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(54) HOUSEHOLD APPLIANCE FOR REFRIGERATING FOODSTUFFS

(57) A household appliance for refrigerating foodstuffs, comprising:

- a compartment (2) for housing foodstuffs;
- a base (3) inferiorly delimiting the compartment (2);
- a lateral wall (4) which contributes to laterally delimiting the compartment (2), a lower part of said lateral wall (4) being horizontally flanked to the base (3);
- a hatch door for access to the compartment (2);

- a support (6) of a rotation pin (600) of the hatch door (5), the support (6) comprising a piece (60) in a single body;
- first fixing means (71) which connect said piece (60) to said base (3);
- second fixing means (72) distinct from the first fixing means (71) and which connect said piece (60) to said lateral wall (4).

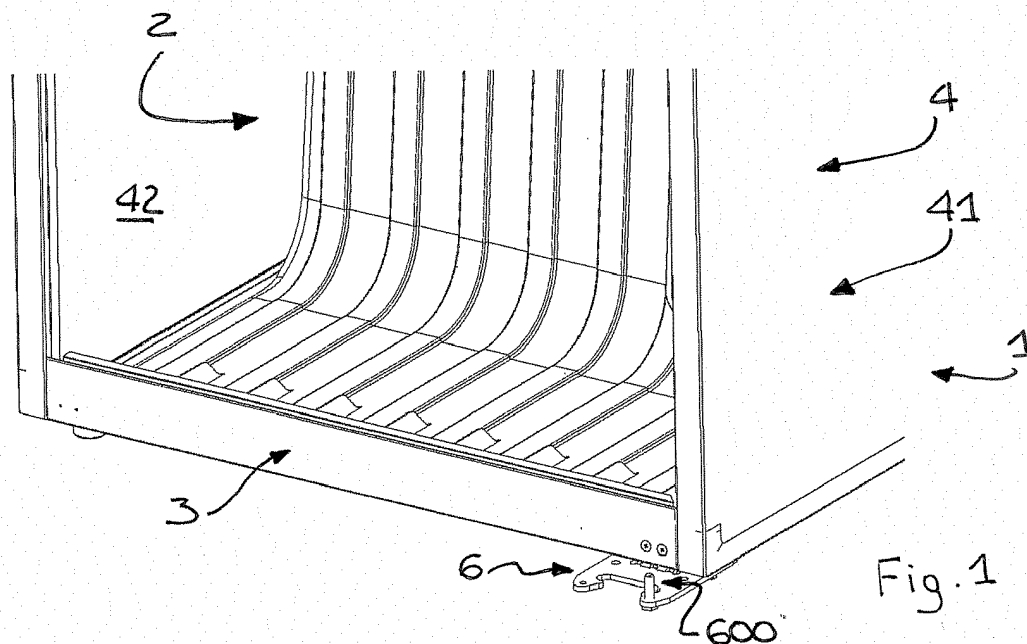


Fig. 1

EP 3 037 756 A1

Description

[0001] The present invention relates to a household appliance for refrigerating foodstuffs, such as for example a refrigerator or a refrigerator-freezer, etc. In particular the present invention relates to a support for a pin which enables opening and closing of an access hatch door to a refrigeration compartment destined for conservation of foodstuffs.

[0002] A refrigerator is known that has an L-shaped bracket for supporting a pin about which the hatch door can rotate.

[0003] One of the two arms of the L-shaped bracket is applied by means of two screws and a lateral wall will delimits a conservation compartment of the foodstuffs; the other arm projects in a distancing direction from the lateral wall and supports the pin.

[0004] In this context, the technical objective underpinning of the present invention is to provide a household appliance for refrigerating foodstuffs which is sturdier.

[0005] A further aim is to make the assembly more rapid.

[0006] The technical task set and the objects specified are substantially attained by a household appliance, comprising the technical characteristics as set out in one or more of the accompanying claims.

[0007] Further characteristics and advantages of the present invention will become more apparent from the following indicative, and hence non-limiting, description of a preferred, but not exclusive, embodiment of a household appliance as illustrated in the appended drawings, in which:

- figure 1 shows a perspective view of a portion of an household appliance according to the present invention;
- figure 2 shows a view from below of the household appliance of figure 1;
- figure 3 shows a sectional view of a detail of the household appliance of figure 1;
- figure 4 shows a view of a component of the household appliance of figure 1.

[0008] In the accompanying figures, reference number 1 denotes a household appliance for foodstuffs refrigeration. This household appliance typically comprises a refrigerator or a refrigerator-freezer or a freezer. Figure 1 illustrates a lower portion of the household appliance. The household appliance 1 comprises a compartment 2 for housing foodstuffs. The foodstuffs which are to be conserved and refrigerated are placed in the compartment 2.

[0009] The household appliance 1 further comprises a hatch door for access to the compartment 2. The hatch door, in passing from the open configuration to a closed configuration, rotates around a vertical axis of rotation. In the accompanying figures the hatch door is not illustrated in order to better evidence other components, but

is destined to occlude the front access opening to the compartment 2 (visible in figure 1).

[0010] The household appliance 1 comprises a base 3 that inferiorly delimits said compartment 2. In a case where there is a plurality of separate housings for the conservation of foodstuffs the compartment 2 is advantageously the lower one.

[0011] The household appliance 1 comprises a lateral wall 4 which contributes to laterally delimiting said compartment 2. A lower part of the lateral wall 4 is flanked horizontally to the base 3 (see for example figure 1).

[0012] The household appliance 1 comprises a support 6 of a rotation pin of the hatch door. The support 6 of the pin 600 inferiorly supports the hatch door. The support 6 comprises a piece 60 in a single body. The piece 60 is typically made of metal. The rotation pin 600 of the hatch door develops vertically starting from said piece 60.

[0013] The household appliance 1 further comprises first fixing means 71 which connect said piece 60 to said base 3 (see figures 2 and 3).

[0014] The household appliance 1 further comprises second fixing means 72 which connect said piece 60 to said lateral wall 4. As will be more fully explained in the following, the first fixing means 71 are distinct from the second fixing means 72.

[0015] The first fixing means 71 retain said piece 60 in contact with the base 3.

[0016] The second fixing means 72 retain said piece 60 in contact with the lateral wall 4.

[0017] The piece 60 is in part below the base 3 (i.e. along the vertical projection towards the bottom part of the base 3) and in part below the lateral wall 4 (i.e. along the vertical projection towards the bottom part of the lateral wall 4).

[0018] The piece 60 comprises a planar small plate 61. The piece 60 further comprises a transversal tab 62 that fits into a first housing 31 fashioned in said base 3. The tab 62 is transversal (preferably perpendicular) to the small plate 61.

[0019] The tab 62 comprises at least a passage hole 620 for the first fixing means 71, in particular the first screw 710. The tab 62 advantageously has two passage holes.

[0020] The small plate 61 and the tab 62 together define a single body and not an assembly of a plurality of pieces. A plurality of reinforcing ribs are present at the join of the small plate 61 and the tab 62. The piece 60 advantageously develops parallel to a single plane with the exception of the tab 62.

[0021] The first fixing means 71 comprise at least a first screw 710 (or an equivalent threaded organ). The first screw 710 is vertically arranged. It crosses said piece 60 and fastens to said base 3.

[0022] The first fixing means 71 comprise at least a second screw 711 (or an equivalent threaded organ). The second screw 711 crosses the tab 62 and fastens to said base 3. The axis of the second screw 711 is appropriately horizontally arranged.

[0023] The second fixing means 72 comprise at least a fixing screw 720 (or an equivalent threaded organ). The fixing screw 720 crosses said piece 60 and fastens to said lateral wall 4. The axis of the fixing screw 720 is appropriately vertically arranged.

[0024] The piece 60 comprises an opening 63 through which a resting foot 8 of the household appliance 1 for refrigeration transits. The opening 63 is advantageously a through-hole of the piece 60.

[0025] The tab 62 extends starting in proximity of a portion of the perimeter of said opening 63.

[0026] The tab 62 is preferably obtained by bending a flap that previously at least partly obstructed said opening 63.

[0027] The piece 60 advantageously comprises at least two holes which develop along an edge which surrounds said opening 63. The two holes enable passage of the first screw 710 and the fixing screw 720.

[0028] The household appliance 1 comprises a reinforcement 33, preferably made of metal, inserted in a second housing 32 fashioned in the base 3. The second housing 32 is flanked to the first housing 31.

[0029] The piece 60 conveniently comprises a first and a second arm 91, 92. The arms are part of said small plate 61. They further define an interposed nook 90.

[0030] The first and the second arm 91, 92 project frontally with respect to the base 3.

[0031] The household appliance 1 further comprises self-closing means 9 of the hatch door. The means 9 advantageously return the hatch door in a closed configuration when the hatch door is ajar.

[0032] The self-closing means 9 comprise said first and said second arm 91, 92.

[0033] The self-closing means 9 comprise a protrusion (not illustrated) of the hatch door which interacts with at least a part of an edge of the nook 90. The protrusion advantageously projects inferiorly with respect to a lower edge of the hatch door. When the hatch door is ajar (for example it is open to less than 15°), the edge of the nook 90 has a design that is such as to push the protrusion, causing a consequent closure of the hatch door.

[0034] The lateral wall 4 described in the foregoing can be either at a first or at a second lateral flank 41, 42 of the household appliance. As illustrated by way of example in figure 1 the first and the second flank 41, 42 are reciprocally opposite.

[0035] Consequently the support 6 is applicable to both the first 41 and the second flank 42 of the household appliance. This enables the hatch door to be reversed. The hatch door can therefore be opened either in a clockwise or in an anticlockwise direction. This enables configuring the household appliance as the user desires, to better adapt it to the context and the environment where it is located.

[0036] The pin 600 is positioned alternatively on the first or the second arm 91, 92. In particular, it is located on the arm which is laterally more external.

[0037] The piece 60 advantageously has a plane of

symmetry 64 which is vertical (this plane 64 is to be measured up when the piece 60 is connected to remaining parts of the household appliance 1). The plane 64 develops parallel to said lateral wall 4.

5 [0038] The invention achieves important advantages.

[0039] Primarily it enables realising an opening system of the hatch door that is sturdier. This is due to the fact that the support 6 can be connected to either the base 3 or the lateral wall 4. Further, the support 6 is fixed to the base 3 both inferiorly and by means of the tab 62.

10 [0040] A further important advantage is the fact that the piece 60 enables having a simplified and rapid mounting, as it is a single piece to be fixed by means of screws.

[0041] The invention as it is conceived is susceptible to numerous modifications and variants, all falling within the scope of the inventive concept by which it is characterised. Further, all the details can be replaced with other technically-equivalent elements. In practice, all the materials used, as well as the dimensions, can be any according to requirements.

Claims

25 1. A household electrical appliance being a refrigerator for foodstuffs, comprising:

- a compartment (2) for housing foodstuffs;
- a base (3) inferiorly delimiting said compartment (2);
- a lateral wall (4) which contributes to laterally delimiting said compartment (2), a lower part of said lateral wall (4) being horizontally flanked to said base (3);
- a door for access to the compartment (2);
- a support (6) of a rotation pin of the door, said support (6) comprising a piece (60) in a single body;

30 **characterised in that** it comprises:

- first fixing means (71) which connect said piece (60) to said base (3);
- second fixing means (72) distinct from the first fixing means (71) and which connect said piece (60) to said lateral wall (4).

45 2. The household electrical appliance according to claim 1, **characterised in that**:

- the first fixing means (71) retain said piece (60) in contact with the base (3);
- the second fixing means (72) retain said piece (60) in contact with the lateral wall (4).

50 3. The household electrical appliance according to claim 1 or 2, **characterised in that** said piece (60) is a planar plate (61) from which a transversal tab

(62) projects, said transversal tab (62) fitting into a first seating (31) fashioned in said base (3).

4. The household electrical appliance according to claim 3, **characterised in that:**

a) the first fixing means (71) comprise:

- at least a first screw (710) arranged vertically which crosses said piece (60) and fastens to said base (3);
- at least a second screw (711) arranged horizontally which crosses said tab (62) and fastens to said base (3);

b) the second fixing means (72) comprise at least a fixing screw (720) arranged vertically, which crosses said piece (60) and which fastens to said lateral wall (4).

5. The household electrical appliance according to claim 3 or 4, **characterised in that** it comprises self-closing means (9) of the door which recall the door into a closed configuration when the door is part-closed, said self-closing means (9) comprising:

- a first and a second arm (91, 92) being a part of said plate (61) and which define a nook interposed between them; said pin (600) being alternatively located on the first or on the second arm (91, 92);
- a protrusion of the door which interacts with at least a part of an edge of the nook (90).

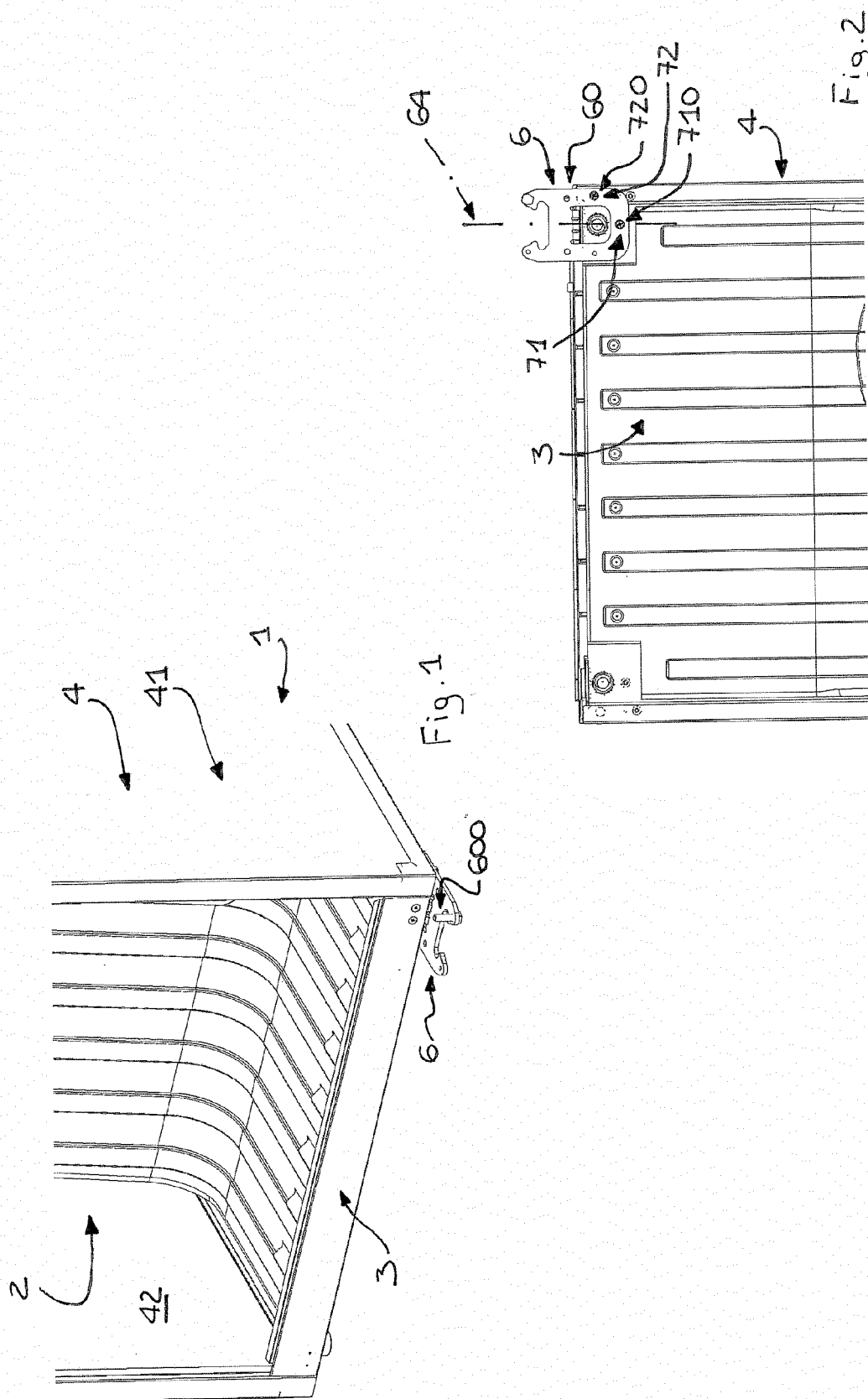
6. The household electrical appliance according to any one of claims from 3 to 5, **characterised in that** it comprises a metal reinforcement (33) inserted in a second seating (32) fashioned in the base (3), said second seating (32) being flanked to the first seating (31).

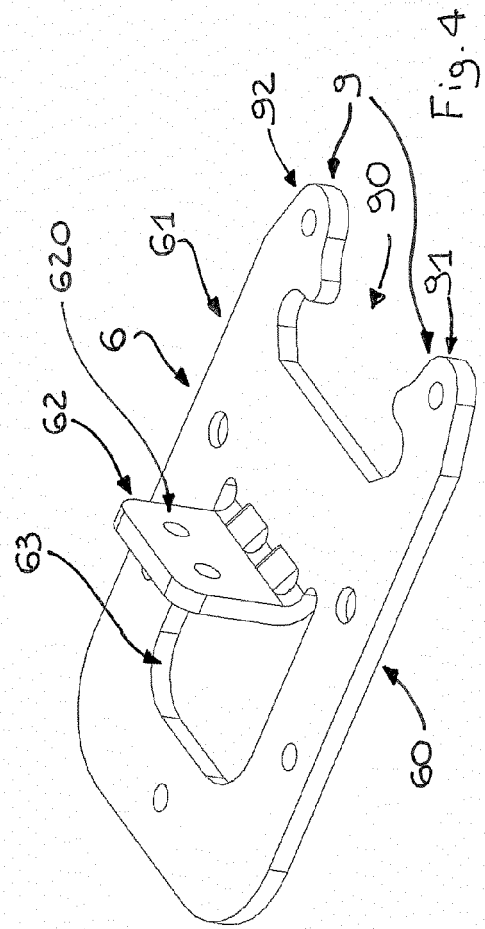
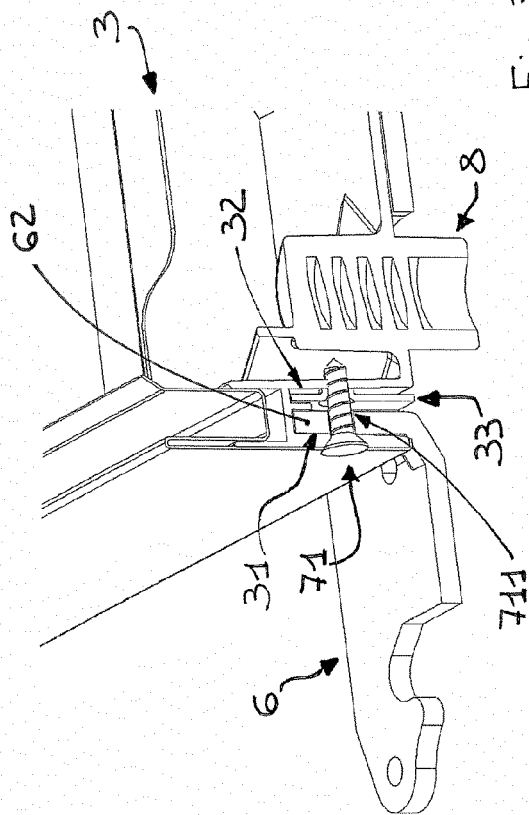
7. The household electrical appliance according to anyone of the preceding claims, **characterised in that** said piece (60) comprises an opening (63) through which a resting foot (8) of the household electrical appliance for refrigeration transits.

8. The household electrical appliance according to anyone of the preceding claims, **characterised in that** said piece (60) exhibits a plane of symmetry (64) which is vertical and which develops parallel to said lateral wall (4).

9. The household electrical appliance according to anyone of the preceding claims, **characterised in that** the support (6) of the pin (600) inferiorly supports the door.

10. A method for producing a household electrical appliance according to claims 3 and 7, **characterised in that** said tab (62) is obtained by bending a flap that previously at least partly obstructed said opening (63).







EUROPEAN SEARCH REPORT

Application Number
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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		12 April 2016	Vigilante, Marco
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 15 19 9871

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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