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(54) **Domestic electrical appliance**

(57) Domestic electrical appliance comprising a refrigerator suitable for being fitted into a kitchen unit, and a base (3) on which said refrigerator is supported. Said base (3) comprises a housing (4) that comprises condensation means (6) for the refrigerator, ventilation means (5) to cool at least said condensation means (6), and a front wall (13) with at least one opening that connects the housing (4) to the exterior, there being produced by means of the ventilation means (5) an airflow that enters from the front wall (13) and exits at least partially through said front wall (13). The ventilation means (5) are placed in the rear part of the housing (4) next to the condensation means (6), and said ventilation means (5) are positioned to form a certain angle in relation to the front wall (13).

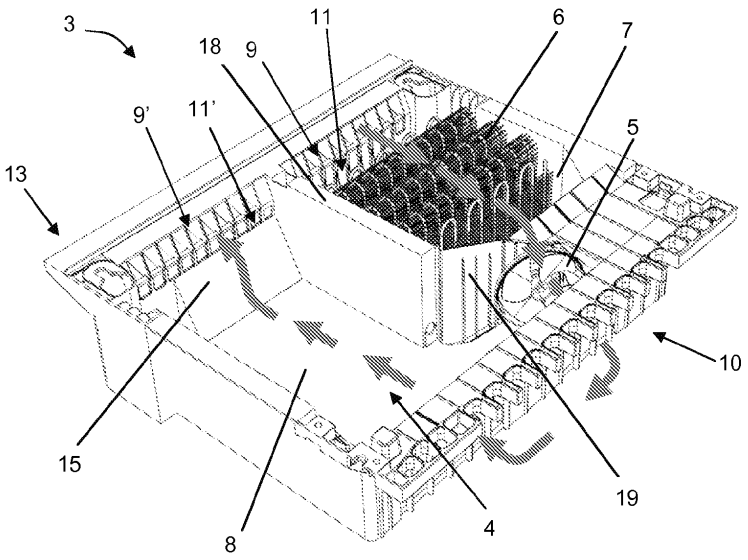

Fig. 3

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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 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 are placed. 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 electrical appliance.

[0003] EP2048462-A2 describes a domestic refrigeration appliance of the built-in type that comprises a refrigerator that is suitable for being fitted into a kitchen unit, and a base on which said refrigerator is supported. Said base comprises a housing with condensation means, ventilation means and a front wall with a grille that connects the housing to the exterior.

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 electrical appliance of the invention comprises a refrigerator suitable for being fitted into a kitchen unit, and a base on which said refrigerator is supported. Said base comprises a housing that comprises condensation means for the refrigerator, ventilation means for cooling at least said condensation means, and a front wall with at least one opening that connects the housing to the exterior, so that, by means of the ventilation means, an airflow is produced that enters from the front wall and exits at least partially through said front wall. Said ventilation means are placed in the rear part of the housing next to the condensation means, and said ventilation means are positioned to form a certain angle in relation to the front wall.

[0006] The domestic electrical appliance of the invention optimises the airflow inside the housing of the base and thereby improves the refrigeration of the condensation means.

[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 an embodiment of the domestic electrical appliance of the invention.

Figure 2 shows a first perspective view of the base of the domestic electrical appliance of Figure 1.

Figure 3 shows a second perspective view of the base of the domestic electrical appliance of Figure 1 showing the airflow.

Figure 4 shows a third perspective view of the base of the domestic electrical appliance of Figure 1 without condensation means and also showing the airflow.

Figure 5 shows a fourth perspective view of the base of the domestic electrical appliance of Figure 1 showing the front part.

DETAILED DISCLOSURE OF THE INVENTION

[0009] As shown in Figure 1, the domestic electrical 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 3 comprises, as shown in Figures 2 and 3, a housing 4 that comprises:

- condensation means 6 for the refrigerator 2,
- ventilation means 5 to cool at least said condensation means 6, and
- a front wall 13 with at least one opening that connects the housing 4 to the exterior.

[0010] By means of the ventilation means 5 an airflow is produced that enters from the front wall 13 and exits through said front wall 13, as shown in Figures 3 and 4. The ventilation means 5 are placed in the rear part of the housing 4 next to the condensation means 6 to form a certain angle in relation to the front wall 13. In a preferred embodiment, said ventilation means 5 are positioned to form an angle of between approximately 10° and 50°, preferably of approximately 20°, in relation to the front wall 13.

[0011] In a preferred embodiment, the housing 4 comprises a dividing wall 18 substantially perpendicular to the front wall 13, and the condensation means 6 are placed on one side of said dividing wall 18. The dividing wall 18 separates, as shown in Figures 3 and 4, the airflow that enters from the front wall 13 and the airflow that exits through said front wall 13.

[0012] As shown in Figure 5, the front wall 13 comprises a plurality of air-intake openings 9, 11 on one side of the dividing wall 18, and a plurality of air-outlet openings 9', 11' on the other side of the dividing wall 18, the air-intake openings 9, 11 being larger than the air-outlet openings 9', 11'. The condensation means 6 are preferably arranged facing the airflow that enters from the front wall 13, i.e. facing the air-intake openings 9, 11.

[0013] In this embodiment the housing 4 comprises an oblique wall 19 next to the dividing wall 18, both walls 18

and 19 separating the housing 4 into two areas connected only by the ventilation means 5: an area 7 in which the condensation means 6 are placed and an adjoining area 8. This separation into two areas improves the direction of the airflow and therefore improves cooling efficiency.

[0014] The ventilation means 5 used in the preferred embodiment are of the type that comprise a fan connected to a motor 12. Preferably, the ventilation means 5 are arranged in such a way that the motor 12 is housed in the area of the housing 4 in which the condensation means 6 are placed. This positioning increases the volume of airflow. The oblique wall 19 comprises a circular hole in which is disposed the fan of the ventilation means 5.

[0015] To improve the direction of the airflow, a deflector wall 14 is placed in the area of the housing 4 in which the condensation means 6 are located, as shown in Figure 4. In addition, the housing 4 also comprises a ramp 15, shown in Figure 3, which directs the airflow to the exterior of the front wall 13. This arrangement reduces the generation of turbulence.

[0016] As shown in Figure 4, the housing 4 comprises a rear wall 10 that may incorporate openings in the form of windows 16 and 17. In the event that the ventilation means 5 are very close to the rear wall 10, said windows 16 and 17 prevent the airflow originating from the ventilation means 5 from colliding directly with said rear wall 10, causing a less abrupt rotation of the airflow.

[0017] Normally the ventilation means 6 are also used to cool the compressor (not shown in the figures) of the refrigerator 2. In this case said compressor is placed next to the ventilation means 6, either in the housing 4 (in the embodiment of the figures in the area 8 of said housing 4), or on top of the base 3 and in the rear part of the refrigerator 2.

Claims

1. Domestic electrical appliance comprising a refrigerator (2) 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) for the refrigerator (2),
   ventilation means (5) to cool at least said condensation means (6), and
   a front wall (13) with at least one opening that connects the housing (4) to the exterior, there being produced by means of the ventilation means (5) an airflow that enters from the front wall (13) and exits at least partially through said front wall (13), **characterised in that** the ventilation means (5) are placed in the rear part of the housing (4) next to the condensation means (6), and said ventilation means (5) are positioned to form a certain angle in relation to the front wall (13).

2. Appliance according to claim 1, wherein the housing (4) comprises a dividing wall (18) substantially perpendicular to the front wall (13), the condensation means (6) being on one side of the dividing wall (18) and said dividing wall (18) separating the airflow that enters from the front wall (13) and the airflow that exits through said front wall (13).

3. Appliance according to claim 2, wherein the front wall (13) comprises a plurality of air-intake openings (9,11) on one side of the dividing wall (18), and a plurality of air-outlet openings (9',11') on the other side of the dividing wall (18), the air-intake openings (9,11) being larger than the air-outlet openings (9', 11').

4. Appliance according to claims 2 or 3, wherein the condensation means (6) are facing the airflow that enters from the front wall (13).

5. Appliance according to any of claims 2 to 4, wherein the housing (4) comprises an oblique wall (19) next to the dividing wall (18), both walls (18,19) separating the housing (4) into two areas connected only by the ventilation means (5).

6. Appliance according to claim 5, wherein the ventilation means (5) comprise a motor (12) that is housed in the area of the housing (4) in which the condensation means (6) are placed.

7. Appliance according to claims 5 or 6, comprising a deflector wall (14) in the area of the housing (4) in which the condensation means (6) are placed, said deflector wall (14) directing the airflow towards the ventilation means (5).

8. Appliance according to any of the preceding claims, wherein the housing (4) comprises a ramp (15) that directs the airflow towards the exterior of the front wall (13).

9. Appliance according to any of the preceding claims, wherein the housing (4) comprises a rear wall (10) with at least one opening.

10. Appliance according to any of the preceding claims, wherein the ventilation means (5) are positioned to form an angle of between approximately 10° and 50° in relation to the front wall (13).

11. Appliance according to claim 10, wherein the ventilation means (5) are positioned to form an angle of approximately 20° in relation to the front wall (13).

12. Appliance according to any of the preceding claims, wherein the ventilation means (6) also cool a compressor, said compressor being placed next to said

ventilation means (6).

13. Appliance according to claim 12, wherein the compressor is placed in the housing (4).

14. Appliance according to claim 12, wherein the compressor is placed on the top of the base (3) and in the rear part of the refrigerator (2).

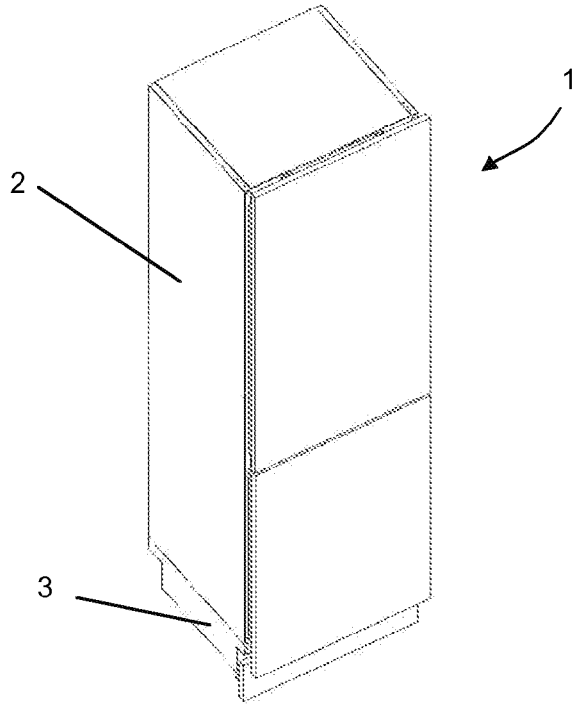

Fig. 1

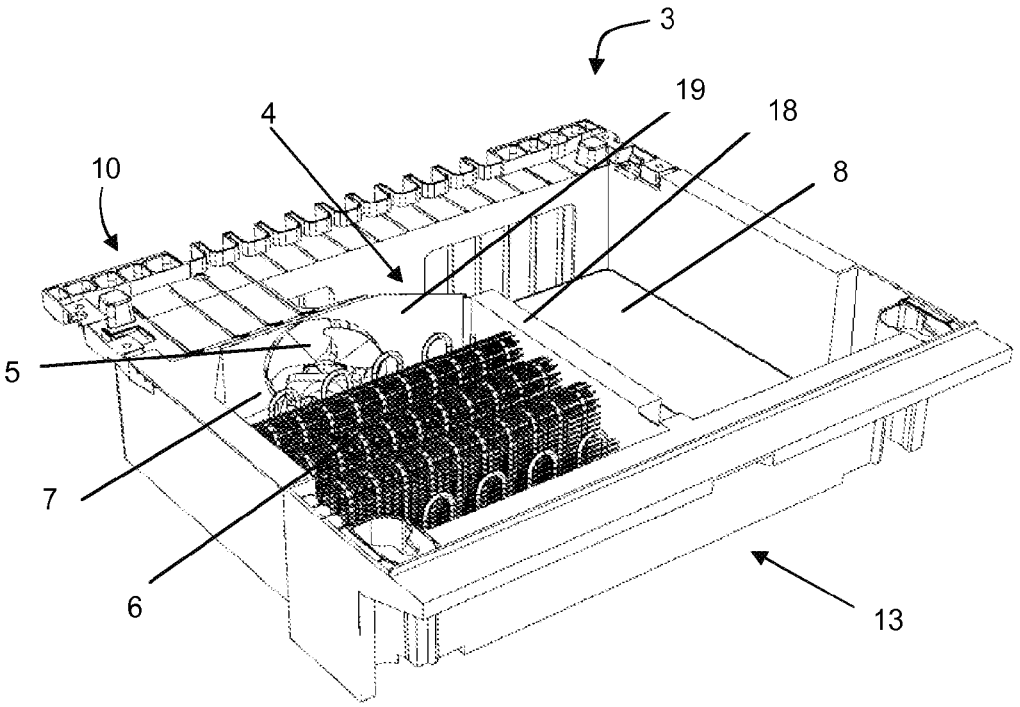

Fig. 2

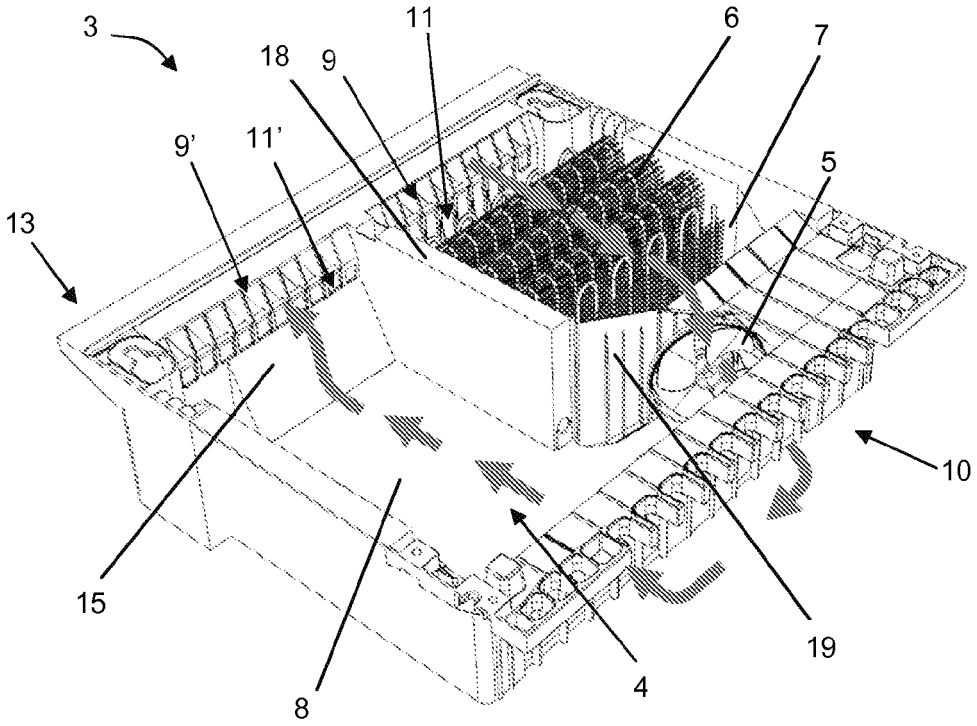

Fig. 3

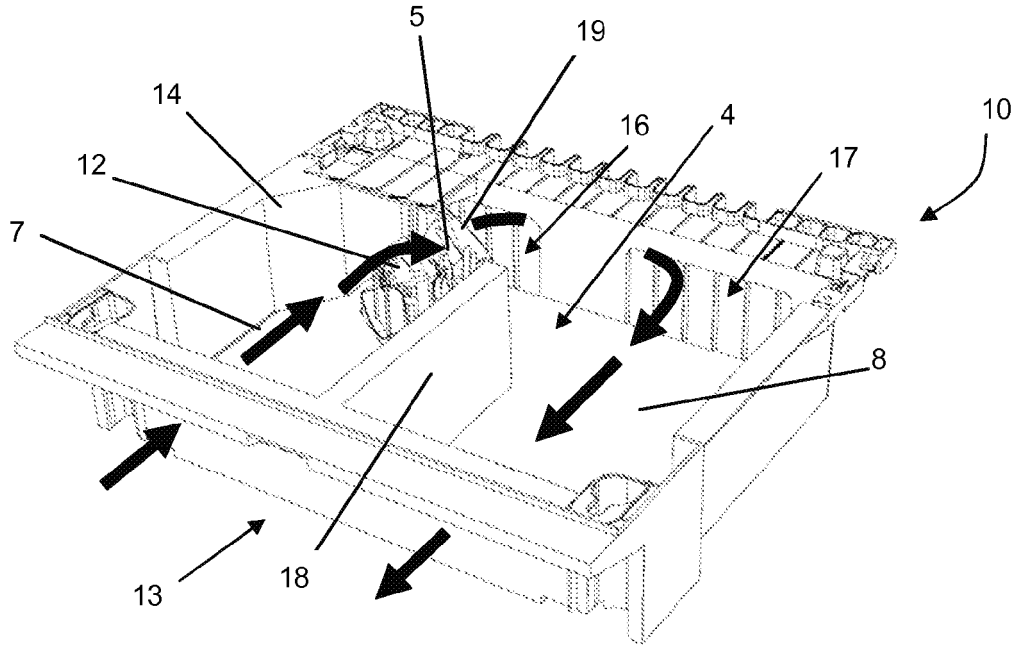

Fig. 4

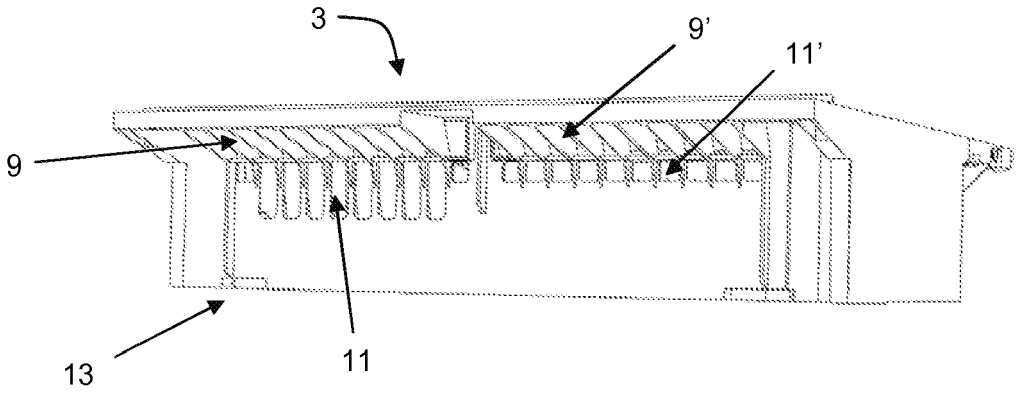

Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 2048462 A2 **[0003]**