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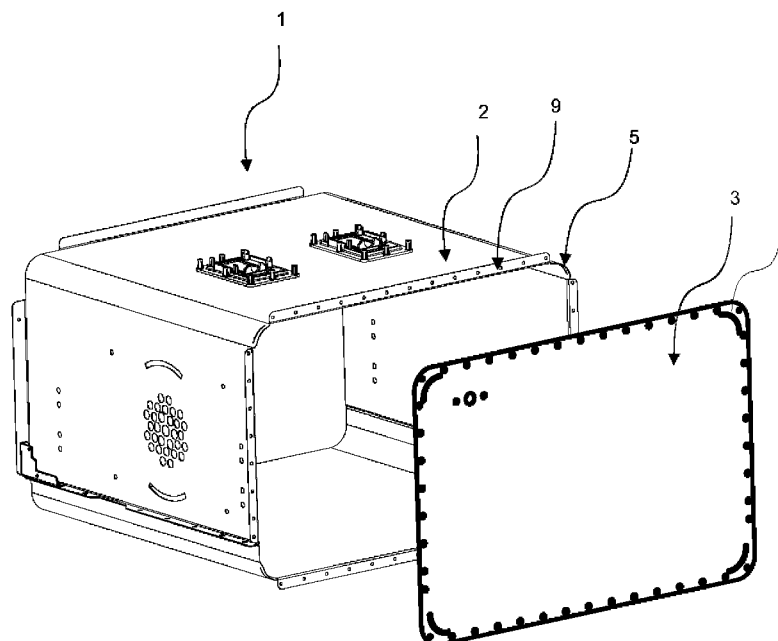
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**(54) A HOUSEHOLD APPLIANCE WITH IMPROVED ASSEMBLY**

(57) The present invention relates to a household appliance (1) comprising a body (2); a rear wall (3) which covers the rear region of the body (2); and a connection member (4) which enables the rear wall (3) to be fixed to the body (2), wherein the household appliance further comprises at least one skirt (5) in the form of an extension

which extends from the corners where the body (2) joins the rear wall (3) towards the rear wall (3), and at least one housing (6) which is provided at the corners of the rear wall (3) and which engages with the skirt (5) to ensure fixing.

Figure 2

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## Description

**[0001]** The present invention relates to a household appliance with improved safety and ease of assembly.

**[0002]** Today, thanks to the improved assembly methods, solutions requiring less labor and lower cost while offering more security are increasing in the assembly of home appliances. Various alternative solutions are also offered for the mounting of the front or rear covers which cover the body, especially in household appliances composed of a plurality of components. In white goods structures, which are generally composed of a rear wall mounted on a casing, while the rear wall is being mounted by the operator with screws, welding or rivets, time is lost in order to place the component correctly and precisely and the component must be kept fixed until being connected to a certain place. This situation, which causes additional labor and time loss during production, is common. In addition, if there is an ultraviolet light source in the device, which may harm human health, exposure of the people to these harmful rays creates a safety risk.

**[0003]** The state of the art United States of America Patent Application No. US2019056123 discloses an ultraviolet light system which is disposed on the ventilation system in cooking devices, and the related cable installation.

**[0004]** In the state of the United States of America Patent Application No. US2015096549, a cooking device is disclosed, wherein the LED lamps, which emit radiation in order to sterilize the oven chamber, are disposed in the vicinity of the glass panel connected to the door.

**[0005]** The aim of the present invention is to increase the safety of use and ease of assembly.

**[0006]** The household appliance realized in order to attain the aim of the present invention, explicated in the claims, comprises a body; a rear wall which covers the rear region of the body; and a connection member which enables the rear wall to be fixed to the body. The rear wall can be fixed to the body by means of the connection member via various industrial assembly methods (screw, welding, rivet, etc.). The household appliance comprises at least one skirt in the form of an extension which extends from the corners where the body joins the rear wall towards the rear wall, and at least one housing which is provided at the corners of the rear wall and which engages with the skirt to ensure fixing. Thus, by using the skirt as a reference, time is saved in assembly and the need for the operator to hold the rear wall during production is eliminated.

**[0007]** In an embodiment of the present invention, the household appliance comprises a slit which is provided on the skirt, and a step which is provided on the housing and which engages with the slit to ensure fixing. The engagement of the slit and the step so as to close all the gaps at the corners of the body provides air- and heat-proofing in the body and rigidity for the casing.

**[0008]** In another embodiment of the present invention, the skirt is bent towards the rear wall after engaging with

the slit so as to ensure the fixing of the rear wall. Thus, the need for connection members is decreased, and great improvements are provided in assembly and costs.

**[0009]** In another embodiment of the present invention, the household appliance comprises at least one body side which is formed by extending the edges of the body joining with the rear wall, and which is bent over the rear wall so as to ensure fixing on the rear wall. Thus, by means of the body sides in the form of extensions such as the skirt, a better snap-fitting process is ensured. Consequently, the need for connection members is decreased, and a more rigid structure is obtained.

**[0010]** In another embodiment of the present invention, the household appliance is a cooking device. Thus, a cooking device is realized, wherein the heat loss is minimized and ease of assembly is provided.

**[0011]** In another embodiment of the present invention, the household appliance is a disinfection device. Thus, a better closed and tight structure is obtained particularly in disinfection devices with UV light sources.

**[0012]** By means of the present invention, ease of assembly and safety of use are improved.

**[0013]** A household appliance realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 - is the perspective view of the household appliance.

Figure 2 - is the perspective view of the household appliance without the rear wall.

Figure 3 - is the schematic view of the rear wall.

Figure 4 - is the detailed view of the household appliance.

**[0014]** The elements illustrated in the figures are numbered as follows:

1. Household appliance
2. Body
3. Rear wall
4. Connection member
5. Skirt
6. Housing
7. Slit
8. Step
9. Body side

**[0015]** The household appliance (1) comprises a body (2); a rear wall (3) which covers the rear region of the body (2); and a connection member (4) which enables the rear wall (3) to be fixed to the body (2). The connection member (4) can be produced preferably by various production methods such as screw, welding or rivet.

**[0016]** The household appliance (1) comprises at least one skirt (5) in the form of an extension which extends from the corners where the body (2) joins the rear wall (3) towards the rear wall (3), and at least one housing (6) which is provided at the corners of the rear wall (3) and

which engages with the skirt (5) to ensure fixing. The skirt (5) and the housing (6) engage with each other preferably at each corner, and the referencing is carried out at at least two corners. Thus, the skirt-housing (5, 6) combination acts as a reference during the production of the connection, eliminating the need for the operator to hold the rear wall (3) in place. Moreover, a better closed structure is obtained in the household appliances (1) comprising ultraviolet light sources, decreasing safety risks.

**[0017]** In an embodiment of the present invention, the household appliance (1) comprises a slit (7) which is provided on the skirt (5), and a step (8) which is provided on the housing (6) and which engages with the slit (7) to ensure fixing. The forms of the slit (7) and the step (8) are designed to match each other. The step (8) and the slit (7) engage with each other without applying a great force, and thus, a more rigid connection is provided and the number of gaps on the casing is minimized while preventing energy losses during the operation of the household appliance (1).

**[0018]** In another embodiment of the present invention, the household appliance (1) comprises the skirt (5) which is bent towards the rear wall (3) after engaging with the slit (7) so as to ensure the fixing of the rear wall (3). By bending the skirt (5) inwards, the need for connection members (4) such as screw, welding or rivet is decreased, providing improvements in costs and assembly. Thus, a faster production is made possible on the assembly line.

**[0019]** In another embodiment of the present invention, the household appliance (1) comprises at least one body side (9) which is formed by extending the edges of the body (2) joining with the rear wall (3), and which is bent over the rear wall (3) so as to ensure fixing on the rear wall (3). The body sides (9) are designed so as to be in the form of an outwards extension such as the skirt (5) and to be adjacent to the body (2). Since the body sides (9) can be bent over the rear wall (3), a better snap-fitting process and a more efficient structure in terms of airproofing are provided.

**[0020]** In another embodiment of the present invention, the household appliance (1) is a cooking device. In products such as oven, microwave oven, etc., more efficient airproofing and ease of assembly are provided.

**[0021]** In another embodiment of the present invention, the household appliance (1) is a disinfection device. In products with disinfection features, more efficient airproofing and ease of assembly are provided.

**[0022]** By means of the connection features in the household appliance (1) of the present invention, a more efficient assembly process is provided for the producer while ensuring better safety of use for the user.

(2); and a connection member (4) which enables the rear wall (3) to be fixed to the body (2), **characterized by** at least one skirt (5) in the form of an extension which extends from the corners where the body (2) joins the rear wall (3) towards the rear wall (3), and at least one housing (6) which is provided at the corners of the rear wall (3) and which engages with the skirt (5) to ensure fixing.

2. A household appliance (1) as in Claim 1, **characterized by** a slit (7) which is provided on the skirt (5), and a step (8) which is provided on the housing (6) and which engages with the slit (7) to ensure fixing.
3. A household appliance (1) as in Claim 1 or 2, **characterized by** the skirt (5) which is bent towards the rear wall (3) after engaging with the slit (7) so as to ensure the fixing of the rear wall (3).
4. A household appliance (1) as in any one of the above claims, **characterized by** at least one body side (9) which is formed by extending the edges of the body (2) joining with the rear wall (3), and which is bent over the rear wall (3) so as to ensure fixing on the rear wall (3).
5. A household appliance (1) as in any one of the above claims, which is a cooking device.
6. A household appliance (1) as in any one of the above claims, which is a disinfection device.

## Claims

1. A household appliance (1) comprising a body (2); a rear wall (3) which covers the rear region of the body

Figure 1

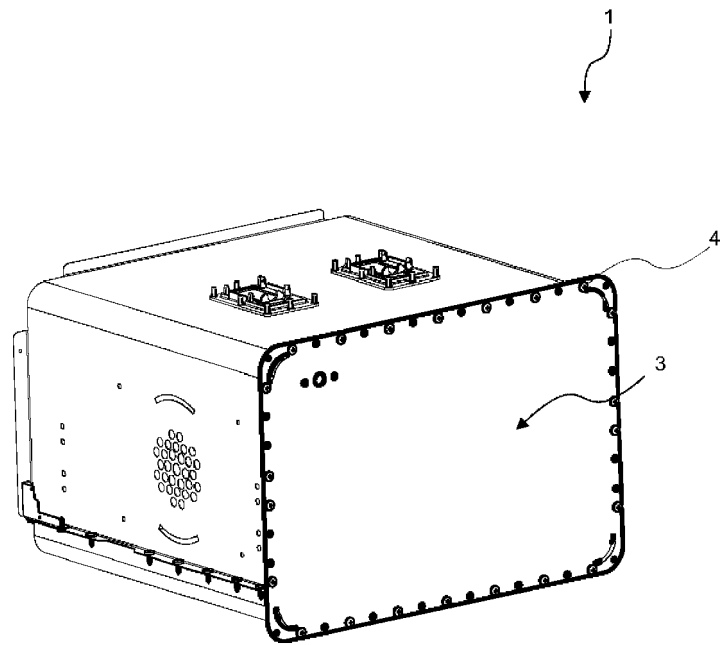


Figure 2

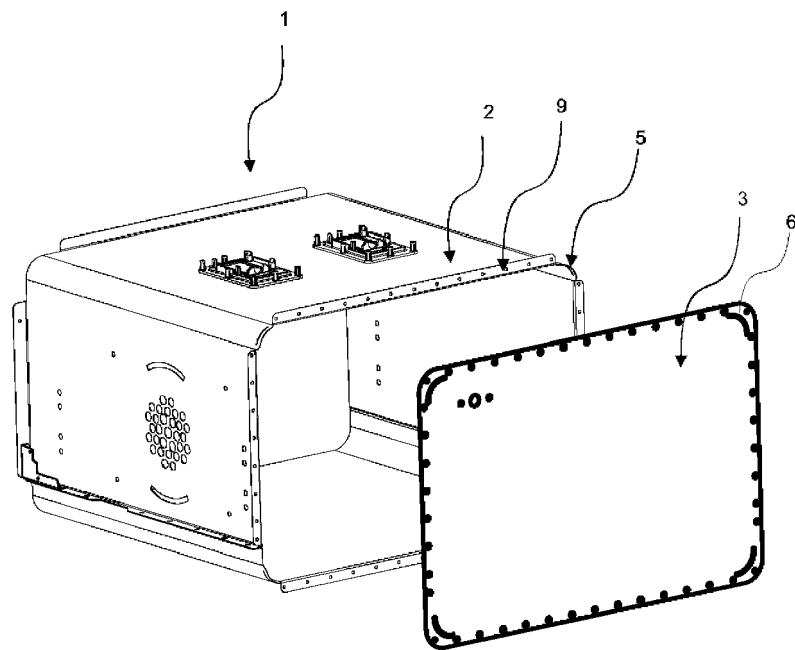


Figure 3

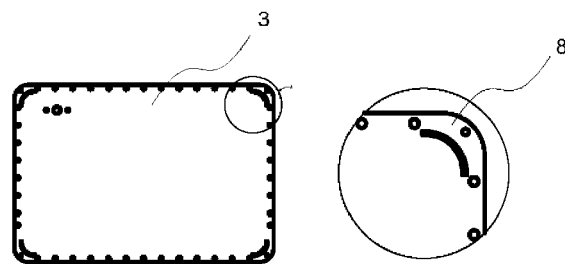
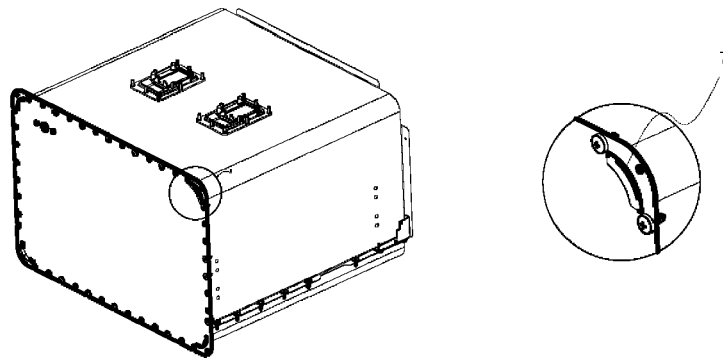


Figure 4





## EUROPEAN SEARCH REPORT

Application Number  
EP 21 17 6422

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The present search report has been drawn up for all claims			
Place of search <b>The Hague</b>		Date of completion of the search <b>9 November 2021</b>	Examiner <b>Fest, Gilles</b>
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			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 21 17 6422

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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09-11-2021

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