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LEE et al.(10) **Pub. No.: US 2021/0003336 A1**(43) **Pub. Date: Jan. 7, 2021**(54) **FUNCTIONAL WATER BOTTLE WITH ICE FORMING CORE AND ICE MAKING TOOL****Publication Classification**(71) Applicant: **Min Ho LEE**, Chuncheon-si,
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Chuncheon-si, Gangwon-do (KR)(21) Appl. No.: **16/956,939**(22) PCT Filed: **Nov. 22, 2018**(86) PCT No.: **PCT/KR2018/014420**

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ABSTRACT

Provided is a functional water bottle with ice forming core and an ice making tool, the water bottle including: a container body having one side opened and closed by means of a lid, for receiving fluid in a cylindrical form; and an ice holder coupled to one side of the container body and extending toward the inside of the container body, for holding ice, wherein the ice holder holds the ice in such a manner that the ice holder may be inserted into or taken out of the container body.

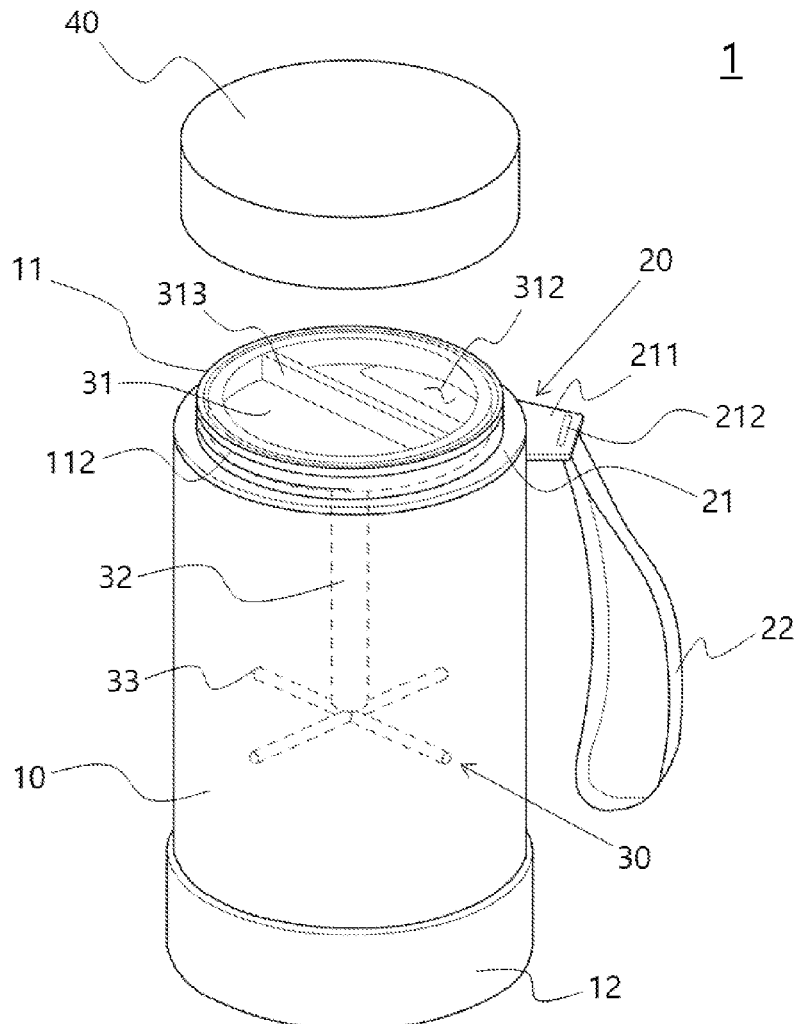
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FIG. 1

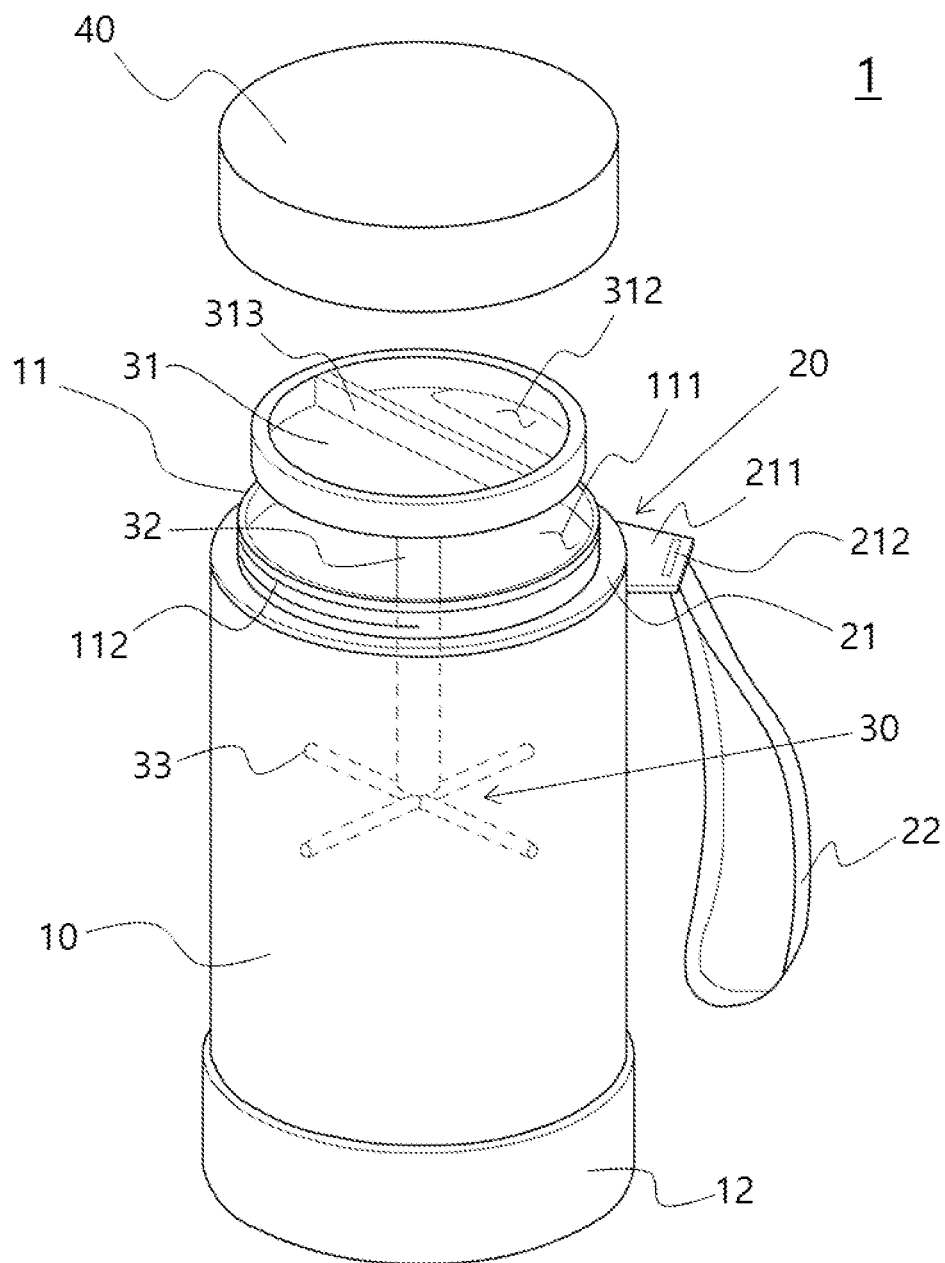


FIG. 2

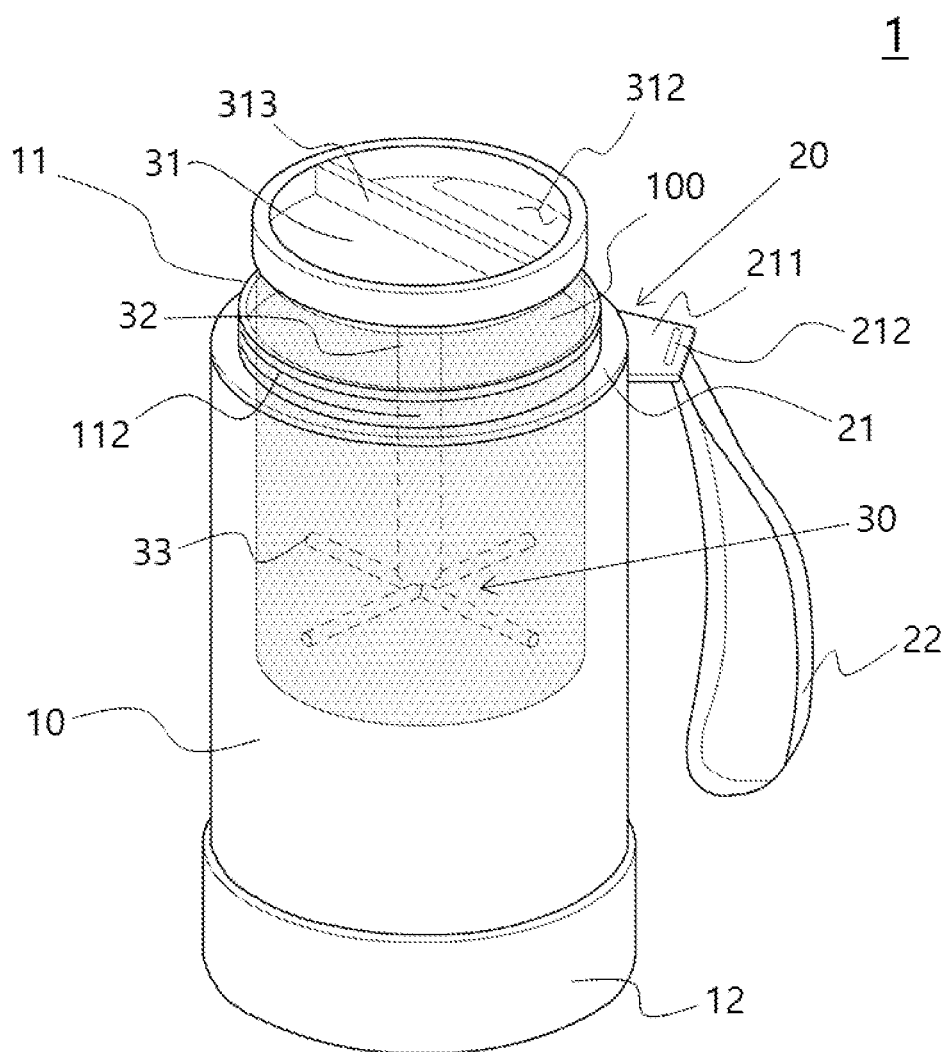


FIG. 3

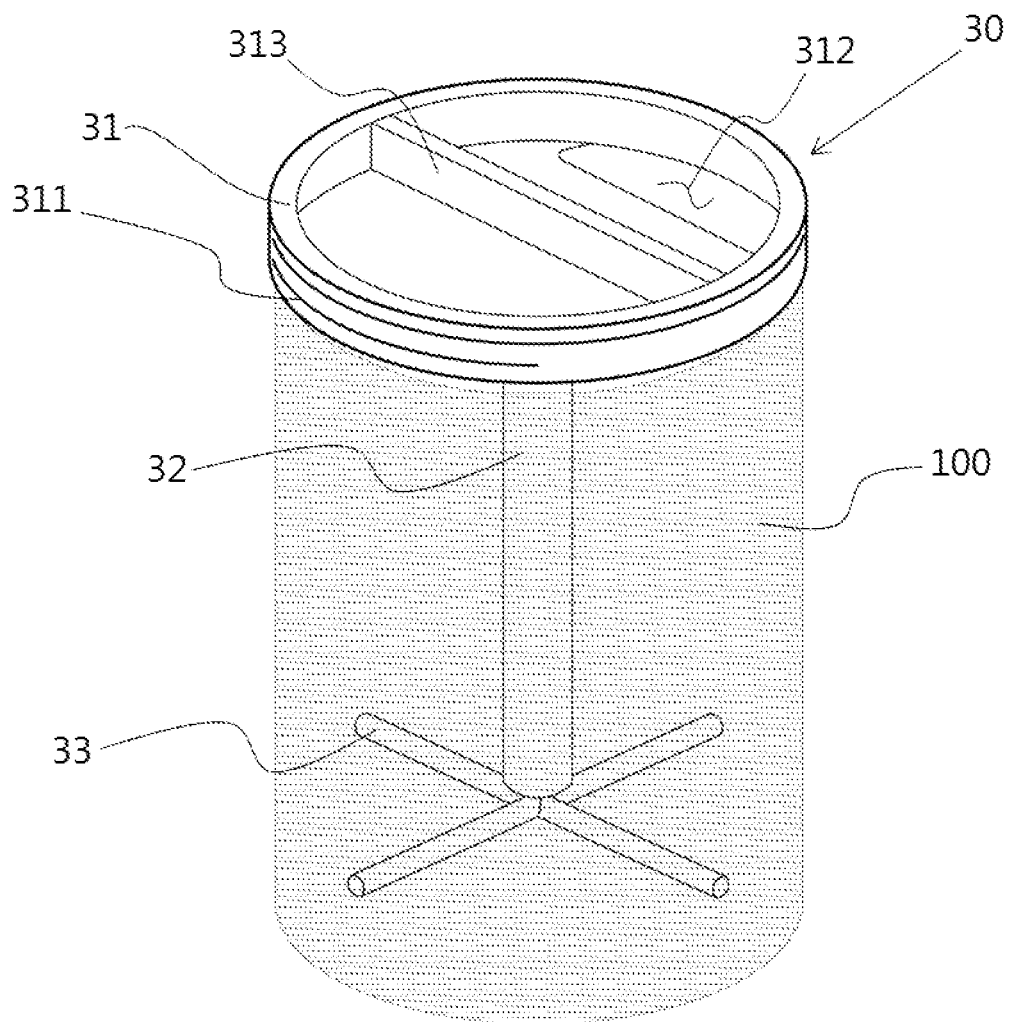


FIG. 4

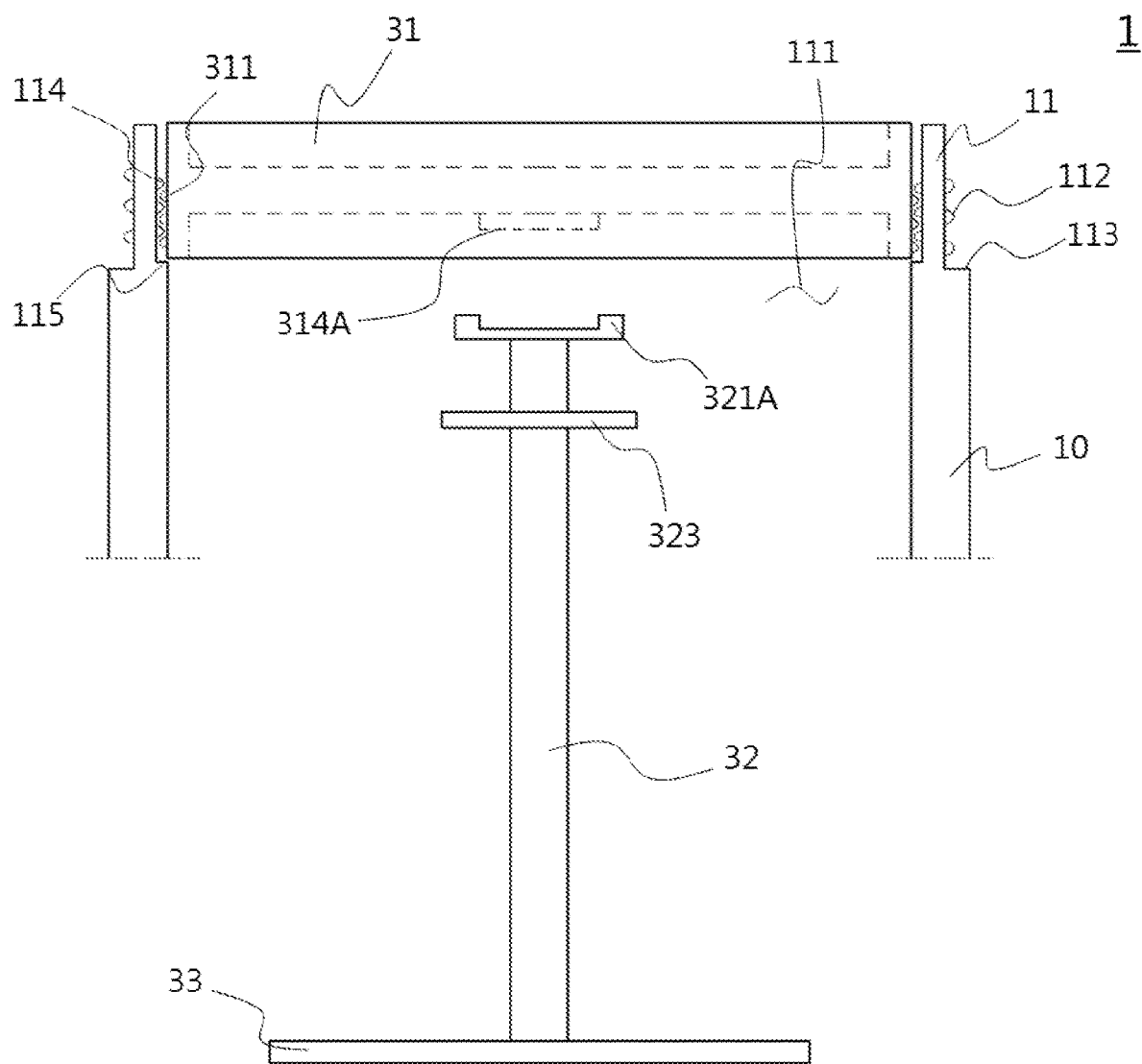


FIG. 5

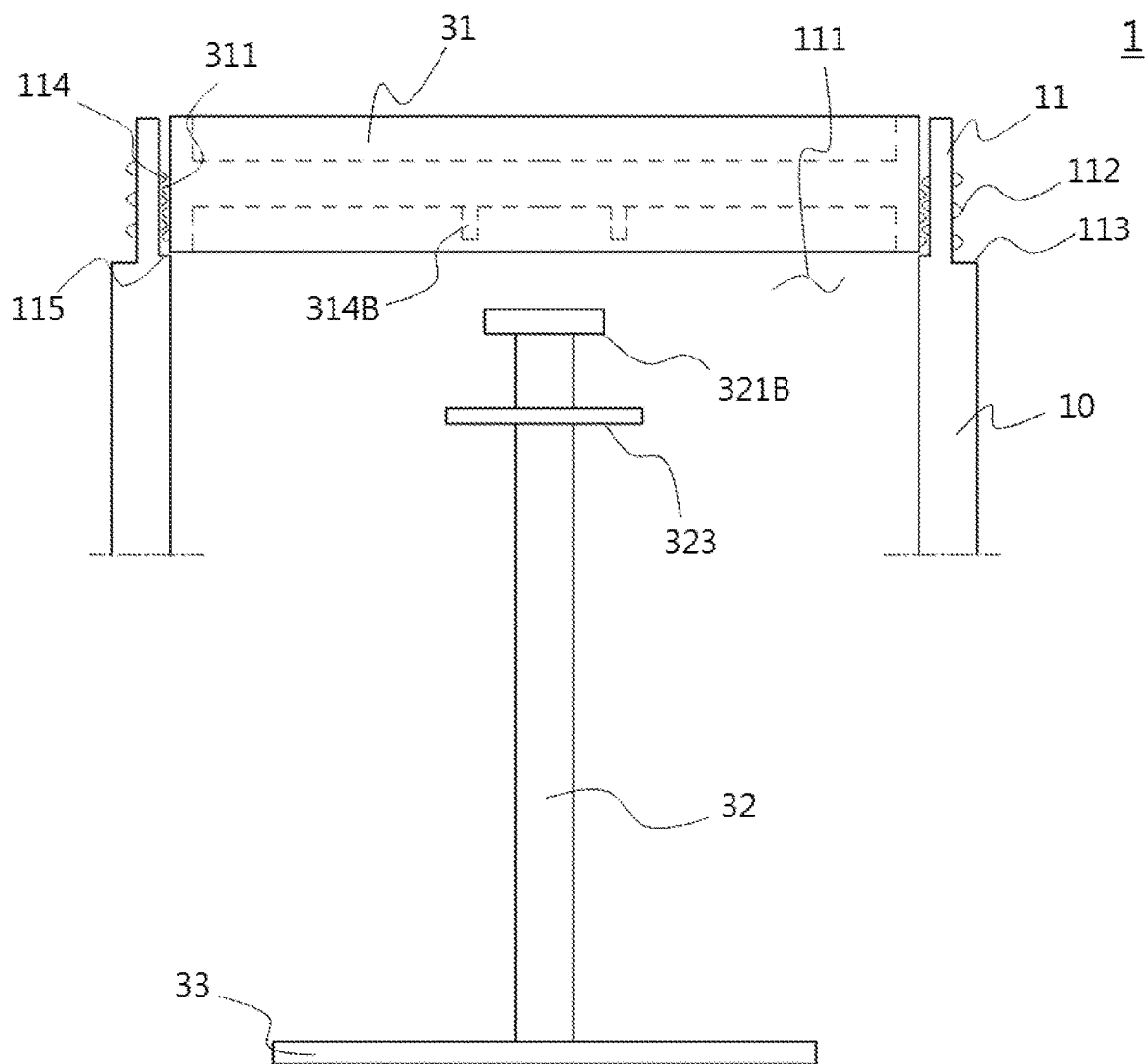


FIG. 6

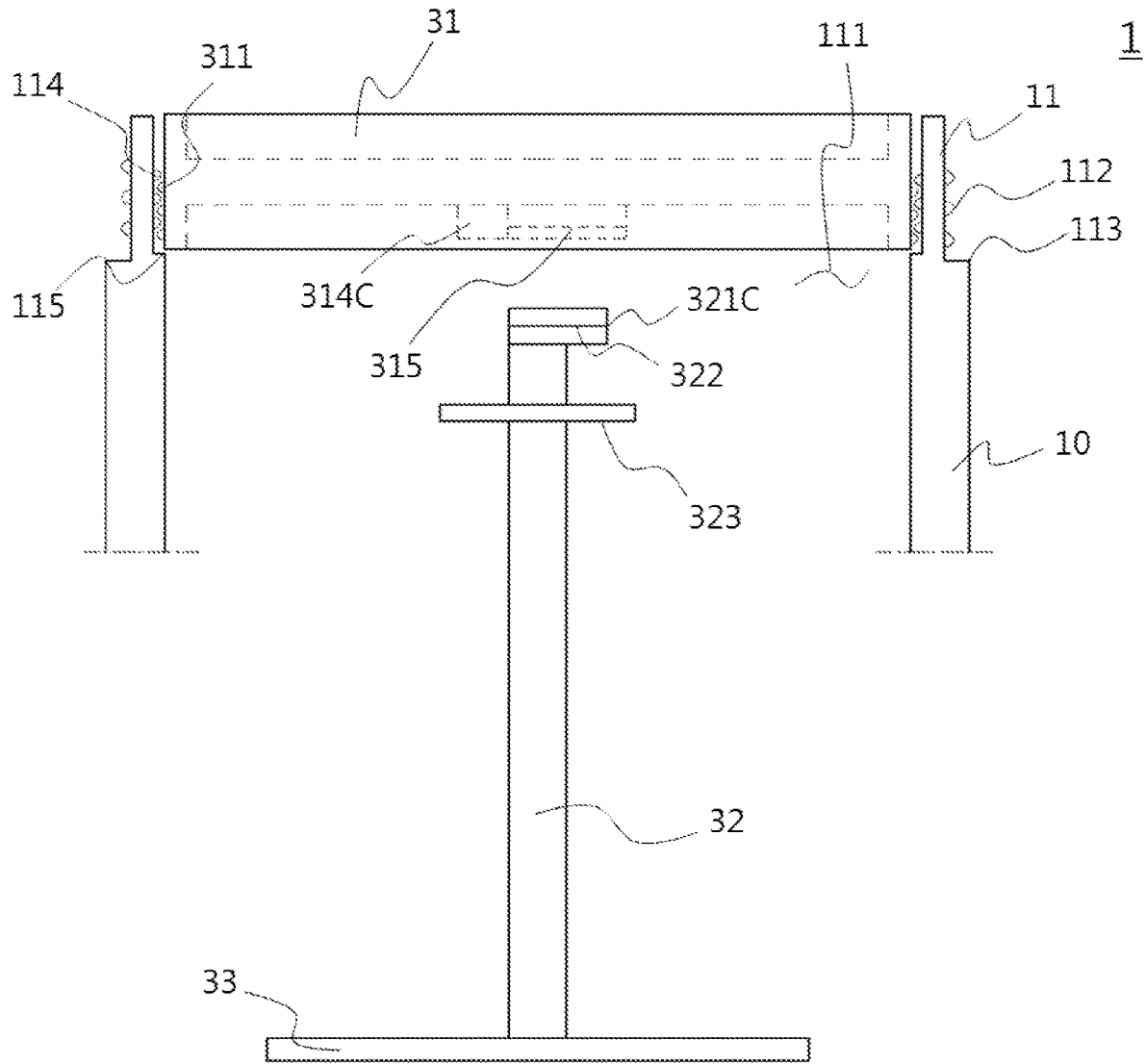


FIG. 7

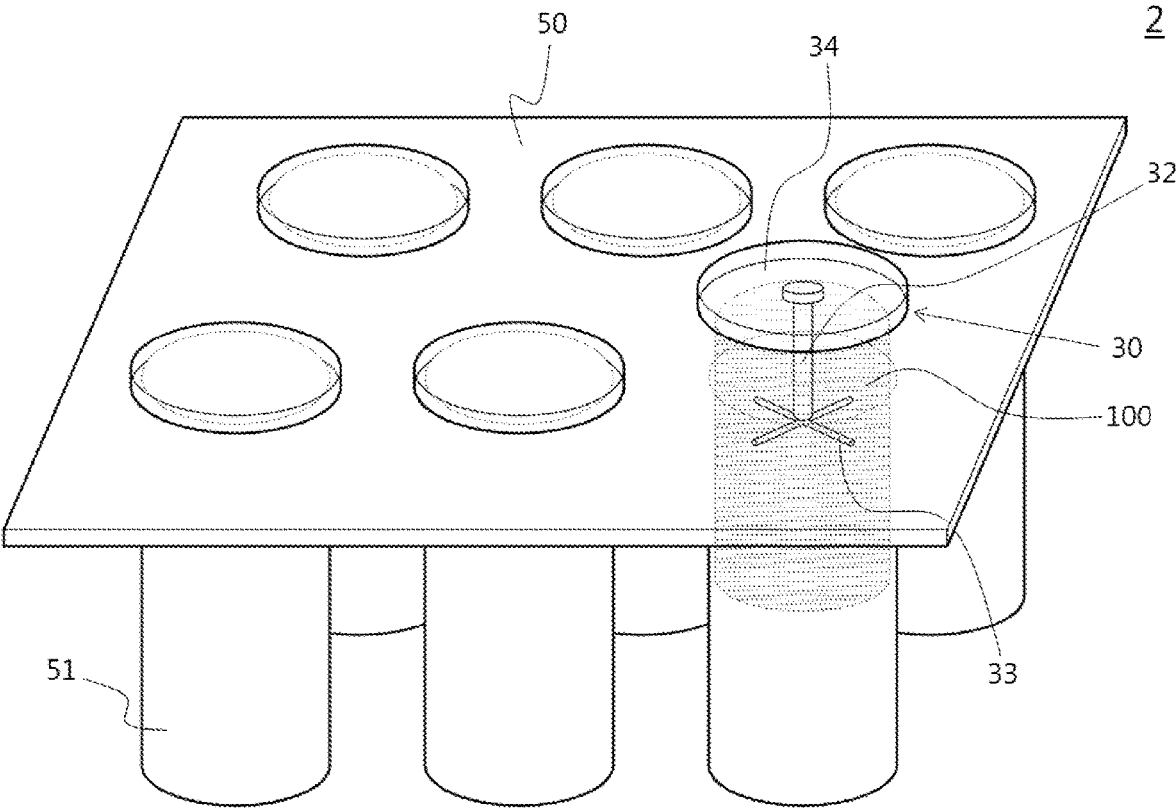


FIG. 8

FUNCTIONAL WATER BOTTLE WITH ICE FORMING CORE AND ICE MAKING TOOL**TECHNICAL FIELD**

[0001] The present invention relates to a functional water bottle to or from which ice is attachable to or detachable from and an ice making tool, and more particularly, to a functional water bottle to or from which ice is attachable or detachable and an ice making tool which significantly increase in convenience of providing ice to a beverage.

BACKGROUND ART

[0002] In general, people use containers having a cylindrical shape and the like to carry drinks. A container includes an inlet, and a lid is openably coupled to the inlet. A user puts a beverage into the container, carries the container while the lid is closed, and drinks the beverage by opening the lid.

[0003] However, the beverage may be accommodated in the container under a temperature condition selected according to ingredients of the beverage, peripheral-environmental conditions (particularly, a temperature), a desire of the user who has the beverage, and the like. It is necessary for the container to have durability which prevents the container or the beverage from being deformed while the beverage is put therein at a temperature desired by the user and to have a thermal insulation property which maintains a relatively uniform temperature of the beverage.

[0004] In addition to maintain the beverage at a high temperature or low temperature using the container as described above, the user may provide ice in the container to allow the beverage to be in a very cold state in hot conditions as in summer.

[0005] To this end, the user fills the container with the beverage, inserts the container filled with the beverage into a freezer to freeze the beverage, and then takes the container out of the freezer to carry as necessary or fills the container with additionally provided ice cubes to use.

[0006] However, when the container is inserted into the freezer to make ice, a beverage of which water accounts for a considerable proportion increases in volume while being frozen.

[0007] Accordingly, it is inconvenient to adequately fill the container with the beverage in consideration of the increase in volume of the beverage. Also, there is a problem that while the beverage is being frozen, the container swells and is deformed.

[0008] Also, although ice forms without any problems, it is difficult to drink the beverage when the ice around the inlet does not melt. Even when the ice around the inlet melts, the ice moves toward the inlet as the container tilts when drinking such that drinking the beverage is impeded.

[0009] On the other hand, when several additionally provided ice cubes are inserted into the container to use, the above problems may be partially solved but ice cubes collide with each other and cause noise while the container is carried.

[0010] As described above, it is not possible to solve such problems using containers on the market in contrast to a desire of the user to drink a cold beverage using ice.

DISCLOSURE**Technical Problem**

[0011] The present invention is directed to providing a functional water bottle to or from which where ice is attachable or detachable and an ice making tool, in which ice is fixed using an ice fixing stand in a container body which accommodates a beverage and the like so as to maintain the beverage at a low temperature for a long time by preventing the ice from falling to a bottom of an interior of the container body.

[0012] The present invention is directed to providing a functional water bottle to or from which ice is attachable or detachable and an ice making tool, in which, since ice is allowed to form outside a container body and then be inserted into the container body, the ice is not made directly using the container body so as to prevent the container body from being damaged.

Technical Solution

[0013] One aspect of the present invention provides a functional water bottle to or from which ice is attachable or detachable. The functional water bottle includes a container body which has one side opened or closed by a lid and accommodates a fluid in a container-shaped interior and an ice fixing stand which is coupled to one side of the container body, extends toward the interior of the container body, and fixes ice. Here, the ice fixing stand fixes the ice while being insertable into or withdrawable from the container body.

[0014] The ice fixing stand may be coupled to the container body while fixing the ice and may allow the ice to be located in the container body.

[0015] The container body may include a mouth portion having an exterior to which the lid is coupled and an interior to which the ice fixing stand is coupled.

[0016] The ice fixing stand may include a container coupling portion coupled to the mouth portion, a column portion extending downward from a bottom surface of the container coupling portion, and an ice placing portion spreading laterally from a bottom end of the column portion.

[0017] The column portion may be detachably provided on the bottom surface of the container coupling portion.

[0018] The column portion may have a height smaller than or equal to half an internal height of the container body.

[0019] The ice placing portion may have a shape which spreads radially from the bottom end of the column portion.

[0020] The mouth portion may include an outer screw thread for being coupled to the lid and provided on an outer surface and an inner screw thread for being coupled to the container coupling portion of the ice fixing stand and provided on an inner surface.

[0021] A support portion detachably coupled to the container body to support the container body may be provided on the other side of the container body.

[0022] The support portion may include a lighting device which emits light toward the container body or a speaker.

[0023] Another aspect of the present invention provides an ice making tool which is a tool for making ice to be supplied to the container body. The ice making tool includes an ice frame which has a shape corresponding to a shape of the container body and comprises one or more ice compartments having one open side and an ice fixing stand which is coupled to the one side of the ice compartment, extends

toward an interior of the ice compartment, and fixes ice being made in the ice compartment. Here, the ice fixing stand is coupled to the ice frame and covers the one side of the ice compartment.

[0024] The ice fixing stand may be separated from the ice frame and then coupled to the container body while fixing the ice made in the ice compartment so as to allow the ice to be located in the container body.

[0025] The ice fixing stand may include a cover portion which covers one side of the ice compartment, a column portion extending downward from the cover portion, and an ice placing portion spreading laterally from a bottom end of the column portion.

[0026] The column portion may be detachably provided on a bottom surface of the cover portion.

[0027] The ice fixing stand may further include a container coupling portion coupled to one side of the container body. Here, the cover portion may be replaced by the container coupling portion, be separated from the ice frame, and then be coupled to the container body while ice made in the ice compartment is fixed so as to allow the ice to be located in the container body.

Advantageous Effects

[0028] According to the present invention, in a functional water bottle to or from which ice is attachable or detachable and an ice making tool, ice is made using an ice frame and an ice fixing stand and the ice fixing stand from which the ice is suspended is coupled to the container body to allow the ice to be located in the container body so that it is unnecessary to be concerned about deformation of the container body, and convenience is maximized by allowing the ice to be exchangeable.

[0029] Also, in the functional water bottle to or from which ice is attachable or detachable and an ice making tool according to the present invention, since ice is fixed by the ice fixing stand in the container body, a beverage and the like may come into continuous contact with the ice to maintain the beverage at a low temperature and the ice may be spaced apart from an inner wall of the container body to delay melting of the ice so as to increase satisfaction levels of users.

DESCRIPTION OF DRAWINGS

[0030] FIG. 1 is a perspective view of a functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention.

[0031] FIG. 2 is a perspective view of the functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention.

[0032] FIG. 3 is a perspective view of the functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention.

[0033] FIG. 4 is a perspective view illustrating an ice fixing stand of the functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention.

[0034] FIG. 5 is a cross-sectional view of the functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention.

[0035] FIG. 6 is a cross-sectional view of the functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention.

[0036] FIG. 7 is a cross-sectional view of the functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention.

[0037] FIG. 8 is a perspective view of an ice making tool according to one embodiment.

MODES OF THE INVENTION

[0038] The aspects, particular advantages, and novel features of the present invention will become apparent from the following detailed description of exemplary embodiments with reference to the attached drawings. While reference numerals are given to components of each drawing, it should be noted that although shown in different drawings, like components will be referred to as like reference numerals if possible. Also, in a description of the embodiments of the present invention, a detailed description of well-known components or functions of the related art will be omitted when it is deemed to obscure understanding of the embodiments of the present invention.

[0039] Hereinafter, exemplary embodiments of the present invention will be described in detail with reference to the attached drawings. Although a functional water bottle to or from which ice is attachable or detachable is described as a container configured to accommodate a beverage for convenience of description in the specification, it should be noted that the functional water bottle to or from which ice is attachable or detachable does not accommodate only a beverage but is capable of accommodating all fluids which need to be cooled by ice (including a fluid and the like not intended to be drunk).

[0040] FIGS. 1 to 3 are perspective views of a functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention, FIG. 4 is a perspective view illustrating an ice fixing stand of the functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention, and FIGS. 5 to 7 are cross-sectional views of the functional water bottle to or from which ice is attachable or detachable according to one embodiment of the present invention.

[0041] Here, FIG. 1 illustrates a state in which an ice fixing stand 30 is coupled to a container body 10, FIG. 2 illustrates a state in which the ice fixing stand 30 is separated from the container body 10, and FIG. 3 illustrates a state in which ice 100 is inserted into the container body 10 or the ice 100 is withdrawn from the container body 10 using the ice fixing stand 30.

[0042] Referring to FIGS. 1 to 7, a functional water bottle 1 to or from which ice is attachable or detachable according to one embodiment of the present invention includes the container body 10, a strap 20, the ice fixing stand 30, and a lid 40.

[0043] The container body 10 has one open side and accommodates a fluid such as a beverage and the like therein. An opening 111 of the one open side of the container body 10 may be opened or closed by the lid 40 but may be opened to drink a beverage without removal of the lid 40.

[0044] An interior of the container body 10 may have a container shape, and as an example, may have a cylindrical shape. The shape of the interior of the container body 10 is not limited thereto but may have a shape through which the ice 100 is slidable in an insertion/withdrawal direction. That is, the interior of the container body 10 may have a container

shape having a cross section which is consistent or becomes smaller in a direction from the opening 111 toward a bottom.

[0045] The container body 10 may have at least a transparent or translucent part to allow a user to easily see an amount of a fluid accommodated therein. Also, the container body 10 may include a material capable of not being deformed and securing a thermal insulation property when a low or high temperature drink is accommodated, and as an example, may include glass, a metal such as stainless steel and the like, a synthetic resin, and the like. However, the material of the container body 10 is not particularly limited.

[0046] The one open side (a peripheral part of the opening 111) of the container body 10 may be referred to as a mouth portion 11. The above-stated lid 40 may be coupled to the mouth portion 11 such that the interior of the container body 10 may be isolated from an exterior. Here, the lid 40 is coupled to the mouth portion 11 using a screw. To this end, an outer screw thread 112 may be provided on an outer surface of the mouth portion 11 which faces the lid 40.

[0047] A method of coupling between the lid 40 and the mouth portion 11 of the container body 10 is not limited thereto. However, the lid 40 may be detachably coupled to the container body 10 using a method capable of conveniently opening or closing one side of the container body 10 while adequately sealing the interior of the container body 10.

[0048] An outer step 113 may be provided on the outer surface of the mouth portion 11 below the outer screw thread 112 so as to restrict a coupling degree of the lid 40 when the lid 40 is coupled to the mouth portion 11. A width of the outer step 113 is provided to correspond to a thickness of the lid 40 so that an outer surface of the lid 40 and an outer surface of the container body 10 may be smoothly connected in succession when the lid 40 is coupled to the container body 10.

[0049] The ice fixing stand 30 which will be described below may be coupled to an inner surface of the mouth portion 11. Here, the mouth portion 11 and the ice fixing stand 30 may be coupled using a screw equally/similarly to coupling between the mouth portion 11 and the lid 40.

[0050] To this end, an inner screw thread 114 may be provided on the inner surface of the mouth portion 11 which faces the ice fixing stand 30.

[0051] An inner step 115 may be provided on the inner surface of the mouth portion 11 equally/similarly to the outer step 113. The inner step 115 may be used as a stopper which restricts a coupling degree of the ice fixing stand 30 when the ice fixing stand 30 is coupled to the mouth portion 11. A width of the inner step 115 is sufficient and not particularly limited as long as the coupling degree of the ice fixing stand 30 (fixing the ice 100) is restricted.

[0052] For example, the width of the inner step 115 may be provided so that a screw thread 311 does not protrude inward so as to prevent the ice 100 fixed to the ice fixing stand 30 from being held when the ice 100 is inserted into or withdrawn from the container body 10.

[0053] Heights of the outer step 113 and the inner step 115 at the mouth portion 11 may be provided to correspond to each other or be vertically diagonal to each other. As an example, the outer step 113 may be provided below the inner step 115.

[0054] Also, sizes of the outer screw thread 112 and the inner screw thread 114 may be equal to or different from each other, which may be diversely determined in consid-

eration of a sealing force caused by coupling of the lid 40, a coupling force necessary for sustaining the ice 100 fixed to the ice fixing stand 30, and the like.

[0055] The mouth portion 11 may be a component having an exterior to which the lid 40 is coupled and an interior to which the ice fixing stand 30 is coupled but is not limited thereto. As an example, the present invention may include any number of modifications such as the ice fixing stand 30 being coupled to cover the opening 111 of the mouth portion 11 while surrounding the exterior of the mouth portion 11, the lid 40 being coupled to the exterior of the ice fixing stand 30, and the like.

[0056] A support portion configured to support a container on a bottom or the like may be provided on an opposite side of the mouth portion 11 of the container body 10, that is, a bottom surface of the container body 10. Here, a support portion 12 may be configured to be integrated with the container body 10 or may be configured as a separate component. Since a bottom surface of the support portion 12 has a flat surface or a concave surface recessed inward (that is, upward), it is possible to stably and firmly support standing of the container body 10. According to an embodiment, a frictional plate may be provided on the bottom surface of the support portion 12 to stably place the container body 10 on a bottom and the like.

[0057] Also, according to an embodiment, a speaker and/or a lighting device may be provided on the support portion 12. A voice, music, or the like desired by a user may be reproduced through the speaker provided on the support portion 12. Also, the lighting device including a light emitting diode (LED) and the like may emit light toward the container body 10. That is, the lighting device may emit light toward a beverage accommodated in the container body 10 so as to provide a more aesthetic lighting effect. The lighting device and/or speaker may be connected to a portable terminal (smart phone or the like) carried by the user using an unrestricted method such as Bluetooth, WiFi, or the like to be remotely operated. Also, an additional battery or a terminal or the like for charging the same may be provided on the support portion 12 to operate the lighting device and/or the speaker. Particularly, the support portion 12 may be configured to be detachable from the container body 10 so as to further improve convenience in use.

[0058] The strap 20 may be provided on the container body 10 so as to allow the container body 10 to be carried. The strap 20 may be coupled to the mouth portion 11 and extend in a direction away from the mouth portion 11 so that the user may carry the container body 10 using the strap 20.

[0059] The strap 20 may include a ring 21 which fits on a perimeter of the mouth portion 11. The ring 21 may be provided to surround a bottom of the perimeter of the mouth portion 11, and a bottom end of the lid 40 may be engaged with a top surface of the ring 21.

[0060] The ring 21 and the mouth portion 11 are not coupled using a screw or the like and may be connected to each other using a method in which the mouth portion 11 simply passes through the ring 21. When the lid 40 is coupled to the ring 21, it is possible to naturally prevent the ring 21 from being separated.

[0061] However, in order to prevent the ring 21 from being separated from the mouth portion 11 when the user opens the lid 40 and tilts the container body 10 to drink a beverage, the

ring 21 may include a screw thread (not shown) on an inner surface thereof to correspond to the outer screw thread 112 of the mouth portion 11.

[0062] Otherwise, the ring 21 includes an inner diameter smaller than an outer diameter formed by the outer screw thread 112 of the mouth portion 11 and forcibly passes through the outer screw thread 112 to be mounted on the mouth portion 11 such that the ring 21 may be prevented to a certain degree from being separated even when the container body 10 is turned upside down while the lid 40 is separated.

[0063] The ring 21 may include an elastically deformable material, and for example, include silicone or the like. That is, the ring 21 may forcibly fit on the mouth portion 11 to be prevented from being unnecessarily separated and may allow the strap 20 to be conveniently separated from the container body 10 by an external force of the user.

[0064] An extending portion 211 which extends in the direction away from the mouth portion 11 may be provided on one side of the ring 21. The extending portion 211 may have a size which extends to a degree of being not hidden by the lid 40 even when the lid 40 is coupled above the ring 21.

[0065] The extending portion 211 is configured to fix a band 22 which will be described below, and one or more extending portions 211 may be provided on a periphery of the ring 21. However, in order to prevent the user from being uncomfortable when the lid 40 is coupled to the container body 10 because the extending portions 211 protrude outward, the extending portions 211 may have a minimum size capable of fixing the band 22 and/or include an elastic material not to damage a hand or the like of the user.

[0066] A hole 212 is formed in the extending portion 211 and the band 22 passes through the hole 212 so that the band 22 may be connected to the extending portion 211. Here, one or more of such holes 212 may be provided in the extending portion 211, and a size of the hole 212 may be diversely determined according to a shape (width and the like) of the band 22.

[0067] The strap 20 has the band 22 extending from the ring 21. As described above, the hole 212 is formed in the extending portion 211 of the ring 21. Here, the band 22 may form a closed shape while passing through the hole 212 to be fixed to the ring 21.

[0068] The band 22 may have a closed curve shape through which a finger, hand, or the like of the user is passable. However, a length of the band 22 may be determined to a degree that the band 22 does not reach a bottom or the like when the container body 10 is placed on the bottom.

[0069] That is, when the length of the band 22 is excessively long, it may be inconvenient to place the container body 10. When the length of the band 22 is excessively short, it may be inconvenient to carry using the band 22. Accordingly, a distance to one side of the band 22 which is farthest from the ring 21 (about a half an overall length of the band 22) may be more than half a height of the container body 10.

[0070] The band 22 may include a material such as cotton, a synthetic resin, and the like or may include a metal. That is, the material of the band 22 is not particularly limited, and all materials which allow the container body 10 to be carried are available.

[0071] The ice fixing stand 30 is coupled to one side of the container body 10. The ice fixing stand 30 may be coupled

to the mouth portion 11 of the container body 10 and cover the opening 111 of the container body 10 while being coupled to the mouth portion 11.

[0072] However, even when the ice fixing stand 30 is coupled to the mouth portion 11 of the container body 10, the interior of the container body 10 may not be sealed. Since the ice fixing stand 30 is a component which is sufficient merely when the ice 100 is located in the container body 10, the ice fixing stand 30 will be described below.

[0073] The ice fixing stand 30 is coupled to the mouth portion 11, extends toward the interior of the container body 10, and fixes the ice 100. That is, the ice fixing stand 30 may be provided such that a top end thereof is coupled to the container body 10 while a bottom end thereof fixes the ice 100.

[0074] Here, the ice fixing stand 30 may fix the ice 100 while being insertable into or withdrawable from the container body 10. Accordingly, the ice fixing stand 30 may be coupled to the container body 10 while fixing the ice 100 so that the ice 100 may be stably located in the container body 10 or may be separated from the container body 10 to take out the ice 100 accommodated in the container body 10 to prevent the beverage from becoming colder.

[0075] The ice fixing stand 30 includes a container coupling portion 31, a column portion 32, and an ice placing portion 33. The container coupling portion 31 is coupled to the mouth portion 11. A screw thread 311 may be provided on the container coupling portion 31 and the screw thread 311 of the container coupling portion 31 may be engaged with the inner screw thread 114 provided on the inner surface of the mouth portion 11.

[0076] Since an outer surface of the container coupling portion 31 may face the inner surface of the mouth portion 11 and the inner step 115 may be provided on the inner surface of the mouth portion 11, a bottom end of the outer surface of the container coupling portion 31 may be prevented, by the inner step 115 of the mouth portion 11, from being inserted into the container body 10.

[0077] Here, since the container coupling portion 31 and the mouth portion 11 are coupled using a screw, the inner step of the mouth portion 11 may be used as a stopper configured to block the container coupling portion 31 from rotating so as to be coupled to the mouth portion 11.

[0078] The container coupling portion 31 is provided on the opening 111 of the container body 10 and covers the opening 111. To this end, an outer diameter of the container coupling portion 31 may be provided corresponding to a diameter of the opening 111. However, the outer diameter of the container coupling portion 31 except the screw thread 311 may be slightly smaller than the diameter of the opening 111. When the container coupling portion 31 is coupled to the mouth portion 11, the screw thread 311 of the container coupling portion 31 and the inner screw thread 114 of the mouth portion 11 are engaged with each other such that a space between the container coupling portion 31 and the mouth portion 11 may be sealed. However, to increase a sealing force, any generally well-known sealing components may be used.

[0079] Although the container coupling portion 31 is coupled to the mouth portion 11 and covers the opening 111, the container body 10 may not be sealed by the container coupling portion 31. A withdrawal opening 312 may be provided in the container coupling portion 31 and is exposed outward when the lid 40 is separated from the mouth portion

11 of the container body 10 such that the user may drink a beverage in the container body 10 through the withdrawal opening 312.

[0080] The container coupling portion 31 may include a handle 313. The handle 313 may be provided near the withdrawal opening 312 and has a size or shape which does not impede drinking the beverage through the withdrawal opening 312.

[0081] When the container coupling portion 31 is coupled to the mouth portion 11 and a top end of the container coupling portion 31 and a top end of the mouth portion 11 are parallel, the handle 313 may be used to separate the container coupling portion 31 from the mouth portion 11.

[0082] That is, the ice fixing stand 30 may be provided not to protrude outward from the mouth portion 11 even when the ice fixing stand 30 is coupled to the mouth portion 11. Here, the container coupling portion 31 of the ice fixing stand 30 coupled to the mouth portion 11 using a screw manner may be separated from the mouth portion 11 by the user gripping and rotating the handle 313.

[0083] The container coupling portion 31 may have a cylindrical shape with an open top surface, and the handle 313 of the container coupling portion 31 may be exposed outward through the open top surface. Here, the user may separate the ice fixing stand 30 from the mouth portion 11 of the container body 10 by turning the container coupling portion 31 clockwise or counterclockwise while gripping the handle 313 with at least two fingers.

[0084] The column portion 32 which will be described below may be attached to or detached from the container coupling portion 31. Here, the column portion 32 may be attached to or detached from a bottom surface of the container coupling portion 31. To this end, first coupling portions 314A, 314B, and 314C may be provided on the bottom surface of the container coupling portion 31. Coupling between the container coupling portion 31 and the column portion 32 will be described in a following description of the column portion 32.

[0085] The column portion 32 extends downward from the bottom surface of the container coupling portion 31. The column portion 32 is a part to which the ice 100 is fixed and may extend downward from a center of the bottom surface of the container coupling portion 31 and form a central axis of the ice 100.

[0086] The column portion 32 primarily fixes the ice 100. However, when a part of the ice 100, which faces the column portion 32, melts, the ice 100 may be separated from the column portion 32. Accordingly, the present invention may fix the ice 100 further using the ice placing portion 33 in addition to the column portion 32.

[0087] However, an outer surface of the column portion 32 is uneven, and includes a plurality of protrusions (not shown), and/or the column portion 32 has a zigzag shape, a curved shape, or the like instead of a bar shape so that the ice placing portion 33 which will be described below may be omitted when the ice 100 is not separated from the column portion 32.

[0088] The column portion 32 may have a cross-sectional area capable of fixing the ice 100 as well as adequately securing a volume of the ice 100 in the container body 10. When the cross-sectional area of the column portion 32 is small, a force of fixing the ice 100 is reduced. On the other hand, when the cross-sectional area of the column portion 32 increases, the volume of the ice 100 is reduced. Accordingly,

the column portion 32 may be provided to have an adequate cross-section which varies according to a size of the container body 10.

[0089] The column portion 32 may be attached to or detached from the container coupling portion 31. The column portion 32 may include second coupling portions 321A, 321B, and 321C which are engaged with the first coupling portions 314A, 314B, and 314C of the container coupling portion 31. As an example, referring to FIG. 5, the first coupling portion 314A may have a cylindrical shape and the second coupling portion 321A may have a shape which surrounds the first coupling portion 314A such that the first coupling portion 314A is inserted thereto.

[0090] That is, in FIG. 5, as the first coupling portion 314A of the container coupling portion 31 is inserted into the second coupling portion 321A, the container coupling portion 31 and the column portion 32 may be coupled. Also, the first coupling portion 314A may have a convex shape  and the second coupling portion 321A may have a concave shape .

[0091] Also, an outer diameter of the first coupling portion 314A may be provided to be greater than an inner diameter of the second coupling portion 321A and/or a magnetic body may be placed on at least one of the first coupling portion 314A and the second coupling portion 321A to secure a coupling force.

[0092] Otherwise, referring to FIG. 6, opposite FIG. 5, the second coupling portion 321B may have a cylindrical shape and the first coupling portion 314B may have a shape into which the second coupling portion 321B is inserted. The first coupling portion 314B may have a concave shape  and the second coupling portion 321B may have a convex shape .

[0093] Here, for a coupling force between the first coupling portion 314B and the second coupling portion 321B, the second coupling portion 321B may be forcibly inserted into the first coupling portion 314B and a magnetic body or the like may be used. Also, a variety of unrestricted coupling structures may be used.

[0094] Also, referring to FIG. 7, the first coupling portion 314C may allow the second coupling portion 321C to slide and be fixed to the first coupling portion 314C in a direction perpendicular to an axial direction of the column portion 32. That is, a right side of the first coupling portion 314C is opened on the basis of the drawing, and the second coupling portion 321C may slide leftward and be coupled through the opened right side of the first coupling portion 314C.

[0095] Here, a step 315 which has front and rear widths of a follow space, which are decreased in a downward direction, is formed on the first coupling portion 314C on the basis of the drawing, and a step 322 is formed on the second coupling portion 321C to correspond to the step 315 of the first coupling portion 314C. Here, when the second coupling portion 321C is coupled to the first coupling portion 314C using a sliding method, the step 322 of the second coupling portion 321C is held by the step 315 of the first coupling portion 314C such that the column portion 32 may be held not to be separated downward.

[0096] That is, in the case of FIG. 7, the structure may be formed such that when the container coupling portion 31 and the column portion 32 are allowed to be simply attached to or detached from each other as well as supporting the ice 100 using the column portion 32, the column portion 32 is not separated from the container coupling portion 31.

[0097] The column portion 32 may have a height smaller than or equal to half an internal height of the container body 10. When the height of the column portion 32 is excessively high, a space to be filled with a beverage which is not the ice 100 is not adequately secured.

[0098] A handle 323 may be provided on the column portion 32. The handle 323 may be a component used when the user holds the column portion 32 and couples the column portion 32 to the container coupling portion 31 or used when the user holds and couples the column portion 32 from which a cover portion 34 (refer to FIG. 8) which will be described is removed to the container coupling portion 31 when the ice 100 is provided on the ice fixing stand 30.

[0099] The handle 323 may be provided to protrude outward from the column portion 32 and to have a relatively firm strength so as to adequately grip using the handle 323. As an example, as shown in the drawing, the handle 323 may have a bar shape which laterally protrudes from the column portion 32 and the ice 100 may be fixed to the column portion 32 right below the handle 323.

[0100] The ice placing portion 33 has a shape which spreads laterally from a bottom end of the column portion 32. As an example, the ice placing portion 33 may be provided on a plane perpendicular to the column portion 32 and have a shape such as a cross (+) shape or the like which spreads radially from the bottom end of the column portion 32. However, a shape of the ice placing portion 33 is not particularly limited, and all structures like an asterisk (*) shape and the like capable of stably supporting the ice 100 may be used.

[0101] The ice placing portion 33 may secure a fixing force to the ice 100 by increasing a contact area between the ice fixing stand 30 and the ice 100 when the ice 100 forms. Also, the ice placing portion 33 may be a component which prevents the ice 100 from being separated downward when the ice 100 forms on the column portion 32.

[0102] Accordingly, the ice 100 may be fixed to the column portion 32 on the column portion 32 as a central axis and be firmly fixed by the ice placing portion 33 also in a horizontal direction perpendicular to a vertical direction. Accordingly, when the ice fixing stand 30 is coupled to the container body 10 while fixing the ice 100 or when the ice fixing stand 30 withdraws the ice 100 from the container body 10, the ice 100 may be prevented from being separated from the ice fixing stand 30.

[0103] Also, in the present invention, the ice 100 is allowed to be fixed using the ice placing portion 33 which spreads from the bottom end of the column portion 32 on the column portion 32 as a central axis so as to minimize contact between the ice 100 and an inner wall surface of the container body 10.

[0104] Accordingly, the ice 100 may be prevented from being melted due to rubbing against an inner wall of the container body 10. It was seen that a preservation time of the ice 100 increased by about 3 to 4 hours with respect to the container body 10 of 300 to 500 ml as an example.

[0105] Also, when the above ice fixing stand 30 is used, a shape of the ice 100 being melted may become even and noise caused by collision between the ice 100 and the inner wall of the container body 10 may be effectively reduced when the user carries the container body 10. The lid 40 opens or closes the opening 111 of the container body 10. The lid 40 may seal the opening 111 by covering the mouth portion 11, and the lid 40 and the mouth portion 11 may be

coupled using a screw. That is, the lid 40 is engaged with the outer screw thread 112 of the mouth portion 11 and coupled with the container body 10.

[0106] When the lid 40 is coupled to the container body 10, although the withdrawal opening 312 is provided in the container coupling portion 31 of the ice fixing stand 30, a beverage does not leak. However, to increase a sealing force, a sealing member (not shown) which includes an elastic material such as silicone and the like may be provided on a part of the lid 40 which comes into contact with a perimeter of the top end of the mouth portion 11.

[0107] When the lid 40 is coupled to the mouth portion 11, a bottom end of the lid 40 may pressurize the ring 21 of the strap 20. However, in this case, when the ring 21 of the strap 20 is thick, the sealing member of the lid 40 may not come into contact with the top end of the mouth portion 11 due to the ring 21. On the other hand, when the ring 21 of the strap 20 is excessively thin, the ring 21 may move and not be fixed so as to cause noise while the lid 40 is tightly coupled to the mouth portion 11. Accordingly, a thickness of the ring 21 of the strap 20 may be selected in consideration of structures of the lid 40, the mouth portion 11, and the like.

[0108] Also, as described above, the ring 21 of the strap 20 may also include an elastic material equally/similarly to the sealing member. Also, the ring 21 provided between the lid 40 and the outer step 113 of the mouth portion 11 may implement secondary sealing.

[0109] The user may carry the container body 10 while the lid 40 is coupled to the mouth portion 11 of the container body 10 and may drink a cool beverage through the withdrawal opening 312 by separating the lid 40 whenever the user would like to drink a beverage.

[0110] As described above, in the embodiment, since the ice 100 is fixed inside the container body 10 using the ice fixing stand 30 and delayed in melting so as to maintain the beverage cold for a long time, a satisfaction level of the user may be secured.

[0111] FIG. 8 is a perspective view of an ice making tool according to one embodiment.

[0112] Referring to FIG. 8, an ice making tool 2 according to one embodiment of the present invention is a tool for making the ice 100 to be supplied to the container body 10 and may include an ice frame 50 and the ice fixing stand 30.

[0113] Hereinafter, with respect to the ice fixing stand 30 of the embodiment, only points thereof which differ from those of the previous embodiment will be described and omitted parts refer to the above description.

[0114] The ice frame 50 may include at least one ice compartment 51. Here, the ice compartment 51 has a shape corresponding to a shape of the container body 10. However, an inner diameter of the ice compartment 51 may be slightly smaller than the inner diameter of the container body 10.

[0115] Accordingly, the ice 100 made in the ice compartment 51 is easily inserted into the container body 10 and a gap is formed between the ice 100 and the inner wall of the container body 10 so as to delay melting of the ice 100 and not to allow the ice 100 to impede a beverage from being discharged.

[0116] The ice compartment 51 may be provided to have a shape different from a shape of the container body 10. As an example, the shape of the container body 10 may be a cylinder, and the shape of the ice compartment 51 may be an upside-down circular cone or a truncated cone. That is, the

ice compartment **51** may have any shape which allows the ice **100** made in the ice compartment **51** to be easily inserted which is not restricted.

[0117] One side of the ice compartment **51** may be opened. A fluid for making the ice **100** may be injected through the opened one side of the ice compartment **51**. Here, the fluid may be a beverage or the like.

[0118] Such ice compartments **51** may be arranged in a lattice shape in the ice frame **50**. In the drawing, three ice compartments **51** may be provided in a lateral direction and two rows may be provided in a back-and-forth direction such that a total of six ice compartments **51** may be formed in one ice frame **50**.

[0119] The number of the ice compartments **51** provided in the ice frame **50** is not particularly limited, and arrangements of the ice compartments **51** are not limited to the drawing or the like. Also, all of a plurality of such ice compartments **51** provided in the ice frame **50** may be the same size or not. That is, a variety of large- or small-sized ice compartments **51** may be provided.

[0120] The fluid may be injected into the ice compartments **51**, and the opened one side may be covered by the ice fixing stand **30**. That is, when the ice compartment **51** is filled with the fluid and then the ice fixing stand **30** is coupled to the ice frame **50**, the ice placing portion **33** and the like of the ice fixing stand **30** may be located in the ice compartment **51**. Here, the user inserts the ice frame **50**, to which the ice fixing stand **30** is coupled, into a freezer so that the ice **100** may be formed on and fixed to the ice fixing stand **30**.

[0121] The ice frame **50** may include an elastic material such as silicone, plastic, and the like to allow the ice **100** made in the ice compartment **51** to be easily discharged by lifting a bottom of the ice compartment **51** from the outside. Even when a volume of the fluid increases while the ice **100** forms, plastic deformation of the ice compartment **51** is prevented.

[0122] The ice fixing stand **30** is coupled to one side of the ice compartment **51**, extends toward an interior of the ice compartment **51**, and fixes the ice **100** being made in the ice compartment **51**. As described above, the ice fixing stand **30** may include the container coupling portion **31**, the column portion **32**, and the ice placing portion **33**. While the ice **100** forms, the container coupling portion **31** may not be used and the cover portion **34** may be used instead.

[0123] The ice fixing stand **30** is coupled to the ice frame **50** and covers one side of the ice compartment **51**. Here, the ice fixing stand **30** may be separated from the ice frame **50** while the ice **100** made in the ice compartment **51** is fixed and may be coupled to the container body **10** so that the ice **100** may be located inside the container body **10**.

[0124] That is, in the present invention, instead of making the ice **100** while the fluid filled in the container body **10** is frozen, the ice **100** forms while being suspended from the ice fixing stand **30** outside the container body **10**. Afterwards, the ice **100** is disposed inside the container body **10** by inserting the ice fixing stand **30**, to which the ice **100** is fixed, into the container body **10**. Accordingly, in the present invention, it is unnecessary to insert the container body **10** into the freezer thereby preventing deformation of the container body **10**.

[0125] The cover portion **34** of the ice fixing stand **30** covers one side of the ice compartment **51**. On the basis of the drawing, the ice compartment **51** may have an open top.

Here, the cover portion **34** may cover the opened top of the ice compartment **51** filled with the fluid and prevent the fluid from leaking when the ice frame **50** is placed on the freezer.

[0126] The cover portion **34** may forcibly fit on the top of the ice compartment **51** or be bonded to a perimeter of a top end of the ice compartment **51** through self adhesion. However, since the ice frame **50** may include silicone and the like, a screw may not be used in coupling between the cover portion **34** and the ice compartment **51**.

[0127] The cover portion **34** may include a transparent or translucent material to allow an interior of the ice compartment **51** to be seen from the exterior. Accordingly, the user may estimate a size of the ice **100** by checking how much of the column portion **32** of the ice fixing stand **30** is soaked into the fluid in the ice compartment **51**.

[0128] The column portion **32** extends downward from a bottom surface of the cover portion **34**. The column portion **32** may be provided to be attached to or detached from the cover portion **34**. The column portion **32** and the cover portion **34** may be attached or detached as the column portion **32** and the container coupling portion **31** are but the present invention is not limited thereto and a variety of attachment or detachment methods may be used.

[0129] As an example, the column portion **32** may be attached to or detached from the cover portion **34** by sliding in a horizontal direction or forcibly fitting thereon. Also, instead of the column portion **32** being connected to the bottom surface of the cover portion **34**, the cover portion **34** may be connected to surround a perimeter of a top end of the column portion **32**. In this case, when the ice fixing stand **30** is coupled to the ice frame **50**, the top end of the column portion **32** may be exposed outward.

[0130] However, since the cover portion **34** is coupled to the column portion **32** but not extent of the ice **100** being lifted, a coupling force between the cover portion **34** and the column portion **32** may be set to be lower than a coupling force between the container coupling portion **31** and the column portion **32**.

[0131] That is, after the ice compartment **51** is filled with the fluid, when the ice frame **50** is accommodated in the freezer and the ice **100** forms while the column portion **32** and the like coupled to the cover portion **34** are located in the ice compartment **51**, the column portion **32** may be exposed above the ice **100** even when the cover portion **34** is separated from the column portion **32**.

[0132] Here, the user may withdraw the ice by holding the top end (for example, the handle **323**) of the column portion **32** exposed above the ice **100** or may lift the ice **100** through the container coupling portion **31** by coupling the container coupling portion **31** to the column portion **32** exposed above the ice **100**.

[0133] That is, the cover portion **34** may not be a component for withdrawing the ice **100** made in the ice compartment **51** from the ice compartment **51**. However, the cover portion **34** may fix a position of the column portion **32** so that the column portion **32** is placed on a central axis of the ice compartment **51**.

[0134] As described above, after the cover portion **34** is replaced by the container coupling portion **31** while the ice **100** made in the ice compartment **51** is fixed, the ice fixing stand **30** may be separated from the ice frame **50** and then coupled to the container body **10** so as to allow the ice **100** to be located in the container body **10**.

[0135] However, unlike the above, the cover portion 34 may not be replaced by the container coupling portion 31 and may be directly coupled to the container coupling portion 31. Otherwise, the cover portion 34 may not be used and the container coupling portion 31 may be used to directly cover one side of the ice compartment 51.

[0136] That is, in the present invention, when the ice fixing stand 30 can move the ice 100 made in the ice compartment 51 to the container body 10, a variety of modifications may be made in using, coupling, or the like of the cover portion 34 and the container coupling portion 31.

[0137] As described above, in the present invention, when the ice 100 is made using the ice compartment 51 of the ice frame 50, the ice 100 may be fixed to the ice fixing stand 30 and the ice fixing stand 30 from which the ice 100 is suspended is moved to and inserted into the container body 10 to easily accommodate the ice 100 in the container body 10 such that it is possible to secure both satisfaction and convenience of the user.

[0138] Although the exemplary embodiments of the present invention have been described above, these are merely for describing the present invention in detail and the present invention is not limited thereto. Also, it is apparent that a variety of modifications and improvements thereof may be made by one of ordinary skill in the art without departing from the technical concept of the present invention.

[0139] All simple modifications and changes of the present invention are included within the scope of the present invention, and a detailed scope of the present invention will be defined by the following claims.

1. A functional water bottle configured to attach or detach ice, the functional water bottle comprising:

a container body having one side thereof configured to open or close by a lid and accommodating a fluid in an interior thereof; and

an ice fixing stand extending toward the interior of the container body, and configured to couple to the one side of the container body and to fix the ice,

wherein the ice is fixed by the ice fixing stand and the ice fixing stand is insertable into or withdrawable from the container body.

2. The functional water bottle of claim 1, wherein the ice fixed by the ice fixing stand is located in the interior of the container body.

3. The functional water bottle of claim 1, wherein the container body comprises a mouth portion having an exterior configured to couple to the lid and an interior configured to couple to the ice fixing stand.

4. The functional water bottle of claim 3, wherein the ice fixing stand comprises:

a container coupling portion configured to couple to the mouth portion;

a column portion extending downward from a bottom surface of the container coupling portion; and

an ice placing portion spreading laterally from a bottom end of the column portion.

5. The functional water bottle of claim 4, wherein the column portion is detachably disposed on the bottom surface of the container coupling portion.

6. The functional water bottle of claim 4, wherein a height of the column portion is smaller than or equal to half of an internal height of the container body.

7. The functional water bottle of claim 4, wherein the ice placing portion spreads radially from the bottom end of the column portion.

8. The functional water bottle of claim 4, wherein the mouth portion comprises an outer screw thread disposed on an outer surface of the exterior thereof for coupling to the lid and an inner screw thread provided on an inner surface of the interior thereof for coupling to the container coupling portion of the ice fixing stand.

9. The functional water bottle of claim 3, further comprising a support portion configured to detachably couple to an other side of the container body to support the container body.

10. The functional water bottle of claim 9, wherein the support portion comprises a lighting device configured to emit light toward the container body or a speaker.

11. An ice making tool for making ice to be supplied to the container body of claim 1, the ice making tool comprising:

an ice frame comprising one or more ice compartments, wherein each of the one or more ice compartments has one open side and a shape corresponding to a shape of the container body; and

an ice fixing stand extending toward an interior of the ice compartment, and configured to couple at the one open side of the ice compartment, and to fix the ice being made in the ice compartment,

wherein the ice fixing stand is configured to couple to the ice frame and to cover the one open side of the ice compartment.

12. The ice making tool of claim 11, wherein the ice fixing stand is configured to separate from the ice frame and to couple to the container body and the ice made in the ice compartment and fixed by the ice fixing stand is located in the interior of the container body.

13. The ice making tool of claim 11, wherein the ice fixing stand comprises:

a cover portion configured to cover the one open side of the ice compartment;

a column portion extending downward from the cover portion; and

an ice placing portion spreading laterally from a bottom end of the column portion.

14. The ice making tool of claim 13, wherein the column portion is detachably disposed on a bottom surface of the cover portion.

15. The ice making tool of claim 13, wherein the ice fixing stand further comprises a container coupling portion coupled to one side of the container body, and

wherein the ice made in the ice compartment is fixed by the ice fixing stand, the container coupling portion is configured to replace the cover portion and to separate from the ice frame, and the separated container coupling portion is configured to couple to the container body and the ice fixed by the ice fixing stand is located in the interior of the container body.

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