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(54) **CUSPIDOR FUNNELS ATTACHABLE TO EMPTY DRINK CONTAINERS**

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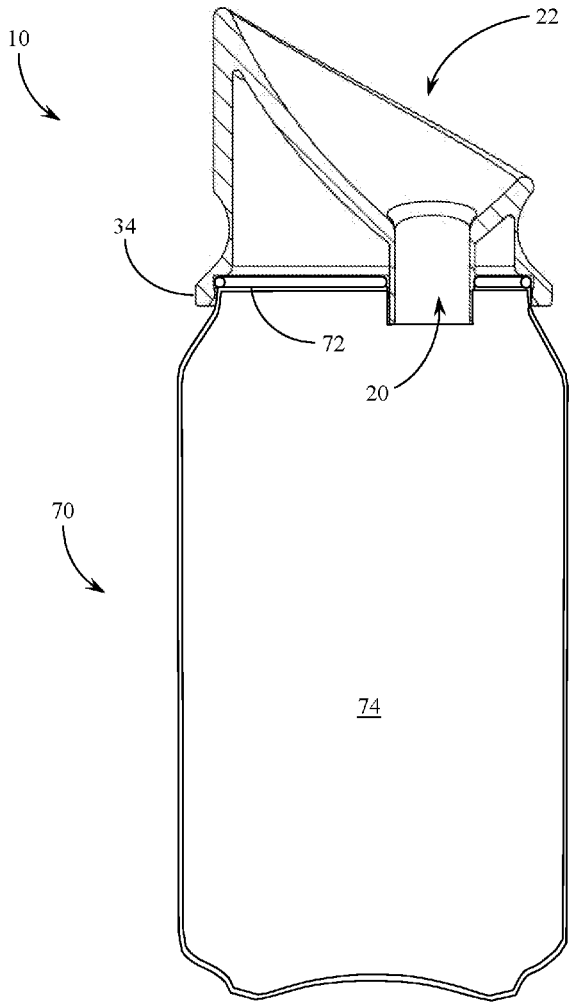
CPC ***A61J 19/00*** (2013.01)

(57) **ABSTRACT**

Two embodiments of a cuspidor funnel are described, each of which may be securely attached to an empty beverage container, and then detached from the container with the container being disposed of after use. A first is attached to a standard sized beverage can while the second is structured to be attached to a standard sized beverage bottle. The can embodiment includes a cylindrical structure that snaps onto the beverage can top rim and positions a funnel neck into the opening of the beverage can typical of a press-tab opening soda or beer can. This funnel neck receives fluid captured by the angled funnel wall formed on the top face of the cuspidor funnel. The beverage bottle embodiment includes a generally cylindrical structure that is threaded onto the beverage bottle opening typical of most single serving plastic beverage bottle containers.



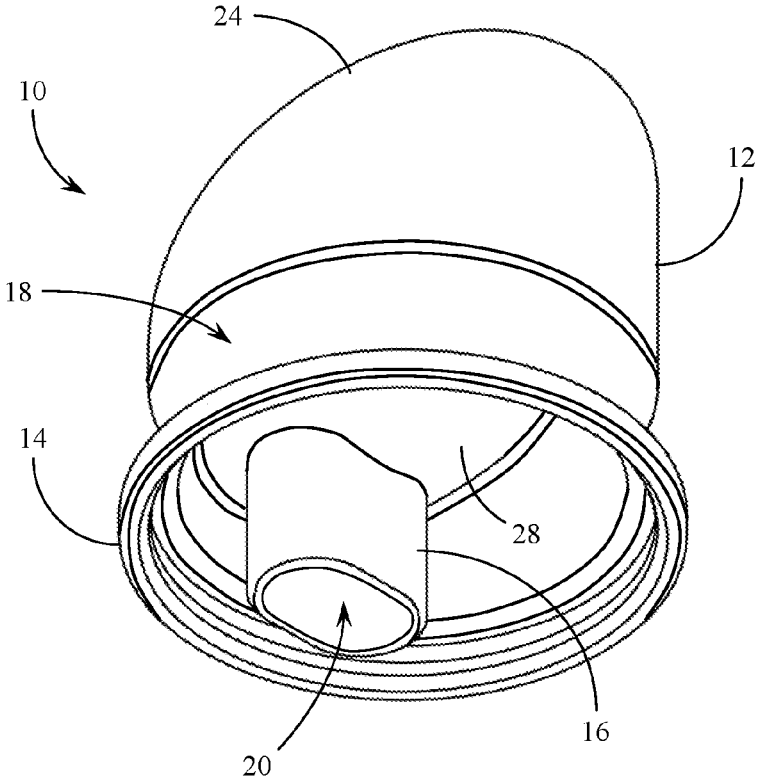


Fig. 1A

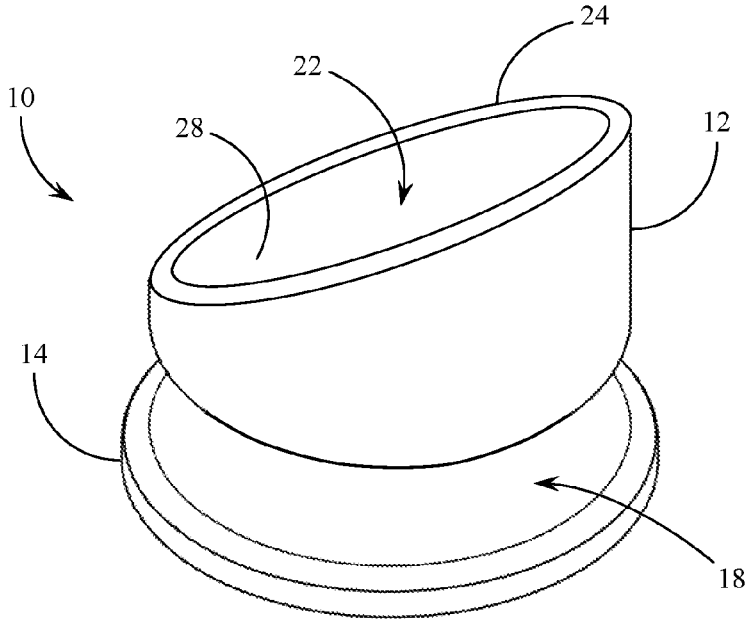


Fig. 1B

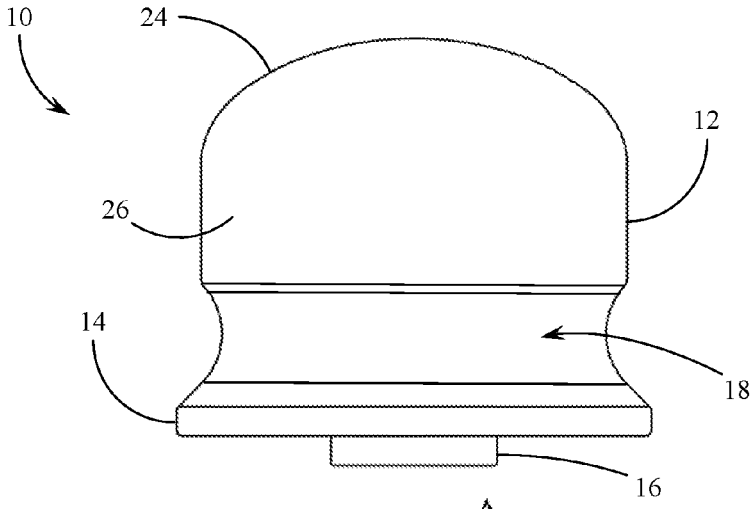


Fig. 2A

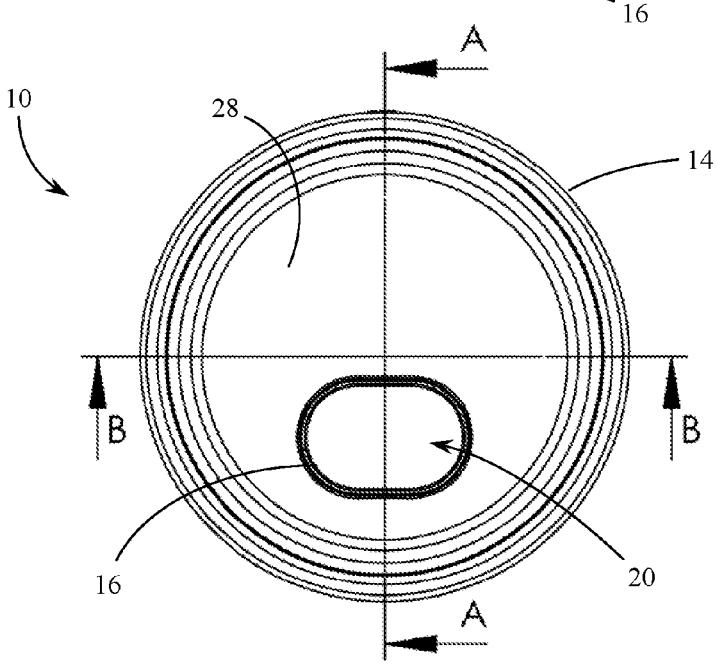


Fig. 2B

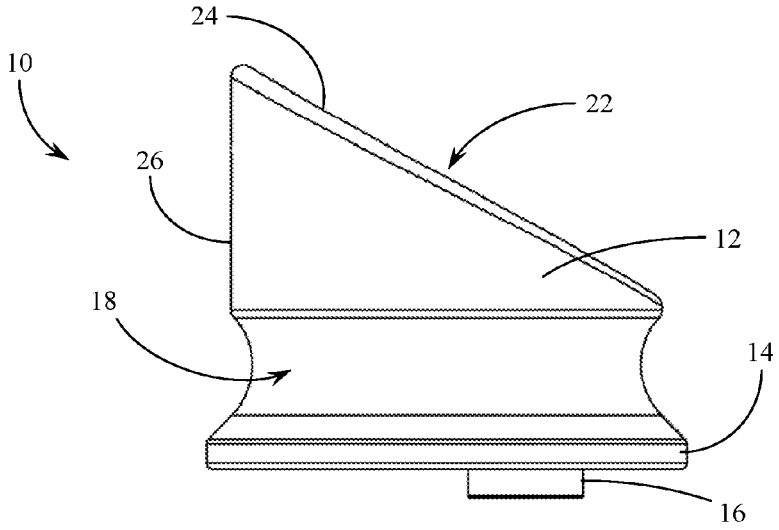


Fig. 2C

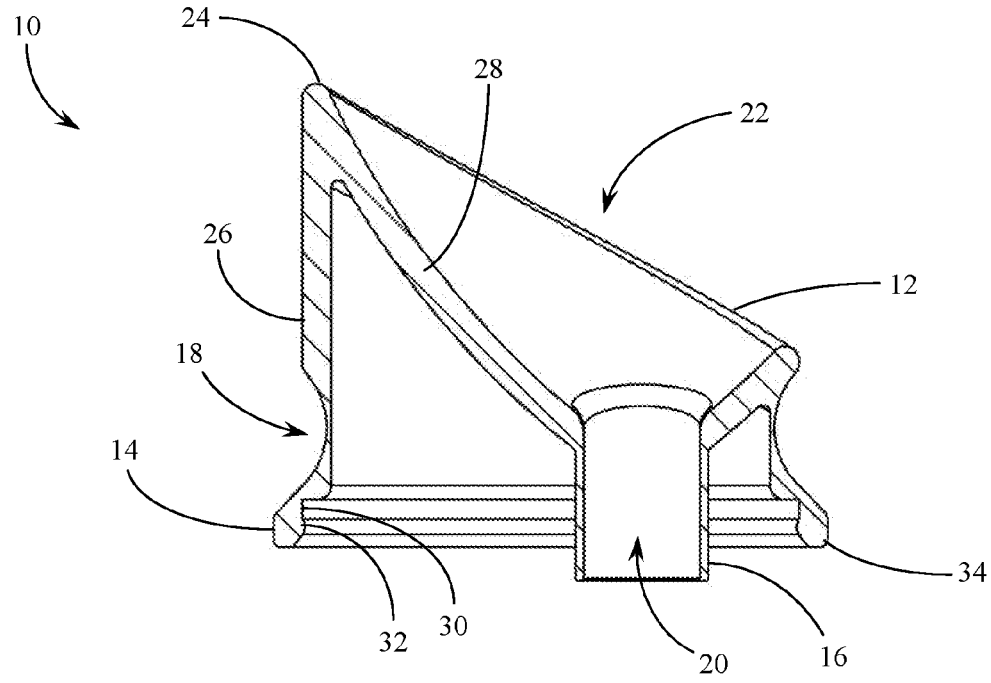


Fig. 3A
(A - A′)

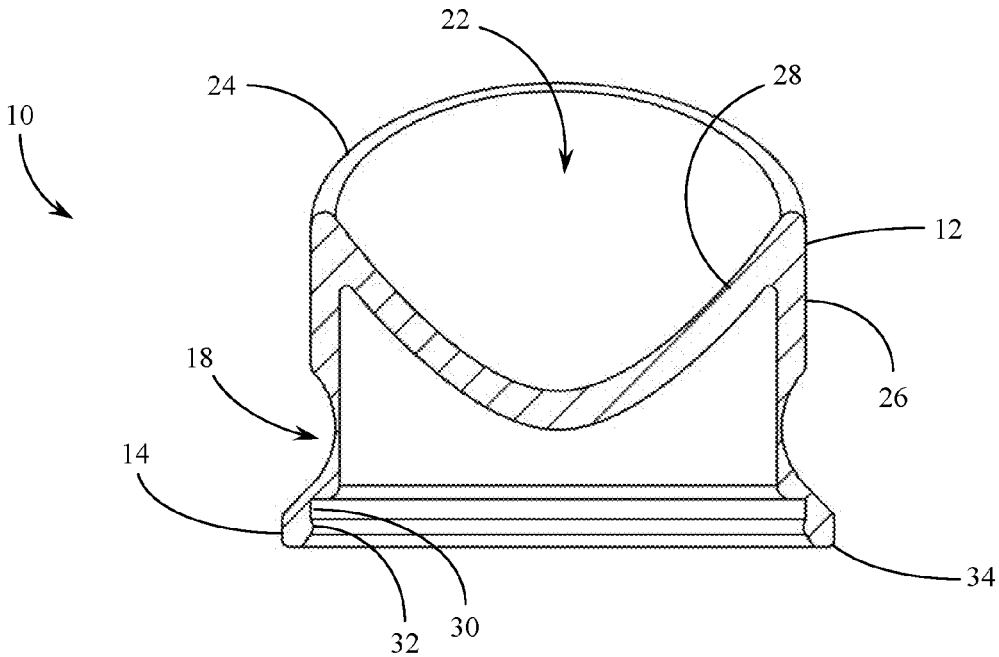


Fig. 3B
(B - B′)

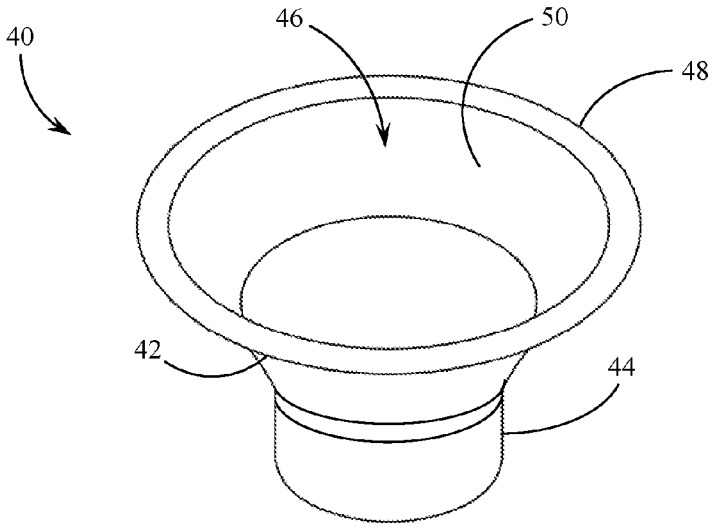


Fig. 4A

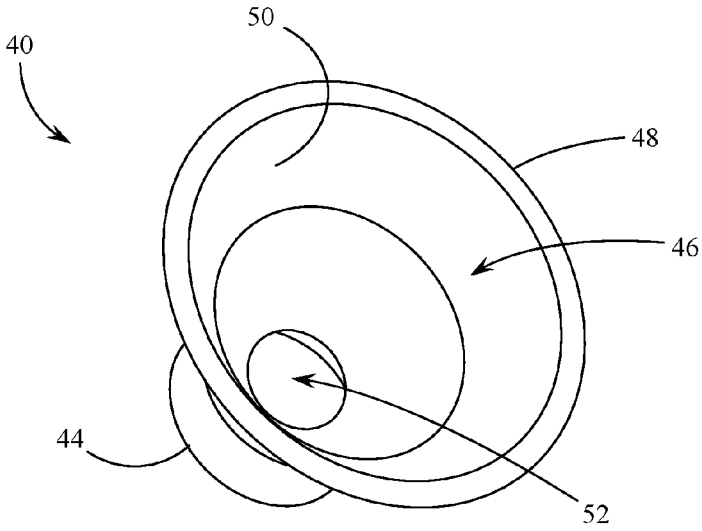


Fig. 4B

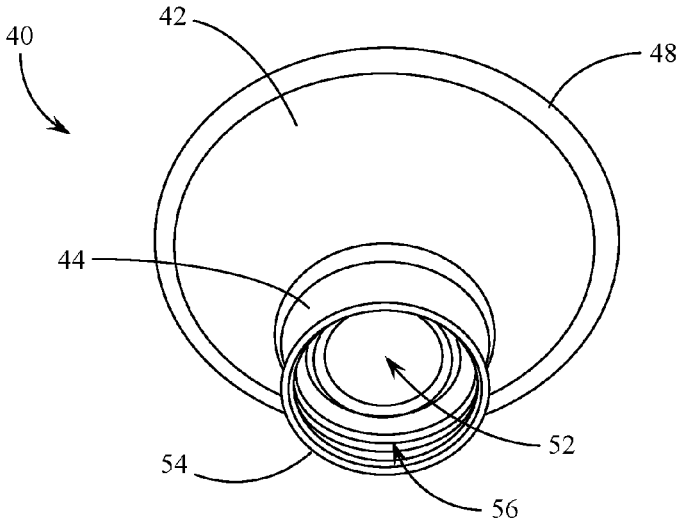


Fig. 4C

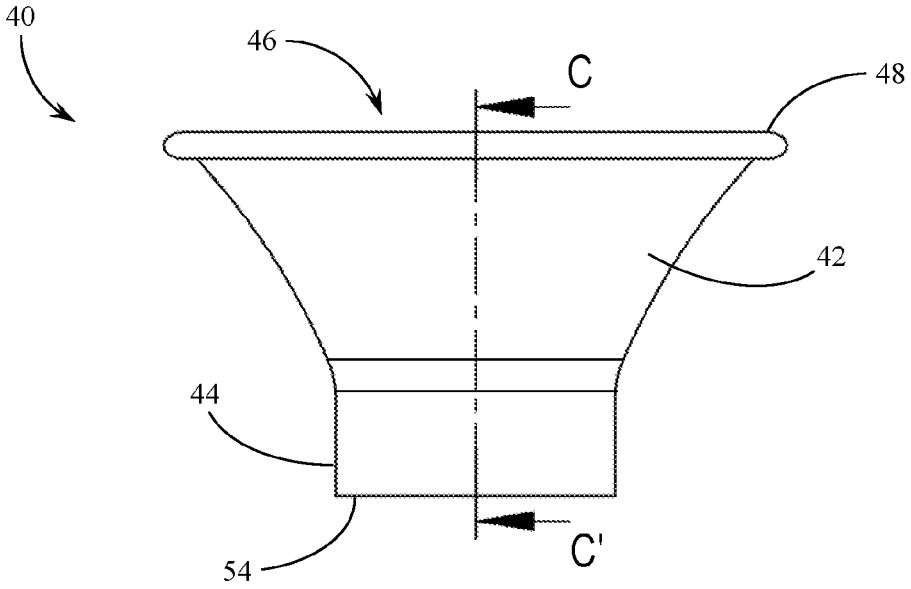


Fig. 5A

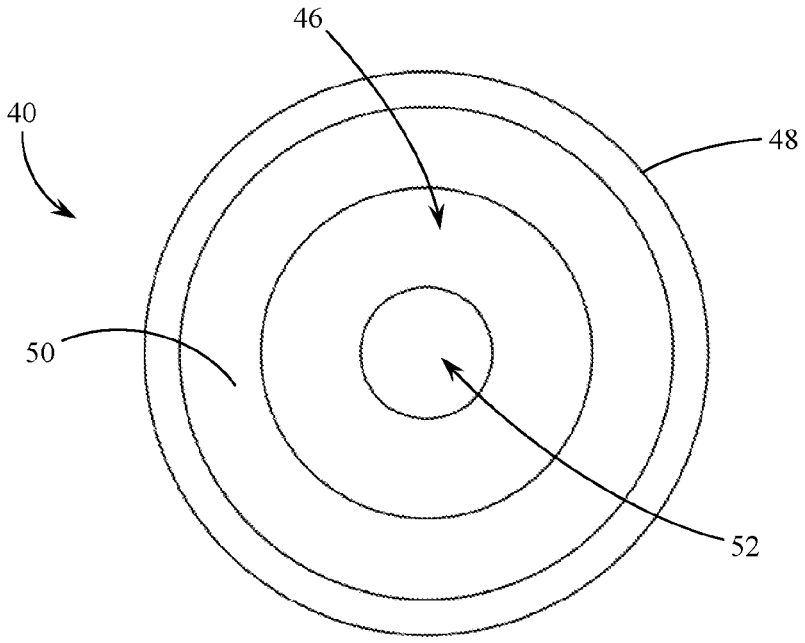


Fig. 5B

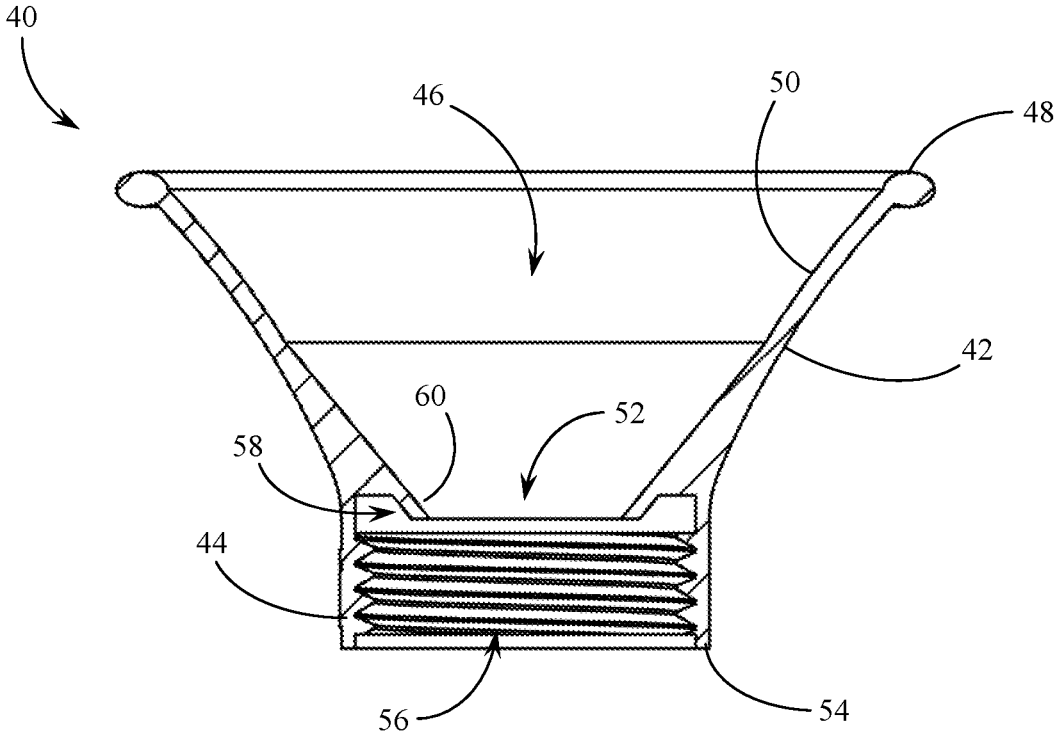


Fig. 6
(C - C′)

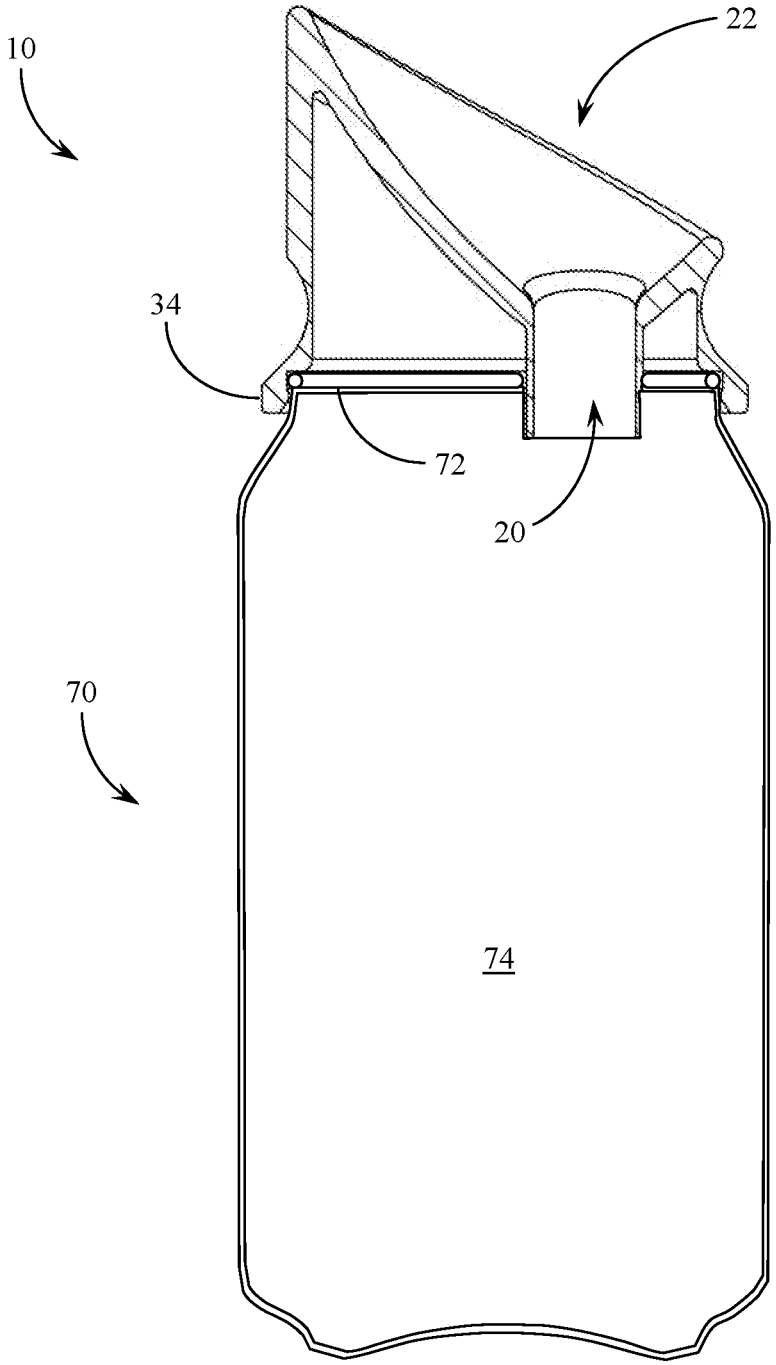


Fig. 7

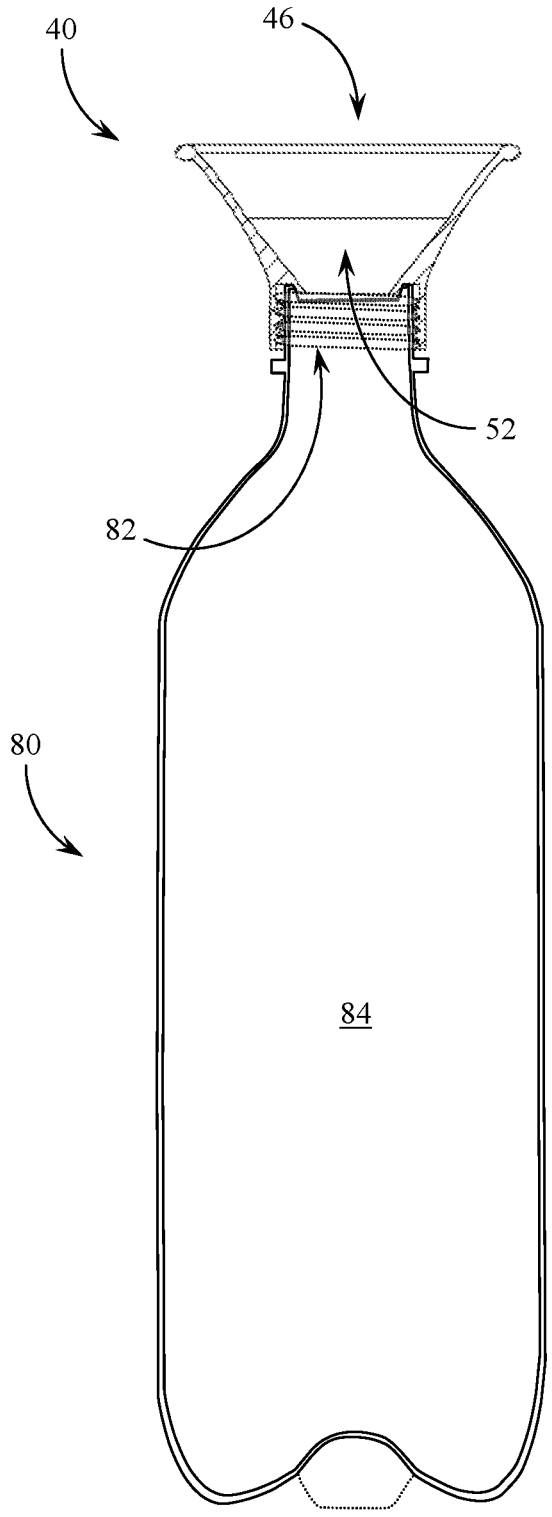


Fig. 8

CUSPIDOR FUNNELS ATTACHABLE TO EMPTY DRINK CONTAINERS

CROSS REFERENCES TO RELATED APPLICATIONS

[0001] This application claims the benefit under Title 35 United States Code §119(e) of U.S. Provisional Patent Application Ser. No. 62/252,344; Filed: Nov. 7, 2015; the full disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates generally to funnels for use with conducting fluids into containers. The present invention relates more specifically to funnels configured to be attachable to standard sized entry drink containers for use as portable hand held cuspidors.

[0004] 2. Description of the Related Art

[0005] Efforts have been made in the past to provide custom funnels for conducting fluids into containers where the fluids may be adequately contained or stored until disposed of. Efforts have also been made in the past to create cuspidors with funnel shaped openings that receive and retain the expelled saliva of an individual using the cuspidor. Such individuals may include, but are not limited to, those that use chewing tobacco or moist snuff (dipping tobacco). Large cuspidors or spittoons with funnel shaped openings have been known for decades. There are, however, very few personal sized cuspidors that function well to receive and retain the expelled saliva of the individual user.

[0006] Most individuals that utilize chewing tobacco or dipping tobacco indoors (or in other locations where the saliva may not simply be expelled onto the ground) will attempt to utilize any small container that might be readily available as a cuspidor. In most cases, the containers that are available are empty beverage containers such as the twelve ounce beverage cans or twenty ounce beverage bottle. Unfortunately, the openings on each of these types of beverage containers are relatively small, making it difficult for the user to cleanly expel saliva fully into the container without ending up with at least some saliva on the exterior of the container and/or on the hand of the user.

[0007] Personal cuspidors of any size are generally impractical as few users would choose to carry around a container of the size that would be required to make the personal cuspidor useful. It would be much more practical to have a small funnel that may be discretely carried by an individual and then utilized in association with an available empty beverage container of one of the types that is ubiquitous in modern society (namely the beverage can or beverage bottle). Whereas a specifically design personal cuspidor, even if it was of a size suitable for being carried around, would require emptying and cleaning after use, a cuspidor funnel could simply be removed from the beverage container and the container disposed of (recycled).

SUMMARY OF THE INVENTION

[0008] The present invention therefore provides two embodiments of a cuspidor funnel that may be securely attached to an empty beverage container so that the container may be used as a personal cuspidor, and then detached from the container with the container being disposed of after use. A first embodiment is structured to be attached to a standard sized twelve ounce beverage can (of the type typically used for soda and/or beer) while the second embodiment is structured to be attached to a standard sized twenty ounce beverage bottle (of the type used for soda and/or bottled water). The beverage can embodiment includes a generally cylindrical structure that snaps onto the beverage can top rim and positions a funnel neck into the oval opening in the beverage can that is typical of a press-top soda or beer can. This funnel neck receives fluid captured by the angled funnel wall formed on the top face of the cuspidor funnel device. The beverage bottle embodiment includes a generally cylindrical structure that is threaded or screwed onto the beverage bottle threaded opening that is typical of most single serving sized plastic beverage bottle containers. The cuspidor funnels are preferably constructed of a molded plastic polymer material that is rigid enough to retain its funnel shape but flexible enough to provide the ability to snap-receive a can rim into a formed channel to secure the structure to the can. While variations in the overall volume of beverage cans and beverage bottles do exist, the vast majority adhere to very specific dimensions for the can top diameters, the push tab openings, the bottle neck diameters, and the bottle neck threading.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIGS. **1**A & **1**B are perspective views of a first cuspidor funnel embodiment of the present invention attachable to an empty beverage can.

[0010] FIG. **2**A is a front elevational view of the first (beverage can) cuspidor funnel embodiment of the present invention.

[0011] FIG. **2**B is a top plan view of the first (beverage can) cuspidor funnel embodiment of the present invention.

[0012] FIG. **2**C is a side elevational view of the first (beverage can) cuspidor funnel embodiment of the present invention.

[0013] FIG. **3**A is a detailed cross-sectional view of the first (beverage can) cuspidor funnel embodiment of the present invention, taken along section line A-A' in FIG. **2**B.

[0014] FIG. **3**B is a detailed cross-sectional view of the first (beverage can) cuspidor funnel embodiment of the present invention, taken along section line B-B' in FIG. **2**B.

[0015] FIGS. **4**A-**4**C are perspective views of a second cuspidor funnel embodiment of the present invention attachable to an empty beverage bottle.

[0016] FIG. **5**A is a side elevational view of the second (beverage bottle) cuspidor funnel embodiment of the present invention.

[0017] FIG. **5**B is a top plan view of the second (beverage bottle) cuspidor funnel embodiment of the present invention.

[0018] FIG. **6** is a detailed cross-sectional view of the second (beverage bottle) cuspidor funnel embodiment of the present invention taken along section line C-C' in FIG. **5**A.

[0019] FIG. **7** is cross-sectional view of the first (beverage can) cuspidor funnel of the present invention shown attached to a typical empty beverage can.

[0020] FIG. **8** is cross-sectional view of the second (beverage can) cuspidor funnel of the present invention shown attached to a typical empty beverage bottle.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] Reference made first to FIGS. **1**A & **1**B; **2**A-**2**C; and **3**A & **3**B for a description of the first preferred embodiment of the present invention structured for attachment to an empty beverage can container. FIGS. **1**A & **1**B are perspective views of the first cuspidor funnel embodiment of the present invention, showing the manner in which the device is attachable to an empty beverage can. FIG. **1**A is a perspective view of the cuspidor funnel from below the funnel opening showing the structures that direct fluid flow into the empty beverage can. FIG. **1**B is a perspective view from above the funnel showing the manner in which it would be positioned and secured on top of an empty beverage can container.

[0022] In FIGS. **1**A & **1**B, can cuspidor funnel **10** is shown to be generally constructed of funnel cylinder **12** with connection cylinder **14** attachable to the beverage can (not shown in this view). Funnel neck **16** (seen only in FIG. **1**A) extends from the funnel opening through the cuspidor funnel structure to the generally oval shaped opening of the typical press tab beverage can lid. A grip channel **18** is formed between funnel cylinder **12** and connection cylinder **14** that facilitates the attachment and removal of the funnel to and from the empty beverage can. The manner in which can cuspidor funnel **10** is attached to a beverage can is shown and described in more detail below with respect to FIG. **7**.

[0023] Can cuspidor funnel **10** defines an upper funnel opening **22** and a lower funnel throat **20**. It is through these structures that fluid, such as the saliva of the individual using the cuspidor, flows from outside the beverage container to the inside where it may be adequately retained. Funnel opening **22** is defined by funnel rim **24** and funnel wall **28** which, in the preferred embodiment, establish a generally circular funnel with an angled opening that allows the user to implement either the lower rim edge of the funnel or the raised rim edge of the funnel in order to dispose saliva into the cuspidor. In other words, the user may orient the funnel positioned on top of the empty beverage can so as to direct saliva over either the lower edge of the funnel (to the left as seen in FIG. **1**B) or the raised edge of the funnel (to the right as seen in FIG. **1**B).

[0024] The structure of can cuspidor funnel **10** as shown in FIGS. **1**A & **1**B is preferably manufactured from an injection molded polymer plastic material having sufficient rigidity to maintain the general structure of the device, but with sufficient flexibility to permit snap on attachment of connector cylinder **14** to the rimmed edge of the typical empty beverage can container. Various polymer plastic materials known in the industry are suitable for this molded construction.

[0025] Reference is next made to FIGS. **2**A-**2**C which show in greater detail the various structural elements of can cuspidor funnel **10**. FIG. **2**A is an elevational front view of the beverage can cuspidor funnel showing the raised edge of funnel rim **24** extending towards the viewer in this orientation. Cylinder wall **26** forms the outer surface of the funnel cylinder **12**. Below cylinder wall **26** is grip channel **18** formed between funnel cylinder **12** and connection cylinder **14**. Grip channel **18** is sized to accommodate the fingers of the hand of the user such that the user may easily snap the cuspidor funnel onto the top rim of the typical beverage can and/or remove the cuspidor funnel from the lid after use. In the view of FIG. **2**A, funnel neck **16** is shown to extend slightly below the lower edge of connection cylinder **14** in a manner that allows it to be partially inserted into the similarly shaped oval opening of the typical press tab opening of the beverage container. In this manner, little or no fluid flows from the funnel onto the top of the beverage container, flowing instead directly into the container, where it is adequately contained even if the container is not held fully upright.

[0026] FIG. **2**B is a top plan view of can cuspidor funnel **10** showing again the funnel throat **20** and its oval shape that generally matches the oval shape of the beverage can opening. Funnel neck **16** is sized to just insert within the standard can opening with little clearance on its perimeter for any leakage to occur. The cross-sectional views of FIGS. **3**A & **3**B are placed and positioned by the section lines shown in FIG. **2**B. Otherwise, the dimensions of connection cylinder **14** are such as to provide the appropriate diameter rim channel that securely snaps onto the raised rim edge of the beverage container. Funnel throat **20**, as defined by funnel neck **16**, is seen to be offset from a central axis of the circular cylindrical structure of cuspidor funnel **10**. This placement aligns funnel neck **16** with the generally standard off-center position of the typical push tab opening in most beverage can tops. The raised and lowered portions of funnel wall **28** are correspondingly oriented to facilitate the various funnel access preferences of the user, as described herein.

[0027] FIG. **2**C again discloses the manner in which the upper funnel rim **24** is angled so as to present a raised side and a lowered side to allow the user various approaches for utilizing the cuspidor for its intended purpose. Some individuals may prefer to dispose saliva onto the raised edge (left side of the diagram in FIG. **2**C) while others may prefer to spit the saliva over the lower edge of funnel rim **34** (the right side of the diagram in FIG. **2**C). In either case, the saliva or fluid is channeled by the tapering funnel wall **28** into funnel throat **20** by way of funnel neck **16** through the opening of the beverage can into the interior of the container.

[0028] FIG. **3**A is a cross-sectional view of can cuspidor funnel **10** taken along section line A-A' of FIG. **2**B. In this view, the overall interior shape of the funnel is disclosed with funnel wall **28** being generally large on one side of funnel throat **20** and small on the opposing side. This cross-sectional view further discloses the manner in which cylinder wall **26** surrounds and supports funnel wall **28** and defines an empty volume between the two components that in use simply sits above the top of the beverage container, closed off from external access. The manner in which funnel neck **16** extends below funnel wall **28** and down past the position of the beverage can top into the interior of the beverage can is also seen in FIG. **3**A.

[0029] Further shown in FIG. **3**A is a cross-sectional view of the manner in which connection cylinder **14** is structured to snap onto the typical raised edge rim of a beverage can container. In cross-section, connection cylinder **14** is shown to include can rim groove **30** positioned inside of connection cylinder rim **32**. The external edge of connection cylinder **14** is defined by connection cylinder perimeter edge **34**. With these structures, also seen in FIG. **3**B, the edge of the typical beverage can top may snap into can rim groove **30** after passing connection cylinder rim **32** and thereby tightly secure cuspidor funnel **10** onto the top of the beverage can until it is intentionally removed by the user. Again, grip channel **18** facilitates user attachment of the funnel to the top of the can, as well as its subsequent removal.

[0030] FIG. **3**B is a cross-sectional view of cuspidor funnel **10** taken along section line B-B' in FIG. **2**B and discloses the raised portion of funnel opening **22** with funnel wall **28** and funnel rim **24** shown extending from the lower side of the funnel looking toward the upper side of the funnel. Again, the manner in which cylinder wall **26** surrounds and supports funnel wall **28** to define an interior empty space is shown. In addition, the structure of connection cylinder perimeter edge **34** defining the outer perimeter of connection cylinder **14** as well as the interior can rim groove **30** with connection cylinder rim **32** positioned below, are clearly seen in FIG. **3**B.

[0031] Reference is next made to FIG. **7** which is a cross-sectional view of the first (beverage can) cuspidor funnel embodiment of the present invention shown attached to a typical empty beverage can. In this view, can cuspidor funnel **10** is shown attached to empty beverage can **70** as would be typically secured and oriented for use. As described above, funnel throat **20** extends into beverage can interior volume **74** so as to dispense fluids into the empty volume without allowing them to leak onto the top of the beverage can between the cuspidor funnel and the can. The structures of connection cylinder perimeter edge **34** and the interior structures now mostly hidden by beverage can rim bead **72** are also disclosed in FIG. **7**. Cuspidor funnel **10** has been snapped into place such that beverage can rim bead **72** is seated within can rim groove **30** (not seen in this view) and secured by connection cylinder rime **32**.

[0032] As can be seen in the cross-sectional view of FIG. **7**, saliva or other fluid that flows through cuspidor funnel **10** into the interior volume **74** of empty beverage can **70** is generally trapped inside the container, even if the container falls over or is otherwise not positioned in the upright orientation shown. While a very full container would, of course, leak back through funnel throat **20** if the container were tipped on its side, or upside down, the modest quantity of fluid disposed within the can container is such that a horizontal orientation of the can that might be a quarter full of fluid, would not find its way back out through funnel throat **20** to leak out of the container. In practice, however, the user would seldom tip the container more than 45° from the vertical such that even a half full container would experience no leakage or drainage.

[0033] Reference is next made to FIGS. **4**A-**4**C; FIGS. **5**A & **5**B; as well as FIGS. **6** & **8**, for a description of an alternate preferred embodiment of the present invention suitable for attachment to an empty beverage bottle container. Bottle cuspidor funnel **40** is generally constructed of funnel body **42** and connection cylinder **44**. Funnel opening **46** is defined by a generally circular funnel rim **48** with funnel wall **50** as shown. Because the exit opening of the funnel is generally centered within the device, the edges of funnel body **42** are radially symmetrical. In other words, there is less need for a raised or lowered edge to the funnel to provide appropriate access to the container opening, centered as it is with a bottle, while offset as it is with a can. The view shown in FIG. **4**B discloses not only the generally circular funnel rim **48** providing the upper edge of funnel wall **50**, but also the generally circular lower opening of the funnel throat **52**. To the extent shown in FIGS. **4**A & **4**B, the structure of bottle cuspidor funnel **40** is generally that of standard, radially symmetrical, fluid flow funnels.

[0034] It is in FIG. **4**C where the unique elements of bottle cuspidor funnel **40** are shown. While the exterior of connection cylinder **44** may preferably be a smooth walled surface, the interior of connection cylinder **44**, inside of connection cylinder perimeter edge **54**, is preferably threaded in the manner shown with connection threading **56**. Funnel throat **52** therefore extends into the bottle neck of the typical beverage container bottle after connection cylinder **44** has been threaded onto the top of the bottle in place of the beverage bottle's standard threaded cap.

[0035] FIG. **5**A is an elevational side view of the beverage bottle cuspidor funnel of the present invention showing its basic geometry similar in some respects to a standard funnel. FIG. **5**B likewise shows basic funnel structures not very different from the typical funnel that might be removeably set into the neck of a bottle without attachment.

[0036] The unique features of bottle cuspidor funnel **40** are seen best in FIG. **6**, which is a cross-sectional view taken along section line C-C' of FIG. **5**A. In FIG. **6**, bottle cuspidor funnel **40** is again shown to be constructed of funnel body **42** and connection cylinder **44**. Funnel opening **46** is defined by funnel rim **48** and funnel wall **50**. These structures reduce down to funnel throat **52** which is sized to be positioned directly onto and over the bottle neck of the beverage container. Connection cylinder **44** is structured with connection cylinder perimeter edge **54** and internal connection threading **56**. At the internal end of threading **54** is connection seat **58** designed to receive the upper perimeter edge of the bottle neck opening. In order to direct fluid from funnel opening **46** through funnel throat **52** and into the empty beverage container without leakage, funnel neck overlap **60** is provided so as to prevent fluids from passing around the threaded portions of the attachment structures.

[0037] Reference is finally made to FIG. **8** which is a cross-sectional view of the second preferred embodiment (the beverage bottle cuspidor) of the present invention positioned on the top of a typical beverage bottle. Bottle cuspidor funnel **40** is positioned onto the beverage bottle neck by way of threading **82** in place of the standard bottle cap that is normally threaded onto the bottle neck to close the container. Beverage bottle interior volume **84** is therefore accessible through funnel throat **52** from funnel opening **46**. Here again, it is seen how the containment method defined by the use of the attachable cuspidor funnel **40** allows for a modest quantity of fluid to be closed within the container even if the container is tipped on its side in a horizontal orientation. With each of the two embodiments described above, it is anticipated that less than a third of the interior volume of the container would be filled before the user would either dispose of the container or empty it for further use. The primary purpose of each of the two embodiments is to allow for the easy assembly of a portable hand held cuspidor device that the user might easily access for a significant period of time, maintaining the fluids securely within the confines of the bottle or can, before such would require emptying or disposal.

[0038] Although the present invention has been described in association with a number of preferred embodiments, those skilled in the art will recognize alternate geometries and structures that would be applicable to alternate container sizes and shapes, without departing from the basic spirit and scope of the invention. While twelve ounce cans and twenty ounce bottles are mentioned as being the typical beverage containers to which the embodiments apply, there is no specific requirement as to the actual volume of the container used. In addition, those skilled in the art will recognize

variations in the material from which the cuspidor funnels are constructed and even the manner of construction (molding or milling). Various other formable materials such as resins or even metals may be used for the construction of the preferred embodiments described.

1. A cuspidor funnel for attachment to an empty beverage container, the beverage container having a container body, a top rim, and a top aperture, the cuspidor funnel comprising:

an upper portion comprising a funnel body and a funnel rim, the funnel body defining a funnel drain; and

a lower portion extending from and supporting the upper portion, the lower portion comprising a beverage container attachment collar;

wherein the attachment collar of the cuspidor funnel is secured to the beverage container at the top rim thereof and oriented so as to align the funnel drain with the top aperture of the beverage container.

2. The cuspidor funnel of claim **1** wherein the empty beverage container is a standard sized beverage can having a rolled rim and a generally oval shaped top aperture; and

wherein the upper portion of the cuspidor funnel comprises a generally circular funnel wall having a central axis and the funnel body defines a generally oval shaped funnel drain with an extended drain wall having a central axis, the central axis of the drain wall offset from the central axis of the funnel wall.

3. The cuspidor funnel of claim **2** wherein the beverage container attachment collar comprises a generally circular edge rim having an internal circular shelf, the internal circular shelf having a diameter generally equal to the diameter of the rolled rim of the beverage can.

4. The cuspidor funnel of claim **1** wherein the upper portion and the lower portion of the funnel are a unitary molded structure of plastic polymer material.

5. The cuspidor funnel of claim **2** wherein the generally circular funnel wall and the funnel rim define a plane angled from a horizontal plane orthogonal to the central axis of the funnel wall.

6. The cuspidor funnel of claim **1** further comprising a middle portion between the upper portion and the lower portion of the cuspidor funnel, the middle portion comprising a generally cylindrical indentation wall sized to be gripped by the hand of the user.

7. The cuspidor funnel of claim **2** wherein the drain wall extends from the funnel drain at least partially into the top aperture of the beverage can.

8. The cuspidor funnel of claim **3** wherein the circular edge rim of the attachment collar comprises a collar extension and wherein the rolled rim of the beverage can is pushed past the collar extension into the internal circular shelf to secure the cuspidor funnel to the beverage container.

9. The cuspidor funnel of claim **1** comprising:

a generally cylindrical support wall having an upper rim and a lower portion;

a funnel wall extending inward from the upper rim of the cylindrical support wall to a funnel drain edge on the lower portion;

a funnel drain tube extending from the funnel drain edge of the funnel wall, the drain tube having a diameter and a length;

an attachment rim extending from the lower portion of the funnel wall, the attachment rim comprising a generally circular wall with an indented interior surface, the indented interior surface having a diameter generally equal to the standard diameter of the top rim of the beverage container;

wherein the cuspidor funnel may be positioned and oriented on the top of an empty beverage container with the funnel tube extending into the beverage container top aperture and the attachment rim secured to the top rim of the beverage container.

10. A cuspidor funnel for attachment to an empty beverage container, the beverage container having a container body, a top rim, and a top aperture, the cuspidor funnel comprising:

a funnel portion comprising a funnel body and a funnel rim, the funnel body defining a funnel drain; and

an attachment portion extending from and supporting the funnel portion, the attachment portion comprising a beverage container attachment edge;

wherein the attachment edge of the cuspidor funnel is secured to the beverage container at the top rim thereof and oriented so as to align the funnel drain with the top aperture of the beverage container.

11. The cuspidor funnel of claim **10** wherein the empty beverage container is a standard sized beverage can having a rolled rim and a generally oval shaped top aperture; and

wherein the funnel portion of the cuspidor funnel comprises a funnel body defining a generally oval shaped funnel drain and drain wall, the oval shaped drain wall extending into the empty beverage container through the generally oval shaped top aperture thereof.

12. The cuspidor funnel of claim **11** wherein the beverage container attachment edge comprises a generally circular edge rim having a beverage container top rim engagement perimeter, the top rim engagement perimeter having a diameter generally equal to the diameter of the rolled rim of the beverage can.

13. The cuspidor funnel of claim **10** wherein the funnel portion and the attachment portion of the funnel are a unitary molded structure of plastic polymer material.

14. The cuspidor funnel of claim **12** wherein the generally circular edge rim of the attachment portion is centered about a first alignment axis and the generally oval shaped funnel drain is centered about a second alignment axis, the second alignment axis offset from the first in an amount generally equal to an offset of a center axis of the beverage container top aperture to a center axis of the beverage container.

15. The cuspidor funnel of claim **14** wherein the funnel rim lies generally within a plane forming an acute angle with the second alignment axis.

16. The cuspidor funnel of claim **10** wherein the attachment portion forms a generally liquid tight seal with the top rim of the beverage container when secured to the beverage container.

17. The cuspidor funnel of claim **11** wherein at least a portion of the funnel rim extends above the drain wall of the generally oval shaped funnel drain.

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