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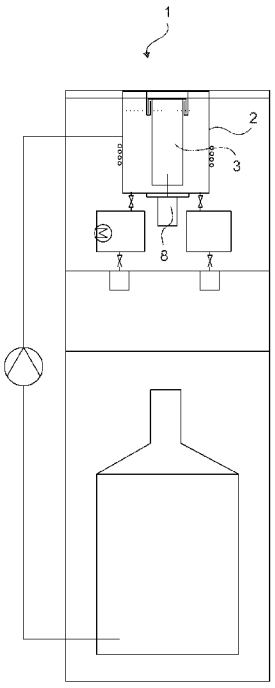
(54) Title: A HEAT EXCHANGE MEANS FOR BEVERAGE CONTAINERS

Figure 1



(57) Abstract: The present invention relates to a multi-purpose water dispenser (1) comprising a thermally isolated receptacle (2) wherein the water is stored. By placing the beverage to be cooled or heated into the receptacle (2) that is disposed on the water dispenser (1) and wherein the drinking water is stored, the instantaneous usage requests of the user are met without using an additional cooling unit.

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DESCRIPTION

A HEAT EXCHANGE MEANS FOR BEVERAGE CONTAINERS

The present invention relates to a heat exchange means for beverage containers.

The state of the art water dispensers meet the hot and/or cold water need of the user. By means of the water dispensers, the hot and/or cold water needs can be met without using an additional heat exchange device.

The aim of the present invention is the realization of a heat exchange means that provides the quick cooling/heating of external beverage containers and that is integrated with the water dispenser.

The water dispenser realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof comprises a hot water or cold water receptacle that is isolated from the outer environment and that stores drinking water. The water dispenser furthermore comprises a heat exchange means that carries the beverage, the temperature of which is to be changed, and enables the beverage to exchange heat with the drinking water inside the receptacle. By means of placing the beverage to be cooled or heated into the receptacle that is disposed on the water dispenser and wherein the drinking water is stored, instantaneous usage request is met without using an additional cooling unit and thus the water dispenser can be used for multiple purposes.

In an embodiment of the present invention, the heat exchange means a housing that physically isolates the beverage container from the drinking water inside the receptacle and that is produced from elastomeric material, and a body whereon the housing is disposed. Thus, the beverage container is prevented from getting wet and the drinking water from getting dirty during the heat transfer between the beverage container and the drinking water.

In an embodiment of the present invention, the water dispenser comprises a protrusion that is arranged on an inner edge of the receptacle along the receptacle and a channel that is arranged on the heat exchange means and wherein the protrusion is seated when the heat exchange means is placed into the receptacle.

Thus, the heat exchange means is mounted onto the receptacle in an easy and durable manner.

In an embodiment of the present invention, the water dispenser comprises a motor that is disposed on the receptacle, that is connected to the body and that provides the rotation of the heat exchange means. The beverage container rotates around its own axis by means of the heat exchange means rotated with the power received from the motor and causes also the rotation of the beverage. From the moment the rotational movement starts, the difference between the peripheral speed of the container and the peripheral speed of the beverage, the temperature of which is to be changed, decreases. Thus, the heat transfer between the beverage and the drinking water is improved.

In an embodiment of the present invention, the heat exchange means is cylindrical and comprises more than one reinforcement rib extending on the body in the vertical direction. The reinforcement ribs reinforce the body so that the heat exchange means can support the liquid-filled beverage container.

In another embodiment of the present invention, the rapid beverage heat exchange means is automatically controlled according to the data received from the temperature and/or presence sensor.

The water dispenser realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 – is the schematic view of a water dispenser.

Figure 2– is the cross-sectional view of a heat exchange means and a receptacle.

The elements illustrated in the figures are numbered as follows:

1. Water dispenser
2. Receptacle
3. Heat exchange means
4. Housing
5. Body

6. Protrusion
7. Slot
8. Motor
9. Reinforcement rib

The water dispenser (1) comprises a hot water or cold water receptacle (2) wherein the water is stored. The at least two water receptacles (2) disposed on the water dispenser (1) are conditioned at different temperatures, namely cold and hot, so as to meet the instantaneous needs of the user. The water heating process is realized by means of the heater disposed in the water heating receptacle (2) and the water cooling process is realized by means of the evaporator disposed in the water cooling receptacle (2).

The multi-purpose water dispenser (1) of the present invention comprises a heat exchange means (3) that is detachably mounted into the receptacle (2) and that allows the placement therein of the beverage container, the temperature of which is to be changed. By cooling or heating the beverage by means of the drinking water conditioned in the receptacle (2) disposed on the water dispenser (1), the instantaneous usage requests of the user are met without using an additional cooling unit. The detachable heat exchange means (3) can be detached and cleaned by washing when desired.

In an embodiment of the present invention, the heat exchange means (3) comprises a housing (4) that is produced from elastomeric material and wherein the beverage, the temperature of which is to be changed, is placed, and a body (5) that supports the housing (4). The housing (4) stretches and assumes the shape of the bottle or the can when the bottle or the can is placed therein. Since the outer surface of the bottle or the can is surrounded by the housing (4), the contact of the bottle or the can with the drinking water inside the receptacle (2) is prevented. The drinking water stored inside the receptacle enables the temperature of the beverage to be changed for a conditioning time predetermined by the manufacturer.

In an embodiment of the present invention, the water dispenser (1) comprises a protrusion (6) that is arranged on an inner edge of the receptacle (2) along the receptacle (2) and a channel (7) that is arranged on the heat exchange means (3) and wherein the protrusion (6) is seated when the heat exchange means (3) is placed into the receptacle (2). Thus, the heat exchange means (3) is mounted onto the receptacle (2) in an easy and durable manner.

In an embodiment of the present invention, the water dispenser (1) comprises a motor (8) that is disposed on the receptacle (2), that is connected to the body (5) and that provides the rotation of the heat exchange means (3). By means of the motor, the heat exchange means (3) rotates around its own axis and activates the heat transfer between the heat exchanges means (3) and the drinking water inside the receptacle (2) isolated from the outer environment wherein the heat exchanges means (3) is placed.

In an embodiment of the present invention, the heat exchange means (3) is cylindrical and the water dispenser (1) comprises more than one reinforcement rib (9) extending on the heat exchange means (3) in the vertical direction. By means of the reinforcement ribs (9), the rigidness of the body (5) is increased and it becomes possible to carry liquid-filled beverage containers in the heat exchange means (3) in a secure manner.

By means of the present invention, particularly by means of the heat exchange means (3) integrated into the water dispenser (1), the water dispenser (1) is used for multiple purposes. By placing the beverage to be cooled or heated into the receptacle (2) that is disposed on the water dispenser (1) and wherein the drinking water is stored, the instantaneous usage requests of the user are met without using an additional cooling unit. The housing (4) produced from elastomeric material physically isolates the beverage container from the drinking water inside the receptacle (2). Consequently, customer satisfaction is improved by preventing the outer surface of the beverage container from getting wet.

CLAIMS

1. A water dispenser (1) **comprising** a receptacle (2) wherein the water is stored, **characterized by** a heat exchange means (3) that is detachably mounted into the receptacle (2) and that allows the placement therein of the beverage container, the temperature of which is to be changed.

2. A water dispenser (1) as in Claim 1, **characterized by** the heat exchange means (3) comprising a housing (4) that is produced from elastomeric material and wherein the beverage, the temperature of which is to be changed, is placed, and a body (5) that supports the housing (4).

3. A water dispenser (1) as in Claim 1 or Claim 2, **characterized by** a protrusion (6) that is arranged on an inner edge of the receptacle (2) along the receptacle (2) and a channel (7) that is arranged on the heat exchange means (3) and wherein the protrusion (6) is seated when the heat exchange means (3) is placed into the receptacle (2).

4. A water dispenser (1) as in any one of the above claims, **characterized by** a motor (8) that is disposed on the receptacle (2), that is connected to the body (5) and that provides the rotation of the heat exchange means (3).

5. A water dispenser (1) as in any one of the above claims, **characterized by** the cylindrical heat exchange means (3) comprising more than one reinforcement rib (9) thereon, extending in the vertical direction.

Figure 1

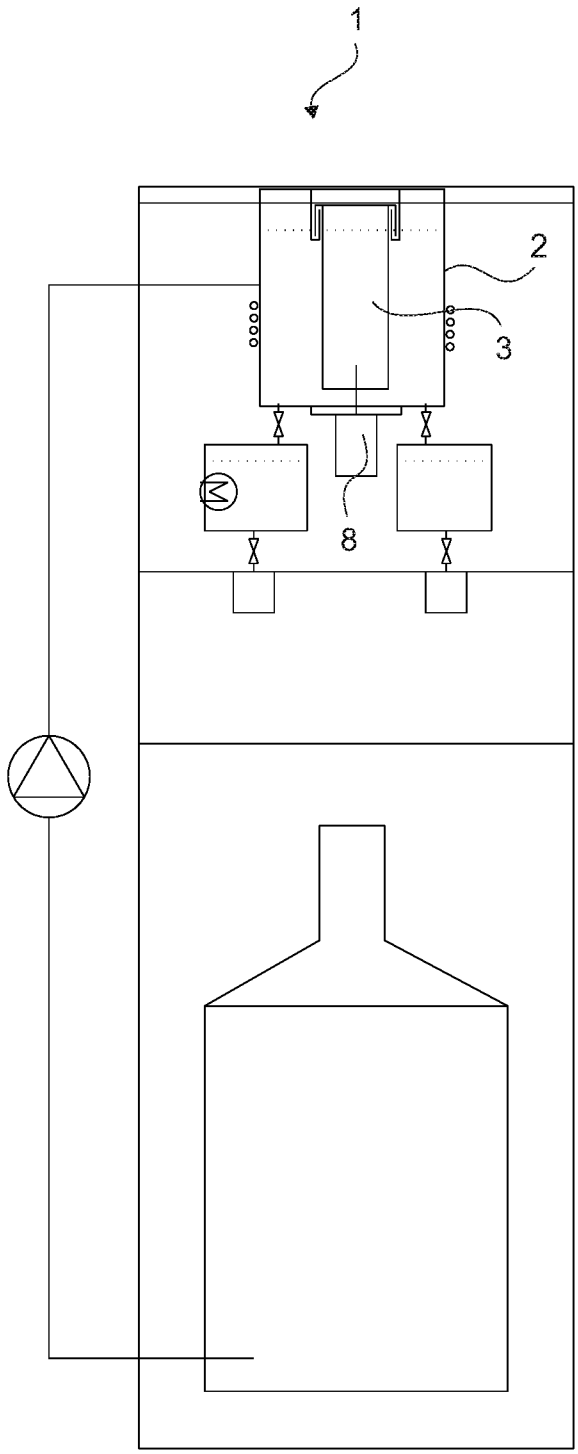
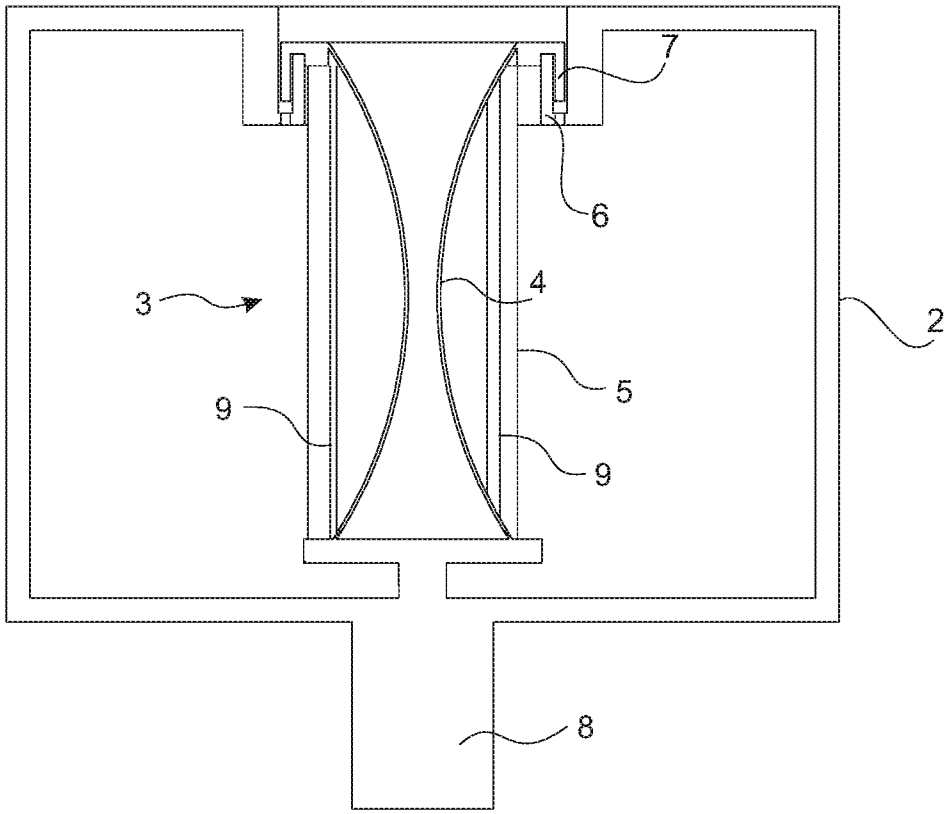


Figure 2



INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
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ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
F25D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 415 777 A (J. GORDON) 26 November 1889 (1889-11-26) the whole document	1,3
X	US 2009/320517 A1 (LAVALLEE PAUL [CA]) 31 December 2009 (2009-12-31) figures 1,3,5,6,7	1,3
X	FR 2 707 744 A1 (ARDECH CONST METALL [FR]) 20 January 1995 (1995-01-20) page 4, line 26 - page 5, line 21; figure 2	1,2
X	US 6 058 733 A (MORGAN ANDY D [US]) 9 May 2000 (2000-05-09)	1,5
Y	the whole document	4

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
24 March 2016	05/04/2016

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2010/218515 A1 (FINK HARVEY S [US] ET AL) 2 September 2010 (2010-09-02) the whole document --- US 6 269 965 B1 (WHITE RICHARD W [US] ET AL) 7 August 2001 (2001-08-07) the whole document ---	4
A		3

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/TR2015/050220

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 415777 A	26-11-1889	NONE	
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