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(54) **CAN COOLER**

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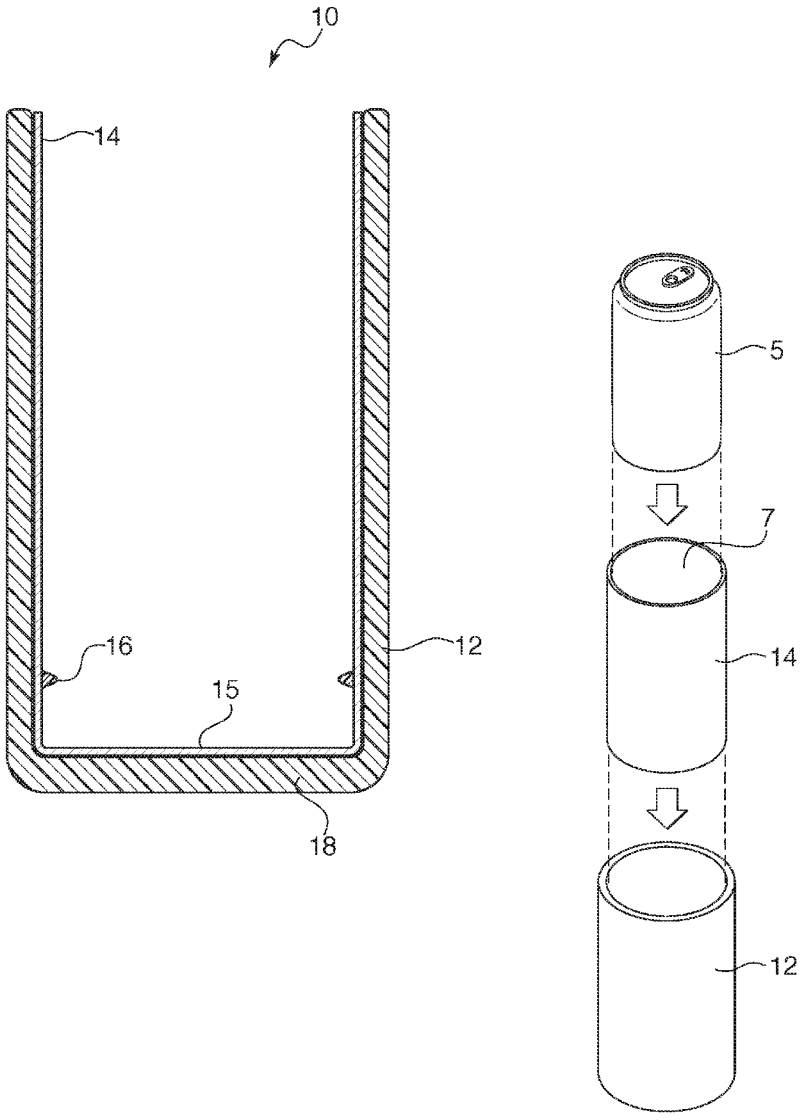
(57) **ABSTRACT**

A can cooler includes a housing having a threaded mating mechanism disposed on a lowermost region of inner sidewalls of the housing and a bottom lid releasably secured to a bottom region of the housing, the bottom lid including an upper portion and a lower portion, the upper portion defining a seal circumferentially disposed therein, wherein the seal engages a can received within a top cavity of the housing. The lower portion of the bottom lid includes threads configured to releasably couple with the threaded mating mechanism of the housing. Further, a bottom surface of the can contacts a top surface of the bottom lid such that the seal engages a lowermost region of the can.



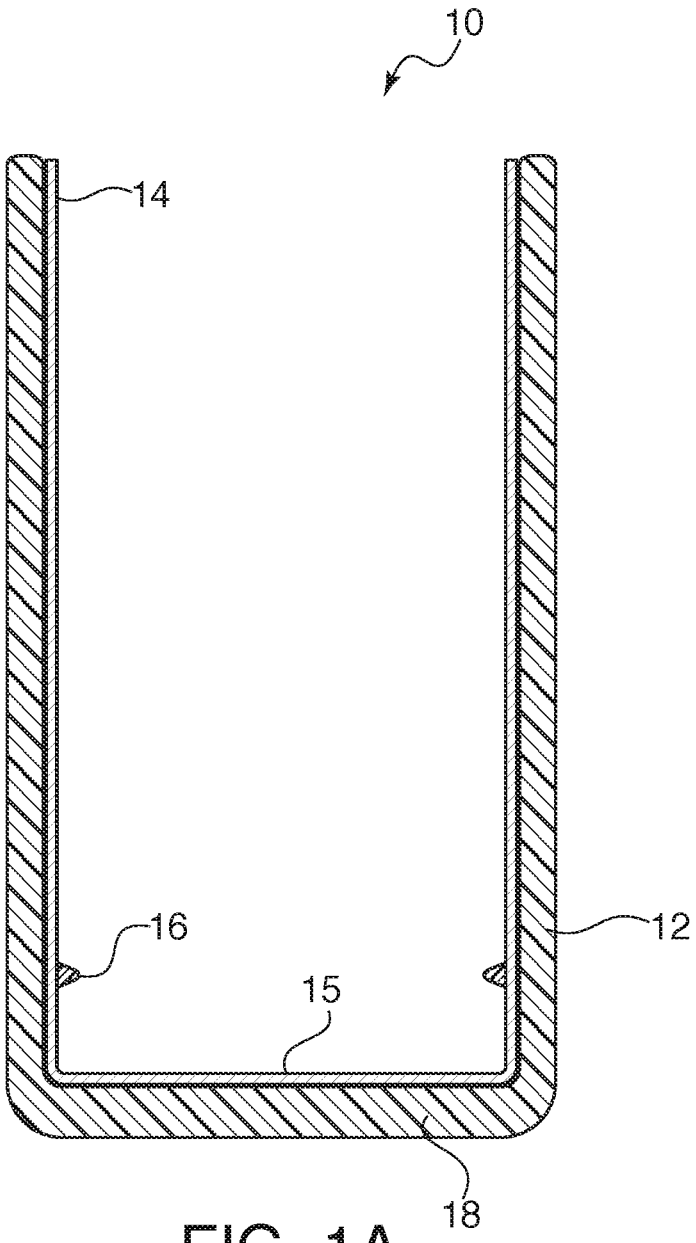


FIG. 1A

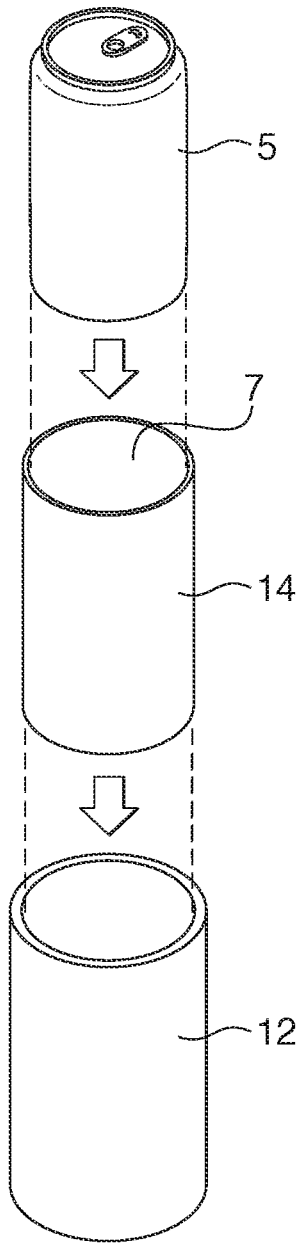


FIG. 1B

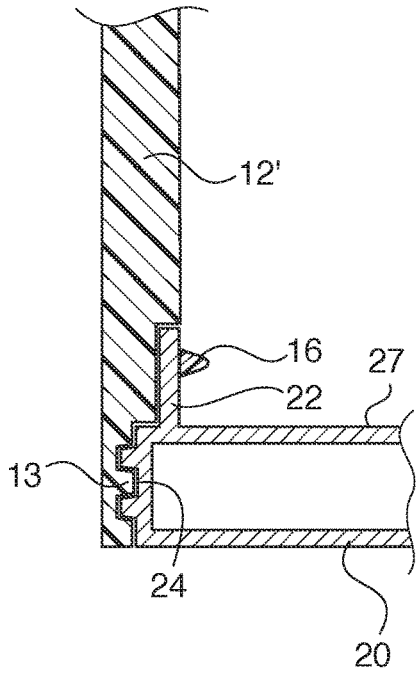


FIG. 2A

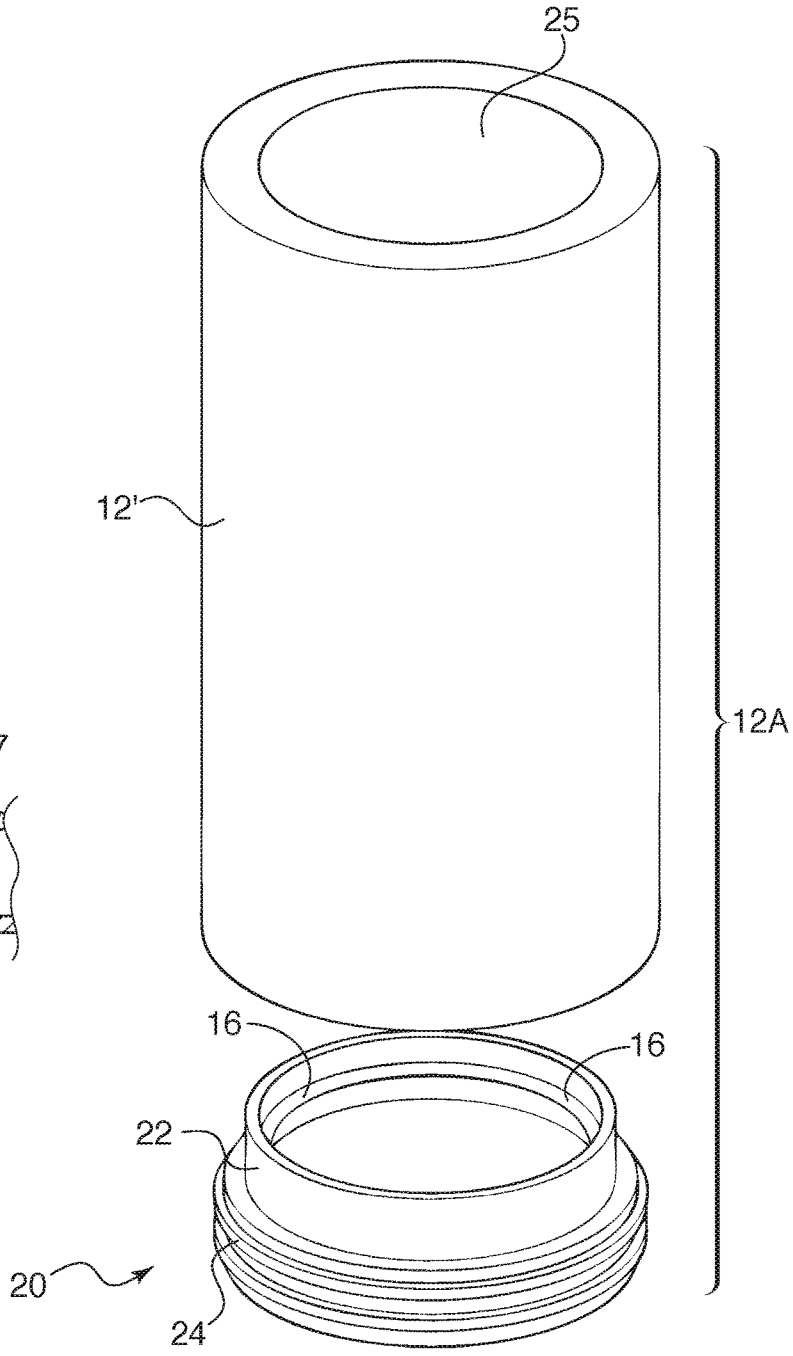


FIG. 2B

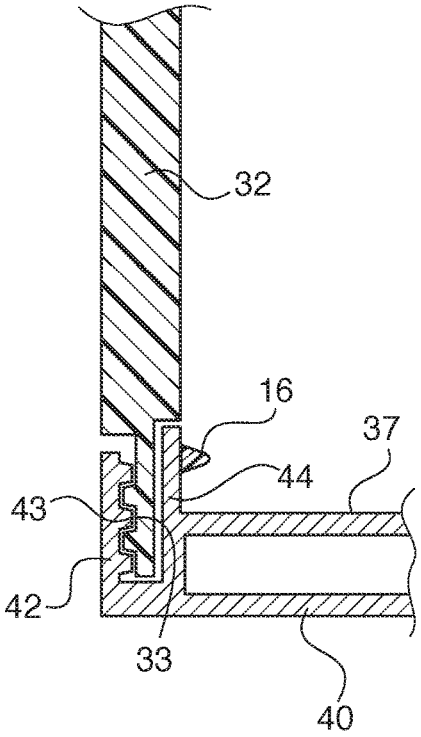


FIG. 3A

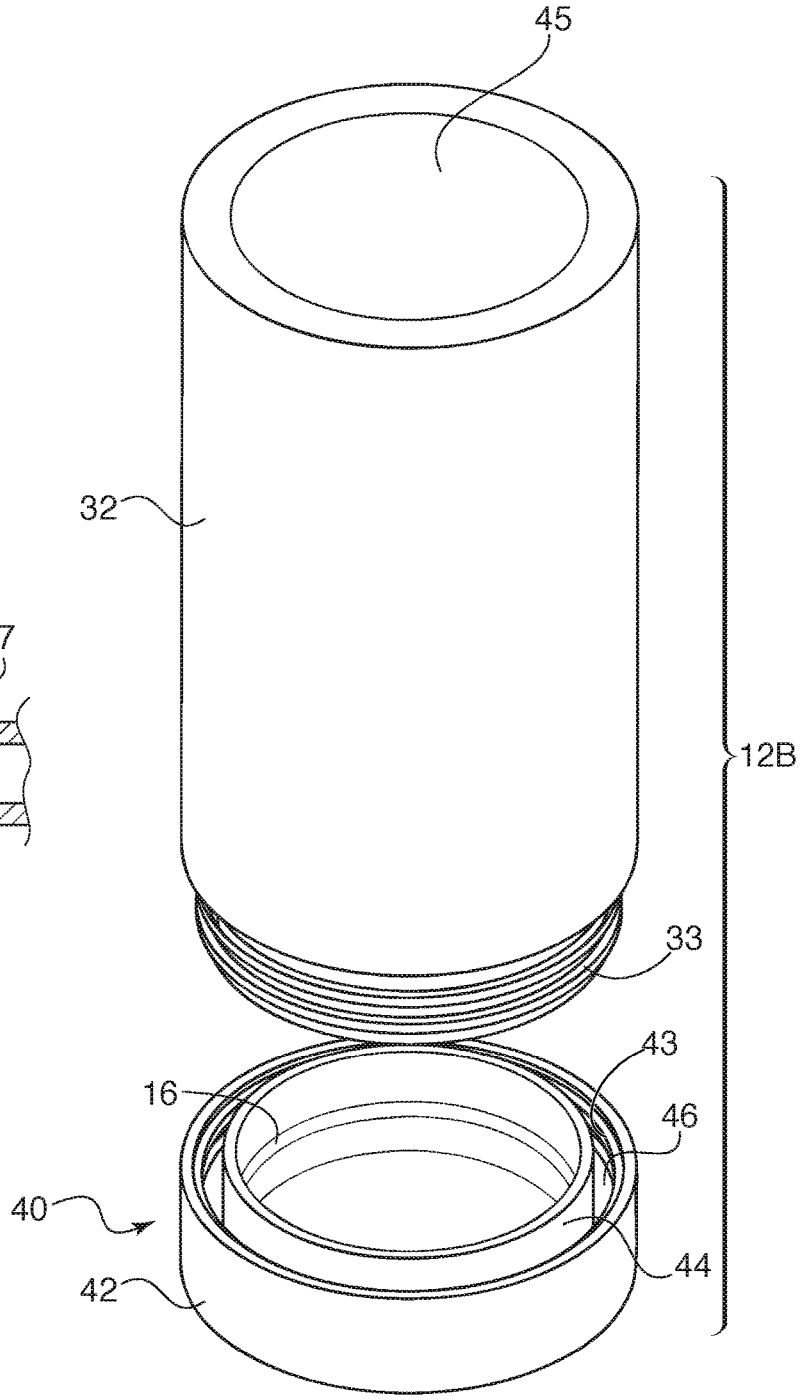


FIG. 3B

CAN COOLER

BACKGROUND

[0001] The present invention relates generally to can coolers, and more specifically, to can coolers that do not require external devices for securing the can to a cooling casing.

[0002] Beverage cans are metal containers designed to hold a fixed amount of a beverage, such as soda, beer, fruit juice, tea, and so on. Worldwide, greater than 350 billion cans are produced per year, the majority of which are made of aluminum. Unfortunately, metal is a good conductor of heat and, once removed from cold storage, a chilled can of a beverage will warm to the surrounding temperature very quickly.

SUMMARY

[0003] In accordance with an embodiment, a can cooler is provided. The can cooler includes a housing having a threaded mating mechanism disposed on a lowermost region of inner sidewalls of the housing and a bottom lid releasably secured to a bottom region of the housing, the bottom lid including an upper portion and a lower portion, the upper portion defining a seal circumferentially disposed therein, wherein the seal engages a can received within a top cavity of the housing.

[0004] In accordance with another embodiment, a can cooler is provided. The can cooler includes a housing having a threaded mating mechanism disposed at a distal end thereof such that the threaded mating mechanism extends beyond a distalmost end of the housing and a bottom lid releasably secured to a bottom region of the housing, the bottom lid including an outer wall and an inner wall, the outer wall defining threads on an inner surface thereof and the inner wall defining a seal circumferentially disposed therein, wherein the seal engages a can received within a top cavity of the housing.

[0005] In accordance with yet another embodiment, a can cooler is provided. The can cooler includes a housing, an inner sleeve securedly fixed within the housing, and a seal circumferentially disposed within the inner sleeve, wherein the seal engages a can received within a top cavity of the housing.

[0006] It should be noted that the exemplary embodiments are described with reference to different subject-matters. In particular, some embodiments are described with reference to method type claims whereas other embodiments have been described with reference to apparatus type claims. However, a person skilled in the art will gather from the above and the following description that, unless otherwise notified, in addition to any combination of features belonging to one type of subject-matter, also any combination between features relating to different subject-matters, in particular, between features of the method type claims, and features of the apparatus type claims, is considered as to be described within this document.

[0007] These and other features and advantages will become apparent from the following detailed description of illustrative embodiments thereof, which is to be read in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The invention will provide details in the following description of preferred embodiments with reference to the following figures wherein:

[0009] FIG. **1**A illustrates a cross-sectional view of a can cooler, in accordance with an embodiment of the present invention;

[0010] FIG. **1**B illustrates an exploded view of a beverage can inserted into the can cooler of FIG. **1**A, in accordance with an embodiment of the present invention;

[0011] FIG. **2**A illustrates a cross-sectional view of a bottom lid securedly attached to the housing of the can cooler, in accordance with another embodiment of the present invention;

[0012] FIG. **2**B illustrates an exploded view of the bottom lid and housing of FIG. **2**A, in accordance with an embodiment of the present invention;

[0013] FIG. **3**A illustrates a cross-sectional view of a bottom lid securedly attached to the housing of the can cooler, in accordance with another embodiment of the present invention; and

[0014] FIG. **3**B illustrates an exploded view of the bottom lid and housing of FIG. **3**A, in accordance with an embodiment of the present invention.

[0015] Throughout the drawings, same or similar reference numerals represent the same or similar elements.

DETAILED DESCRIPTION

[0016] Embodiments in accordance with the present invention provide for different types of can coolers. In one embodiment, a can cooler includes an inner sleeve within a housing, as well as a seal contacting a bottom region of the inner sleeve to secure a can within the housing. In another embodiment, a can cooler includes a housing and a bottom lid secured to a bottom region of the housing, the bottom lid including a seal for securing a can to the housing. In yet another embodiment, a can cooler includes a housing and a bottom lid secured to a bottom region of the housing, the bottom lid having an outer wall and an inner wall, the outer wall defining threads and the inner wall having a seal for securing a can to the housing.

[0017] Most consumers prefer to consume drinks such as soda and beer while they are cold. Canned or bottled drinks which have been chilled in ice chests or refrigerators begin to warm as soon as they are removed from the chilled environment. In particular, on summer days, drinks warm up very quickly in the hot sun.

[0018] Products have been designed to slow the heating process. Many consumers insulate their can or bottle with a wrap such as neoprene or foam. Millions of these have been sold, proving a desire of consumers to keep drinks cold. However, this wrap simply insulates and does not provide refrigeration or cooling of the beverage.

[0019] One product which attempts to refrigerate the beverage is a double walled mug which has a refrigerant between the walls. This refrigerant can be frozen or chilled in a freezer prior to use. When the mug is removed from the freezer, drinks may be poured into the mug to help them stay cold. To use this mug, the consumer must plan ahead to freeze the mug for a period of time before use. This mug also eventually needs to be re-frozen before re-use by returning it to a chilled environment. This takes planning and time between uses. This product is therefore not very practical for several reasons, e.g., for outdoors people drinking beverages or multiple beverages from cans or bottles which are taken from an ice chest.

[0020] As a result, the desirability of consuming a can of beer or soda in a chilled state, regardless of the temperature

of the environment in which these beverages are consumed, has prompted the development of further apparatuses that insulate these chilled beverages during consumption. For example, another such popular apparatus is a can holder molded into an insulative cup configuration suitable for receiving a beverage can. Such insulative cups are most popular outdoors where an uninsulated beverage would quickly absorb the heat of the environment. However, such insulative cups suffer from the same disadvantages mentioned above regarding other products.

[0021] As a result, the exemplary embodiments of the present invention introduce new can coolers with different designs for more effectively cooling beverage cans.

[0022] It is to be understood that the present invention will be described in terms of a given illustrative architecture; however, other architectures, structures, substrate materials and process features and steps/blocks can be varied within the scope of the present invention. It should be noted that certain features cannot be shown in all figures for the sake of clarity. This is not intended to be interpreted as a limitation of any particular embodiment, or illustration, or scope of the claims.

[0023] FIG. **1**A illustrates a cross-sectional view of a can cooler, in accordance with an embodiment of the present invention, whereas FIG. **1**B illustrates an exploded view of a beverage can inserted into the can cooler of FIG. **1**A, in accordance with an embodiment of the present invention.

[0024] Referring to FIG. **1**A, the can cooler **10** has a housing **12** and an inner sleeve **14**. The inner sleeve **14** is positioned within the housing **12**. The inner sleeve **14** assumes the shape of the interior walls of the housing **12**. In one embodiment, the inner sleeve **14** is permanently affixed within the housing **12**. In another embodiment, the inner sleeve **14** is releasably secured to the housing **12**. The inner sleeve **14** has a seal **16** extending circumferentially thereon. Stated differently, the seal **16** projects inwardly from a sidewall of the inner sleeve **14**. The seal **16** is parallel to the bottom wall **18** of the housing **12**. In one example, the seal **16** is horizontally placed within the inner sleeve **14**. In another example, the seal **16** can be angularly placed within the inner sleeve **14**.

[0025] The seal **16** is positioned on a lower portion of the inner sleeve **14**. In one example, the seal **16** is positioned approximately ½ of an inch from the bottom surface **15** of the inner sleeve **14**. In another example, the seal **16** is positioned approximately ¼ of an inch from the bottom surface **15** of the inner sleeve **14**. The placement of the seal near the bottom region of the housing **12** advantageously provides for a better and more secure gripping effect between the seal **16** and the beverage can **5** to stabilize the beverage can **5** within the housing **12**.

[0026] The can cooler can be referred to as a beverage cooler or cooling apparatus. The housing **12** can also be referred to as a receptacle, a body, a cylindrical body or an enclosure or a base member having a bottom wall **18**. The housing **12** defines one continuous element or member or component. The inner sleeve **14** can also be referred to as an insert or inner vessel. The seal **16** can also be referred to as a ring or rubber ring or gasket or rib or annular seal. The seal **16** can be, e.g., an O-ring seal.

[0027] The housing **12** can be made of, e.g., stainless steel.

[0028] Referring to FIG. **1**B, in operation, a beverage can **5** is inserted into the opening or cavity **7** of the inner sleeve **14** of the housing **12**. The outer walls of the beverage can **5** engage the inner walls of the inner sleeve **14** such that the beverage can **5** engages the seal **16**. The inner diameter of the inner sleeve **14** is configured to snugly accommodate the beverage can **5**. At that point, a user applies a slight downward force to the beverage can **5** such that the bottom of the beverage can **5** contacts the top surface **15** of the inner sleeve **14** (thus overcoming the friction presented by the seal **16**). The seal **16** operates to secure the beverage can **5** to the inner sleeve **14** within the housing **12**.

[0029] In an alternative embodiment, a double seal can be positioned within the lower portion of the inner sleeve **14**. The double seal includes a first seal and a second seal in parallel to each other and separated from each other by a small distance.

[0030] In another alternative embodiment, three seals or three ribs can be positioned within the lower portion of the inner sleeve **14**. The ribs can be equally spaced apart from each other by a small distance.

[0031] In yet another alternative embodiment, the seal **16** may not define one continuous circumferential element. Instead, the seal **16** may define a ring with segmented or discontinuous or disconnected or disjointed elements/segments.

[0032] FIG. **2**A illustrates a cross-sectional view of a bottom lid securedly attached to the housing of the can cooler, in accordance with another embodiment of the present invention, whereas FIG. **2**B illustrates an exploded view of the bottom lid and housing of FIG. **2**A, in accordance with an embodiment of the present invention.

[0033] In another embodiment, the can cooler **12**A includes an upper portion and a lower portion. The upper portion **12'** defines the outer sleeve whereas the lower portion **20** defines a bottom lid. The bottom lid **20** is releasably secured to the outer sleeve **12'**.

[0034] The outer sleeve **12'** is a cylindrical body. A lowermost inner portion of the outer sleeve **12'** includes a threaded mating mechanism **13** for receiving the threads **24** of the bottom lid **20**. The outer sleeve **12'** can also be referred to as the housing **12'**. The threads **24** are defined on an exterior surface of the bottom lid **20**.

[0035] The bottom lid **20** includes an upper portion **22** and a lower portion **24**. The upper portion **22** incudes a smooth surface, whereas the lower portion **24** includes the threads. The upper portion **22**, however, also includes or accommodates the seal **16** therein. The seal **16** circumferentially extends around an inner area or region of the upper portion **22** of the bottom lid **20**. The seal **16** is parallel to a top surface **27** of the bottom lid **20**. In one example, the seal **16** is horizontally placed within the upper portion **22** of the bottom lid **20**. In another example, the seal can be angularly placed within the upper portion **22** of the bottom lid **20**.

[0036] When the bottom lid **20** is engaged to the outer sleeve **12'**, the seal **16** is positioned or disposed around or adjacent to a lower portion of the outer sleeve **12'**. In one example, the seal **16** is positioned approximately ½ of an inch from the top surface **27** of the bottom lid **20**. In another example, the seal **16** is positioned approximately ¼ of an inch from the top surface **27** of the bottom lid **20**. The bottom surface of the beverage can **5** contacts a top surface **27** of the bottom lid **20** such that the seal **16** engages a lowermost region of the beverage can **5**. The placement of the seal near the bottom region of the outer sleeve **12'** advantageously provides for a better and more secure grip-

ping effect between the seal **16** and the beverage can **5** to stabilize the beverage can **5** within the outer sleeve **12'**.

[0037] The cross-sectional view of FIG. **2**A illustrates the releasable engagement or coupling between the bottom lid **20** and the outer sleeve **12'**. The threads **24** of the bottom lid **20** engage or mate or couple with the threaded mating mechanism **13** defined within a lower portion of the outer sleeve **12'**. Additionally, the upper portion **22** of the bottom lid **20** with the seal **16** rests adjacent the inner wall of the outer sleeve **12'**. The upper portion **22** is vertically aligned with the sidewall of the outer sleeve **12'**, whereas the seal **16** is vertically aligned with the opening **25** of the outer sleeve **12'**. The upper portion **22** can also be referred to as a circumferential wall. The outer sleeve **12'** can also be referred to as a housing.

[0038] Moreover, the topmost portion of the outer sleeve **12'** can be referred to as the proximalmost portion or region and the bottommost portion of the outer sleeve **12'** can be referred to as the distalmost portion or region. The proximalmost end and the distalmost end of the outer sleeve **12'** remain open or each include a cavity. The bottom lid **20** threadably attaches to the distalmost region or area of the outer sleeve **12'**. The threads **13** are disposed or positioned or defined on a lowermost inner sidewall of the outer sleeve **12'**.

[0039] The seal **16** is also vertically offset from the threaded mating mechanism **13** of the outer sleeve **12'** and vertically offset from the threads **24** of the bottom lid **20**. The seal **16** is not positioned on or next to the threads **24**. The seal **16** is separate and distinct from the threads **24** of the bottom lid **20**. The seal **16** is configured to be above the threads **24** of the bottom lid **20**. Thus, the seal **16** is not coplanar with the threads **24**. Moreover, a diameter of the seal **16** is less than a diameter of the lower portion **24** having the threads.

[0040] In operation, the bottom lid **20** is threadedly secured to the outer sleeve **12'**, and then a beverage can **5** is inserted into the opening or cavity **25** of the outer sleeve **12'**. The outer walls of the beverage can **5** engage the inner walls of the outer sleeve **12'** such that the beverage can **5** engages the seal **16**. At that point, a user applies a slight downward force to the beverage can **5** such that the bottom of the beverage can **5** contacts the top surface **27** of the bottom lid **20** (thus overcoming the friction presented by the seal **16**). The seal **16** operates to secure the beverage can **5** to the outer sleeve **12'** threadedly secured to the bottom lid **20**.

[0041] FIG. **3**A illustrates a cross-sectional view of a bottom lid securedly attached to the housing of the can cooler, in accordance with another embodiment of the present invention, whereas FIG. **3**B illustrates an exploded view of the bottom lid and housing of FIG. **3**A, in accordance with an embodiment of the present invention.

[0042] In another embodiment, the can cooler **12**B includes an upper portion and a lower portion. The upper portion **32** defines the outer sleeve, whereas the lower portion **40** defines a bottom lid. The bottom lid **40** is releasably secured to the outer sleeve **32**.

[0043] The outer sleeve **32** is a cylindrical body. The outer sleeve **32** can also be referred to as a housing **32**. A lower portion of the outer sleeve **32** includes a threaded mating mechanism **33** extending away from the outer sleeve **32** for receiving the threads **43** of the bottom lid **40**. Stated differently, the threaded mating mechanism **33** is disposed at a distal end thereof such that the threaded mating mechanism **33** extends beyond a distalmost end of the outer sleeve **32**. The threaded mating mechanism **33** can also be referred to as a projection member or threaded projection member or threaded projection component outside the confines of the outer sleeve **32**.

[0044] The bottom lid **40** includes an outer wall **42** and an inner wall **44**. The inner wall **44** is separated from the outer wall **42** by a space **46**. The outer wall **42** includes internal threads **43** for mating with the threaded mating mechanism **33** of the outer sleeve **32**. The inner wall **42** includes the seal **16**. The seal **16** circumferentially extends around an inner area or region of the inner wall **44** of the bottom lid **40**.

[0045] The cross-sectional view of FIG. **3**A illustrates the releasable engagement or coupling between the bottom lid **40** and the outer sleeve **32** via the threaded mating mechanism **33**. The threads **43** of the outer wall **42** engage or mate or couple with the threaded mating mechanism **33** of the outer sleeve **32**. Additionally, the inner wall **44** of the bottom lid **40** with the seal **16** rests adjacent the inner wall of the outer sleeve **32**. The inner wall **44** is vertically aligned with the sidewall of the outer sleeve **32**, whereas the seal **16** is vertically aligned with the opening **45** of the outer sleeve **32**.

[0046] The seal **16** is also vertically offset from the threaded mating mechanism **33** of the outer sleeve **32** and vertically offset from the threads **43** of the outer wall **42**. The seal **16** is not positioned on or next to the threads **43**. The seal **16** is separate and distinct from the threads **43** of the outer wall **42**. The seal **16** is configured to be above the threads **43** of the threaded mating mechanism **33** and the threads **43** of the outer wall **42**. Thus, the seal **16** is not coplanar with the threads **43**. Moreover, a diameter of the seal **16** is less than a diameter of the outer wall **42** including the threads **43**.

[0047] In an alternative embodiment, the seal **16** may not define one continuous circumferential element. Instead, the seal **16** may define a ring with segmented or discontinuous or disconnected or disjointed elements/segments.

[0048] In operation, the bottom lid **40** is threadedly secured to the outer sleeve **32** via the threaded mating mechanism **33**, and then a beverage can **5** is inserted into the opening or cavity **45** of the outer sleeve **32**. The outer walls of the beverage can **5** engage the inner walls of the outer sleeve **32** such that the beverage can **5** engages the seal **16**. At that point, a user applies a slight downward force to the beverage can **5** such that the bottom of the beverage can **5** contacts the top surface **37** of the bottom lid **40** (thus overcoming the friction presented by the seal **16**). The seal **16** operates to secure the beverage can **5** to the outer sleeve **32** threadedly secured to the bottom lid **40** via the threaded mating mechanism **33**.

[0049] The threaded mating mechanism **33** is positioned directly between the outer wall **42** and the inner wall **44**. In other words, the threaded mating mechanism **33** is positioned or placed within the space **46** defined between the outer wall **42** and the inner wall **44**. The inner wall **44** has a height greater than a height of the outer wall **42**. Moreover, the seal **16** is configured to be positioned above a topmost thread of the threaded mating mechanism **33**. Thus, the seal **16** is horizontally offset from the threaded mating mechanism **33**.

[0050] In conclusion, different can coolers have been presented. In one embodiment, a can cooler includes an inner sleeve within a housing, as well as a seal contacting a bottom region of the inner sleeve to secure a can within the

housing. In another embodiment, a can cooler includes a housing and a bottom lid secured to a bottom region of the housing, the bottom lid including a seal for securing a can to the housing. In yet another embodiment, a can cooler includes a housing and a bottom lid secured to a bottom region of the housing, the bottom lid having an outer wall and an inner wall, the outer wall defining threads and the inner wall having a seal for securing a can to the housing.

[0051] While there have been shown, described and pointed out fundamental novel features of the present principles, it will be understood that various omissions, substitutions and changes in the form and details of the methods described and devices illustrated, and in their operation, may be made by those skilled in the art without departing from the spirit of the same. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same way to achieve the same results are within the scope of the present principles. Moreover, it should be recognized that structures and/or elements and/or method steps shown and/or described in connection with any disclosed form or implementation of the present principles may be incorporated in any other disclosed, described or suggested form or implementation as a general matter of design choice. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.

[0052] It should also be understood that the example embodiments disclosed and taught herein are susceptible to numerous and various modifications and alternative forms. Thus, the use of a singular term, such as, but not limited to, "a" and the like, is not intended as limiting of the number of items. Furthermore, the naming conventions for the various components, functions, parameters, thresholds, and other elements used herein are provided as examples, and can be given a different name or label. The use of the term "or" is not limited to exclusive "or" but can also mean "and/or".

[0053] Having described preferred embodiments, which serve to illustrate various concepts, structures and techniques that are the subject of this patent, it will now become apparent to those of ordinary skill in the art that other embodiments incorporating these concepts, structures and techniques may be used. Additionally, elements of different embodiments described herein may be combined to form other embodiments not specifically set forth above.

[0054] Accordingly, it is submitted that that scope of the patent should not be limited to the described embodiments but rather should be limited only by the spirit and scope of the following claims.

1. A can cooler comprising:
- a housing having a threaded mating mechanism disposed on a lowermost region of inner sidewalls of the housing; and
- a bottom lid releasably secured to a bottom region of the housing, the bottom lid including an upper portion and a lower portion, the upper portion defining a seal circumferentially disposed therein, wherein the seal engages a can received within a top cavity of the housing.

2. The can cooler of claim **1**, wherein the seal is positioned approximately ½ of an inch from a top surface of the bottom lid.

3. The can cooler of claim **1**, wherein the seal is positioned approximately ¼ of an inch from a top surface of the bottom lid.

4. The can cooler of claim **1**, wherein the lower portion of the bottom lid includes threads configured to releasably couple with the threaded mating mechanism of the housing.

5. The can cooler of claim **1**, wherein a bottom surface of the can contacts a top surface of the bottom lid such that the seal engages a lowermost region of the can.

6. The can cooler of claim **1**, wherein the upper portion of the bottom lid is vertically aligned with sidewalls of the housing and wherein the seal is vertically aligned with the top cavity of the housing.

7. A can cooler comprising:
- a housing having a threaded mating mechanism disposed at a distal end thereof such that the threaded mating mechanism extends beyond a distalmost end of the housing; and
- a bottom lid releasably secured to a bottom region of the housing, the bottom lid including an outer wall and an inner wall, the outer wall defining threads on an inner surface thereof and the inner wall defining a seal circumferentially disposed therein, wherein the seal engages a can received within a top cavity of the housing.

8. The can cooler of claim **7**, wherein the seal is positioned approximately ½ of an inch from a top surface of the bottom lid.

9. The can cooler of claim **7**, wherein the seal is positioned approximately ¼ of an inch from a top surface of the bottom lid.

10. The can cooler of claim **7**, wherein the threads of the outer wall are configured to releasably couple with the threaded mating mechanism of the housing.

11. The can cooler of claim **7**, wherein a bottom surface of the can contacts a top surface of the bottom lid such that the seal engages a lowermost region of the can.

12. The can cooler of claim **7**, wherein the upper portion of the bottom lid is vertically aligned with sidewalls of the housing and wherein the seal is vertically aligned with the top cavity of the housing.

13. The can cooler of claim **7**, wherein the threaded mating mechanism of the housing is securedly positioned between the outer wall and the inner wall.

14. The can cooler of claim **7**, wherein the inner wall has a first height and the outer wall has a second height, wherein the first height is greater than the second height.

15. A can cooler comprising:
- a housing;
- an inner sleeve securedly fixed within the housing; and
- a seal circumferentially disposed within the inner sleeve, wherein the seal engages a can received within a top cavity of the housing.

16. The can cooler of claim **15**, wherein the seal is positioned approximately ½ of an inch from a bottom surface of the inner sleeve.

17. The can cooler of claim **15**, wherein the seal is positioned approximately ¼ of an inch from a bottom surface of the inner sleeve.

18. The can cooler of claim **15**, wherein a bottom surface of the can contacts a bottom surface of the inner sleeve such that the seal engages a lowermost region of the can.

19. The can cooler of claim **15**, wherein the seal includes a plurality of seals.

20. The can cooler of claim **15**, wherein the seal is a segmented seal.

* * * * *