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(54) **BEVERAGE CONTAINER**

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(57) **ABSTRACT**

Related U.S. Application Data

(60) Provisional application No. 62/062,910, filed on Oct. 12, 2014.

Apparatuses and methods of manufacturing a beverage container. The beverage container includes a body having a pronounced lip at least at one end.



Beverage Container 1

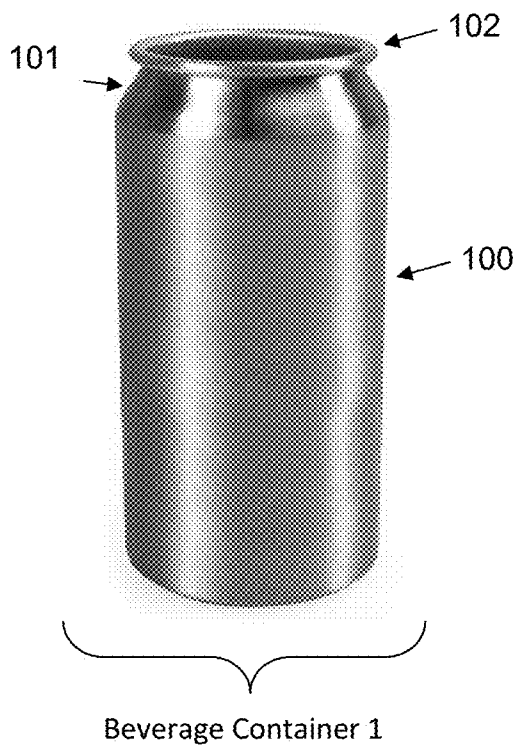


FIG. 1

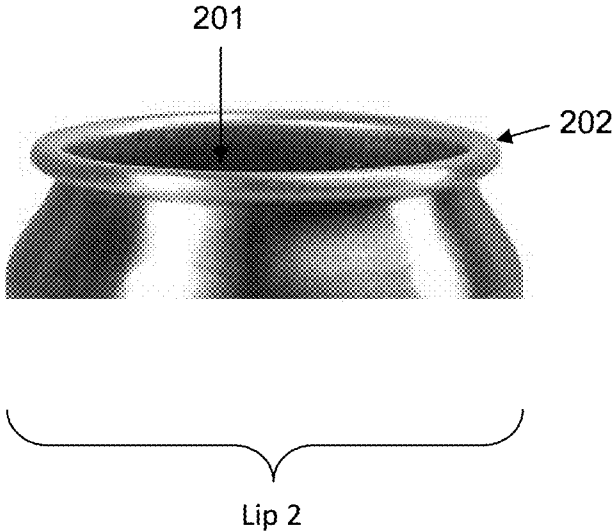


FIG. 2

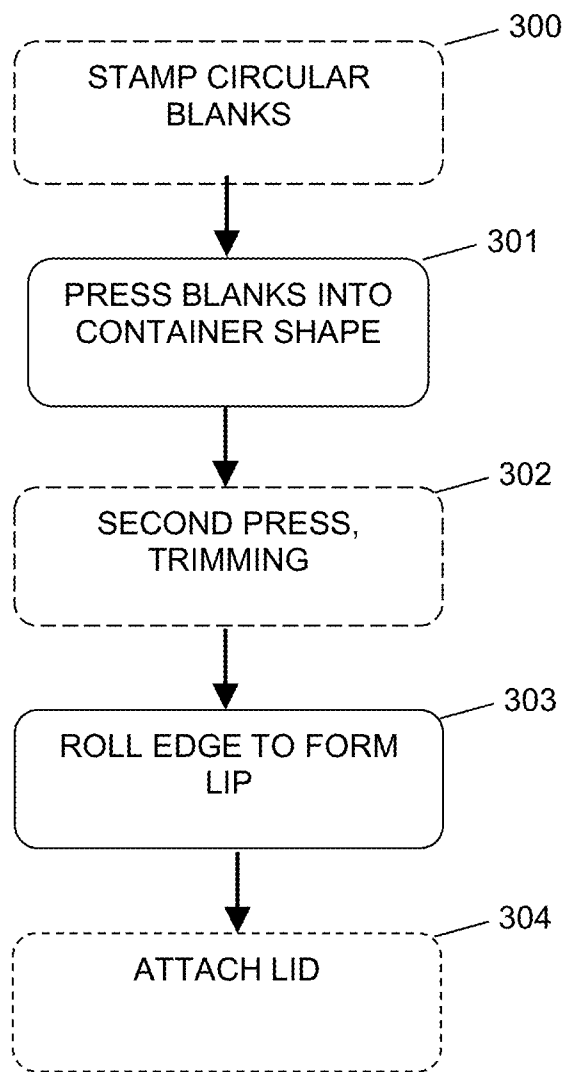


FIG. 3

BEVERAGE CONTAINER

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to and the benefit of U.S. Provisional Patent Application No. 62/062,910, filed on Oct. 12, 2014, which is hereby incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] Embodiments of the invention generally relate to beverage containers, and more specifically, a container having a form factor that facilitates automated handling and consumption.

BACKGROUND

[0003] Conventional beverage containers are fabricated from coils of sheet aluminum. The sheet aluminum is pressed out into discs, and each disc is stretched into the shape of a cylinder using a press. Prior to distribution and sale to a consumer, the cylinders are labeled, filled and then capped with a lid. Typically manufacturers use a crimper to affixes a lid to the cylinder.

[0004] The shape and form of these containers is typically dictated by the manufacturing process and the geometry of the human hand. In particular, the amount of material used to establish the seam between the lid and the body of the can, i.e., the “lip” of the can, may be chosen to ensure the integrity of the seam. Presently, aluminum containers are manufactured with a thin lip—typically about the same thickness as the container wall, sometimes thinner. The shape and form of the typical container fails to address important concerns, in particular automated handling (e.g., by a vending machine), ease and, enjoyability of consumption.

[0005] Accordingly, there exists a need in the market for a beverage container that addresses the aforementioned considerations. There exists a further need for cost effective manufacturing processes that result in fast production times and quality products.

SUMMARY

[0006] In general, various aspects and embodiments of the apparatus described herein are directed to beverage containers having a variety of shapes and form factors, most notably a pronounced lip that provides for improved sipping and improved automated handling, and methods of manufacturing the same.

[0007] According to one aspect of the present invention, there is provided a beverage container. The beverage container includes a cylindrical body, and the body has a pronounced lip that is at least at one end.

[0008] In one embodiment, the cylindrical body comprises a tapered portion that tapers toward the pronounced lip.

[0009] In another embodiment, the thickness of the pronounced lip is approximately one eighth inch.

[0010] In another embodiment, the ratio of the diameter of the body to the height of the body is approximately three.

[0011] In another embodiment, the thickness of the pronounced lip is at least one eighth inch.

[0012] In another embodiment, at least one end of the cylindrical body is substantially flat.

[0013] According to another aspect of the present invention, there is provided a method of manufacturing a beverage

container. The method includes pressing a circular shaped portion into a cylindrical body that has a closed end and an open end; and rolling the open end to form a pronounced lip.

[0014] In one embodiment, the cylindrical body is tapered at one end.

[0015] In another embodiment, the method further includes crimping a lid to the pronounced lip.

[0016] In another embodiment, the thickness of the pronounced lip is approximately one eighth inch.

[0017] In another embodiment, the ratio of the diameter of the body to the height of the body is approximately three.

[0018] In another embodiment, the thickness of the pronounced lip is at least one eighth inch.

[0019] In another embodiment, the method includes stamping a circular shaped portion.

[0020] According to another aspect of the present invention there is provided a beverage container manufactured according to a process. The process includes pressing the circular shaped portion into a cylindrical body comprising a closed end and an open end; and rolling an edge of the open end to form a pronounced lip.

[0021] In one embodiment, the cylindrical body is tapered at one end.

[0022] In another embodiment, the process further includes the step of crimping a lid to the pronounced lip.

[0023] In another embodiment, the thickness of the pronounced lip is approximately one eighth inch.

[0024] In another embodiment, the ratio of the diameter of the body to the height of the body is approximately three.

[0025] In another embodiment, the thickness of the pronounced lip is at least one eighth inch.

[0026] In another embodiment, the method includes stamping the circular shaped portion.

[0027] The foregoing and other features and advantages of the present invention will be made more apparent from the descriptions, drawings, and claims that follow. One of ordinary skill in the art, based on this disclosure, would understand that other aspects and advantages of the present invention exist.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] In the drawings, like reference characters generally refer to the same parts throughout the different views. In the following description, various embodiments of the present invention are described with reference to the following drawings, in which:

[0029] FIG. 1 is an illustration of a beverage container according to one embodiment of the present invention;

[0030] FIG. 2 is an illustration of a pronounced lip of a beverage container according to an exemplary embodiment of the present invention;

[0031] FIG. 3 is an illustration of process for manufacturing a beverage container according to one exemplary embodiment of the present invention.

DETAILED DESCRIPTION

[0032] Described herein are various embodiments of methods and systems consistent with the present invention. These embodiments are exemplary and should not be interpreted to limit the scope that one of ordinary skill in the art would give to the invention. In some instances, well-known operations are not described in detail to avoid unnecessarily obscuring the present invention.

[0033] A beverage container **1** in accord with an exemplary embodiment of the present invention will now be described with reference to FIG. 1. The beverage container **1** has a cylindrical body **100**, a tapered end **101**, and a pronounced lip **102**. In one embodiment, the beverage container **1** has a concave bottom (not shown). In another embodiment, the beverage container **1** has one a bottom that is substantially flat (not shown).

[0034] The cylindrical body **100** may provide a form factor that permits a beverage in the container to be held in the hand and consumed.

[0035] The tapered end **101** is described in connection with the embodiment illustrated in FIG. 1, but is, generally speaking, optional. The tapered end **101**, in conjunction with the pronounced lip **102**, provides a shape that is suited to handling and processing by automated machinery, including but not limited to vending machines adapted to handle the beverage container.

[0036] The tapered end **101** may begin at any point along the height of the cylindrical body **100**, but is preferably within the third of the body **100** closest the open end where a lid would be affixed. In one embodiment, the ratio of the height to the diameter is about 3, i.e., the height is 3× the diameter of the body **100**.

[0037] In addition to facilitating automated handling, the pronounced lip **102** provides a rounded surface that facilitates consumption of a beverage in the beverage container **1**.

[0038] FIG. 2 illustrates a pronounced lip **2** according to an exemplary embodiment of the present invention. The pronounced lip **2** has a first surface **200** and round portion **201**. The round portion **201** is curved and extends away from the edge of the container, forming a rim or seam where it meets the outer surface of the container. The pronounced lip **2** is disposed along the entire length of the edge of a beverage container. The thickness of the round portion **201** of the pronounced lip **2** is typically about one eighth of an inch or greater, although it may vary and be larger or smaller in various embodiments. The thickness may vary, in part, based on the degree of tapering of the body of the container toward the pronounced lip **102**.

[0039] A method of manufacturing a container according to an exemplary embodiment of the present invention will now be described with reference to FIG. 3.

[0040] The process begins with the striking or stamping of circular blanks (Step **300**) from an appropriate material such as aluminum, steel, aluminum alloy (e.g., alloy 3004, 3105, etc.), plastic, etc. Each circular blank is then pressed into a mold that establishes the distinctive shape consistent with embodiments of the present invention, e.g., a cylinder with a tapered or an untapered end (Step **301**). In some embodiments, the striking and pressing are performed by the same party; in other embodiments the presser, e.g., receives blanks that have been already struck, or the striker, ships blanks to a third party for manufacturing and finishing.

[0041] Though optional and not a required part of the present invention, the cylinder may be pressed a second time, e.g., to create a curve in the bottom of the cylinder to strengthen the container, and irregularities may be trimmed from the pressed cylinder (Step **302**).

[0042] At least one end of the cylinder may be rolled (Step **303**) to form the pronounced lip shown in FIG. 1 and FIG. 2. In other embodiments at least one end of the body may be folded or cast in a mold to form the pronounced lip. In yet another exemplary embodiment the pronounced lip may be

formed separately and seamlessly attached to the container by sealing, soldering, or some similar process generally known to those of ordinary skill in the art.

[0043] Though optional and not a required part of the present invention, lids fabricated from an appropriate material such as aluminum, steel, aluminum alloy, plastic, etc. may be attached (Step **304**) to the container by, e.g., rolling the edges of the lid around the pronounced lip and sealing the seam shut. The beverage container may be painted or wrapped in some kind of label or design to identify the contents of the container or the manufacturer or distributor of the contents. In one embodiment, the design may be attached prior to the filling of the container, and in another embodiment the design may be attached after the container's filling. One of ordinary skill would recognize that the beverage containers of the present invention may be fabricated in a variety of shapes (tapered cylinders, rectangular solids, prisms, etc.), sizes (12 oz., 16 oz., 20 oz., 24 oz., etc.), geometries (wide, tall, etc.), and materials (metal, plastic, wood, etc.). Other embodiments in accord with the present invention may have multiple pronounced lips (e.g., on each end of a cylindrical body), or the pronounced lip may be disposed on the beverage container at a position other than the edge of the tapered end (e.g., ½ to 1 inch from the edge).

[0044] Although each exemplary operation illustrated by FIG. 3 and the accompanying text recites steps performed in a particular order, the present invention does not necessarily need to operate in that recited order. One of ordinary skill in the art would recognize many variations, including performing steps in a different order.

[0045] Certain embodiments of the present invention were described above. It is, however, expressly noted that the present invention is not limited to those embodiments, but rather the intention is that additions and modifications to what was expressly described herein are also included within the scope of the invention. Moreover, it is to be understood that the features of the various embodiments described herein were not mutually exclusive and can exist in various combinations and permutations, even if such combinations or permutations were not made express herein, without departing from the spirit and scope of the invention. In fact, variations, modifications, and other implementations of what was described herein will occur to those of ordinary skill in the art without departing from the spirit and the scope of the invention. As such, the invention is not to be defined only by the preceding illustrative description.

What is claimed is:

1. A beverage container, the container comprising:
 - a cylindrical body, the body having at least one end with a pronounced lip.
2. The apparatus of claim 1, wherein the cylindrical body comprises a tapered portion that tapers toward the pronounced lip.
3. The apparatus of claim 1, wherein the thickness of the pronounced lip is approximately one eighth inch.
4. The apparatus of claim 2, wherein the ratio of the diameter of the body to the height of the body is approximately three.
5. The apparatus of claim 1, wherein the thickness of the pronounced lip is at least one eighth inch.
6. The apparatus of claim 1, wherein at least one end of the cylindrical body is substantially flat.
7. A method of manufacturing a beverage container, the method comprising:

pressing a circular shaped portion into a cylindrical body comprising a closed end and an open end; and rolling the open end to form a pronounced lip.

8. The method of claim 7, wherein the cylindrical body is tapered at one end.

9. The method of claim 7, the method further comprising crimping a lid to the pronounced lip.

10. The method of claim 7, wherein the thickness of the pronounced lip is approximately one eighth inch.

11. The method of claim 7, wherein the ratio of the diameter of the body to the height of the body is approximately three.

12. The method of claim 7, wherein the thickness of the pronounced lip is at least one eighth inch.

13. The method of claim 7 further comprising stamping the circular shaped portion.

14. A beverage container manufactured according to a process comprising the steps of:

pressing a circular shaped portion into a cylindrical body comprising a closed end and an open end; and rolling an edge of the open end to form a pronounced lip.

15. The product by process of claim 14, wherein the cylindrical body is tapered at one end.

16. The product by process of claim 14, the process further comprising the step of crimping a lid to the pronounced lip.

17. The product by process of claim 14, wherein the thickness of the pronounced lip is approximately one eighth inch.

18. The product by process of claim 14, wherein the ratio of the diameter of the body to the height of the body is approximately three.

19. The method of claim 14, wherein the thickness of the pronounced lip is at least one eighth inch.

20. The method of claim 14 further comprising stamping the circular shaped portion

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