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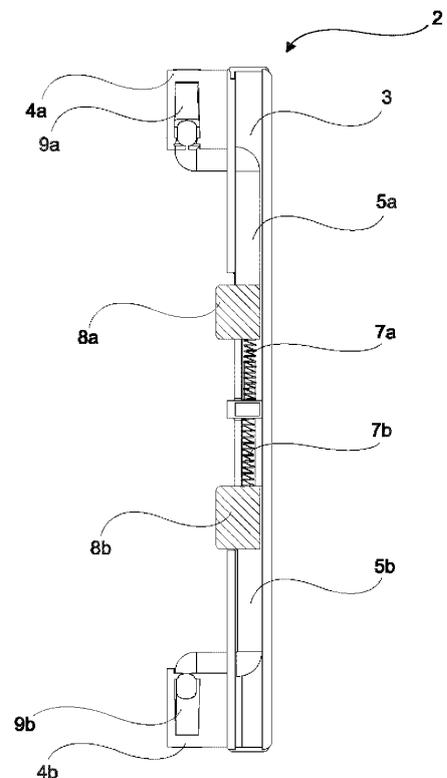
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(54) **A COOLING APPLIANCE HAVING AN IMPROVED HANDLE MECHANISM**

(57) The present invention relates to a cooling appliance comprising; a body and a door (1) attached to the body between a closed position and an open position; a handle (2), having a canal (3) therein, attached onto an edge of the door (1) by means of a pair of supports (4a,4b) distanced apart from one another on the door (1), the appliance further comprising a pair of tabs (5a,5b), configured to slide along the canal (3) between a first position during which the tabs (5a,5b) are inserted inside the supports (4a,4b), fixing the handle (2) onto the door (1) and a second position during which the tabs (5a,5b) come out of the supports (4a,4b), releasing the handle (2) from the door (1).

Figure 2



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Description

[0001] The present invention relates to a cooling appliance, in particular to a cooling appliance having an improved handle mechanism.

[0002] The cooling devices are provided with a wide variety of door handles. The handles contain many features so as to meet the demand of the customers. In the event of changing the location of the cooling appliance inside the kitchen or moving to a new house, the necessity of changing the swing direction of the door may arise. In such cases, the handle must be switched to the opposing side of the door. Such a procedure requires the attendance of a skilled worker which is unwanted as it causes additional costs. Another problem caused by the handles during transportation is that the handle generally protrudes outwards from the door therefore increasing the projection area and therefore the volume of the cooling appliance. This additional increase in the volume increases the volume of the cooling appliance during transportation.

[0003] A prior art publication in the technical field of the present invention may be referred to as KR20070065743A among others, the document disclosing a cooling appliance having an handle having simplified assembly and structure.

[0004] A prior art publication in the technical field of the present invention may be referred to as US2010005631A1 among others, the document disclosing a cooling appliance having a handle wherein the handle is mounted to a front face of the door through inter-engagement of fasteners with clips

[0005] A prior art publication in the technical field of the present invention may be referred to as WO2015144247A1 among others, the document disclosing a cooling appliance having a handle wherein the handle has a simplified assembly and structure.

[0006] A prior art publication in the technical field of the present invention may be referred to as WO2016177428A1 among others, the document relating to a handle assembly for use in a household assembly, in particular a cooling appliance.

[0007] An objective of the present invention is to provide a handle having simplified assembly.

[0008] Another objective of the present invention is to provide a handle helping reduce the volume of the cardboard boxes during the transport by means of the handle being easily disassembled during the transportation.

[0009] Another objective of the present invention is to provide a handle wherein the handle is easy to assemble and disassemble but is impossible to remove from the door by accident.

[0010] 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 a body and a door pivotably attached onto the body between a closed and an open position. The handle is attached onto the door by a pair

of supports wherein the supports are provided on the door. The supports are distanced apart by a predetermined length. The length depends on the length of the handle. The handle comprises a canal extending almost through its length and the said canal accommodates a pair of tabs in a slidable manner. The pair of tabs slide along the canal between a first position during which the tabs are inserted inside the supports. During first position, the distance between the tabs are at maximum. The tabs are in the shape of a bent bar, and they are seated inside the supports from one end during the first position. During the first position, the handle is fixed onto the door. The tabs have a second position during which they slide along the canal and towards each other therefore releasing the said ends from the supports. Thus, the handle is freed from the door.

[0011] In an embodiment of the invention, the handle comprises a pair of cutouts provided on a rear surface of the handle. The cutout facilitates the movement of the tabs inside the canal as it helps the user to reach the tabs easily.

[0012] In an embodiment of the invention, the handle comprises a pair of biasing means biasing the tabs towards the first position. The user pulls the tabs towards each other so as to remove the handle from the door. As soon as the tabs are freed, the move away from each other and towards the first position. By means of the biasing means, the handle is fixed onto the door, should the user release the tabs. An advantageous effect provided by means of the biasing means is that the handle remains attached onto the door in a rigid manner.

[0013] In an embodiment of the invention, the elements are used as the means the user forces the tabs to slide along the canal. The elements have a serrated surface which helps the user to slide the elements conveniently.

[0014] In an embodiment of the invention, the tabs are configured to be seated inside the supports by means of a slot provided inside the supports. The slots and the tabs provide a rigid structure.

[0015] By means of the present invention, the handle can be attached onto the door in a convenient manner reducing maintenance related costs.

[0016] Another advantageous effect provided by means of this invention is that the structure of the handle and the locking mechanism is simplified reducing the overall costs of the cooling appliance.

[0017] Another advantageous effect provided by means of the handle being easily removable, helps reduce the volume of the cooling appliance during transport as the manufacturer can easily remove the handle and store it inside the cooling appliance. Upon arrival to the final user, user may slide the tabs and attach the handle onto the door easily and without the need for a trained staff.

[0018] 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 perspective view of the cooling appliance

Figure 2 - is a cross sectional view of handle along dashed A-A lines in Figure 1

Figure 3 - is a rear view of the handle

[0019] The following numerals are assigned to different parts demonstrated in the drawings and referred to in the present detailed description of the invention:

1. Door
2. Handle
3. Canal
4. Supports
- 4a. First support
- 4b. Second support
5. Tabs
- 5a. First tab
- 5b. Second tab
6. Cutouts
- 6a. First cutout
- 6b. Second cutout
7. Biasing means
- 7a. First biasing means
- 7b. Second biasing means
8. Elements
- 8a. First element
- 8b. Second element
9. Slots
- 9a. First slot
- 9b. Second slot

[0020] The present invention relates to a cooling appliance comprising; a body and a door (1) attached to the body between a closed position and an open position; a handle (2), having a canal (3) therein, attached onto an edge of the door (1) by means of a pair of supports (4a,4b) distanced apart from one another on the door (1); a pair of tabs (5a,5b), configured to slide along the canal (3) between a first position during which the tabs (5a,5b) are inserted inside the supports (4a,4b), fixing the handle (2) onto the door (1) and a second position during which the tabs (5a,5b) come out of the supports (4a,4b), releasing the handle (2) from the door (1). The tabs (5a,5b) are configured to slide along the canal (3) and inside the handle (2). The tabs (5a,5b) slide between a first position during which the tabs (5a,5b) are seated inside the supports (4a,4b), therefore fixing the handle (2) onto the supports (4a,4b). The tabs (5a,5b) slide inside the canal (3) and towards each other, releasing the tabs (5a,5b) from the supports (4a,4b) and therefore the handle (2) from the door (1). The tabs (5a,5b) provides a convenient assembly of the handle (2) onto the door (1). Another advantageous effect provided by means of the tabs (5a,5b) is that the handle (2) can be disassembled during transportation, decreasing the volume of the box and therefore

transportation related costs. A further advantageous effect provided by means of the tabs (5a,5b) is that the user can easily assemble and disassemble the handle (2) from the door (1) eliminating the need to call for a maintenance staff.

[0021] In another embodiment of the invention, the handle (2) comprises a pair of cutouts (6a,6b) provided on a rear surface accommodating a first end of the pair of tabs (5a,5b). The cutouts (6a,6b) facilitates the sliding movement of the pair of tabs (5a,5b) inside the canal (3).

[0022] In another embodiment of the invention, the handle (2) comprises a pair of biasing means (7a,7b) biasing the tabs (5a,5b) towards the first position. The biasing means (7a,7b) are biasing the tabs (5a,5b) away from each other and towards the supports (4a,4b). The user forces the tabs (5a,5b) towards each other, compressing the biasing means (7a,7b) and releases the tabs (5a,5b) as the tabs (5a,5b) are in close vicinity of the supports (4a,4b). Due to the force created by the biasing means (7a,7b), the tabs (5a,5b) are automatically inserted inside the supports (4a,4b). By means of the biasing means (7a,7b), accidental removal of the tabs (5a,5b) from the supports (4a,4b) is eliminated.

[0023] In another embodiment of the invention, the tabs (5a,5b) comprise an element (8a,8b) protruding outward from the cutouts (6a,6b) having a serrated holding surface. The elements (8a,8b) are used as the means the user forces the tabs (5a,5b) to slide along the canal (3). The serrated surface the elements (8a,8b) provides a strong holding area. Instead of the serrated surface any surface with a patterned structure can be used so as to increase the gripping force.

[0024] In another embodiment of the invention, the pair of supports (4a,4b) comprise a slot (9a,9b) configured to form fittingly accommodate the pair of tabs (5a,5b). The tabs (5a,5b) are seated inside the slots (9a,9b) form fittingly providing a rigid structure and assembly.

[0025] An advantageous effect provided by means of the invention is that the handle (2) can be assembled onto the door (1) in a convenient manner by means of the pair of tabs (5a,5b).

[0026] Another advantageous effect provided by means of the pair of tabs (5a,5b) is that the handle (2) can be easily removed from the door (1).

[0027] Another advantageous effect provided by means of the pair of tabs (5a,5b) is that the handle (2) is rigidly attached onto the door (1), eliminating the possibility of accidental disconnecting of the handle (2) from the door (1), providing safety for the children.

[0028] Another advantageous effect provided by means of handle (2) being easily disassembled from the door (1) provides the handle (2) to be stored inside the cooling appliance during transport, greatly reduces the dimensions of the card board box containing the cooling appliance and therefore the transportation related costs.

Claims

1. A cooling appliance comprising;
 - a body and a door (1) attached to the body between
a closed position and an open position; 5
 - a handle (2), having a canal (3) therein, attached
onto an edge of the door (1) by means of a pair of
supports (4a,4b) distanced apart from one another
on the door (1);
 - characterized by** 10
 - a pair of tabs (5a,5b), configured to slide along the
canal (3) between a first position during which the
tabs (5a,5b) are inserted inside the supports (4a,4b),
fixing the handle (2) onto the door (1) and a second
position during which the tabs (5a,5b) come out of 15
 - the supports (4a,4b), releasing the handle (2) from
the door (1).

2. A cooling appliance according to claim 1, **charac-
terized in that** the handle (2) comprises a pair of 20
- cutouts (6a,6b) provided on a rear surface accom-
modating a first end of the pair of tabs (5a,5b)

3. A cooling appliance according to any preceeding
claim , **characterized in that** the handle (2) 25
- comprises a pair of biasing means (7a,7b) biasing the
tabs (5a,5b) towards the first position.

4. A cooling appliance according to any preceeding
claim, **characterized in that** the tabs (5a,5b) 30
- comprise an element (8a,8b) protruding outward from
the cutouts (6a,6b) having a serrated holding sur-
face.

5. A cooling appliance according to any preceeding 35
- claim, **characterized in that** the pair of supports (4a,
4b) comprise a slot (9a,9b) configured to form fittingly
accommodate the pair of tabs (5a,5b).

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Figure 1

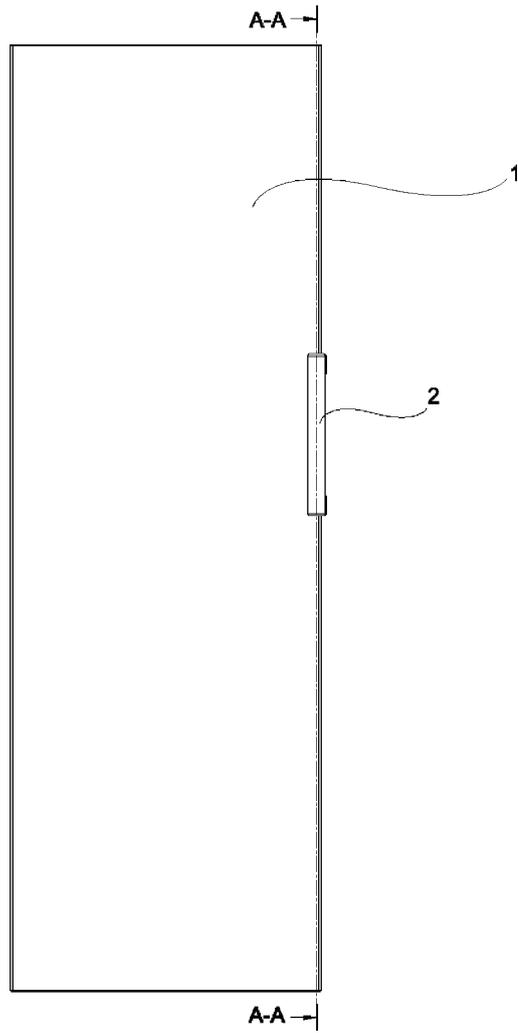


Figure 2

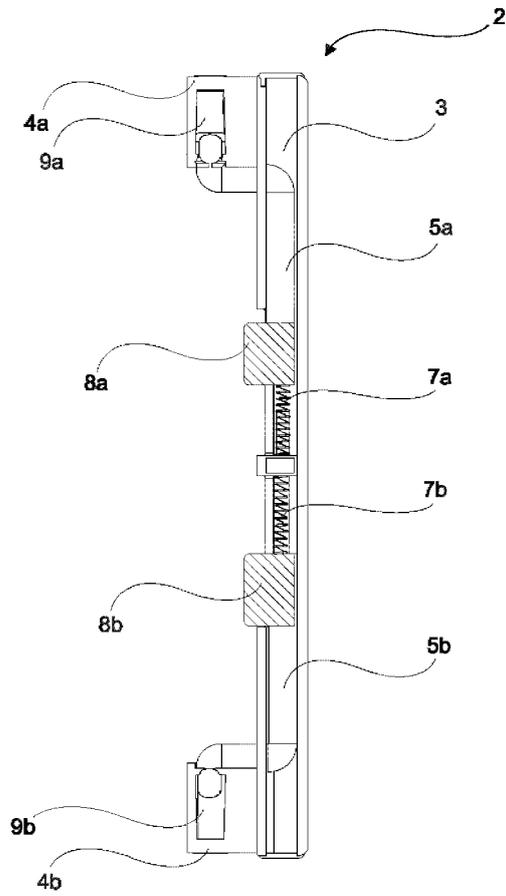
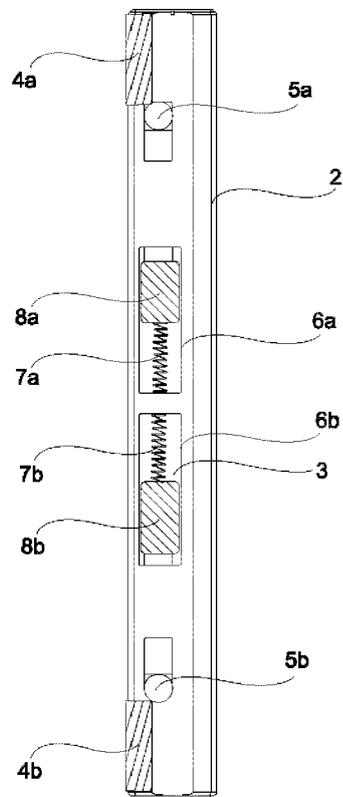


Figure 3





EUROPEAN SEARCH REPORT

Application Number
EP 21 17 6407

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			F25D E05C E05B
Place of search		Date of completion of the search	Examiner
The Hague		27 October 2021	Fest, Gilles
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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