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(54) **Mechanism for sliding a container, in particular for a cooling appliance**

(57) Mechanism for sliding a container (1) in an inner chamber, comprising a front door (3), two rails (4) fixed on the two sides of the inner chamber, two guides (5) that slide along the rails (4), and at least one connecting piece (6). Said piece (6) comprises a first connecting member (6a) to connect said piece (6) to the front door (3), a second connecting member (6b) to connect said piece (6) to the guide (5) and a third connecting member (6c) to fix said piece (6) to the container (1). Each guide (5) comprises a flange (7) on the top part of the end closest to the front door (3). The second connecting member (6b) of the piece (6) is pre-fixed to the guide (5) by means of said flange ('7) and is then fixed by binding said piece (6) against the guide (5).

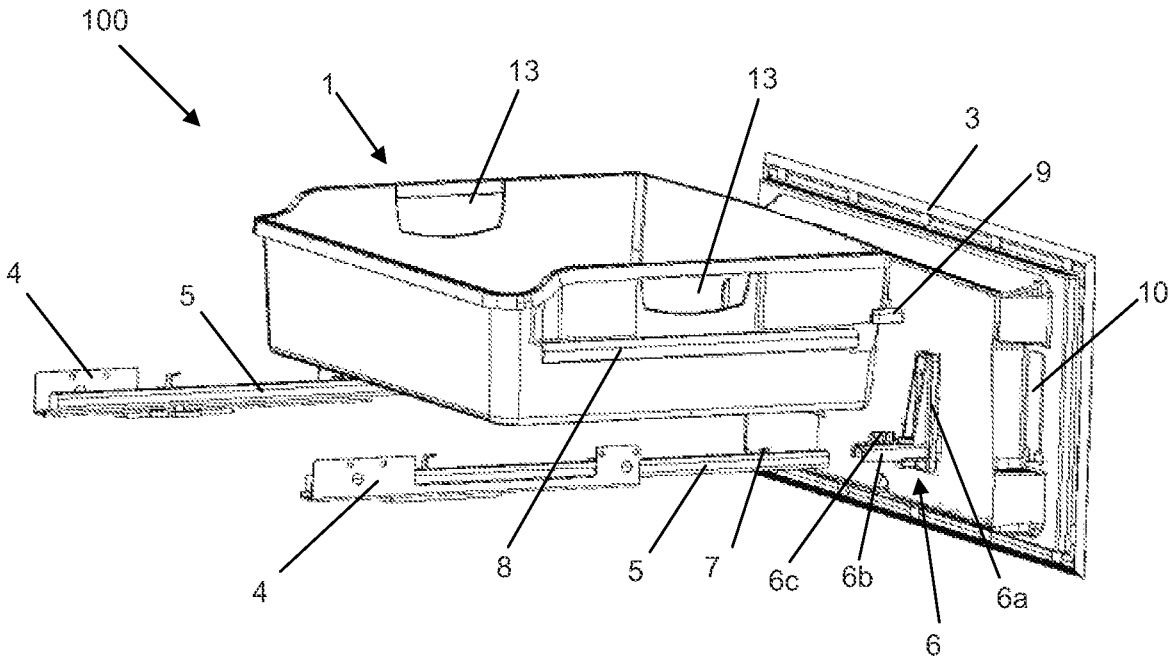

Fig. 2

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Description

TECHNICAL FIELD

[0001] The present invention relates to mechanisms for sliding a container in appliances such as cooling appliances.

PRIOR ART

[0002] There are known cooling appliances that comprise a mechanism for sliding a container in a horizontal direction by making use of the opening and closing movement of a door that slides by means of rails and guides.

[0003] JP 2006343051A2 discloses a refrigerator that comprises a container that may be taken out of and put into a refrigerator by opening and closing the door of the refrigerator compartment. In said door a frame is fixed on the right-hand side and another on the left-hand side, which contains the container. The frames slide on rails that are disposed inside the refrigerator compartment.

DISCLOSURE OF THE INVENTION

[0004] It is the object of this invention to provide a mechanism for sliding, in a horizontal direction, a container, in particular for a cooling appliance, as defined in the claims.

[0005] The mechanism of the invention slides, in a horizontal direction, a container so that said container may be taken out of and put into an inner chamber, preferably of a cooling appliance. The mechanism comprises:

- at least one front door,
- at least two rails facing each other and fixed on the two sides, left and right, of the inner chamber,
- at least two guides facing each other and which slide along the rails, and
- at least one connecting piece that comprises a vertical first connecting member to connect said piece to the front door, a horizontal second connecting member to connect said piece to the guide and a third connecting member in the form of a hub to fix said piece to the container.

[0006] Each guide comprises at least one flange on the top part of the end closest to the front door. The second connecting member of the connecting piece is pre-fixed to the guide by means of said flange and is then fixed binding said connecting piece against the guide by means of the plastic deformation of the connecting piece.

[0007] The main advantage presented by this invention is that it makes it easier to connect the guides to the front door. As a result, the guides may have a simple geometrical shape, thereby reducing manufacturing costs and reducing the weight of the total structure.

[0008] 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

[0009]

Figure 1 shows an exploded perspective view of an embodiment of the mechanism according to the invention.

Figure 2 shows a second exploded perspective view of the embodiment of Figure 1, in which the container is also included.

Figure 3 shows a longitudinal cross-section of the embodiment of Figure 1.

Figure 4 shows a perspective view of the container of Figure 2.

Figure 5 shows a perspective view of a cooling appliance with a compartment that includes the mechanism of the embodiment of Figure 1.

DETAILED DISCLOSURE OF THE INVENTION

[0010] Figures 1 and 2 show a mechanism 100 for sliding, in a substantially horizontal direction, a container 1 outwards and inwards in an inner chamber 2. The mechanism 100 comprises:

- a front door 3,
- two rails 4 facing each other and fixed on the two sides, left and right, of the inner chamber 2,
- two guides 5 facing each other and which slide along the rails 4, and
- two connecting pieces 6.

[0011] The connecting piece 6 comprises a vertical first connecting member 6a to connect said piece 6 to the front door 3, a horizontal second connecting member 6b to connect said piece 6 to the guide 5 and a third connecting member 6c in the form of a hub to fix said piece 6 to the container 1.

[0012] In addition, each guide 5 comprises a flange 7 on the top part of the end closest to the front door 3. Figure 3 shows said flange 7 in detail and a recess that comprises the horizontal second connecting member 6b of the connecting piece 6 where the flange 7 of the guide 5 is pre-fixed. The guide 5 is then fixed to the piece 6, binding said connecting piece 6 against the guide 5 by means of the plastic deformation of the connecting piece 6, as shown below.

[0013] As shown in Figure 3, the connecting piece 6 comprises a through hole 11 and a threaded hole 12. Both holes are coaxial and are separated from each other by an intermediate space or gap in which one end of the guide 5 is housed. A connecting member, preferably a

screw (not shown in the figure), passes through the first hole 11 and self-traps into the second hole 12. The tightening of said screw causes a plastic deformation of the connecting piece 6, where the areas 6d and 6e tend to join together, binding in their interior the guide 5, which, logically, also comprises a hole (not shown in the figures) in the top part located close to the end closest to the front door 3 and which is coaxial to the holes 11 and 12. In another possible arrangement the second hole 12 is a threaded hole, thereby enabling the use of a cheaper standard screw.

[0014] The container 1, which slides as a result of the mechanism 100 of the invention, comprises a longitudinal tongue 8 on each side of the container 1, as can be seen in Figures 2 and 4. The container 1 is supported on the guides 5 by means of said tongues 8 and is centered and fixed to the mechanism 100, with the two housings 9, disposed on each end of each side, as shown in Figure 4, being fitted on the hub of each third connecting member 6c of each connecting piece 6. This design enables the container 1 to be fixed on the mechanism 100 in a simple manner. In addition, the container 1 comprises handles 13 on the sides (see Figures 2 and 4) to allow the container 1 to be taken out comfortably.

[0015] The connecting piece 6 enables a simple design for the guides 5. The guide 5 is in fact a tubular guide, preferably with an inverted U-shape that slides along the rails 4. As a result, given that it is a simple mechanism that also comprises simple members, manufacturing costs are reduced, as is the total weight of the structure of the mechanism 100 of the invention.

[0016] In addition, as can be seen in Figure 2, the front door 3 comprises, for each connecting piece 6, on its inner side, a substantially flat support face 10 enabling each piece 6 to be connected to the front door 3. In the embodiment of the invention screws are preferably used for the connection. Other connections that do not use screws are possible, such as the first connecting member 6a of the piece 6 being fitted into a guide built into the front door 3.

[0017] In the preferred embodiment, the connecting piece 6 is made of plastic, which helps reduce the total weight of the structure of the mechanism 100 of the invention. Other embodiments, which include a connecting member 6 that may be colourless, of various colours, or even metallic, are also possible.

[0018] With the mechanism 100 according to the invention, the container 1 exits or enters the inner chamber 2 when the front door 3 of, for example, a cooling appliance 200 is pulled or pushed, as shown in Figure 5.

Claims

1. Mechanism for sliding in a substantially horizontal direction a container (1) outwards and inwards in an inner chamber (2), in particular for a cooling appliance (200), comprising
   at least one front door (3),
   at least two rails (4) facing each other and fixed on the two sides, left and right, of the inner chamber (2), and
   at least two guides (5) facing each other and which slide along the rails (4),
   characterised in that it comprises at least one connecting piece (6) comprising a vertical first connecting member (6a) to connect said piece (6) to the front door (3), a horizontal second connecting member (6b) to connect said piece (6) to the guide (5) and a third connecting member (6c) in the form of a hub to fix said piece (6) to the container (1), each guide (5) comprising at least one flange (7) on the top part of the end closest to the front door (3), the second connecting member (6b) being pre-fixed to the guide (5) by means of said flange (7) and fixing said connecting piece (6) by binding it against the guide (5) by means of the plastic deformation of the connecting piece (6).

2. Mechanism according to the preceding claim, wherein said connecting piece (6) comprises at least one first hole (11), and a second hole (12), both holes (11,12) being coaxial and separated from each other by an intermediate space in which one end of the guide (5) is housed, the connecting piece (6) being bound against the guide (5) by means of a screw that passes through the first hole (11) and which threads into the second hole (12), the tightening of said screw causing the plastic deformation of the connecting piece (6).

3. Mechanism according to claim 2, wherein the screw that passes through the first hole (11) self-traps into the second hole (12).

4. Mechanism according to claim 2, wherein the second hole (12) is a threaded hole.

5. Mechanism according to any of the preceding claims, wherein said horizontal second connecting member (6b) comprises a recess on the top end to house the flange (7) of the guide (5).

6. Mechanism according to any of the preceding claims, wherein the container (1) comprises at least one longitudinal tongue (8) on each side, said longitudinal tongues (8) being supported on the guides (5).

7. Mechanism according to any of the preceding claims, wherein the container (1) comprises at least one housing (9) in each side, the third connecting member (6c) of the respective connecting piece (6) being inserted in said housing (9) to centre and fix said container (1) on the guides (5).

8. Mechanism according to any of the preceding claims, wherein the guide (5) is substantially tubular, preferably with an inverted U-shape.

9. Mechanism according to any of the preceding claims, wherein the front door (3) comrpises, for each connecting piece (6), on its inner side, a substantially flat support face (10) for enabling said connecting piece (6) to be connected to the front door (3).

10. Mechanism according to claim 9, wherein the connecting piece (6) and the front door (3) are fixed by means of screws.

11. Mechanism according to any of the preceding claims, wherein the connecting piece (6) is plastic.

12. Mechanism according to any of the preceding claims, wherein the connecting piece (6) is metallic.

13. Cooling appliance **characterised in that** it comprises a mechanism (100) according to any of the preceding claims.

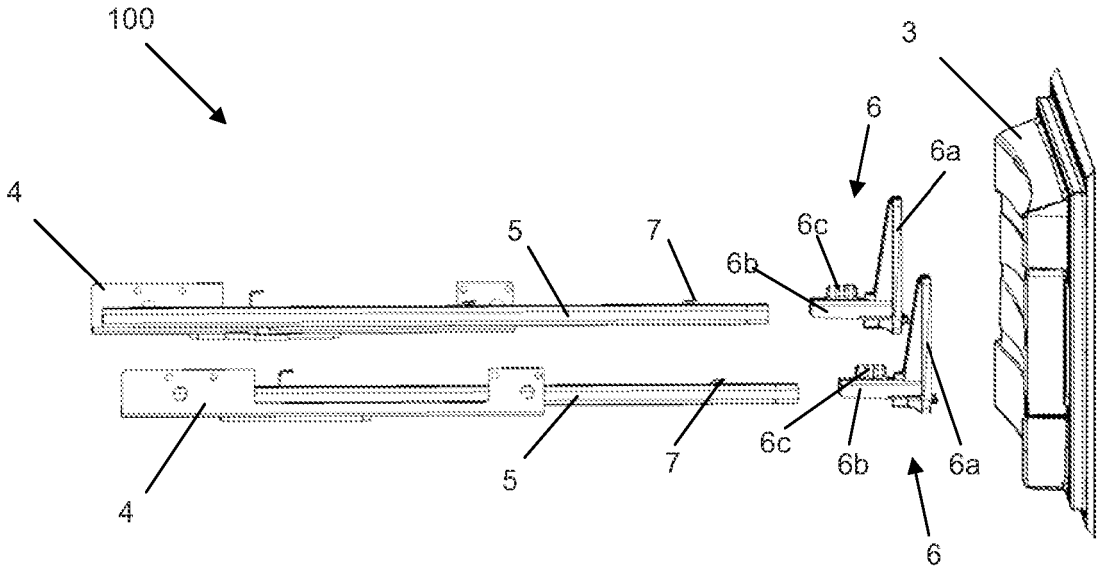

Fig. 1

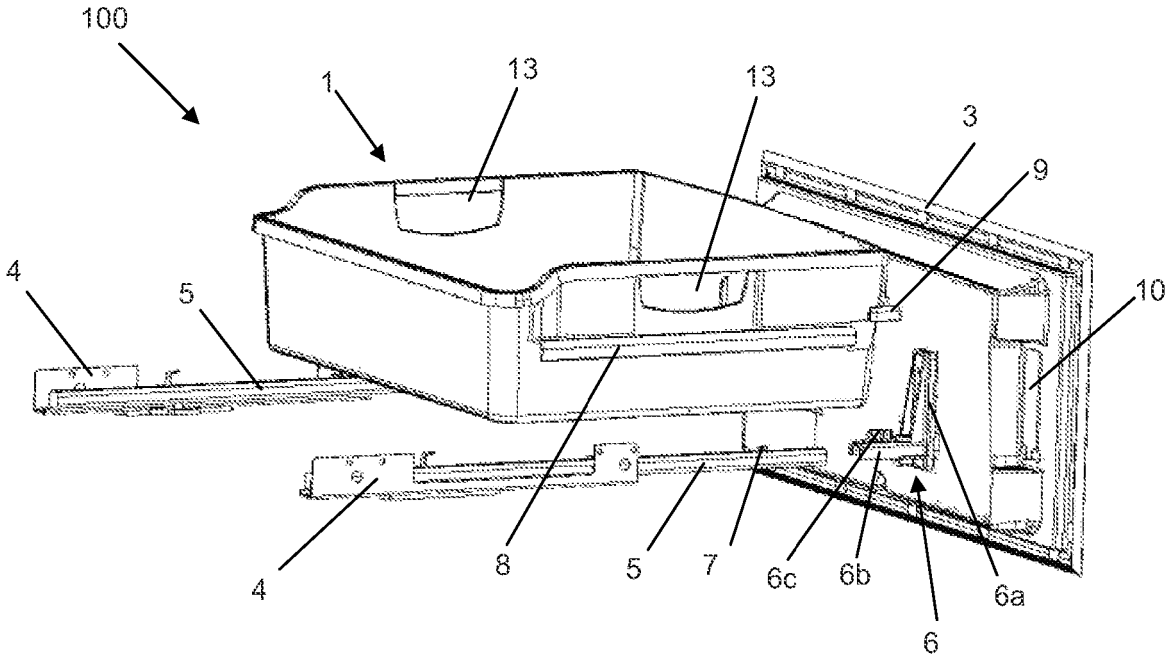

Fig. 2

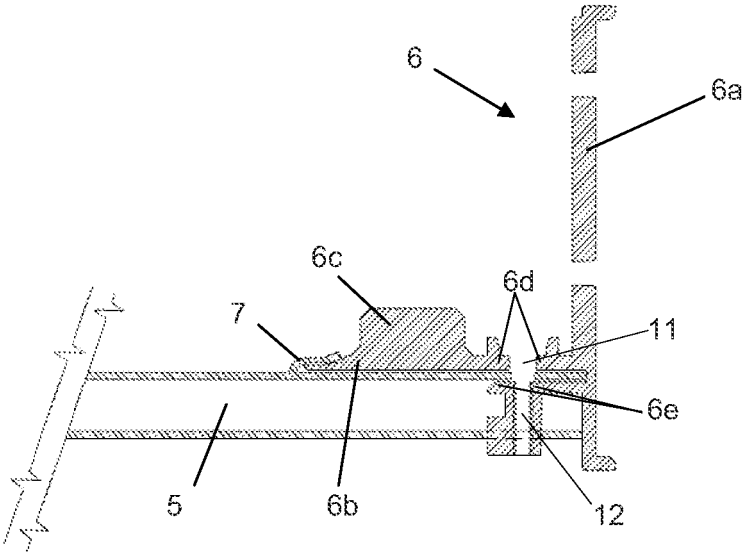

Fig. 3

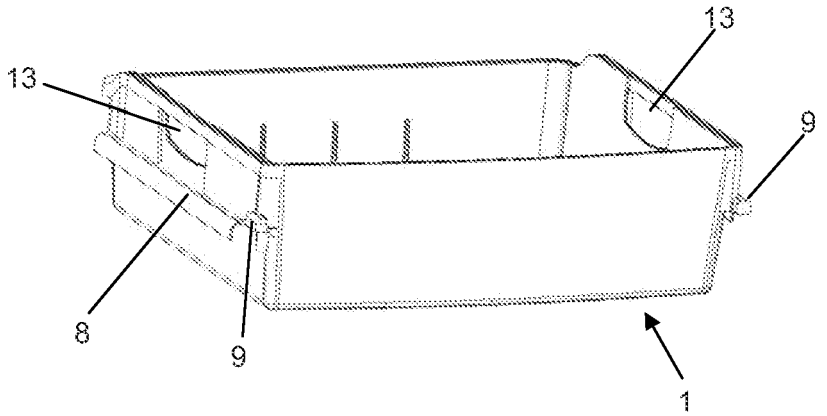

Fig. 4

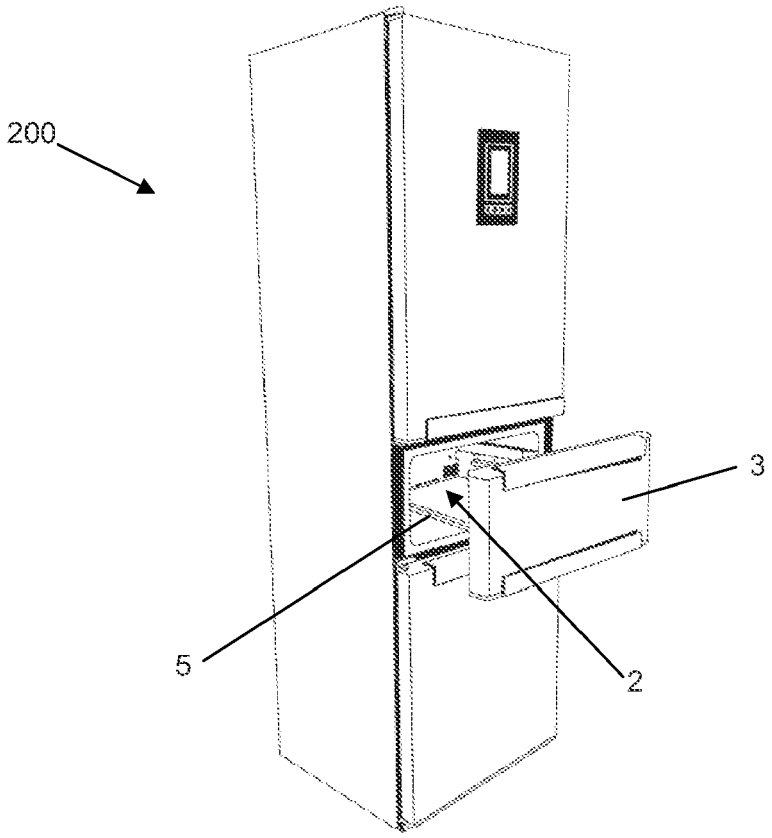

Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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