

(19)



(11)

EP 1 910 752 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:

09.03.2011 Bulletin 2011/10

(51) Int Cl.:

F25D 3/08 (2006.01)

(86) International application number:

PCT/GB2006/050217

(21) Application number: **06765366.7**

(22) Date of filing: **20.07.2006**

(87) International publication number:

WO 2007/010310 (25.01.2007 Gazette 2007/04)

(54) **BEVERAGE COOLING DEVICE**

GETRÄNKEKÜHLVORRICHTUNG

DISPOSITIF DE REFROIDISSEMENT DE BOISSONS

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**

(30) Priority: **20.07.2005 GB 0514781**

(43) Date of publication of application:

16.04.2008 Bulletin 2008/16

(73) Proprietor: **Spratley, David Derek Grant**

Richmond, Surrey TW9 1PE (GB)

(72) Inventor: **Spratley, David Derek Grant**

Richmond, Surrey TW9 1PE (GB)

(74) Representative: **Evans, Huw David Duncan**

Chapman Molony

Cardiff Business Technology Centre

Senghennydd Road

Cardiff CF24 4AY (GB)

(56) References cited:

DE-U- 7 030 647 US-A- 2 016 514

US-A- 3 147 888 US-A- 5 357 761

US-A- 5 799 501

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 1 910 752 B1

Description

[0001] The present invention to a device for cooling beverages contained swithin a drinking vessel.

[0002] It is well known to cool beverages by adding one or more ice cubes to the beverage. However, a disadvantage of this arrangement is that the water from which the ice is made can contain micro-organisms, which can be harmful if ingested the beverage as the ice melts.

[0003] Another disadvantage of ice cubes is that, as the ice melts, the water dilutes the beverage and detracts from its overall strength and taste.

[0004] US Patent No. 4,325,230 attempts to overcome the above-mentioned problems by providing a device comprising a sealable cubic housing, into which an ice cube can be placed. In use, one or more of such devices can be frozen and then added to drinks. The ice is contained inside the housing and thus does not contaminate or dilute the beverage as it melts. Following use, the device can be washed and reused. In an alternative embodiment, the body of water is permanently sealed inside the housing and the device itself is frozen prior to use.

[0005] As disadvantage of ice and the above-mentioned device is that they are relatively easy to swallow, particularly as they float on the surface of the beverage. Another device for cooling beverages according to the preamble of claim 1 is known from US2016514. I have now devised a device for cooling beverages, which alleviates the above-mentioned problems.

[0006] In accordance with this invention, there is provided a device according to claim 1.

[0007] In use, the body portion cools the beverage yet does not dilute the beverage because it is insoluble. The vessel-engaging portion securely fastens the device in-situ on the vessel and thus the risk of accidentally swallowing the device is avoided.

[0008] Preferably the body portion comprises a liquid or gel contained within a sealed housing, the liquid or gel being arranged to absorb heat from the beverage, so as to provide a cooling effect.

[0009] In one embodiment, the housing may comprise a closure, which can be opened to allow an ice cube to be inserted into a compartment provided inside the housing.

[0010] in a preferred embodiment, the liquid or gel is permanently sealed inside the housing, the user having to freeze the device prior to use.

[0011] The housing may contain water, although it preferably contains a material, such us ethylene or propylene glycol, which turns from its solid to liquid phase at a temperature below the freezing temperature of water: the latent heat absorbed my such materials as they change from their solid to liquid phases acts to disproportionately cool the beverage.

[0012] In an alternative embodiment, the container may comprise materials, such as water and ammonium chloride, which are arranged to endothermically react

and absorb heat. Such devices may be single use or it may be possible to reverse the endothermic reaction, so that they can be used again.

[0013] Another disadvantage of using ice cubes or the above-mentioned devices of US 4,325,230 is that they float on the surface of the beverage and thus their whole surface area is not in contact with the beverage, with the result that the cooling effect is not maximised.

[0014] Preferably the clip comprises means, which are arranged to engage the vessel at respective circumferentially spaced apart positions: this helps to prevent lateral movement of the arm and maintains the position of the body portion within the vessel.

[0015] An embodiment of this invention will now be described by way of an example only and with reference to the accompanying drawings, in which:

Figure 1 is a plan view of a beverage cooling device in accordance with this invention;

Figure 2 is a front view of the beverage cooling device of Figure 1;

Figure 3 is a side view of the the beverage cooling device of Figure 1; and

Figure 4 is a perspective view of the beverage cooling device of Figure 1, when fitted to a drinking vessel.

[0016] Referring to Figures 1 to 3 of the drawings, there is shown a beverage cooling device comprising a body portion 10 having a spherical housing of plastics material, which is filled with a mixture of water and propylene glycol, being a material which freezes at a temperature below that of water. The housing could be of any other shape and could be filled with water or any other suitable material.

[0017] An articulated arm 11 extends from the body portion 10 and comprises a plurality of rigid section 12, which are connected end-to-end by flexible joint portions 13. The outermost , section of the arm 11 is folded back on itself to define a C-shaped clip 14 for engaging the rim of a drinking vessel.

[0018] The outer arm of the C-shaped clip 14 is connected to the central portion of an elongate bracing device 15, which extends generally perpendicular to the arms of the C-shaped clip 14. The opposite ends of the bracing portion 15 are connected to the central portion thereof by respective flexible joints 16.

[0019] Referring to Figure 4 of the drawings, in use the device is taken from a freezer and clipped onto the rim of a drinking vessel, such that the arm 11 extends into the drinking vessel to hold the body portion 10 near the bottom of the vessel. The opposite ends oaf the bracing portion 15 extend in opposite circumferential directions against the outside surface of the drinking vessel to prevent lateral movement of the arm 11. Teeth or elastomeric

gripping members 17 are preferably provided on the opposed faces of the arms of the C-shaped clip 14, in order to securely grip the rim of the drinking vessel.

[0020] The frozen material inside the housing of the body portion 10 absorbs heat from the beverage contained in the drinking vessel, so as to cool the beverage. If desired, a plurality of devices may be attached to the vessel.

[0021] A device in accordance with this invention is simple and inexpensive in construction, yet provides, a safe and reliable way of chilling beverages.

Claims

1. A device for cooling beverages, the device comprising: a body portion (10) which is insoluble in said beverage and arranged for immersion in the beverage; a portion for engaging a wall of a vessel in which the beverage is provided, said vessel engaging portion comprising a clip (14) arranged to fasten to the rim of said vessel, said device being **characterised in that**, said body portion (10) is connected to said vessel engaging portion by an elongate flexible arm, thereby allowing the body portion to be positioned at almost any selected position within the vessel.
2. A device as claimed in claim 1, in which the body portion (10) comprises a liquid or gel contained within a sealed housing, the liquid or gel being arranged to absorb heat from the beverage, so as to provide a cooling effect.
3. A device as claimed in claim 2, in which the sealed housing comprised a closure, which can be opened to allow an ice cube to be inserted into a compartment provided inside the housing.
4. A device as claimed in claim 2, in which the liquid or gel is permanently sealed inside the housing, the user having to freeze the device prior to use.
5. A device as in claim 4, in which the sealed housing contains water.
6. A device as claimed in claim 4, in which the the sealed housing contain a material which turns from its solid to liquid phase at a temperature below the freezing temperature of water,
7. A device as claimed in claim 6, in which the material comprises ethylene or propylene glycol.
8. A device as claimed in claim 4, in which the sealed housing contains materials which are arranged to endothermically react and absorb heat,
9. A device as claimed in claim 8, in which the materials

comprise water and ammonium chloride.

10. A device as claimed in claim 1, in which the clip (14) comprises means (15) arranged to engage the vessel at respective circumferentially spaced apart positions.

Patentansprüche

1. Getränkekühlvorrichtung, wobei die Vorrichtung umfaßt: einen Körperabschnitt (10), der in dem Getränk unlöslich ist und angeordnet ist, um in das Getränk einzutauchen, ein Abschnitt, um mit einer Wand eines Gefäßes in Eingriff zu stehen, in dem das Getränk bereitgestellt wird, wobei der in das Gefäß eingreifende Abschnitt einen Clip bzw. eine Klammer (14) aufweist, die angeordnet ist, um am Rand des Gefäßes befestigt zu werden, wobei die Vorrichtung **dadurch gekennzeichnet ist, dass** der Körperabschnitt (10) mit dem in das Gefäß eingreifenden Abschnitt mit einem länglichen flexiblen Arm verbunden ist, was es dem Körperabschnitt ermöglicht, in nahezu jeder ausgewählten Position innerhalb des Gefäßes positioniert zu werden.
2. Vorrichtung nach Anspruch 1, wobei der Körperabschnitt (10) eine Flüssigkeit oder ein Gel aufweist, enthalten in einem verschlossenen Gehäuse, wobei die Flüssigkeit oder das Gel angeordnet sind, um Wärme vom Getränk zu absorbieren, um einen Kühlungseffekt zu bewirken.
3. Vorrichtung nach Anspruch 2, wobei das verschlossene Gehäuse einen Verschuß aufweist, der geöffnet werden kann, damit ein Eiswürfel in einen Abschnitt bzw. eine Kammer, der/die sich innerhalb des Gehäuses befindet, eingefüllt werden kann.
4. Vorrichtung nach Anspruch 2, wobei die Flüssigkeit oder das Gel dauerhaft im Gehäuse eingeschlossen ist, wobei der Verwender die Vorrichtung vor dem Gebrauch einfrieren muß.
5. Vorrichtung nach Anspruch 4, wobei das verschlossene Gehäuse Wasser enthält.
6. Vorrichtung nach Anspruch 4, wobei das verschlossene Gehäuse ein Material enthält, das bei einer Temperatur unter der Gefrieretemperatur von Wasser von der festen in die flüssige Phase übergeht.
7. Vorrichtung nach Anspruch 6, wobei das Material Ethylen- oder Propylenglykol umfaßt.
8. Vorrichtung nach Anspruch 4, wobei das verschlossene Gehäuse Materialien enthält, die angeordnet sind, um endotherm zu reagieren und Wärme zu ab-

sorbieren.

9. Vorrichtung nach Anspruch 8, wobei die Materialien Wasser und Ammoniumchlorid umfassen.
10. Vorrichtung nach Anspruch 1, wobei der Clip bzw. die Klammer (14) Mittel (15) umfaßt, angeordnet, um in das Gefäß an jeweils auf dem Umfang befindlichen, voneinander beabstandeten Positionen einzugreifen.

cés de manière à réagir de manière endothermique et à absorber la chaleur.

9. Dispositif selon la revendication 8, dans lequel les matériaux comprennent de l'eau et du chlorure d'ammonium.
10. Dispositif selon la revendication 1, dans lequel la pince (14) comprend des moyens (15) agencés de manière à venir en prise avec le récipient en des positions respectives espacées sur la circonférence.

Revendications

1. Dispositif pour refroidir des boissons, lequel dispositif comprend : une partie de corps (10) qui est insoluble dans ladite boisson et agencée pour une immersion dans la boisson ; une partie pour venir en prise avec une paroi d'un récipient dans lequel est placée la boisson, ladite partie de prise de récipient comprenant une pince (14) agencée pour fixer le rebord dudit récipient, ledit dispositif étant **caractérisé en ce que** ladite partie de corps (10) est connectée à ladite partie de prise de récipient par un bras flexible allongé, en permettant ainsi à la partie de corps d'être positionnée pratiquement en n'importe quelle position sélectionnée à l'intérieur du récipient.
2. Dispositif selon la revendication 1, dans lequel la partie de corps (10) comprend un liquide ou un gel contenu à l'intérieur d'une enceinte scellée, le liquide ou gel étant agencé de façon à absorber la chaleur de la boisson afin de conférer un effet refroidisseur.
3. Dispositif selon la revendication 2, dans lequel l'enceinte scellée comprend une fermeture qui peut être ouverte pour permettre l'insertion d'un glaçon dans un compartiment placé à l'intérieur de l'enceinte.
4. Dispositif selon la revendication 2, dans lequel le liquide ou gel est scellé de façon permanente à l'intérieur de l'enceinte, l'utilisateur devant congeler le dispositif avant utilisation.
5. Dispositif selon la revendication 4, dans lequel l'enceinte scellée contient de l'eau.
6. Dispositif selon la revendication 4, dans lequel l'enceinte scellée contient un matériau qui passe de sa phase solide à sa phase liquide à une température inférieure à la température de congélation de l'eau.
7. Dispositif selon la revendication 6, dans lequel le matériau comprend de l'éthylèneglycol ou du propylèneglycol
8. Dispositif selon la revendication 4, dans lequel l'enceinte scellée contient des matériaux qui sont agen-

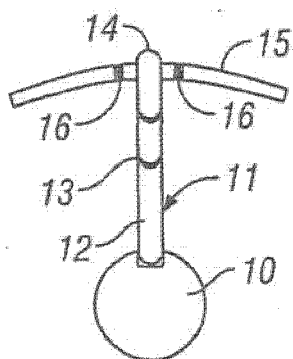


FIG. 1

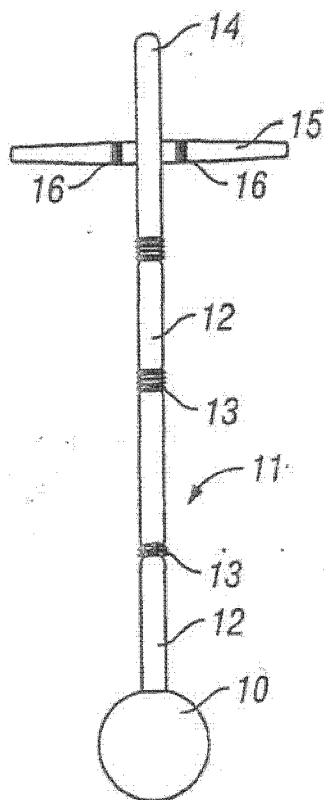


FIG. 2

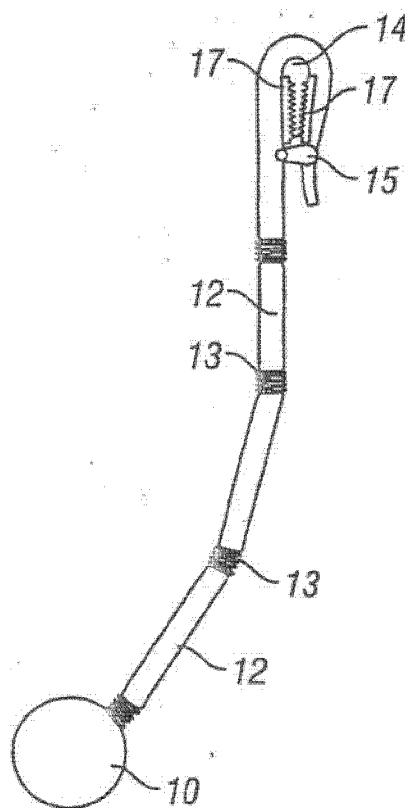


FIG. 3

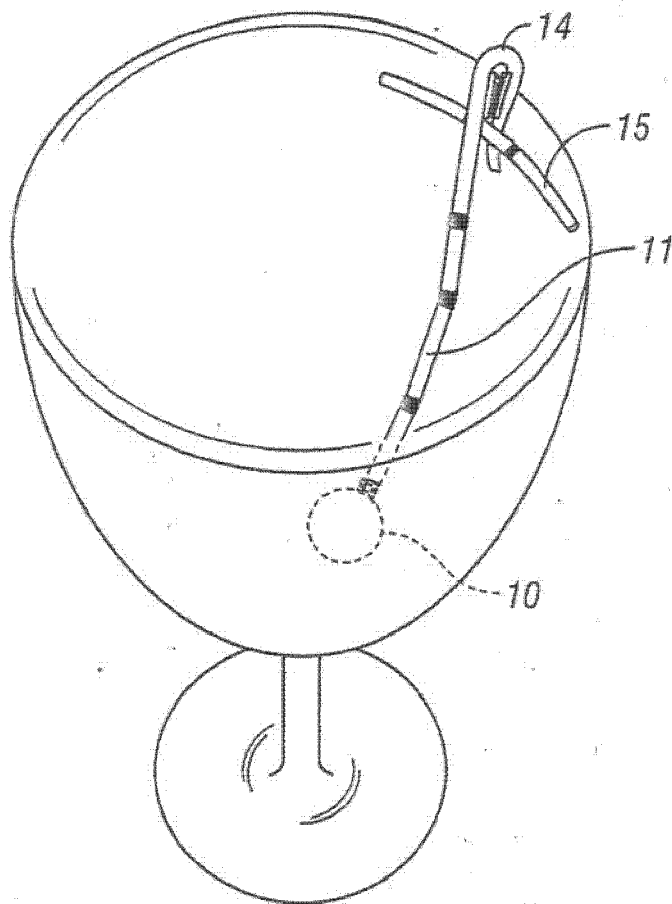


FIG. 4

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 4325230 A [0004] [0013]
- US 2016514 A [0005]