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Erickson(10) **Pub. No.: US 2007/0138178 A1**(43) **Pub. Date: Jun. 21, 2007**(54) **BEVERAGE CONTAINER RE-CLOSING
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220/906

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(60) Provisional application No. 60/714,082, filed on Sep. 2, 2005.

(57) **ABSTRACT**

A generally non-removable and compact beverage container re-closing cover that can be attached to the can via the center rivet and seals and unseals the opening of the can by rotation without protruding outside the can's rim in any direction. The re-closing cover may be used to keep out undesired objects such as insects from entering the can, maintain the quality of the ingredients in the can, and prevent the contents of the can from spilling. The re-closing cover can serve the above functions with convenience and ease to the user, without interfering with shipping and packaging, and without requiring complex manufacturing. The invention can be adapted to any type of beverage can including soda cans, beer cans and the like.

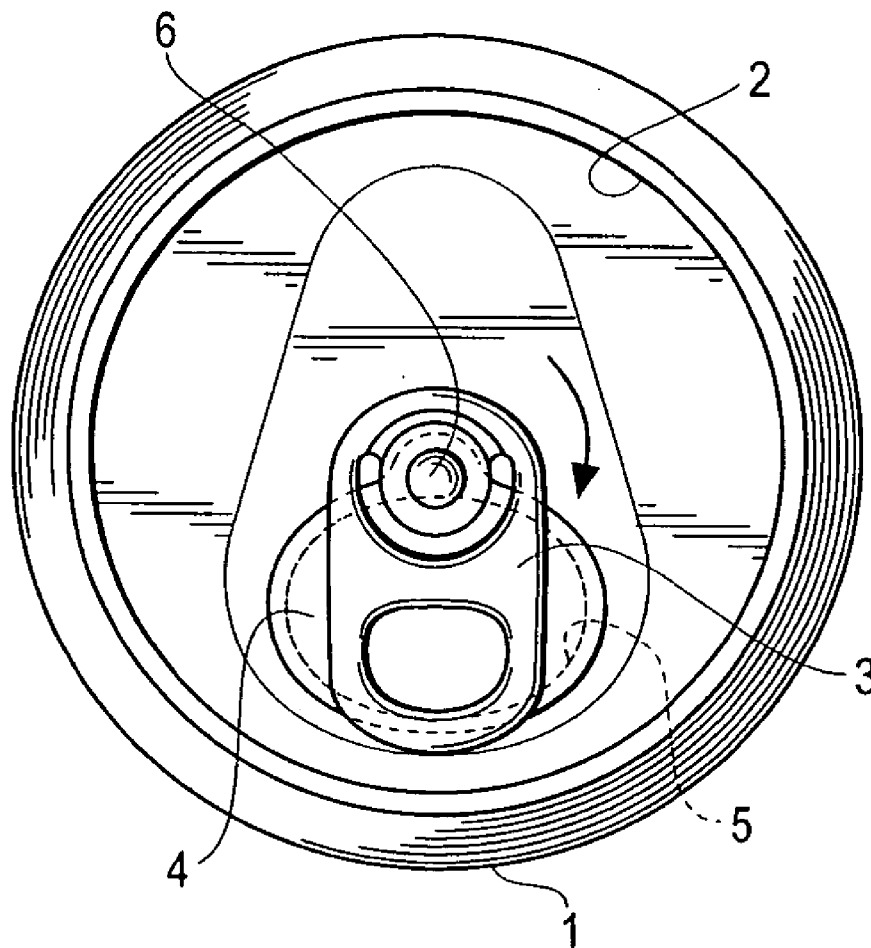


Fig. 1

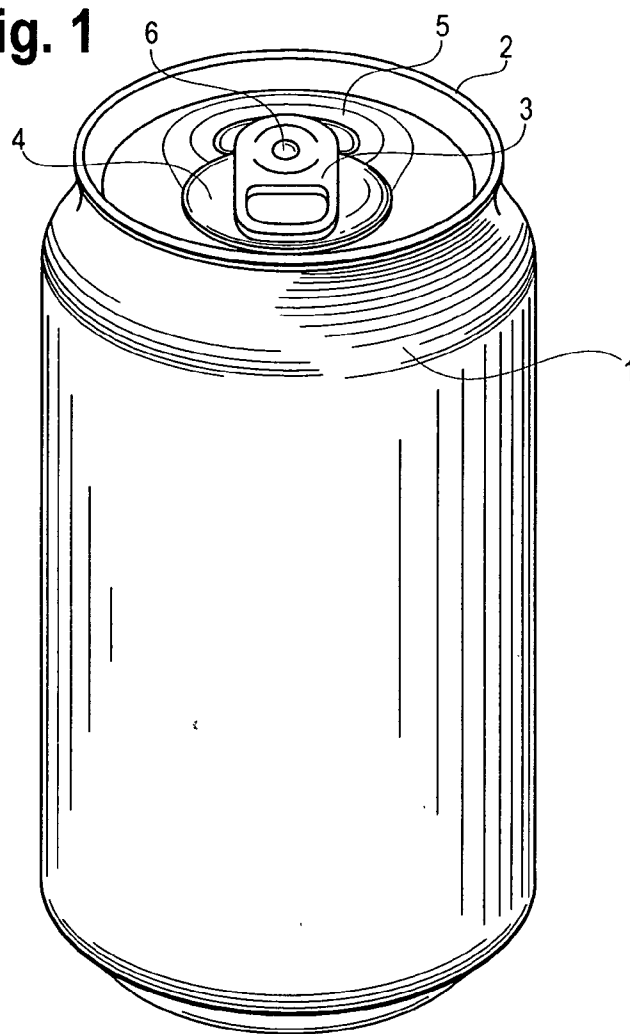


Fig. 2

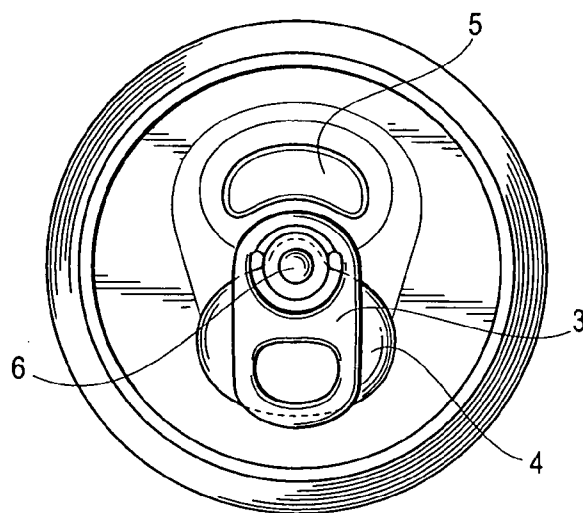


Fig. 3A

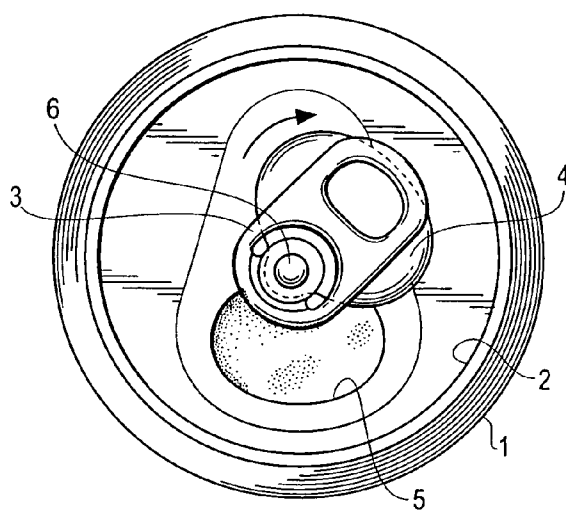


Fig. 3B

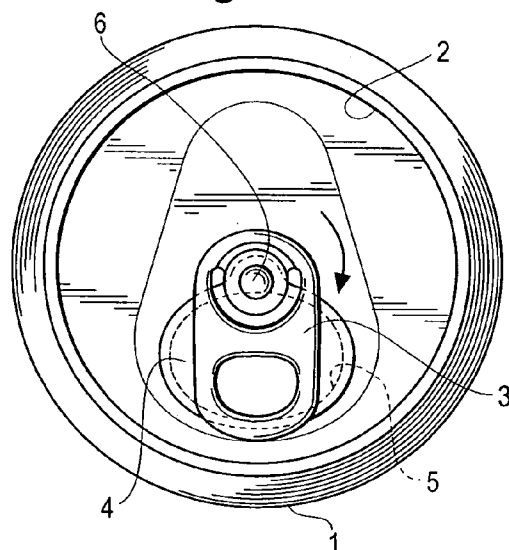


Fig. 4A

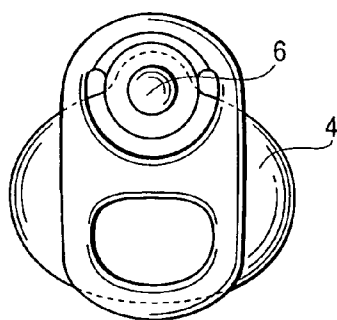
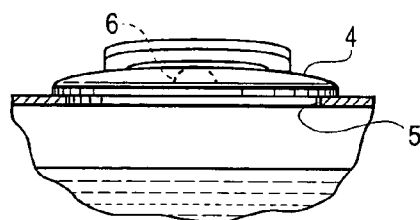


Fig. 4B



BEVERAGE CONTAINER RE-CLOSING COVER

[0001] This application is related to and claims priority from U.S. provisional patent application No. 60/714,082 filed Sep. 2, 2005. Application No. 60/714,082 is hereby incorporated by reference.

BACKGROUND

[0002] 1. Field of the Invention

[0003] The present invention relates generally to the field of container seals and more particularly to a beverage container re-closing cover.

[0004] 2. Description of the Prior Art

[0005] It is desirable in the field of container seals to have a beverage container re-closing cover that prevents the contents of the can from spilling, maintains the quality of the ingredients in the can, and keeps out undesired objects and insects. It is also desirable that the can re-closing cover be easy and convenient to use, and that it not interfere with shipping and packaging and not require complex manufacturing.

[0006] Morris in U.S. Pat. No. 5,285,924 teaches a removable plastic cover that can be used to keep out undesired objects from a can and prevent the contents of the can from spilling. However, the cover is inconvenient to use because the user must take steps to clamp and align it onto the opening of the can. In addition, since the cover is removable, it may get lost or contaminated with undesired objects before use. Another limitation of the cover in the Morris patent is that it is bulky and protrudes outside the outer edges of the can. Such a design prevents covered cans from being stacked, which subsequently interferes with shipping and packaging.

[0007] Cho in U.S. Pat. No. 5,813,559 teaches different covers that are either attached to or part of the tab. The user may rotate the cover towards the opening of a can to keep out undesired objects and toxic materials. However, the different versions of the cover protrude to the outer rim of the can. Thus, such a design will interfere significantly with shipping and packaging. Moreover, the bulky design of the covers may prevent the formation of a tight seal around the opening of the can. Consequently, the design will affect the ability of the covers to prevent spills or maintain the quality of the ingredients in the can.

[0008] Jamieson in U.S. Pat. No. 6,098,830 teaches different covers that can either be inserted onto or attached to the tab. The covers contain overhangs that protrude outside the edges of the can. The user may utilize these overhangs to rotate the cover towards the opening to keep insects out of the can and mitigate spills. However, the bulky and protruding nature of the covers may interfere with shipping and packaging. In addition, the design of the covers in the Jamieson patent, like those of the Cho patent, may prevent the formation of a tight seal around the opening of the can, thereby preventing the covers from stopping spills or maintaining the quality of the ingredients in the can. Jamieson mentions that a rubber-like thin layer can be mounted underneath the cover to form a tighter seal around the opening and thus enable the covers to serve such functions. However, such a step would burden the manufacturer of the cover with additional design, labor and material costs.

[0009] Johnson in U.S. Pat. No. 5,547,100 teaches a compact cover that is attached to the tab and does not protrude outside the edges of the can. The purpose of this cover is to keep insects out of an opened can and concomitantly allow the user to consume the beverage. As illustrated in FIG. 3, the long apertures that span the can opening help achieve these dual properties. Due to such a design, the cover cannot prevent spills or maintain the quality of the ingredients of an opened can. In addition, the cover generally cannot block the entry of smaller non-insect objects into a can, such as dust, pollen, or microbes.

[0010] It would be advantageous to have a beverage container re-closing cover that is easy to use and manufacture, prevents spills, maintains the quality of the ingredients in the can, and keeps out undesired objects from the can without interfering with shipping and packaging.

SUMMARY OF THE INVENTION

[0011] It is an objective of the present invention to provide a beverage container re-closing cover that prevents the contents of the can from spilling. Another objective of the present invention is to provide a re-closing cover that maintains the quality and flavor of the ingredients in the can by mitigating oxidation and a substantial loss in carbonation. It is another objective of the present invention to provide a re-closing cover that prevents undesired objects such as allergens, microbes and insects from entering the can. It is therefore desirable that the beverage container re-closing cover of the present invention forms a tight seal around the opening of the can.

[0012] Another objective of the present invention is to provide a re-closing cover that does not interfere with packaging and shipping. It is therefore desirable that the beverage container re-closing cover of the present invention be compact and not protrude outside the rim of the can in any direction such that it interferes with stacking.

[0013] Another objective of the present invention is to provide a beverage container re-closing cover that is easy to use. It is therefore desirable that the can re-closing cover of the present invention is attached to the can by the manufacturer and be non-removable. It is also desirable that the can re-closing cover of the present invention is operated without requiring detailed instructions or multiple steps.

[0014] It is finally an objective of the present invention to provide a beverage container re-closing cover that does not require complex manufacturing. It is therefore desirable that the re-closing cover of the present invention inherently forms a tight seal around the opening of the can and does not require that the manufacturer make modifications to improve its sealing capabilities.

DESCRIPTION OF THE DRAWINGS

[0015] The present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

[0016] FIG. 1 shows a perspective view of an embodiment of the present invention

[0017] FIG. 2 shows a top view of the embodiment of FIG. 1.

[0018] FIG. 3A shows a top view of a re-closing cover being rotated towards the opening of a soda can.

[0019] FIG. 3B shows a top view of a re-closing cover on the opening of a soda can.

[0020] FIG. 4A shows a top view of an embodiment of the re-closing cover of the present invention.

[0021] FIG. 4B shows a longitudinal view of the embodiment of FIG. 4A.

DESCRIPTION OF THE INVENTION

[0022] Turning now to FIG. 1, a beverage can 1 is shown. The can in FIG. 1 could store beverage drinks such as soda pop, beer, soft drinks, fruit juices, water, and the like or any other type of can. In other embodiments, the can 1 could store non-beverage food ingredients such as syrups, flour, powdered items, and other similar food items or non-food ingredients such as lubricating oils, fertilizers, insecticides, and the like. Any type of can with any ingredients is within the scope of the present invention.

[0023] FIGS. 1-2 also show a perspective and top view of an embodiment of the present invention. A tab 3 is held in place by a central rivet or pin 6. A re-closing cover 4 fits around the rivet 6 and can be used to close the hole in the can top caused by popping the tab 3. When the user pulls on the tab 3, pressure is placed on a perforated area 5; the perforated area is broken, and an opening 5 is created. After opening the can, the user may rotate the tab 3 until the re-closing cover 4 completely covers opening the 5. FIG. 3B illustrates a re-closed version of the can 1 by such as process. The re-closing cover can be elliptical, circular or any other shape.

[0024] FIGS. 3A and 3B provide a more detailed illustration of closing opening 5 with the re-closing cover 4. It is shown in FIG. 3A that the re-closing cover 4 is attached to the tab 3 by a rivet 6, pin or any other attaching method or means. This connection enables the user of the can 1 to control the re-closing cover 4 by rotating the tab 3 with his finger toward the opening 5. The alignment of the re-closing cover 4 with the opening 5 on the soda can 1 can completely cover the opening and form a tight seal, as illustrated in FIG. 3B.

[0025] FIGS. 4A and 4B show more detailed views of the re-closing cover 4. The small hole on the re-closing cover 4 is where the rivet 6 can connect the re-closing cover 4 to the tab 3. As shown in FIG. 4B, the hole can span the entire area of the re-closing cover 4. The re-closing cover could be composed of materials such as rubber, plastics (polypropylenes or other polymers), metals (aluminum, alloy, stainless steel, and the like), wood, ceramic, composite, fiber, or other suitable materials in a heterogeneous or homogenous composition. A preferred material is rubber, metal or plastic. In a preferred embodiment, the re-closing cover member can be elliptical to totally cover the access hole in the can. While an elliptical cover member is preferred, any shape or size cover member is within the scope of the present invention. For improved sealing, the cover member may be optionally shaped concave downward—that is slightly raised in its center.

[0026] Closing the opening 5 with the cover 4 can slow down or prevent the oxidation of the ingredients in the can

1 and help reduce or prevent a loss in any carbonation in the liquid content. In addition, the closing of the opening 5 with the cover 4 can prevent the entry of undesired objects into the can. Undesired objects can include, but are not limited to, microbes such as bacteria, fungi, and viruses; allergens such as dust, pollen and aerosols; and insects such as bees, ticks, bugs and roaches. As a result, closing of the opening 5 with cover 4 can help preserve the quality of the ingredients in the can such as color, taste and flavor. Other properties of the can contents that the re-closing cover 4 could maintain include but are not limited to anti-oxidative properties, turbidity, dielectric strength, lubricating properties, viscosity, and other physical and chemical properties.

[0027] Turning again to FIG. 2, it can be seen that the design of the re-closing cover 4 in its shape and coverage of the entire area of the opening 5—inherently forms a tight seal around the can's opening. Such a design enables the re-closing cover 4 to meet the objectives of the present invention without requiring complex manufacturing such as adding rubber-like materials underneath the cover, adding a clamp or making similar modifications. Such modifications burden the manufacturer of the cover with additional design, labor and material costs.

[0028] The re-closing cover 4 on the can 1, as illustrated in FIGS. 1 and 2, does not generally protrude outside the rim 2 of the can 1 in any direction. This can enable multiple cans with re-closing covers to be stacked horizontally and vertically in an efficient manner without creating indentations or spaces between them. Such efficient stacking can be important to the objectives of the present invention because it will not generally interfere with shipping and packaging the cans.

[0029] Another important aspect of the re-closing cover 4 is that it is normally non-removable. The non-removable nature of the cover 4 helps prevent it from getting lost before use or contaminated with undesired objects. In addition, the non-removable nature of the re-closing cover 4 eliminates the additional burden on the user to store the cover in sanitary condition before use and eliminates the additional step of clamping and aligning the cover onto a can. Such advantages make the re-closing cover 4 easier and more convenient to use.

[0030] It must be noted that the drawings and the above description only illustrate a single embodiment of the present invention and that other embodiments fall within the scope of this invention. For instance, in an alternative embodiment, the re-closing cover 4 and the tab 3 can be a single object as long as the object tightly seals the opening of a can without requiring complex manufacturing. In another embodiment, the re-closing cover 4 can be rotated by a small handle on the cover instead of an attached tab, as long as the handle does not protrude beyond the rims of the can in any direction such that it interferes with stacking multiple cans. Likewise, the re-closing cover 4 could further contain complex manufacturing materials such as rubber-like insulations or clamps, as long as such materials are not essential in meeting the requirements of the present invention.

[0031] A method of implementing the present invention in manufacture is to place the closing member 4 on the top of the closed can 1 at the time of manufacture. The can may contain a pre-punched pop-top outline (that can later be

popped with a tab). The central rivet **6** can be attached through both the pop-top tab **3** and the closing member **4** securely attaching both the closing member **4** and the tab **3** in position on the top of the can. Normally a hole can be drilled or punched through the can top center to receive the rivet **6** before the rivet is set. Thus, the hole can be first drilled or punched; the closing member **4** can then be placed on the can; the tab **3** can be placed on the closing member, and the rivet **6** can be inserted through aligned holes in the tab, closing member and can top. The rivet **6** can then be set in place. In many manufacturing operations, the can may also be filled through the rivet hole before the rivet is inserted; however, any method of filling the can is within the scope of the present invention.

[0032] Various descriptions and illustrations have been presented to better aid in the understanding of the present invention. One skilled in the art will realize that many changes and variations are possible. These changes and variations are within the scope of the present invention.

I claim:

1. A re-closable pop-top can comprising a non-removable cover member rotatable around a soda can top to cover or uncover an access port by rotation of said cover member, said cover member attached at a periphery to a central rivet in said soda can wherein said central rivet also holds a popping tab, said cover member rotatable by rotating said popping tab.

2. The re-closable pop-top can of claim 1 wherein said cover member is elliptical.

3. The re-closable pop-top can of claim 1 wherein said cover member is concave downward.

4. The re-closable pop-top can of claim 1 wherein said cover member made from one of the group of materials consisting of rubber, plastic and metal.

5. The re-closable pop-top can of claim 1 wherein said cover member is rotatable 360 degrees around said can top.

6. The re-closable pop-top can of claim 1 wherein said can has a rim, and said cover rotates without engaging said rim.

7. A re-closing apparatus for a pop-top can comprising, in combination:

- a pop-top can with a rim and a pop-top;
- a flexible closing cover with a rivet hole in its periphery;
- a pop-top tab with a rivet hole in one end;

a rivet passing through the hole in said closing cover and the hole in said pop-top tab, wherein said rivet holds said closing cover against the top of said can and the pop-top tab against said closing cover so that when said can is opened, said closing cover can be rotated between a closed position and an open position by rotating said pop-top tab.

8. The re-closing apparatus of claim 7 wherein said closing cover is elliptical.

9. The re-closing apparatus of claim 7 wherein said closing cover is made from one of the group of materials consisting of rubber, plastic and metal.

10. The re-closing apparatus of claim 7 wherein said closing cover is concave downward.

11. The re-closing apparatus of claim 7 wherein said closing cover rotates 360 degrees along the top of said can without touching said rim.

12. A method of manufacturing a pop-top can with a rotatable re-closing member comprising the steps of:

making a hole in the center of a pop-top can to be assembled;

making a hole in a rotatable closing member near its periphery;

making a hole in a pop-top tab, placing said rotatable closing member on said can with the hole in its periphery aligned with the hole in said can;

placing said tab on said rotatable closing member with the hole in said tab aligned with the hole in said rotatable closing member;

placing a rivet through said aligned holes;

setting said rivet.

13. The method of claim 12 wherein said rotatable closing member is made from one of the materials from the group consisting of rubber, plastic and metal.

14. The method of claim 12 wherein said rotatable closing member is elliptical.

15. The method of claim 12 wherein said rotatable closing member can rotate 360 degrees.

16. The method of claim 12 wherein said pop-top can has a rim and said rotatable closing member rotates without engaging said rim.

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