 wherein said dispensing port is defined by a spout depending from said lower surface of said disk and having an inner and outer surface, and wherein the outer surface of said spout has a beveled projection for engaging an edge of an opening in the can.

12. The beverage can cover of claim 1 wherein said tether is permanently connected to said cover at a first end, and permanently connected to said plug at a second end.

13. A beverage can cover comprising:

a disk having an upper and lower surface and a circumferential edge, and an aperture disposed between a center of the disk and the circumferential edge and defined by a continuous wall having an interior surface, the continuous wall projecting substantially perpendicular to the upper surface and extending downward below the lower surface of the disk for insertion into an opening in said beverage can, the aperture having a generally crescent shape, and the disk further comprising an inwardly projecting rib below the upper surface on the circumferential edge of the cover for engaging a recess in a beverage can to secure said cover to the can;

a plug shaped to fit into said aperture to form a leak-proof seal and including a side wall, and a groove on the side wall of the plug and a ridge on the disk along a wall defining the aperture and spaced from the upper surface cooperate to form a press-fit juncture between the plug and disk; and

a tether having a length, and said tether connecting said disk and said plug, and said tether integrally formed with said disk as a single unit and detachably connected to said disk for the length of the tether along said circumferential edge of the disk.

14. The beverage can cover of claim 13 further comprising a membrane joining the circumferential edge of the disk with the tether, the membrane integrally formed with the tether and the disk.

15. The beverage can cover of claim 13 further comprising a plurality of tabs joining the circumferential edge of the disk with the tether, the tabs integrally formed with the tether and the disk.

16. The beverage can cover of claim 13 further comprising an elevated lip circumscribing the upper surface of the disk at the circumferential edge.

17. The beverage can cover of claim 13 wherein the plug comprises a flat upper surface and a continuous wall depending therefrom at a position interior to a periphery of the flat upper surface.

18. A beverage can cover comprising:

a disk having an upper and lower surface and a circumferential edge, and an dispensing port disposed between a center of the disk and the circumferential edge defined by a continuous wall, the continuous wall including a ridge projecting radially inward;

a plug shaped to fit into said dispensing port to form a leak-proof seal, the plug comprising a groove sized to receive said radially projecting ridge of the disk’s dispensing port; and

a tether having a length, and said tether connecting said disk and said plug, and said tether integrally formed with said disk as a single unit and detachably connected to said disk.

19. A beverage can cover comprising:

a disk having an upper and lower surface and a circumferential edge, and a dispensing port disposed between a center of the disk and the circumferential edge, said disk further comprising a spout depending from said lower surface sized to be received by an opening in said beverage can, said spout including a beveled catch disposed thereon for securing the spout inside said opening of said can;

a plug shaped to fit into said aperture to form a leak-proof seal; and

a tether having a length, and said tether connecting said disk and said plug, and said tether integrally formed with said disk as a single unit and detachably connected to said disk.

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