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(71) Applicant: **Fagor, S. Coop.**
20500 Arrasate-Mondragon (ES)

(72) Inventors:
- **Llamazares Alvarez, Mª Paz**
  48970 Basauri (ES)
- **Bárbara Ganzabal, Joseba**
  01400 Laudio (ES)
- **Ciardegui Iriarte, Aitor**
  20550 Aretxabaleta (ES)

(74) Representative: **Igartua, Ismael**
Fagor, S.Coop.
Industrial Property Department
San Andrés Auzoa, z/g;
Apdo. 213
20500 Arrasate-Mondragon (ES)

(54) **Built-in domestic electrical appliance**

(57) Domestic appliance (1) that comprises a refrigerator (2) that is suitable for being fitted into a kitchen unit, and a base (3) on which the refrigerator (2) is supported. This base (3) comprises a housing on which are placed condensation means and ventilation means. The base (3) also comprises a front face with at least one opening to let air in and out. A baseboard (7), of a certain height, is placed in front of said front face so that part of said opening is placed beneath the height of the baseboard (7). The domestic appliance (1) also comprises stop means to prevent the baseboard (7) from covering the part of the opening that is beneath the height of the baseboard (7).

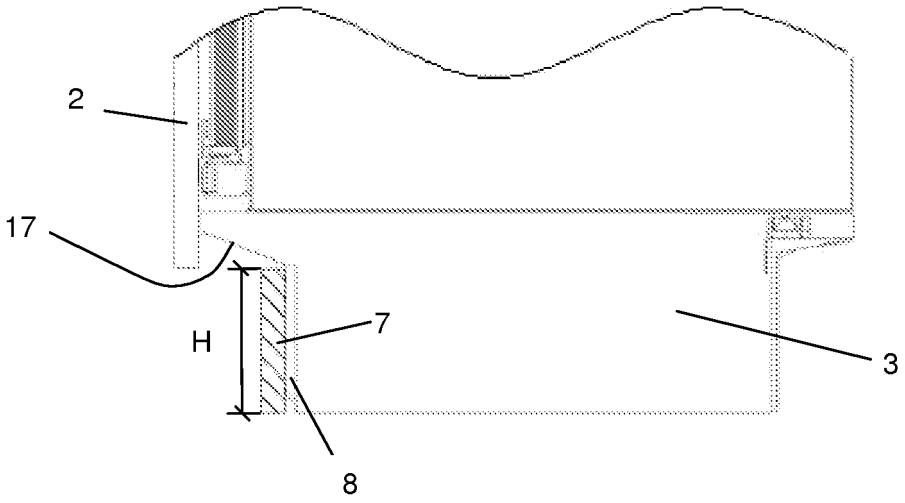

Fig. 4

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Description

TECHNICAL FIELD

[0001] The present invention relates to domestic refrigeration appliances, and in particular to domestic refrigeration appliances fitted in a kitchen.

PRIOR ART

[0002] There are known domestic refrigeration appliances that comprise a base on which are placed the condensation means, the fan, which causes a flow of forced air from the exterior to the interior of the base, and even the compressor. This base is located in the bottom part of the domestic refrigeration appliance and allows the elements placed on it to be removed from the rear part of the domestic appliance. There are also known domestic refrigeration appliances that comprise a baseboard in front of said base.

[0003] EP2048462-A2 describes a domestic refrigeration appliance of the built-in type that comprises a base in the bottom part of the domestic appliance and which has a grille on the front part. It also comprises a baseboard that is positioned in front of the base and which is situated beneath the grille, leaving said grille free.

DISCLOSURE OF THE INVENTION

[0004] It is the object of the invention to provide a domestic refrigeration appliance as defined in the claims.

[0005] The domestic appliance of the invention comprises a refrigerator suitable for being fitted into a kitchen unit, and a base on which said refrigerator is supported. This base comprises a housing in which condensation means and ventilation means are placed. The base also comprises a front face with at least one opening to let air in and out. A baseboard, of a certain height, is placed in front of said front face so that part of said opening is positioned beneath the height of the baseboard. The domestic appliance also comprises stop means to prevent said baseboard from covering the part of said opening that is beneath the height of the baseboard.

[0006] The domestic appliance of the invention increases the cooling efficiency of the components in the base in a simple and inexpensive manner, thereby also improving the performance and efficiency of the domestic appliance and thus reducing energy consumption.

[0007] 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

[0008]

Figure 1 shows a perspective view of the domestic appliance of the invention with a baseboard and decorative panels.

Figure 2 shows a perspective view of a kitchen unit with the domestic appliance of Figure 1 arranged in it.

Figure 3 shows a longitudinal profile view of the domestic appliance of Figure 1 with the decorative panels and the baseboard.

Figure 4 shows a first detail of the longitudinal profile view of Figure 3 of the domestic appliance of Figure 1.

Figure 5 shows a second detail of the longitudinal profile view of Figure 3 of the domestic appliance of Figure 1.

Figure 6 shows a first perspective view of an embodiment of the base of the domestic appliance of Figure 1.

Figure 7 shows a second perspective view of the embodiment of the base of Figure 6 of the domestic appliance of Figure 1.

Figure 8 shows a third perspective view of the embodiment of the base of Figure 6 of the domestic appliance of Figure 1.

DETAILED DISCLOSURE OF THE INVENTION

[0009] As shown in Figure 1, the domestic appliance 1 of the invention comprises a refrigerator 2 that is suitable for being fitted into a kitchen unit and a base 3 on which the refrigerator 2 is supported. This base comprises:

- a housing 4 on which condensation means 6 and ventilation means 5 are placed (see Figures 7 and 8), and
- a front face 13 with at least one opening to let air in and out (see Figures 7 and 8).

[0010] A baseboard 7, of a certain height H, is placed in front of said front face 13 so that part of said opening is positioned beneath the height H of the baseboard, as shown in Figures 3 and 4. The domestic appliance 1 also comprises stop means to prevent said baseboard 7 from covering the part of said opening that is beneath the height H of the baseboard 7.

[0011] In a preferred embodiment the base 3 comprises a top part 10 that projects out frontally and is arranged on the top of the baseboard 7, and a bottom part 12 in which the stop means are placed. The top part 10, in this embodiment and as shown in Figure 6, comprises a sloping bottom face 17 to improve the airflow, although other embodiments and arrangements are possible.

[0012] As shown in Figures 7 and 8, the housing 4 of

the base 3 comprises a first cavity 14 and a second cavity 15. In a preferred embodiment, the condensation means 6 and the ventilation means 5 are placed in the first cavity 14. In another embodiment, not shown in the figures, the compressor may be placed in the second cavity 15.

[0013] As shown in Figure 6, the bottom part 12 of the base 3 comprises a first area with a plurality of openings 11 and a second area with a plurality of openings 11'. Similarly, the top part 10 of the base 3 also comprises a first area with a plurality of openings 9 and a second area with a plurality of openings 9'. It is through the openings 9 and 11 that the air, sucked by the ventilation means 5, enters the base 3, cooling on the way the condensation means 6, which are placed in the cavity 14 of the housing 4 of the base 3 as shown in Figure 7. Through the openings 9' and 11' the air exits to the exterior from the interior of the base 3. Figure 8 shows the airflow.

[0014] In the preferred embodiment of the invention, the openings 11 of the first area of the bottom part 12 are substantially larger than the openings 11' of the second area of the bottom part 12 in order to balance the intake and outlet of air of the base 3. In another possible embodiment (not shown in the figures), the openings 11' of the second area of the bottom part 12 may be equal to or even greater than the openings 11 of the first area of the bottom part 12. This solution would be valid in the event that the compressor is placed in the second cavity 15 of the housing 4 of the base 3.

[0015] Additionally, as shown in Figure 8, the second cavity 15 of the housing 4 of the base 3 comprises a ramp 18 to guide the airflow to the exterior through the openings 9' and 11' of the second area of the top part 10 and the bottom part 12 respectively. This arrangement reduces turbulence and enhances the outlet of air, preventing it from colliding with the baseboard 7 and thereby improving the performance of the domestic appliance.

[0016] To ensure an additional intake of air through the openings 11, which are positioned beneath the height H of the baseboard 7, in the preferred embodiment and as shown in Figure 6, the stop means of the base 3 comprise three ribs 8 placed on the front face 13 of the base 3. These ribs 8 are positioned one on each end of the front part 13 and another approximately at the height of the space between the first cavity 14 and the second cavity 15 of the housing 4 of the base 3.

[0017] As shown in Figure 3 and in greater detail in Figure 4, there is a minimum space between the baseboard 7 and the front part 13 of the base 3. This minimum space is, at the very least, the depth of the rib 8. Figure 4 shows an embodiment in which the baseboard 7, the position of which is determined by the rest of the kitchen units, as shown in Figure 2, is supported on the ribs 8. In the preferred embodiment this minimum space is 15mm, which is the depth of the ribs 8.

[0018] Figure 5 shows the airflow entering the base 3. The air enters through the gap left between a decorative panel 16 that is fixed to the door of the refrigerator 2 and the baseboard 7. The larger amount of air "a" enters through the openings 9 of the first area of the top part 10, but thanks to the solution of the invention there is an additional entry of air "b" that enters through the openings 11 of the first area of the bottom part 12 that is beneath the height H of the baseboard 7. As a result, the cooling efficiency of the condensation means 6 placed in the first cavity 14 of the housing 4 of the base 3 is optimised in a simple and inexpensive manner. As an indirect result of this the performance and efficiency of the domestic appliance is also improved, thereby reducing energy consumption.

[0019] Another of the advantages provided by the domestic appliance 1 of the invention is that use is made of the baseboard 7, which is used for the rest of the kitchen units, without changing the design or the position, as shown in la Figure 7. Furthermore, a positive aesthetic effect is achieved due to the fact that the air-intake openings (9 and 11) and air-outlet openings (9' and 11') of the base 3 are not visible from the outside.

[0020] The base 3 of the domestic appliance 1 is preferably made of plastic, thus reducing costs and making its manufacture easier.

Claims

1. Built-in domestic electrical appliance that comprises a refrigerator (2) that is suitable for being fitted into a kitchen unit, and a base (3) on which said refrigerator (2) is supported, said base (3) comprising
   a housing (4) that comprises condensation means (6) and ventilation means (5), and
   a front face (13) with at least one opening to let air in and out, a baseboard (7) of a certain height (H) being placed in front of said front face (13),
   characterised in that at least part of said opening is positioned beneath the height (H) of the baseboard (7) and **in that** the appliance (1) comprises stop means to prevent said baseboard (7) from covering the part of said opening that is beneath said height (H).

2. Appliance according to claim 1, wherein said stop means comprise at least one rib (8) placed on the front face (13) of the base (3).

3. Appliance according to claims 1 or 2, wherein the base (3) comprises a top part (10) that projects out frontally and is placed on top of the baseboard (7), and a bottom part (12) in which the stop means are placed.

4. Appliance according to claim 3, wherein said top part (10) comprises a sloping bottom face (17).

5. Appliance according to claims 3 or 4, wherein the bottom part (12) of the base (3) comprises a first area with a plurality of openings (11) and a second area

with a plurality of openings (11').

6. Appliance according to claim 5, wherein the top part (10) of the base (3) comprises a first area with a plurality of openings (9) and a second area with a plurality of openings (9').

7. Appliance according to claim 6, wherein said housing (4) comprises a first cavity (14) where air enters the base (3) through the openings (9) of the first area of the top part (10) and through the openings (11) of the first area of the bottom part (12), and a second cavity (15) where air exits from the interior of the base (3) to the exterior through the openings (9') of the second area of the top part (10) and through the openings (11') of the second area of the bottom part (12).

8. Appliance according to claim 7, wherein the condensation means (6) and the ventilation means (5) are placed in said first cavity (14) of the housing (4) of the base (3).

9. Appliance according to claim 7 or 8, wherein the stop means comprise three ribs (8) placed on the front face (13) of the base (3) and positioned one on each end of the front part (13) and another approximately at the height of the space between the first cavity (14) and the second cavity (15) of the housing (4).

10. Appliance according to claims 5 to 9, wherein the openings (11) of the first area of the bottom part (12) are substantially larger than the openings (11') of the second area of the bottom part (12).

11. Appliance according to claims 7 to 9, wherein the second cavity (15) of the housing (4) comprises a ramp (18) to guide the airflow to the exterior through the openings (9') of the second area of the top part (10) and through the openings (11') of the second area of the bottom part (12).

12. Appliance according to claims 5 to 11, wherein between the bottom part (12) of the front part (13) of the base (3) and the baseboard (7) there is a minimum space.

13. Appliance according to claim 12, wherein said minimum space is approximately 15 mm.

14. Appliance according to any of the preceding claims, wherein the base (3) is preferably made of plastic.

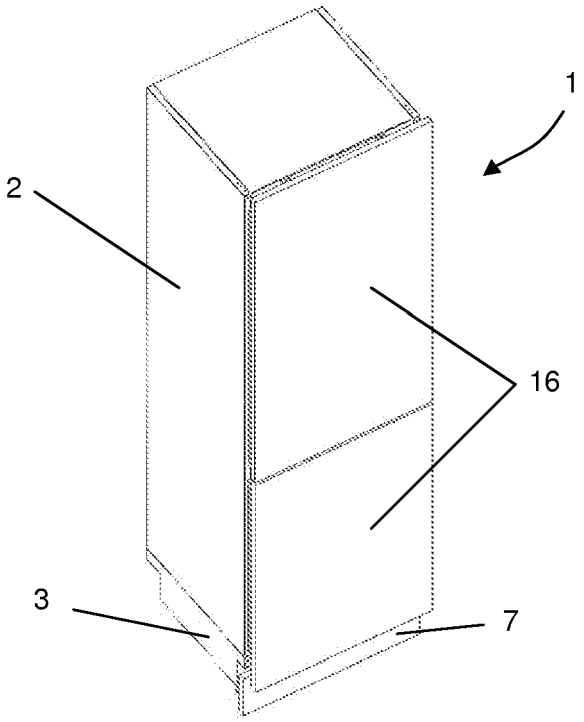

Fig. 1

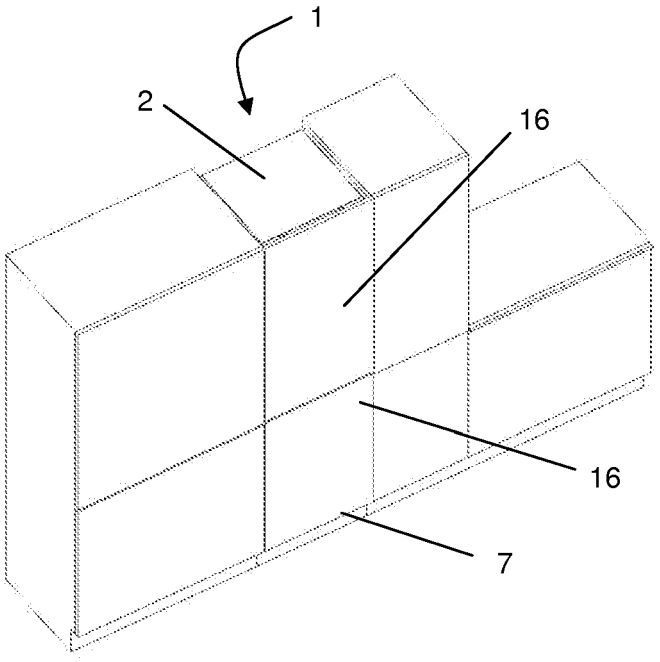

Fig. 2

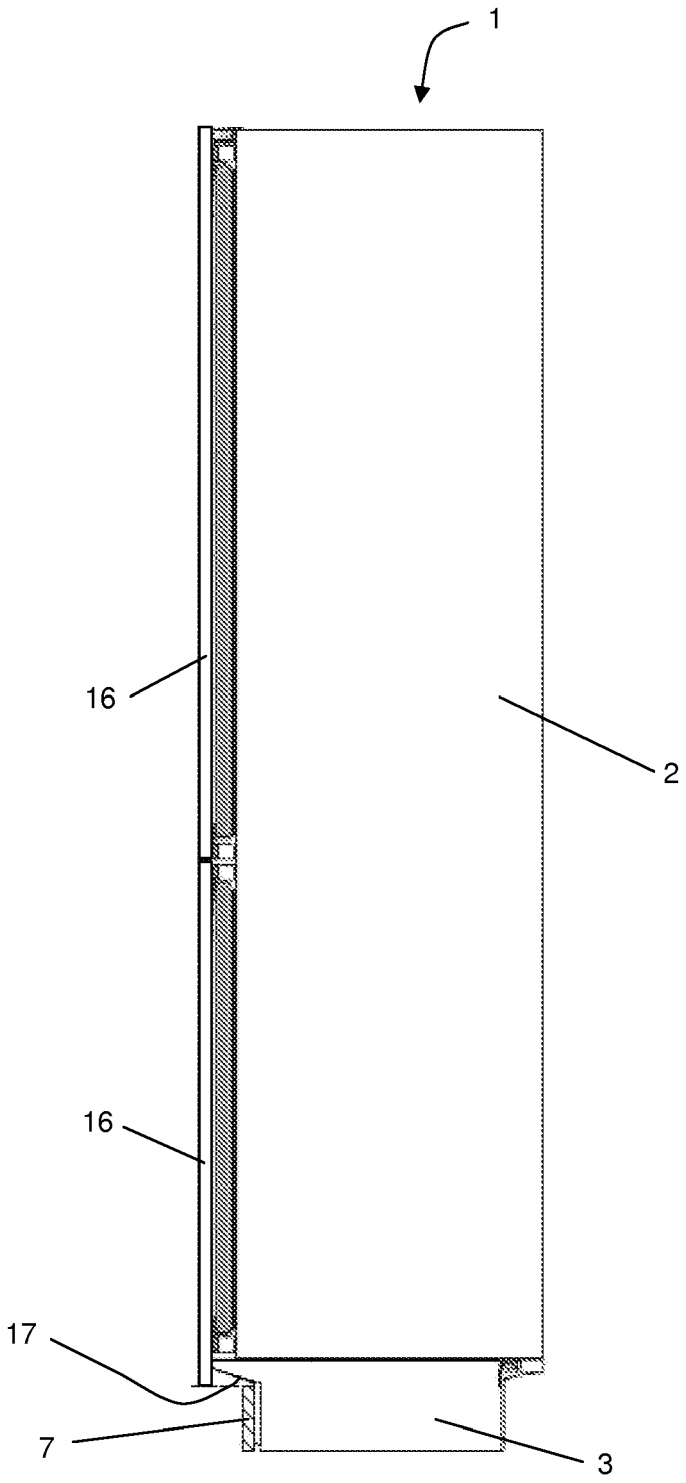

Fig. 3

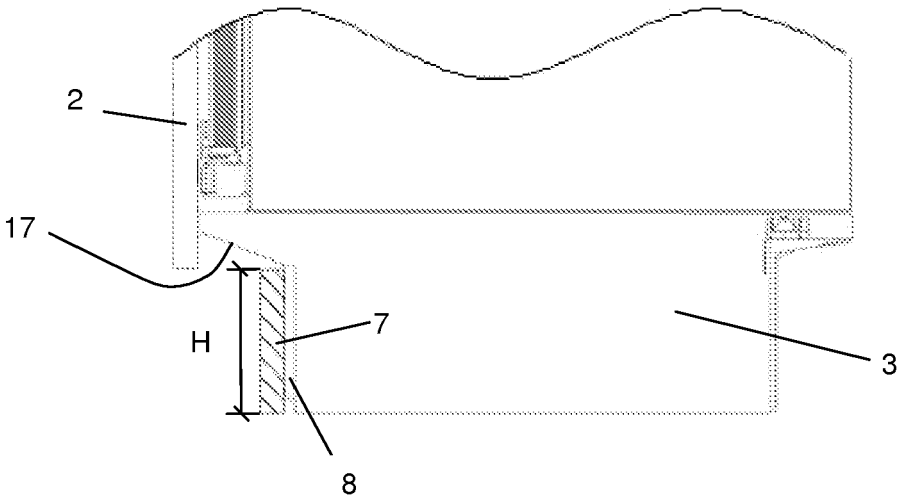

Fig. 4

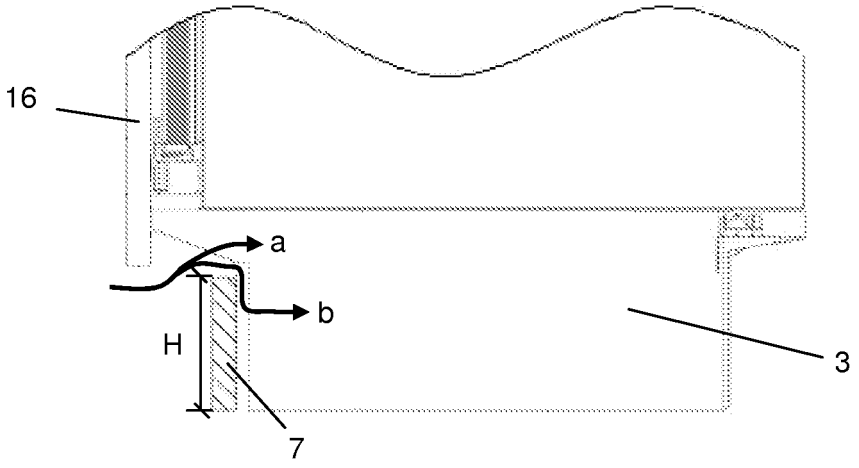

Fig. 5

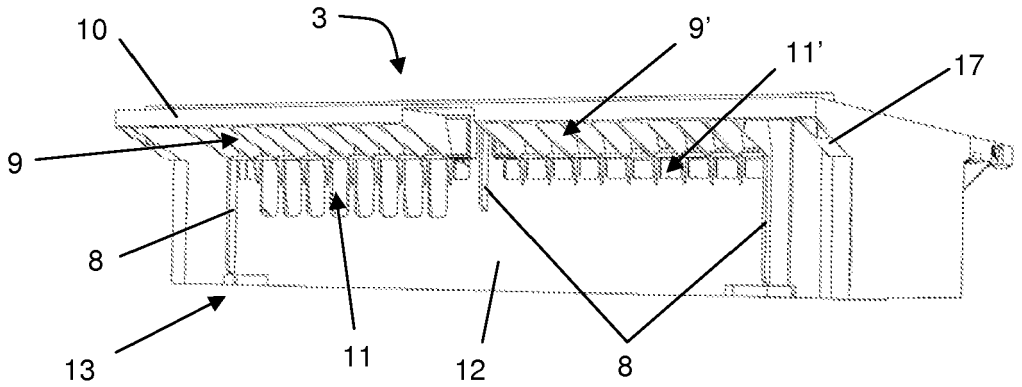

Fig. 6

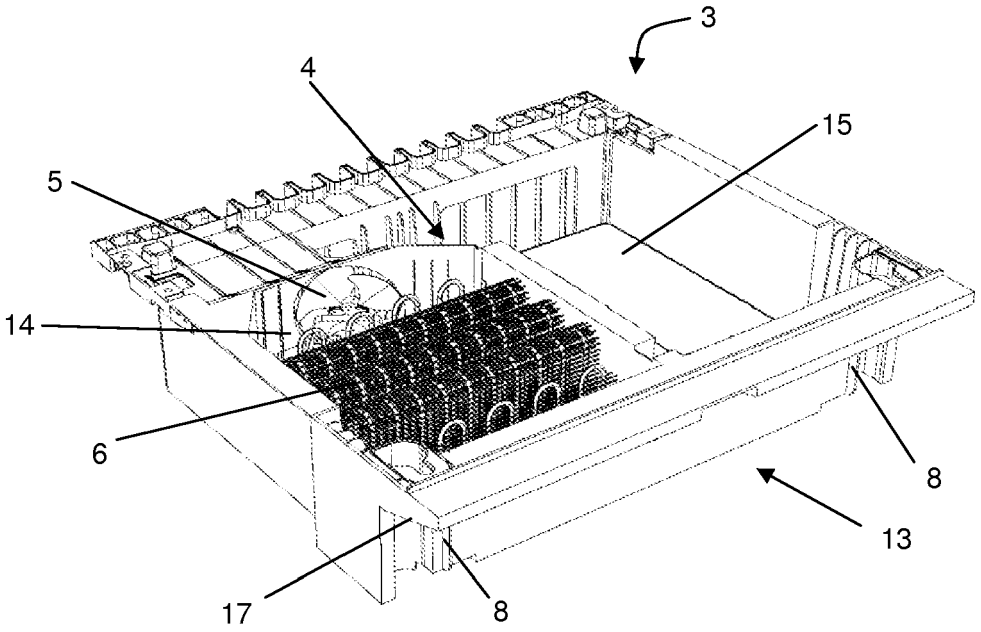

Fig. 7

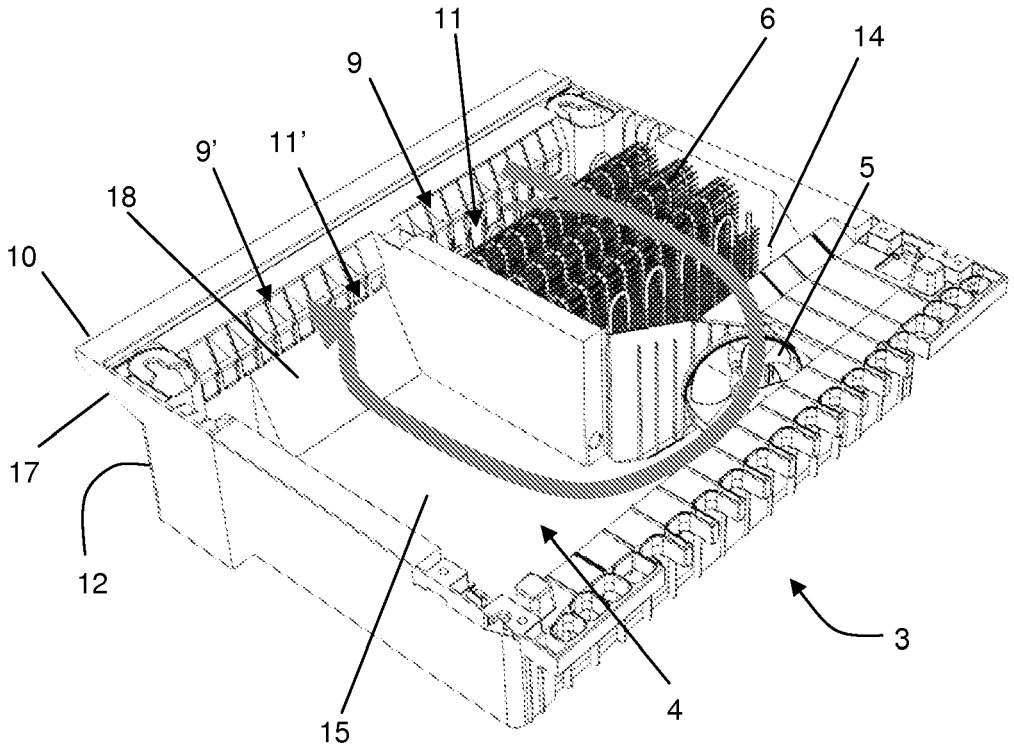

Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 2048462 A2 **[0003]**