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(54) **A COOLING DEVICE WHEREOF THE LID IS ILLUMINATED**

KÜHLVORRICHTUNG MIT BELEUCHTETEM DECKEL

DISPOSITIF DE REFROIDISSEMENT DONT LE COUVERCLE EST ÉCLAIRÉ

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Description

[0001] The present invention relates to a cooling device whereof the lid is illuminated.

[0002] In some of the cooling devices, lids which are disposed on the door and which allow the users to take their cooled foods and beverages without opening the cooling device door are provided. The said lids which are also called door in door are generally used for easily taking outside the bottles stored on the door shelf. Thus, the door is not opened for taking the bottle, etc. and heat loss is decreased by a remarkable extent.

[0003] Most of the lids are secured over an opening arranged on the door by being pivoted from one of their sides. They are opened by a handle grip or by pressing a push/release button situated on another side. In some of the state of the art embodiments, a lighting element is utilized on the handle grip or the push/release button in order to find their places in dark environment. A cooling device according to the preamble of claim 1 is known from Document No. DE 20 011436 U1.

[0004] In the state of the art United States Patent Application No. US2003102825, a refrigerator having a door with a lid the external surface of which is illuminated is described.

[0005] In the state of the art Korean Patent Application No. KR2004004967, a cooling device having an illumination element which allows the bottles on the shelf to be seen when the lid is opened is explained.

[0006] More than one illuminator or a big illuminator which continuously gives off light in all directions is required in order to illuminate both the exterior surface of the lid and also the shelf section when the lid is opened. This causes complications with regards to the layout and costs.

[0007] The aim of the present invention is the realization of a cooling device having an illumination element which can be utilized multi purposely.

[0008] The cooling device realized in order to attain the aim of the present invention is explicated in the claims.

[0009] The cooling device of the present invention comprises a lid which covers the opening situated on the door.

[0010] The cooling device has an illumination element which illuminates the lid while the lid is closed and the opening when the lid is opened. When the lid is closed, the light emitted by the illumination element is guided by a light guide situated on the lid one end of which extends to the illumination element and the other end to the exterior surface of the lid.

[0011] In an embodiment of the present invention, the light guide has an L shaped configuration. When the lid is closed, the light guide delivers the light received from one arm to the exterior surface of the lid thus providing the lid to be seen.

[0012] In another embodiment of the present invention, a cavity situated on the side of the opening which extends

towards the door and wherein an illumination element is disposed is provided. When the lid is open, the illumination element gives off light from the cavity towards the opening and provides the foodstuffs situated on the door shelf to be illuminated.

[0013] In an embodiment of the present invention, the cavity is covered by a transparent cover. Consequently, the illumination element is protected from external factors such as dust, dirt, etc., thus its light emitting effectiveness is prevented from decreasing.

[0014] In an embodiment of the present invention, the lid is surrounded by the light guide. Accordingly, when the lid is closed, the frame thereof is illuminated thus facilitating the noticing of the lid.

[0015] In an embodiment of the present invention, the handle grip of the lid is surrounded by the light guide. Consequently, when the lid is closed, the handle grip is illuminated by the light emitted from the illumination element and the user is enabled to reach the handle grip.

[0016] In another embodiment of the present invention, a lid opening button surrounded by light guide is situated on the door. Accordingly, the lid can be opened by noticing the button even in a dark environment and when the lid is opened another light is not required in the environment since the opening is illuminated.

[0017] In other embodiments of the present invention, the lid and/or the handle grip and/or the opening button is produced from light guiding material, and one of their ends is in contact with the light guide. Thus, the light reaching to the light guide while the lid is closed provides all the surfaces to be illuminated.

[0018] By means of the illumination element of the present invention, while the lid is illuminated when the lid is required to be illuminated and the opening is illuminated when the opening is required to be illuminated. Consequently, savings in use of space is provided by using a single illumination element.

[0019] The cooling device realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

[0020] Figure 1 - is the perspective view of a cooling device.

[0021] Figure 2 - is the sideways cross-sectional view of a door when the lid is closed.

[0022] Figure 3 - is the front view of the door when the lid is open.

[0023] Figure 4 - is the detailed view of a light guide.

[0024] The elements illustrated in the figures are numbered as follows:

1. Cooling device
2. Body
3. Door
4. Opening
5. Lid
6. Illumination element
7. Cavity
8. Light guide

9. Cover

[0025] The cooling device (1) comprises a body (2), at least one door (3), at least one opening (4) situated on the door (3) allowing access to the interior volume of the body (2) without opening the door (3) and at least one lid (5) pivoted from one side to the side of the opening (4).

[0026] The cooling device (1) furthermore comprises an illumination element (6) situated on the door (3) at the side of the opening (4), a light guide (8) disposed on the lid (5), one end of which extends to the illumination element (6) and the other end to the exterior surface of the lid (5) and the illumination element (6) which illuminates the lid (5) when the lid (5) is closed and illuminates the opening (4) when the lid (5) is open by means of the light guide (8).

[0027] The illumination element (6) provides the lid (5) to be noticed by illuminating the lid (5) when the lid (5) is closed. Consequently, the user can easily reach and open the lid (5). When the lid (5) is opened, the illuminating direction of the illumination element (6) turns toward the opening (4) by means of the light guide (8) and enables the foods and beverages on the door (3) shelf to be seen. Thus, the illumination element (6) allows the lid (5) to be seen when the lid (5) is closed and the foods remaining at the rear side of the opening (4) when the lid (5) is open.

[0028] In an embodiment of the present invention, the cooling device (1) comprises at least one cavity (7) situated on the side of the opening (4) wherein the illumination element (6) is disposed and at least one L shaped light guide (8) (Figure 2).

[0029] By means of the L shaped light guide (8) situated on the lid (5), the direction of the light can be changed without requiring to move the illumination element (6). Consequently, the light of the illumination element (6) emitting light towards the opening (4) illuminates the opening (4) when the lid (5) is open and illuminates the exterior of the lid (5) by passing through the arms of the light guide (8) when the lid (5) is closed. By means of one arm of the light guide (8) overlapping with the cavity (7) wherein the illumination element (6) is disposed, the light is enabled to reach the exterior surface of the lid (5) without dispersing to another environment thus without losing its intensity. The interior of the light guide (8) is preferably coated with mirror. Thus, the direction of light can be changed without requiring to move the illumination element (6).

[0030] In an embodiment of the present invention, the door (3) comprises a transparent cover (9) which covers the cavity (7). The cover (9) allows the light to reach the opening (4) while protecting the illumination element (6) from the outside environment.

[0031] In an embodiment of the present invention, the cooling device (1) comprises a frame which surrounds the opening (4) and the illumination element (6) situated on the frame.

[0032] In another embodiment of the present invention,

the lid (5) comprises a handle grip surrounded by the light guide (8). Consequently, the handle grip allows the user to reach the opening (4) while creating a visual difference.

[0033] In an embodiment of the present invention, the lid (5) comprises an opening button surrounded by the light guide (8). While access to the preferably push release type illuminated opening button becomes easier, the lid (5) is opened by actuating the opening button.

[0034] In an embodiment of the present invention, the lid (5) is surrounded by the light guide (8). Thus while the lid (5) is illuminated its boundaries are also highlighted.

[0035] In another embodiment of the present invention, the lid (5) comprises a handle grip produced from material with light guiding property, one end of which contacts the light guide (8). Thus, the handle grip is also illuminated while the lid (5) is closed and noticed by the user.

[0036] In another embodiment of the present invention, the lid (5) comprises an opening button produced from material with light guiding property, one end of which contacts the light guide (8). The light guide (8) contacting the opening button, delivers the light received from the illumination element (6) to the opening button when the lid (5) is closed and provides the opening button produced from material with light guiding property to also give off light to the environment.

[0037] In another embodiment of the present invention, the lid (5) is produced from material with light guiding property, one end of which contacts the light guide (8). Consequently, the lid (5) is illuminated when closed and creates a visual difference.

[0038] By means of the embodiment of the present invention, it is provided that the exterior surface of the lid (5) is illuminated when needed or the opening (4) when required by utilizing a single illumination element (6). Thus, separate light sources or a light source with high capacity is not required and the problem of cable complication inside the cooling device (1) is prevented. The light guide (8) utilized changes the direction of the illumination element (6) light without losing its intensity thus moving the illumination element (6) is not required.

[0039] It is to be understood that the present invention is not limited to the embodiments disclosed above and a person skilled in the art can easily introduce different embodiments. These should be considered within the scope of the protection postulated by the claims of the present invention.

Claims

1. A cooling device (1) comprising a body (2), at least one door (3), at least one opening (4) situated on the door (3) allowing access to the interior volume of the body (2) without opening the door (3) and at least one lid (5) pivoted from one side to the side of the opening (4) providing the opening (4) to be opened when desired and **characterized by**

an illumination element (6) situated on the door (3), a light guide (8) disposed on the lid (5) one end of which extends to the illumination element (6) and another end which extends to the exterior surface of the lid (5) and wherein the illumination element (6) illuminates the lid (5) when the lid (5) is closed and illuminates the opening (4) when the lid (5) is open by means of the light guide (8).

2. A cooling device (1) as in Claim 1, **characterized by** an L shaped light guide (8).
3. A cooling device (1) as in Claim 1, **characterized by** at least one cavity (7) situated on the side of the opening (4) wherein the illumination element (6) is disposed
4. A cooling device (1) as in Claim 3, **characterized in that** the door (3) has a transparent cover (9) which covers the cavity (7).
5. A cooling device (1) as in any one of the above Claims, **characterized in that** the lid (5) comprises a handle grip surrounded by the light guide (8).
6. A cooling device (1) as in any one of the above Claims, **characterized in that** the lid (5) comprises an opening button surrounded by the light guide (8).
7. A cooling device (1) as in any one of the above Claims, **characterized in that** the lid is (5) surrounded by the light guide (8).
8. A cooling device (1) as in any one of the Claims 1 to 4, **characterized in that** the lid (5) comprises a handle grip produced from material with light guiding property, one end of which contacts the light guide (8).
9. A cooling device (1) as in any one of the Claims 1 to 4, **characterized in that** the lid (5) comprises an opening button produced from material with light guiding property, one end of which contacts the light guide (8).
10. A cooling device (1) as in any one of the Claims 1 to 4, **characterized in that** the lid is (5) produced from material with light guiding property, one end of which contacts the light guide (8).

Patentansprüche

1. Kühlvorrichtung (1), umfassend einen Gehäusekörper (2), wenigstens eine Tür (3), wenigstens eine Öffnung (4) an der Tür (3), die Zugang zum Innenraum des Gehäusekörpers (2) bietet, ohne dass die

Tür (3) geöffnet wird, und wenigstens einen Deckel (5), der von einer Seite zur Seite der Öffnung (4) geschwenkt wird, und zulässt, dass der Öffnung (4) um bei Bedarf geöffnet wird, und **gekennzeichnet durch**

ein Beleuchtungselement (6), das an der Tür (3) angeordnet ist, einen Lichtleiter (8), der am Deckel (5) angeordnet ist und dessen eines Ende sich zum Beleuchtungselement (6) erstreckt und dessen anderes Ende sich zur Außenfläche des Deckels (5) erstreckt, und wobei das Beleuchtungselement (6) mithilfe des Lichtleiters (8) den Deckel (5) beleuchtet, wenn der Deckel (5) geschlossen ist, und die Öffnung (4) beleuchtet, wenn der Deckel (5) geöffnet ist.

2. Kühlvorrichtung (1) nach Anspruch 1, **gekennzeichnet durch** einen L-förmigen Lichtleiter (8).
3. Kühlvorrichtung (1) nach Anspruch 1, **gekennzeichnet durch** wenigstens einen Hohlraum (7) an der Seite der Öffnung (4), in dem das Beleuchtungselement (6) angeordnet ist.
4. Kühlvorrichtung (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** die Tür (3) eine transparente Abdeckung (9) aufweist, die den Hohlraum (7) abdeckt.
5. Kühlvorrichtung (1) nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** der Deckel (5) einen Griff umfasst, der von dem Lichtleiter (8) umgeben ist.
6. Kühlvorrichtung (1) nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** der Deckel (5) einen Knopf umfasst, der von dem Lichtleiter (8) umgeben ist.
7. Kühlvorrichtung (1) nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** der Deckel (5) von dem Lichtleiter (8) umgeben ist.
8. Kühlvorrichtung (1) nach einem der vorangehenden Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** der Deckel (5) einen Griff umfasst, der aus Material mit Licht leitenden Eigenschaften hergestellt ist, dessen eines Ende mit dem Lichtleiter (8) in Kontakt steht.
9. Kühlvorrichtung (1) nach einem der vorangehenden Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** der Deckel (5) einen Knopf umfasst, der aus Material mit Licht leitenden Eigenschaften hergestellt ist, dessen eines Ende mit dem Lichtleiter (8) in Kontakt steht.

10. Kühlvorrichtung (1) nach einem der vorangehenden Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** der Deckel (5) Material mit Licht leitenden Eigenschaften hergestellt ist, dessen eines Ende mit dem Lichtleiter (8) in Kontakt steht.

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Revendications

1. Un dispositif de refroidissement (1) comprenant un corps (2), au moins une porte (3), au moins une ouverture (4) située sur la porte (3) permettant l'accès dans le volume intérieur du corps (2) sans ouvrir la porte (3), et au moins un couvercle (5) articulé à partir d'un côté sur un côté de l'ouverture (4) et permettant à l'ouverture (4) d'être ouverte lorsque l'on le désire et **caractérisé par**,
un élément d'illumination (6) situé sur la porte (3), un guide de lumière (8) situé sur le couvercle (5), dont l'une extrémité s'étend vers l'élément d'illumination (6) et dont l'autre extrémité s'étend vers la surface extérieure du couvercle (5), et où l'élément d'illumination (6) illumine le couvercle (5) lorsque le couvercle (5) est fermé et qui illumine l'ouverture (4) lorsque le couvercle (5) est ouvert au moyen du guide de lumière (8).
2. Un dispositif de refroidissement (1) selon la Revendication 1, **caractérisé par** un guide de lumière en forme de L (8).
3. Un dispositif de refroidissement (1) selon la Revendication 1, **caractérisé par** au moins une cavité (7) située sur le côté de l'ouverture (4), dans laquelle l'élément d'illumination (6) est placé.
4. Un dispositif de refroidissement (1) selon la Revendication 3, **caractérisé en ce que** la porte (3) présente un couvercle transparent (9) qui couvre la cavité (7).
5. Un dispositif de refroidissement (1) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le couvercle (5) comprend une poignée entourée par le guide de lumière (8).
6. Un dispositif de refroidissement (1) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le couvercle (5) comprend un bouton d'ouverture entouré par le guide de lumière (8).
7. Un dispositif de refroidissement (1) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le couvercle (5) est entouré par le guide de lumière (8).
8. Un dispositif de refroidissement (1) selon l'une quelconque des revendications de 1 à 4, **caractérisé en**

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ce que le couvercle (5) comprend une poignée qui est produit d'un matériau ayant la particularité de guidage de lumière, dont l'une extrémité est en contact avec le guide de lumière (8).

9. Un dispositif de refroidissement (1) selon l'une quelconque des revendications de 1 à 4, **caractérisé en ce que** le couvercle (5) comprend un bouton d'ouverture qui est produit d'un matériau ayant la particularité de guidage de lumière, dont l'une extrémité est en contact avec le guide de lumière (8).

10. Un dispositif de refroidissement (1) selon l'une quelconque des revendications de 1 à 4, **caractérisé en ce que** le couvercle (5) est produit d'un matériau ayant la particularité de guidage de lumière, dont l'une extrémité est en contact avec le guide de lumière (8).

Figure 1

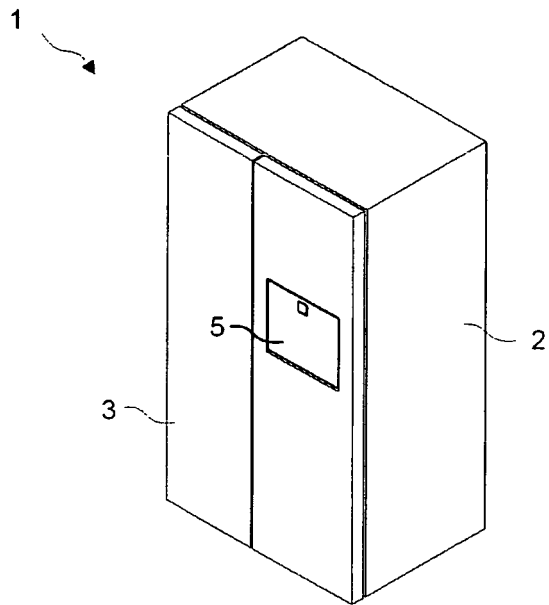


Figure 2

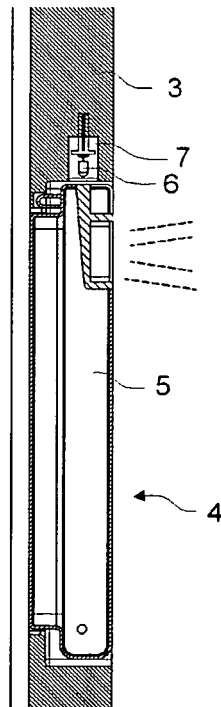


Figure 3

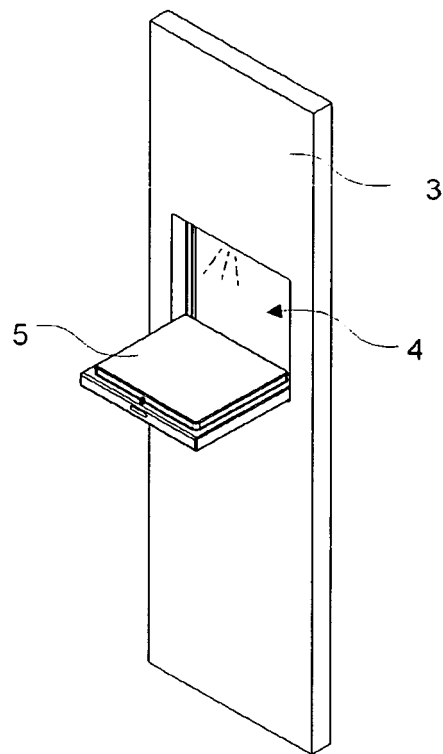
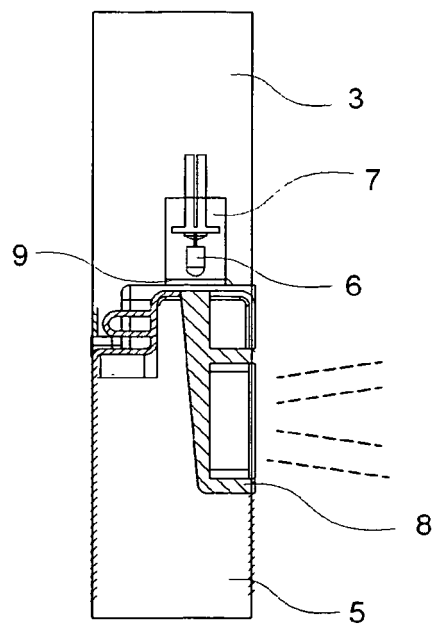


Figure 4



REFERENCES CITED IN THE DESCRIPTION

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