

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 December 2010 (16.12.2010)

(10) International Publication Number
WO 2010/143958 A2

(51) International Patent Classification:
F25D 3/08 (2006.01)

(21) International Application Number:
PCT/NL2010/050359

(22) International Filing Date:
11 June 2010 (11.06.2010)

(25) Filing Language: Dutch

(26) Publication Language: English

(30) Priority Data:
2003005 11 June 2009 (11.06.2009) NL

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,
ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished
upon receipt of that report (Rule 48.2(g))

(54) Title: COOLER FOR A GLASS, CAN, BOTTLE OR MUG

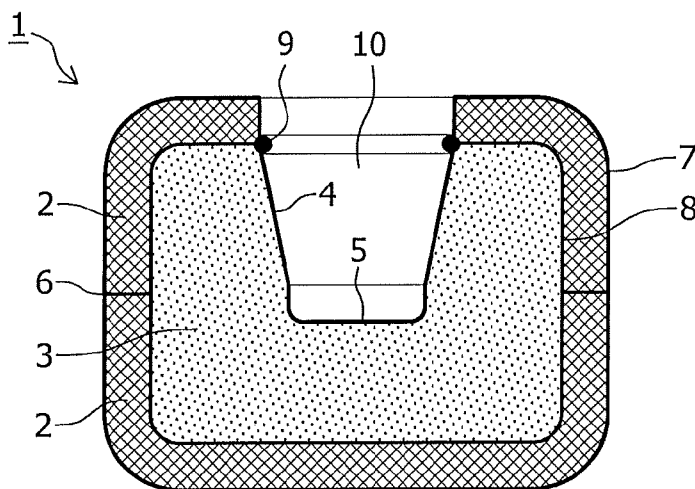


FIG. 1

(57) Abstract: The invention relates to a cooler for at least a container for drinks, such as a glass, a mug, or a bottle, comprising an enclosed body with an outer wall that encloses a volume, the enclosed body at least comprising a cup-shaped recess, wherein the outer wall at location of the bottom of the cup-shaped recess is formed from heat-conducting material and the other part of the outer wall is mainly formed from heat-insulating material, wherein the enclosed volume is filled with a material with a large heat capacity.

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Cooler for a glass, can, bottle or mug

The invention relates to a cooler for a container for drinks such as a glass, can, mug or a bottle, comprising a closed body with an outer wall that encloses a space, the enclosed body at least comprising one cup-shaped recess.

5 For wine bottles, coolers are known, that comprise an enclosed body wherein a wall encloses a gas-filled space and the enclosed body comprises a recess in the shape of a bottle, in which a bottle can be placed. The air in the space in which the bottle can be placed can be cooled by the cold bottle that is
10 placed therein and the insulating properties of the cooler, that in fact forms a double-walled envelope with an insulating layer of gas in between, prevents that the surrounding of the bottle heats up to quickly.

Also such wine coolers are known in which instead of
15 gas the enclosed space comprises a liquid, so that if the cooler for instance has been placed for some time in a refrigerator, it not only has an insulating but also an actively cooling effect.

Such coolers are suited to keep a wine bottle cool for
20 a limited period of time and usually this is sufficient for the purpose, being to keep a bottle of wine cool during part of a meal. Also such coolers are exclusively suitable for bottles and not for other drink containers as for example glasses or mugs.

It is an aim of the invention to provide a cooler that
25 in addition to the positive properties of the coolers mentioned above, also can keep a container of containers of drinks cool for a longer period of time and is also suited as well for glasses, mugs as bottles.

This aim is accomplished by a cooler according to claim
30 1. With such a cooler the enclosed space is filled with the material with a large heat capacity and the outer wall outside the cup-shaped recess is mainly formed from heat-insulating material. This means that when the content of an enclosed space, for example by a stay in the freezer, has been cooled down strongly,
35 it can take up a large amount of heat. This can take place specifically because the outer wall at the location of the bottom of the cup-shaped recess is formed from heat-conducting (cold conducting) material and a mug or glass or bottle with a drink

that has been placed on this bottom can be
period of time. With this it is an advantage that exclusive with
the part of the cooler that is part of the cup-shaped recess for
a container to be cooled and in particular the part that is in
5 contact with the container to be cooled, transfers the heat. Be-
cause the other part of the outer wall is formed from insulating
material, the cooling capacity is used exclusively for the drink
in the container that is to be cooled. The cold air is trapped
in the heat-conducting recess by its depth and insulation. A
10 regular and long lasting cooling of the drink in the container
to be cooled is ensured by the considerable cooling capacity on
one hand and the regular distribution of the material with the
large heat capacity that is responsible for the cooling, over
the circumference of the cup-shaped recess on the other hand.

15 The cold- or heat-transferring capacity can be in-
creased when at least a part of the wall of the cup-shaped re-
cess adjacent to the bottom is also formed from heat-conducting
material.

In a preferred embodiment the material with large heat
20 capacity that is in the enclosed space mainly comprises water.
Not only water with possibly materials dissolved therein, but
also water containing gels and such materials can be considered.
Water is a material that is cheap and commonly available and has
a large heat capacity. A most preferred embodiment is formed by
25 a material with a large heat capacity that consists of a gel
that is formed by mixing cellulosegum and water in a weight ra-
tio between 2% and 3% cellulosegum and 98% to 97% water. The gel
that is thus formed can be enclosed in a enclosed space without
special sealing. A favourable material for the heat conducting
30 material is for example aluminium or stainless steel or alumin-
ium alloys. These materials have excellent heat conducting prop-
erties and are suitable in a humid surrounding. They can be kept
clean easily and do not rust.

A useful material for the heat insulating material of
35 the wall is expanded polystyrene. It can be constructively fa-
vourable to form the wall from expanded polystyrene with on one
side or on both sides covered with a thin layer of another mate-
rial for instance. For example on the outside with a layer of a
material that makes the handling of the cooler more pleasant,
40 and on the inside a material that is impermeable for the mate-

rial with large heat capacity that is on t

In a favourable embodiment of the invention the total volume of the material with large heat capacity is about 30% larger than the volume of the cup-shaped recess. This provides a relatively large amount of the material with large heat capacity, so that during several hours the cooler can have a cooling effect for the container of drinks placed in the cup-shaped recess.

The cooler according to the invention can be equipped with one recess or with more recesses. When the cooler is equipped with more recesses, more glasses and the like can be placed in the cooler at the same time. This makes the cooler according to the invention especially suited for use outdoors, such as on terraces, campsites, on board of pleasure crafts etcetera. The invention will now be explained with the description of some examples of preferred embodiments of a cooler according to the invention, with reference to the attached drawing, in which:

Fig. 1 shows a cross section of a first embodiment; and

Fig. 2 shows a top view of a second embodiment of a cooler according to the invention.

Fig. 1 shows an example of a cooler 1 according to the invention that is suited for cooling or for keeping cool of a glass or mug and that comprises a recess 10, in which the glass or mug fits. Cooler 1 comprises a closed body of which the outer wall outside the cup-shaped recess is formed by a wall 2, that mainly comprises a layer of expanded polystyrene and wherein the outer wall of the body further comprises wall 4 and bottom 5 of the cup-shaped recess. Wall 4 and bottom 5 have been manufactured by extrusion from a 1 mm thick aluminium plate, such that the bottom has a thickness of 1 mm and the wall has a thickness of approximately 0.5 mm. The walls of the body enclose a volume 3 that is filled with a material with large heat capacity, in this case a gel, in which water has been absorbed. The gel is formed by a mixture of cellulosegum and water preferably in a weight ratio from between 2% and 3% cellulosegum and 98% to 97% water. This gel is environmentally friendly and because of the constitution of almost a solid material, no specific sealing of the enclosed volume is required.

The outer wall 2 of polystyrene has been closed off on

the outside by a plastic foil 7 and on the
be able to manufacture the cooler simply and economically, it
has been prepared from two parts that have been glued by means
of a water resistant glue that has been placed on the connecting
5 surfaces 6 of the two halves. The cup-shaped recess has a flat
aluminium bottom 5 and connecting to that a cylindrical alumin-
ium side wall 4. Aluminium side wall 4 has been connected to the
other part 2 of the outer wall by means of a rubber sealing 9.

By placing cooler 1 during a certain amount of time in
10 the freezer, via the aluminium wall 4 and bottom 5, the content
of volume 3 cools down to a low temperature. In use in recess 10
a glass of mug containing a drink can now be placed. By heat
conduction of the aluminium wall 4 and bottom 5 the glass or mug
will be kept cool because the water containing gel in volume 3
15 having a low temperature and a large heat capacity, can absorb a
lot of heat. This means that a glass, can or glasses containing
drinks can be kept cool for a long period of time.

Fig. 2 shows a plan view of a cooler 1 according to an-
other embodiment of the invention and comprising more, in this
20 case four, recesses 10. Such a cooler is suitable for simultane-
ously keeping cool four glasses.

It will be clear that the invention can have many em-
bodiments both concerning use of materials, shape as well as
number of recesses, and with that positions for glasses or cups
25 of bottles to be cooled. In addition the cooler according to the
invention is not only suited for keeping drinks cool, but can
also be used for keeping drinks warm. To this end the cooler
should not be placed in a cool area for a certain period of
time, but the content of volume 3 must be heated up, for example
30 by placing it for some time in a warm environment.

CLAIMS

1. Cooler (1) for at least one container for drinks, such as a glass, a mug, or a bottle, comprising an enclosed body with an outer wall (2) that encloses a volume (3), the enclosed body at least comprising a cup-shaped recess (10) with a bottom (5) and a wall (4) connecting to the bottom (5) that together with the bottom (5) separates the cup-shaped recess (10) from the enclosed volume (3) and at the end away from the bottom (5) is connected to the outer wall (2), **characterized in that** the bottom (5) of the cup-shaped recess (10) is formed of heat conducted material and the outer wall (2) is mainly formed from heat-insulating material, the enclosed volume (3) having been filled with a material with large heat capacity, and the total volume (3) of the material with a large heat capacity being at least 30% larger than the volume of the cup-shaped recess (10), and wherein the enclosed volume (3) at the location of the wall (4) and the bottom (5) of the cup-shaped recess (10) accommodates a layer of the material with large heat capacity, the thickness of this layer being at 10% of a diameter of the cup-shaped recess (10).

2. Cooler (1) according to claim 1, **characterized in that** at least a part of the wall (4) of the cup-shaped recess (10) that connects to the bottom (5) is also formed of a heat-conducting material.

3. Cooler (1) according to claim 1 or 2, **characterized in that** the material with large heat capacity mainly comprises water.

4. Cooler (1) according to claim 3, **characterized in that** the material with large heat capacity comprises a gel that is formed by mixing cellulosegum and water.

5. Cooler (1) according to claim 4, **characterized in that** the mixture of cellulosegum and water has a weight ratio between 2% and 3% of cellulosegum and 98% to 97% of water.

6. Cooler (1) for a glass or cup according to one of the claims 1 to 5, **characterized in that** the heat conducting material is chosen from the group that comprises: aluminium, stainless steel, an aluminium alloy.

7. Cooler (1) for a glass or a cup according to one of

the claims 1 to 6, **characterized in that** the heat-insulating material comprises expanded polystyrene.

8. Cooler (1) for a glass or a cup according to one of the claims 1 to 7, **characterized in that** the heat conducting material has a thickness of at least 0.5 mm.

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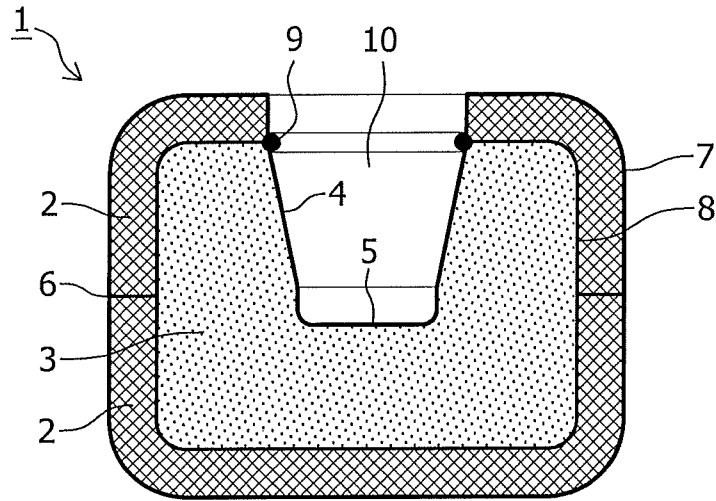


FIG. 1

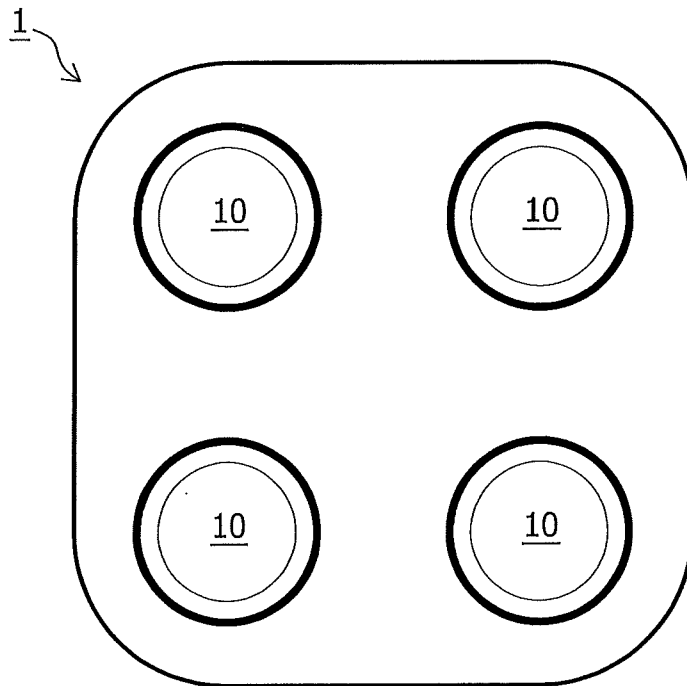


FIG. 2