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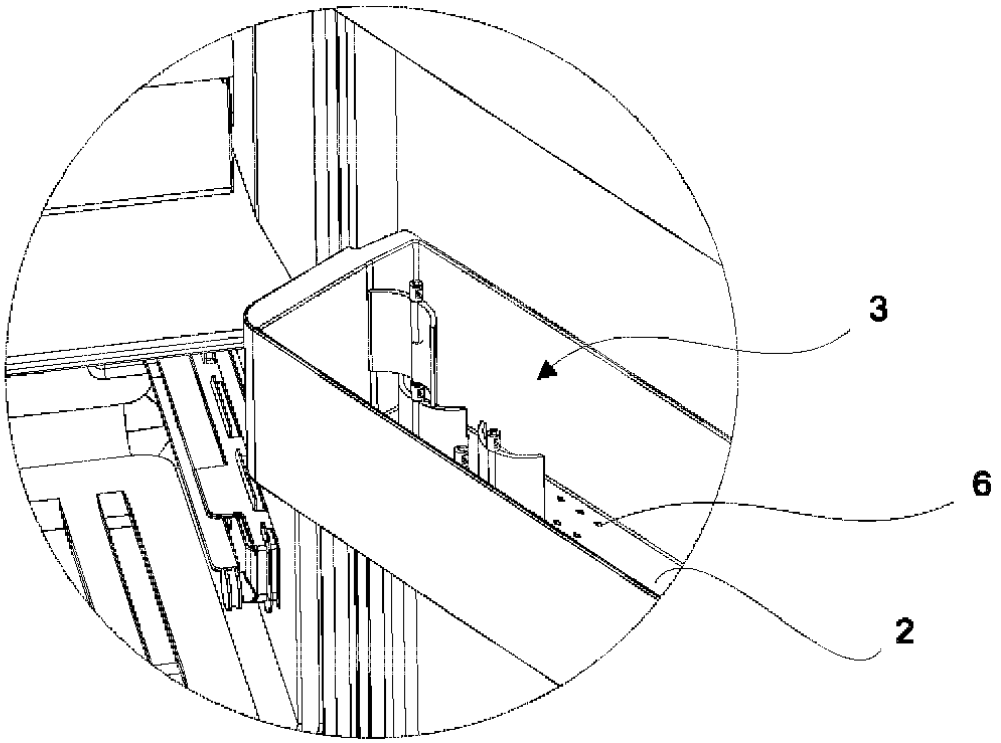
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(54) **A COOLING APPLIANCE COMPRISING A RETAINING MEANS**

(57) The present invention relates to a cooling appliance (1) comprising; a planar surface (2); a retaining means (3) comprising a shaft (4) and a pair of flaps (5) extending from the shaft (4).

Figure 2



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Description

[0001] The present invention relates to a cooling appliance, in particular to a cooling appliance having a retaining means.

[0002] The cooling devices comprise shelves in different forms and numbers which are positioned at different levels and whereon the items to be cooled in the body are placed. Moreover, bottle retaining means which can safely hold bottles can be produced together with the shelves as a single piece or can be mounted onto the shelves afterwards. A problem faced with the retaining means is that different retaining means are required to retain articles having different shapes, geometries and heights. Another problem faced with such retaining means is that the location of the retaining means has to be changed so as to meet the demands of the users. When and if he user wants to locate the bottles, cans or the like inside the cooling appliance, the retaining means fail to meet the demand as they are stationary or are limited to move along a predetermined direction.

[0003] A prior art publication in the technical field of the present invention may be referred to as WO2006003534A1 among others, the document disclosing a cooling appliance having a separator for use in a door of a refrigeration appliance.

[0004] A prior art publication in the technical field of the present invention may be referred to as WO2004053407A1 among others, the document disclosing a cooling appliance having a divider for use in a door of a refrigeration appliance.

[0005] A prior art publication in the technical field of the present invention may be referred to as DE102017118185A1 among others, the document disclosing a cooling appliance having a retainer.

[0006] An objective of the present invention is to provide a retaining means wherein the location of the retaining means inside the cooling appliance can be changed conveniently.

[0007] Another objective of the present invention is to provide a retaining means having the ability to retain articles having a wide range of geometry.

[0008] The method realized to achieve the aim of the present invention and disclosed in the first claim and the dependent claims comprises a cooling appliance. The cooling appliance comprises at least a planar surface. The cooling appliance comprises a retaining means wherein the retaining means comprises a shaft and a pair of flaps extending away from the shaft. The flaps are pivotable attached to the shaft between a closed position and an open position. During the closed position, the flaps remain close together. As the user forces an article to be cooled inside the flaps, the flaps pivot towards the open position. The retaining means is placed onto the planar surface via a first slot provided on the planar surface. The retaining means is inserted into the first slot by means of a first end provided on an end of the shaft. Upon being seated inside the first slot, the shaft and therefore the retaining means extends perpendicular to the planar surface. As a result, the location of the retaining means can be changed on the planar surface. By means of which, the user can relocate the retaining means, achieving flexibility during the use. Another advantageous effect provided by means of the flaps being pivotable between the closed and open position is that the bottles, can and articles having a varying diameter can be retained by means of a single retaining means.

[0009] In an embodiment of the invention, the planar surface is a surface of a shelf of the cooling appliance.

[0010] In another embodiment of the invention, the planar surface is the inner surfaces of the cooling appliance, meaning that the inner line of the cooling appliance. By means of providing the planar surface on the inner liner, bottles, cans or the like can be retained horizontally.

[0011] In an embodiment of the invention, the planar surface is a surface of a door shelf.

[0012] In an embodiment of the invention, the flaps comprise a canal into which the shaft is seated. By means of the canal, the flaps act as a hinge, rigidly retaining the bottles, cans and other articles to be cooled.

[0013] In an embodiment of the invention, the retaining means comprises a spring, biasing the flaps towards the closed position. The spring abuts against the both flaps from behind. The shaft is inserted inside the spring. The spring is a helical spring having a hollow core through which the shaft passes through. The user first inserts the shaft through one of the flaps, then spring and then finally the second flap. The spring is located between the two flaps. By means of the spring, the flaps are biased towards the closed position which in turn provides use of convenience for the user.

[0014] In an embodiment of the invention, the shaft comprises a locking catch wherein the locking catch is located opposite the first end along the shaft. The locking catch comprises two parallel extending lugs which are configured to be seated inside the canal of flaps. Upon passing though the canal, the locking catch automatically opens, holding the flaps attached onto itself. Same applies to the spring. Should the user require to remove the flaps from the locking catch, the user needs to squeeze the locking catch therefore releasing the flaps and the spring. The locking catch prevents the flaps to be removed from the shaft by accident.

[0015] In an embodiment of the invention, the spring is located equidistant from the first end and the locking catch. By means of this, the flaps that are going to attached onto the shaft can be identical which in turn decreases mold related costs.

[0016] In an embodiment of the invention, the retaining means comprises a cap configured to be placed onto the locking catch. The cap upon being seated onto the locking catch, closes the end of the shaft and prevents the flaps to be removed from the shaft. The cap is cylindrical shaped and comprises two ends. Each end comprises a slot. The end facing the locking catch comprises the second slot configured to be seated onto the locking catch.

The other end that is located opposite the second slot comprises a first slot. The first slot on the locking catch is identical to the first slot provided on the planar surface and allows another shaft to be placed onto the locking catch. Therefore, multiple retaining means can be placed on top of each other, lengthening the retaining means. This helps retaining long articles such as bottles to be hold in a safe manner.

[0017] In an embodiment of the invention, the cap comprises an opening. The opening is used for releasing the cap from the locking catch.

[0018] In an embodiment of the invention, the first end comprises a pair of protrusion wherein the protrusions are configured to be seated inside the recesses provided inside the first slot. Therefore, the shaft is form fittingly seated inside the first slot, preventing the movement of the shaft which in turn can cause the tipping over of the articles as the user opens and closes the door of the cooling appliance.

[0019] In an embodiment of the invention, the flaps form a concave surface upon being seated onto the shaft. Most elongated articles such as cans, bottles and jars have a cylindrical shape and the concavity of the flaps matches the shape of the said articles. Therefore, the articles are retained in a tight manner.

[0020] The spring provides the pivot movement of the flaps. Therefore, the concavity of the retaining means is automatically adjusted according to the shape of the articles to be cooled.

[0021] In an embodiment of the invention, the area of the flaps facing the articles to be cooled are at least partially coated with silicone or similar elastic material so as to prevent the noise occurring due to collision with the flaps and the articles to be cooled.

[0022] In an embodiment of the invention, the area is configured to form a pattern on the surface of the flap.

[0023] By means of the present invention, a retaining means is provided for the user allowing them to change the location of the retaining means according to their needs. As a result, inner volume of the cooling appliance is utilized in an efficient manner.

[0024] Another advantageous effect provided by means of this invention is that, thanks to the pivot movement of the flaps, articles having different shapes and volumes can be retained by a single retaining means.

[0025] The drawings are not meant to delimit the scope of protection as identified in the claims nor should they be referred to alone in an effort to interpret the scope identified in the claims without recourse to the technical disclosure in the description of the present invention.

Figure 1 - is a front view of the cooling appliance
Figure 2 - is an enlarged view of dashed A-A lines in Figure-1
Figure 3 - is a perspective view of the planar surface
Figure 4 - is an isolated view of the retaining means
Figure 5 - is an exploded view of the retaining means

[0026] The following numerals are assigned to different parts demonstrated in the drawings and referred to in the present detailed description of the invention:

1. Cooling appliance
2. Planar surface
3. Retaining means
4. Shaft
5. Flap
6. First slot
7. First end
8. Spring
9. Locking catch
10. Cap
11. Second slot

[0027] The present invention relates to a cooling appliance (1) comprising; a planar surface (2); a retaining means (3) comprising a shaft (4) and a pair of flaps (5) extending from the shaft (4).

[0028] The present invention relates to a cooling appliance (1) wherein the flaps (5) are pivotable attached onto the shaft (4) between a closed position and an open position during which the articles to be cooled are retained and that the planar surface (2) comprises at least a first slot (6) into which a first end (7) of the shaft (4) is inserted, perpendicular fixing the shaft (4) with respect to the planar surface (2). The cooling appliance (1) comprises the planar surface (2) wherein the planar surface (2) is parallel or vertical to the ground frame. The cooling appliance (1) is provided with the retaining means (3). The retaining means (3) comprises the shaft (4) and a pair of flaps (5) extending from the shaft (4). The flaps (5) are pivotable attached to the shaft (4). The flaps (5) are configured to move between the closed position and the open position. The flaps (5) are suitable to hold can, bottles and other articles to be cooled. The flaps (5) are biased towards the closed position, therefore retaining the articles to be cooled. The position of the retaining means (3) inside the cooling appliance (1) can be changed. The planar surface (2) comprises at least a first slot (6). The first slot (6) is used to fix the retaining means (3) inside the cooling appliance (1). The shaft (4) comprises the first end (7) wherein the first end (7) is configured to be seated inside the first slot (6). The planar surface (2) comprises first slots (6) at different locations, therefore the user, depending on the size and shape of the article to be cooled, can change the position of the retaining means (3) simply by removing the retaining means (3) and inserting the retaining means (3) to another first slot (6) different than the first slot (6). Upon being placed inside the first slot (6), the shaft extends perpendicular to said planar surface (2). The user then places the retaining means (3) to a first (6) close to a surface that is perpendicular to the planar surface (2) therefore constricting the article to be cooled between the retaining means (3) and the surface that is perpendicular to the planar surface (2). By means of the retaining

means (3), the articles to be cooled are retained in a stable manner, eliminating the possibility of tipping over of the articles as the users open and close the door of the cooling appliance (1). Another advantageous effect provided by the retaining means (3) is that the distance between the flaps (5) is automatically adjusted according to the size of the articles. As a result, the articles having different shapes and volumes can be retained by a single retaining means (3) providing flexibility and convenience for the user.

[0029] In another embodiment of the invention, the planar surface (2) is a surface of a shelf.

[0030] In another embodiment of the invention, the shelf is a door shelf.

[0031] The shelf is either a shelf on the door of the cooling appliance (1) or a body shelf extending between the side walls of the cooling appliance (1). The slots (6) can be provided both on said door shelves or on the body shelves.

[0032] In another embodiment of the invention, the planar surface (2) is an inner surface of the side walls of the cooling appliance (1). The first slots (6) are provided on inner surface of the side walls of the cooling appliance (1). By means of this, the articles to be cooled can be retained horizontally inside the cooling appliance (1).

[0033] In another embodiment of the invention, the flaps (5) comprise a canal through which the shaft (4) passes. The shaft (4) forms an axis. The flaps (5) are placed onto the shaft (4) via the canal and rotates around the axis.

[0034] In another embodiment of the invention, the flaps (5) are biased towards the closed position by means of a spring (8). The spring (8) abuts against the flaps (5) and biases the flaps (5) towards the closed position. By means of the spring (8), the flaps (5) are automatically adjusted according to the different shapes and volumes the articles to be cooled have. As the user removes the article in between the flaps (5), the flaps (5) automatically moves towards the closed position.

[0035] In another embodiment of the invention, the shaft (4) comprises a locking catch (9) opposite the first end (6). The locking catch (9) comprises two vertically extending lugs with a catching tab at the end of each lugs. Therefore, as the flap (5) is placed onto the shaft (4), the locking catch (9) squeezes, and is released as the shaft (4) emerges from the canal of the flap (5). The locking catch (9) prevents the flaps (5) to be removed from the shaft (4) by accident.

[0036] In another embodiment of the invention, the spring (8) is equidistant from the locking catch (9) and the first end (6). By means of the equidistant location of the spring from the flap (5), a single type of flap (5) can be used decreasing the mold related costs.

[0037] In another embodiment of the invention, the cooling appliance (1) comprises a cap (10) comprising the first slot (6) and the second slot (11) located opposite to each other on the cap (10) and wherein the second slot (11) is configured to be seated onto the locking catch (9). The cap (10) comprises the second slot (11) that is configured to be seated onto the locking catch (9). The cap (10) comprises the first slot (6) located opposite the second slot (11) wherein the first slot (6) is configured to accommodate the first end (7) of the shaft (4). Therefore, multiple retaining means (3) can be attached on top of each other. As a result, long articles such as bottles and the like can be retained.

[0038] In another embodiment of the invention, the cap (10) comprises an opening. The cap (10) comprises an opening in the form of a window. The user can squeeze the locking catch (9) via the opening, therefore releasing the cap (10) from the locking catch (9).

[0039] In another embodiment of the invention, the first end (6) comprises a pair of protrusions configured to be form fittingly inserted inside the first slot (6). By means of the protrusions, the shaft (4) is placed inside the first slot (6) in an unmovable manner.

[0040] In another embodiment of the invention, the flaps (5) form a concave surface. The concave surface fits the surface geometry of articles such as can, bottles or other cylindrical articles.

[0041] By means of the retaining means (3), the articles to be cooled are retained in an unmovable manner as the user opens the door of the cooling appliance (1).

[0042] Another advantageous effect provided by means of the retaining means (3) is that the articles, thanks to the flaps (5), having different geometries and volumes can be retained by means of a single retaining means (3).

[0043] Another advantageous effect provided by means of the retaining means (3) is that the location of the retaining means (3) inside the cooling appliance (1) can be changed via the plurality of first slots (6) provided on planar surfaces (2).

Claims

1. A cooling appliance (1) comprising;
   a planar surface (2);
   a retaining means (3) comprising a shaft (4) and a pair of flaps (5) extending from the shaft (4);
   characterized in that
   the flaps (5) are pivotable attached onto the shaft (4) between a closed position and an open position during which the articles to be cooled are retained and that the planar surface (2) comprises at least a first slot (6) into which a first end (7) of the shaft (4) is inserted, perpendicular fixing the shaft (4) with respect to the planar surface (2).

2. A cooling appliance (1) according to claim 1, **characterized in that** the planar surface (2) is a surface of a shelf.

3. A cooling appliance (1) according to claim 2, **characterized in that** the shelf is a door shelf.

4. A cooling appliance (1) according to any preceeding claim, **characterized in that** the flaps (5) comprise a canal through which the shaft (4) passes.

5. A cooling appliance (1) according to any preceeding claim, **characterized in that** the flaps (5) are biased towards the closed position by means of a spring (8).

6. A cooling appliance (1) according to any preceeding claim, **characterized in that** the shaft (4) comprises a locking catch (9) opposite the first end (6).

7. A cooling appliance (1) according to claim 6, **characterized in that** the spring (7) is equidistant from the locking catch (9) and the first end (6).

8. A cooling appliance (1) according to claims 6 or 7, **characterized by** a cap (10) comprising the first slot (6) and the second slot (11) located opposite to each other on the cap (10) and wherein the second slot (11) is configured to be seated onto the locking catch (9).

9. A cooling appliance (1) according to claim 7, **characterized in that** the cap (10) comprises an opening.

10. A cooling appliance (1) according to any preceeding claim, **characterized in that** the first end (6) comprises a pair of protrusions configured to be form fittingly inserted inside the first slot (6).

11. A cooling appliance (1) according to any preceeding claim, **characterized in that** the flaps (5) form a concave surface.

Figure 1

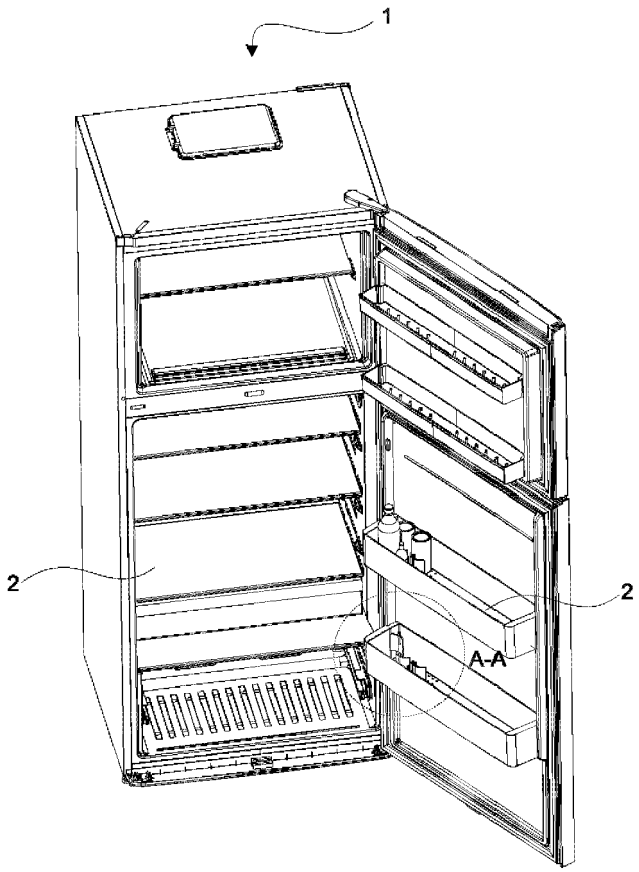


Figure 2

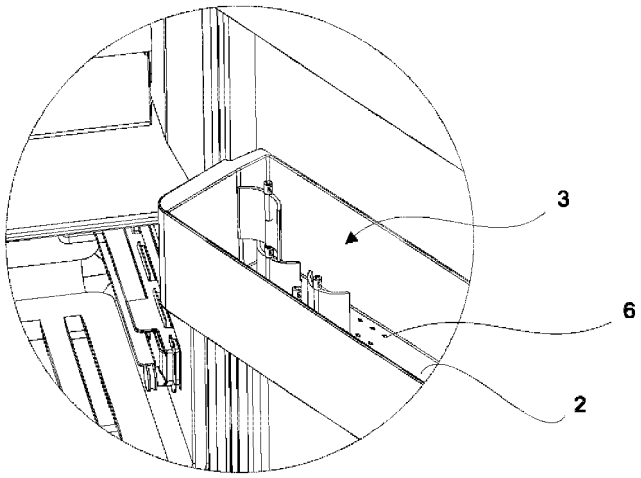


Figure 3

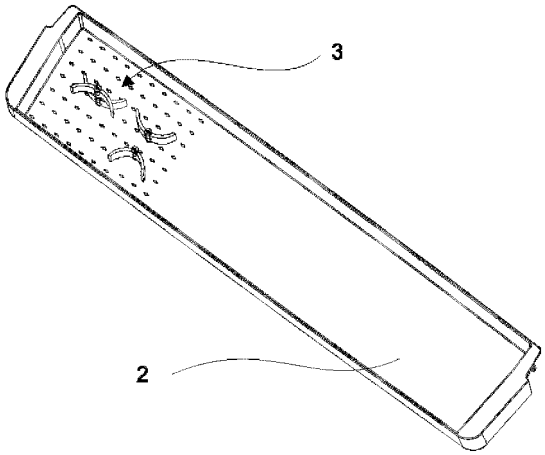


Figure 4

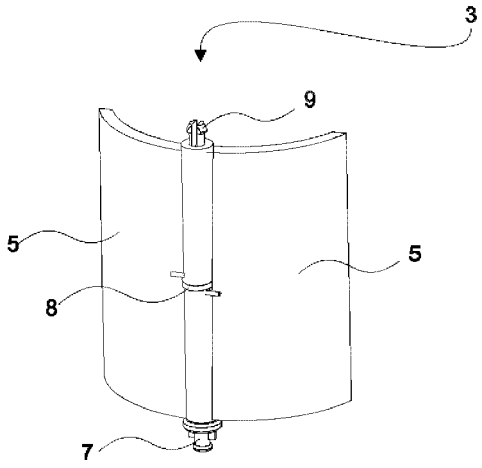
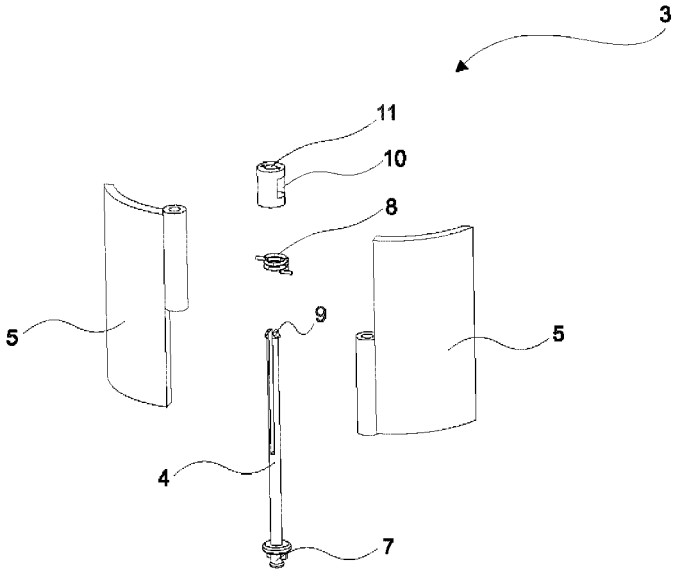


Figure 5



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EUROPEAN SEARCH REPORT

Application Number
EP 21 16 5724

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	15 September 2021	Bejaoui, Amin

CATEGORY OF CITED DOCUMENTS

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