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(54) **Refrigerator appliance with horizontal handle**

(57) Cooling appliance comprising at least one door (1) with a substantially vertical front face (2) and which opens rotating in relation to a substantially vertical axis of rotation, and at least one substantially horizontal handle (4) connected to said door (1). The handle (4) comprises at least one gripping member (5) suitable for being

held by a user in order to open the door (1), and at least one connecting member (6) that connects said gripping member (5) to the door (1). The gripping member (5) forms a certain angle α in relation to the front face (2) of the door (1), the end of the gripping member (5) closest to the axis of rotation of the door (1) being the closest to the front face (2) of said door (1).

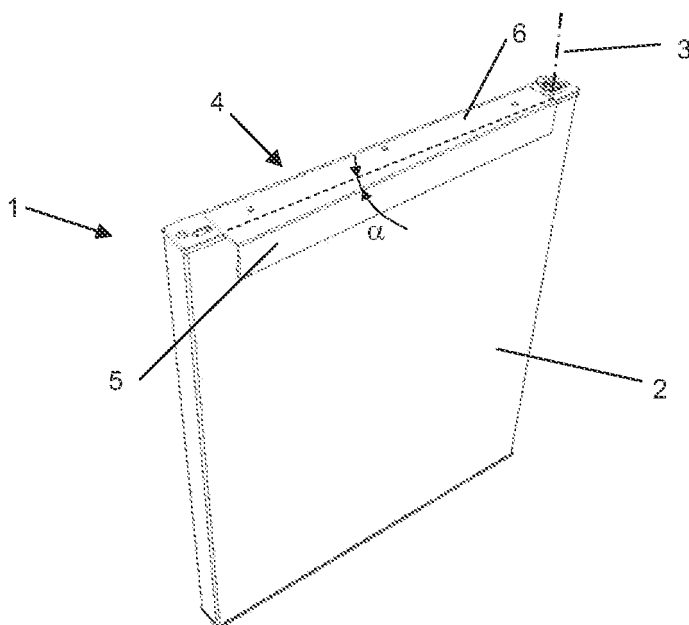


Fig. 2

Description

TECHNICAL FIELD

[0001] This invention relates to cooling appliances that comprise horizontal handles for opening and closing their doors.

PRIOR ART

[0002] There are known cooling appliances that comprise horizontal handles on the door of the appliance.

[0003] EP1947407A2 discloses a cooling appliance that includes a horizontal handle that enables shelves and containers to be removed from the inside of the cooling appliance in a comfortable manner even if the appliance is positioned next to a wall. To achieve this, the evaporator of the rear part of the cooling appliance is moved to the side closest to the axis of rotation of the door. As a result, the axis of rotation of the door is moved away from the end of the cooling appliance so that by the time the handle comes up against the wall or an obstacle, the door has opened sufficiently for the shelves and containers to be taken out.

[0004] JP2006090662A describes a cooling appliance that includes a decorative L-shaped horizontal handle. Said handle is fixed pressed against a member that is fixed on the door of the cooling appliance. The door of the refrigerator is provided with a recess at the height of the handle with enough space to accommodate a hand.

DISCLOSURE OF THE INVENTION

[0005] It is the object of this invention to provide a cooling appliance that comprises a horizontal handle, as defined in the claims.

[0006] The cooling appliance of the invention comprises at least one door with a substantially vertical front face that opens rotating in relation to a substantially vertical axis of rotation, and at least one substantially horizontal handle connected to said door. The handle also comprises:

- at least one substantially straight and elongated gripping member that is suitable for being held by a user in order to open the door, and
- at least one connecting member that connects said gripping member to the door.

[0007] The gripping member forms a certain angle in relation to the front face of the door, the end of the gripping member closest to the axis of rotation of the door being the closest to the front face of said door.

[0008] With the cooling appliance of the invention, the user has sufficient space between the gripping member and the front face of the door to hold said gripping member without the need for a recess in said front face, and at the same time said gripping member restricts as little

as possible the angle of opening of the door when the cooling appliance is located close to a wall.

[0009] These and other advantages and characteristics of the invention will be made evident in the light of the drawings and the detailed description thereof.

DESCRIPTION OF THE DRAWINGS

[0010]

Figure 1 shows a perspective view of a first embodiment of a cooling appliance according to the invention.

Figure 2 shows a perspective view of the bottom door of the embodiment of Figure 1.

Figure 3 shows a ground view of the embodiment of Figure 1 with the doors open.

Figure 4 shows a perspective view of a second embodiment of the cooling appliance of the invention.

DETAILED DISCLOSURE OF THE INVENTION

[0011] Figure 1 shows an embodiment of a cooling appliance 100 that comprises a top door 1 and a bottom door 1 with a substantially vertical front face 2 that opens rotating in relation to a substantially vertical axis of rotation 3, and at least one substantially horizontal handle 4 connected to said door 1. The handle 4 comprises:

- a straight and elongated gripping member 5, as shown in Figure 2, that is suitable for being held by a user in order to open the door 1, and
- a connecting member 6, as shown in Figure 2, that connects said gripping member 5 to the door 1.

[0012] As shown in said Figure 2, the gripping member 5 forms a certain angle α in relation to the front face 2 of the door 1, the end of the gripping member closest to the axis of rotation 3 of the door 1 being closest to the front face 2 of said door 1, an end that may even be in contact with said front face 2. As a result, on the end of the gripping member 5 furthest from the axis of rotation 3 of the door 1 there is a gap where the user can put their hand in and pull the gripping member 5 to open the door 1, or push it to close the door 1.

[0013] In the preferred embodiment of the invention the angle α between the front face 2 of the door 1 and the gripping member 5 is between 1° and 5°, preferably 2.5° for a length of the gripping member 5 in greater than 400 mm.

[0014] This arrangement of the handle 4 is very useful in situations in which the cooling appliance 100 must be positioned close to a wall 8 because, as shown in Figure 3, it allows the opening of the door 1 to be optimised due to the fact that the handle 4 comes up against the wall 8

close to the axis of rotation 3 of the door 1 as little as possible, allowing the door 1 to open a couple of degrees more than a door with a conventional horizontal handle. In addition, as there is no need for a recess to be formed in the door to achieve the same effect, the solution proposed by the invention is more economical.

[0015] As a result, as shown in Figure 3, in the preferred embodiment of the invention the door 1 of the cooling appliance 100 located approximately 10mm from a wall 8 may be opened approximately 87°, this being sufficient to remove the containers or shelves from inside the compartment of the cooling appliance 100.

[0016] As shown in Figures 1 and 2, the gripping member 5 and the connecting member 6 of the handle 4 are substantially flat and substantially perpendicular to each other.

[0017] The gripping member 5 has an ergonomic design with smoother radii and shapes to ensure it is pleasant to the touch and also preventing the risk of cuts.

[0018] In the embodiment of Figure 1, the cooling appliance 100 comprises 2 doors 1, a top one and a bottom one. Each door 1 comprises a respective handle 4, where:

- the connecting member 6, of the first handle 4 of the top door 1, is disposed substantially horizontally and is attached to the bottom part of said door 1, with the gripping member 5 extending upwards from said connecting member 6, and
- the connecting member 6, of the second handle 4 of the bottom door 1, is disposed substantially horizontally and is attached to the top part of said door 1, with the gripping member 5 extending downwards from said connecting member.

[0019] Figure 4 shows a second embodiment in which the cooling appliance 100 comprises a top door 1, a bottom door 1 and a middle door 7. For this second embodiment, the middle door 7 slides horizontally to open or close the corresponding inner compartment. The possibility of said middle door 7 rotating or swinging is also contemplated. The doors 1 and 7 are arranged as follows:

- the top door 1 comprises a handle 4 with a connecting member 6 disposed substantially horizontally and is attached to the bottom part of said top door 1, with the gripping member 5 extending upwards from said connecting member 6,
- the middle door 7 comprises two handles 4 where:
 - o the first handle 4, with a connecting member 6 disposed substantially horizontally, is attached to the bottom part of said door 7, with the gripping member 5 extending upwards from said connecting member 6, and
 - o the second handle 4, with a connecting member 6 disposed substantially horizontally, is attached to the top part of said door 7, with the

gripping member 5 extending downwards from said connecting member 6, and

- the bottom door 1 comprises a handle 4 with a connecting member 6 disposed substantially horizontally and is attached to the top part of said bottom door 1, with the gripping member 5 extending downwards from said connecting member 6.

[0020] Another of the advantages of the embodiments shown in the figures is that if the axis of rotation 3 of the doors 1 is switched from one side to the other, the same handles 4 may be used by exchanging them. In other words, for the embodiment of Figure 1 for example, the handle 4 attached to the top part of the bottom door 1, and where the gripping member 5 extends downwards, would be attached on the bottom part of the top door 1, with the gripping member 5 extending upwards, and the handle 4 attached on the bottom part of the top door 1, where the gripping member 5 extends upwards, would be attached on the top part of the bottom door 1, with the gripping member 5 extending downwards.

[0021] The handle 4 of the door 1 of the cooling appliance of the invention is made of metal, preferably aluminium or stainless steel, or plastic.

[0022] By combining the various handles of the various doors 1 or 7 a distinctive and striking aesthetic effect is achieved for the cooling appliance 100. In addition, if the various materials and colours are combined, both in the doors 1 or 7 and the handles 4, an even greater visual effect is achieved.

Claims

1. Cooling appliance comprising at least one door (1) with a substantially vertical front face (2) and which opens rotating in relation to a substantially vertical axis of rotation (3), and at least one substantially horizontal handle (4) connected to said door (1), the handle (4) comprising

at least one substantially straight and elongated gripping member (5) suitable for being held by a user in order to open the door (1), and
at least one connecting member (6) that connects said gripping member (5) to the door (1),

characterised in that said gripping member (5) forms a certain angle (α) in relation to the front face (2) of the door (1), the end of the gripping member (5) closest to the axis of rotation (3) of the door (1) being closest to the front face (2), or being in contact with said front face (2) of said door (1).

2. Cooling appliance according to claim 1, wherein the gripping member (5) and the connecting member (6) are substantially flat.

3. Cooling appliance according to claim 2, wherein the gripping member (5) is substantially perpendicular to the connecting member (6).
4. Cooling appliance according to claims 2 or 3, wherein the connecting member (6) is disposed substantially horizontally and is attached to the top part of the door (1), the gripping member (5) extending downwards from said connecting member (6). 5
5. Cooling appliance according to claims 2 or 3, wherein the connecting member (6) is disposed substantially horizontally and is attached to the bottom part of the door (1), the gripping member (5) extending upwards from said connecting member (6). 10
6. Cooling appliance according to claims 2 or 3, comprising two doors (1), a top one and a bottom one, each door (1) comprising a respective handle (4), the connecting member (6) of both handles (4) being disposed substantially horizontally, the connecting member (6) of the handle (4) of the top door (1) being attached to the bottom part of said top door (1) and the gripping member (5) extending upwards from said connecting member (6), and the connecting member (6) of the handle (4) of the bottom door (1) being attached to the top part of said bottom door (1) and the gripping member (5) extending downwards from said connecting member (6). 20 25 30
7. Cooling appliance according to claims 2 or 3, comprising two doors (1), a top one and a bottom one, and a middle door (7), 35

the top door (1) comprising a handle (4) with a connecting member (6) disposed substantially horizontally, the connecting member (6) of said handle (4) being attached to the bottom part of said top door (1) and the gripping member (5) extending upwards from said connecting member (6), 40

the middle door (7) comprising

a first handle (4) with a connecting member (6) disposed substantially horizontally, the connecting member (6) of said handle (4) being attached to the bottom part of said middle door (7) and the gripping member (5) extending upwards from said connecting member (6), and 45 50

a second handle (4) with a connecting member (6) disposed substantially horizontally, the connecting member (6) of said handle (4) being attached to the top part of said middle door (7) and the gripping member (5) extending downwards from said connecting member (6), and 55
- the bottom door (1) comprising a handle (4) with a connecting member (6) disposed substantially horizontally, the connecting member (6) of said handle (4) being attached to the top part of said bottom door (1) and the gripping member (5) extending downwards from said connecting member (6).
8. Cooling appliance according to claim 7, wherein the middle door (7) opens or closes by sliding with a substantially horizontal movement.
9. Cooling appliance according to any of claims 6, 7 or 8, wherein, in the event of the axis of rotation (3) of the doors (1) being switched from one side to the other, the same handles (4) may be used by exchanging them.
10. Cooling appliance according to any of the preceding claims, wherein at least one handle (4) is made of metal, preferably of aluminium or stainless steel, or plastic.
11. Cooling appliance according to any of the preceding claims, wherein the gripping member 5, of at least one handle (4), has a length greater than or equal to 400 mm and forms an angle (α) in relation to the front face (2) of the respective door (1) of between 1° and 5°.
12. Cooling appliance according to claim 11, wherein said angle (α) is approximately 2.5°.

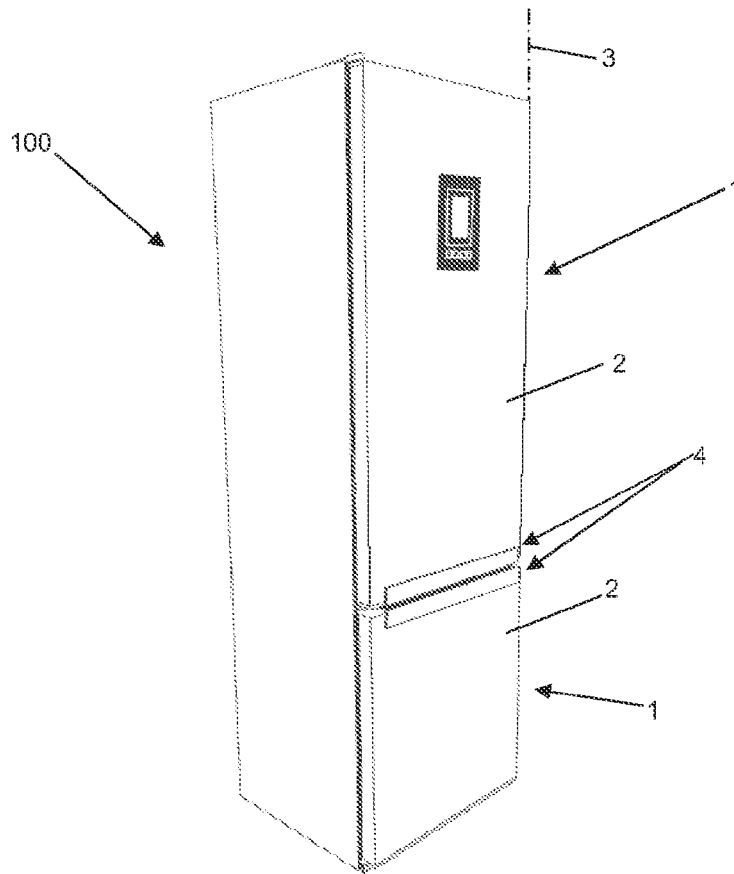


Fig. 1

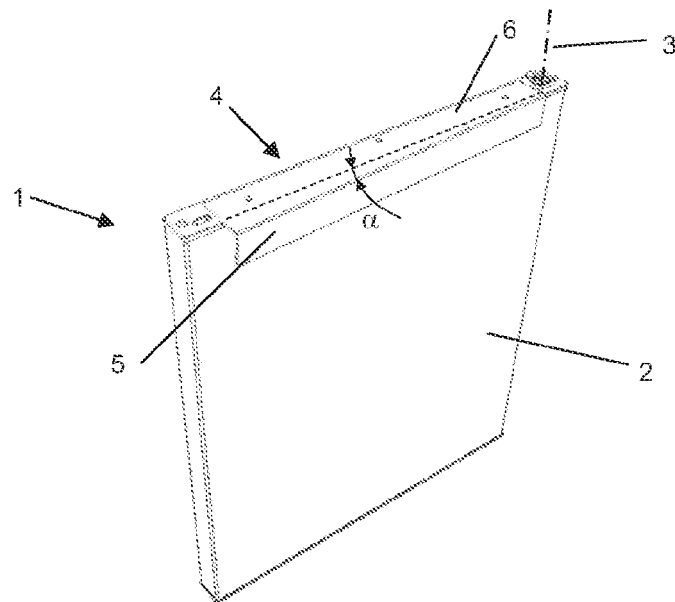


Fig. 2

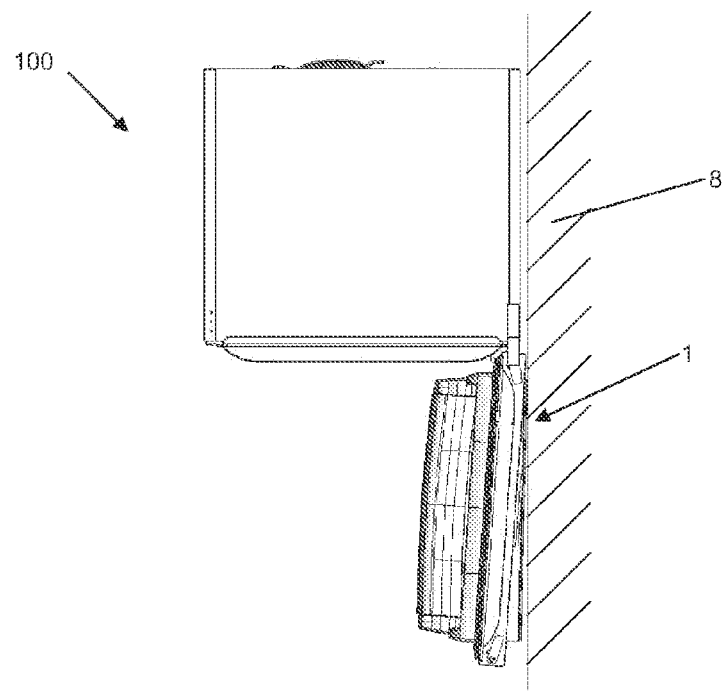


Fig. 3

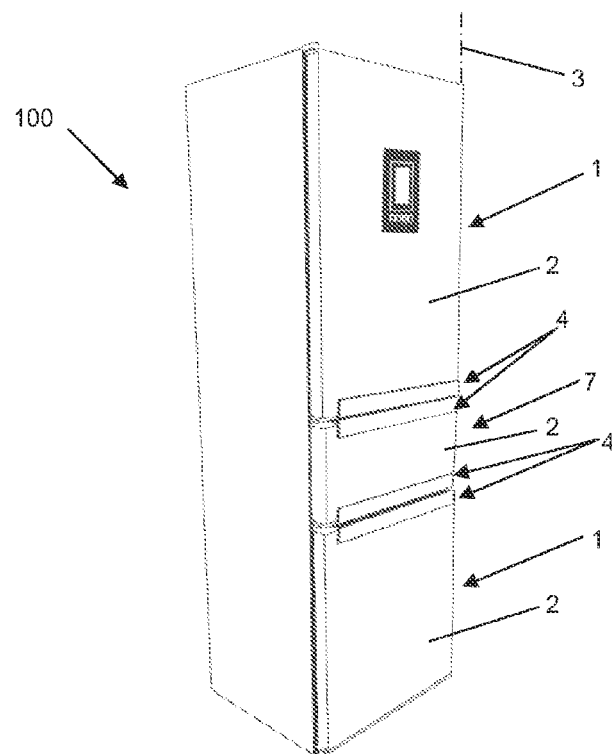


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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