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(54) **REFRIGERATOR**

KÜHLSCHRANK

RÉFRIGÉRATEUR

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EP 2 985 552 B1

Description

FIELD

[0001] The present disclosure relates to a field of household appliances, and more particularly to a refrigerator.

BACKGROUND

[0002] With the improvement of people's living standards and the progress of the society, the refrigerator is not only used in the family kitchen, but also gradually appeared in the office and single dormitory. User not only requires the refrigerator with functions of cold storage, adjusting temperature and freezing, but also hopes the frozen fish and meat taken from the refrigerator can be thawed out immediately.

[0003] A microwave oven combined with a refrigerator is disclosed in a Chinese patent CN1316638A, which includes an outer casing, a supporting foot, a cabinet body and a cabinet door. The structure of the microwave oven combined with the refrigerator is divided into two parts, in which an upper part is configured as the microwave oven and a lower part is configured as the refrigerator. It has the function of the microwave oven for food thawing and cooking as well as the function of the refrigerator for food freezing and cold storage to save the family investment and kitchen space. However, the microwave oven combined with the refrigerator has low heat dissipation effect.

SUMMARY

[0004] The present disclosure seeks to solve at least one of the problems existing in the related art to at least some extent. For this, an object of the present disclosure is to provide a refrigerator with functional diversification, convenient to use, reliable performance, strong practicability, and meeting the needs of the users.

[0005] In order to achieve the above purpose, the present disclosure provides a refrigerator, including: a refrigerator body defining a refrigeration compartment and a microwave oven compartment therein, and provided with an air inlet and an air outlet communicating the microwave oven compartment with outside; doors provided to the refrigerator body so as to open and close the refrigeration compartment; and a microwave oven arranged in the microwave oven compartment.

[0006] The refrigerator according to the present disclosure has a plurality of advantages, such as functional diversification, convenient to use, reliable performance, strong practicability, and meeting the needs of the users.

[0007] In addition, the refrigerator according to the present disclosure further has the following additional technical features.

[0008] According to the present invention, the refrigerator further includes an air inlet guiding member provided

in the microwave oven compartment; an air inlet through hole provided in the microwave oven to communicate the inside of the microwave oven with the outside, wherein the air inlet guiding member communicates the air inlet with the air inlet through hole so as to communicate the inside of the microwave oven with the outside. Thus the heat dissipation effect of the microwave oven can be further improved, thereby enabling the performance of the microwave oven to be more reliable.

[0009] In some embodiments of the present disclosure, the air inlet and the air outlet are provided in a back surface of the refrigerator body. Thus enabling the structure of the refrigerator to be more reasonable, and making the appearance of the refrigerator to be more neat and beautiful without affecting the heat dissipation effect of the microwave oven.

[0010] In some embodiments of the present disclosure, the air inlet guiding member is installed at a back plate of the refrigerator body. Thus the stability of the air inlet guiding member in the microwave oven compartment can be improved, thereby improving the heat dissipation reliability of the microwave oven.

[0011] According to the present invention, the air inlet guiding member is provided with a line groove, and a power line of the microwave oven is provided in the line groove. Thus not only enabling the microwave oven to connect to a power supply more convenient, but also avoiding the power line of the microwave oven is too messy and damaged.

[0012] In some embodiments of the present disclosure, the refrigerator further includes an air inlet cover provided at the air inlet. In this way, the air inlet cover can not only play a protective role, but also can prevent debris from getting into the microwave oven compartment from the air inlet.

[0013] In some embodiments of the present disclosure, the refrigerator further includes an air outlet cover provided at the air outlet. In this way, the air outlet cover can not only play a protective role, but also can prevent debris from getting into the microwave oven compartment from the air outlet.

[0014] In some embodiments of the present disclosure, the refrigerator further includes a fan provided in the microwave oven compartment and adjacent to the air outlet. In this way, the heat dissipation effect of the microwave oven can be further improved, so as to further improve the performance reliability of the microwave oven.

[0015] In some embodiments of the present disclosure, the microwave oven includes an oven body and an oven door, and the oven door is installed to the oven body via a slide track so as to open and close the oven body. Thus it is convenient for users to put the food into the microwave oven or take the food out of the microwave oven.

[0016] In some embodiments of the present disclosure, the refrigeration compartment includes a cold storage compartment located above the microwave oven

compartment and a freezing compartment located below the microwave oven compartment. Thus the functional diversification of the refrigerator can be further improved so as to further improve the convenience of the refrigerator.

[0017] Additional aspects and advantages of embodiments of present disclosure will be given in part in the following descriptions, become apparent in part from the following descriptions, or be learned from the practice of the embodiments of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] These and other aspects and advantages of embodiments of the present disclosure will become apparent and more readily appreciated from the following descriptions made with reference to the drawings, in which:

Fig. 1 is an exploded view of a refrigerator according to an embodiment of the present disclosure;

Fig. 2 is a schematic diagram of a refrigerator according to an embodiment of the present disclosure;

Fig. 3 is a schematic diagram of a refrigerator body of a refrigerator according to an embodiment of the present disclosure;

Fig. 4 is a schematic diagram of a microwave oven compartment of a refrigerator according to an embodiment of the present disclosure;

Fig. 5 is a schematic diagram of a microwave oven and air inlet guiding member of a refrigerator according to an embodiment of the present disclosure;

Reference numerals:

[0019] refrigerator 1, refrigerator body 100, cold storage compartment 110, microwave oven compartment 120, air inlet 121, air outlet 122, back plate 140, freezing compartment 130, cold storage compartment door body 210, freezing compartment door body 220, microwave oven 300, oven body 310, oven door 320, air inlet guiding member 400, line groove 410, air inlet cover 500, air outlet cover 600.

DETAILED DESCRIPTION

[0020] Reference will be made in detail to embodiments of the present disclosure. The embodiments described herein with reference to drawings are explanatory, illustrative, and used to generally understand the present disclosure. The embodiments shall not be construed to limit the present disclosure. The same or similar elements and the elements having same or similar functions are denoted by like reference numerals throughout the descriptions.

[0021] In the specification, it is to be understood that terms such as "central," "longitudinal," "lateral," "length," "width," "thickness," "upper," "lower," "front," "rear," "left,"

"right," "vertical," "horizontal," "top," "bottom," "inner," "outer," "clockwise," and "counterclockwise" should be construed to refer to the orientation as then described or as shown in the drawings under discussion. These relative terms are for convenience of description and do not require that the present invention be constructed or operated in a particular orientation. In addition, terms such as "first" and "second" are used herein for purposes of description and are not intended to indicate or imply relative importance or significance or to imply the number of indicated technical features. Thus, the feature defined with "first" and "second" may comprise one or more of this feature. In the description of the present invention, "a plurality of" means two or more than two, unless specified otherwise.

[0022] In the present invention, unless specified or limited otherwise, the terms "mounted," "connected," "coupled," "fixed" and the like are used broadly, and may be, for example, fixed connections, detachable connections, or integral connections; may also be mechanical or electrical connections; may also be direct connections or indirect connections via intervening structures; may also be inner communications of two elements, which can be understood by those skilled in the art according to specific situations.

[0023] The refrigerator 1 according to embodiments of the present disclosure will be described below in detail with reference to Fig. 1 to Fig. 5. As shown in Fig. 1 to Fig. 5, the refrigerator 1 according to embodiments of the present disclosure includes a refrigerator body 100, door body and a microwave oven 300.

[0024] The refrigerator body 100 defines a refrigeration compartment and a microwave oven compartment 120 therein, and is provided with an air inlet 121 and an air outlet 122 communicating the microwave oven compartment 120 with the outside. The door body is provided to the refrigerator body 100 so as to open and close the refrigeration compartment. The microwave oven 300 is arranged in the microwave oven compartment 120.

[0025] The refrigerator 1 according to the present disclosure enables the refrigerator 1 not only having functions of refrigeration, preservation and storage, but also having functions of heating, thawing, barbecue, cold storage and heat dissipation via providing a microwave oven compartment 120 in the refrigerator body 100, and the microwave oven compartment 120 being provided with a microwave oven 300 therein. Thus user can use the microwave oven 300 to thaw out the frozen fish and meat immediately, thereby making usage more convenient, and meeting the needs of the users. Moreover, the refrigerator body 100 is provided with the air inlet 121 and the air outlet 122 communicating the microwave oven compartment 120 with the outside, thus ensuring the microwave oven 300 to work normally in a harsh environment, making the performance of the refrigerator 1 reliable. Therefore, the refrigerator 1 according to the present disclosure has a plurality of advantages, such as functional diversification, convenient to use, reliable

performance, strong practicability, and meeting the needs of the users.

[0026] Fig. 1 and Fig. 3 show a refrigerator 1 according to an embodiment of the present disclosure. As shown in Fig. 1 and Fig. 3, the refrigeration compartment includes a cold storage compartment 110 located above the microwave oven compartment 120 and a freezing compartment 130 located below the microwave oven compartment 120 (the up-down direction is indicated by arrow A as shown in Fig. 1 to Fig. 5). Thus enabling the refrigerator 1 having functions of the cold storage and freezing, thereby further improving the functional diversification of the refrigerator 1 so as to further improve the convenience of the refrigerator 1.

[0027] As shown in Fig. 1, the door body can include a cold storage compartment door body 210 and a freezing compartment door body 220, the cold storage compartment door body 210 can be provided to the refrigerator body 100 so as to open and close the cold storage compartment 110, and the freezing compartment door body 220 can be provided to the refrigerator body 100 so as to open and close the freezing compartment 130.

[0028] Optionally, as shown in Fig. 1, the microwave oven 300 can include an oven body 310 and an oven door 320, and the oven door 320 can be installed to the oven body 310 via a slide track so as to open and close the oven body 310. That is, the oven door 320 is a drawing-out door. Thus making users to open and close the oven body 310 more convenient, thereby enabling users to put the food into the microwave oven 300 or take the food out of the microwave oven 300 conveniently.

[0029] Figs. 1-5 show a refrigerator 1 according to a specific embodiment of the present disclosure. As shown in Figs. 1-5, the refrigerator 1 further includes an air inlet guiding member 400 provided in the microwave oven compartment 120, the microwave oven 300 can be provided with an air inlet through hole to communicate the inside of the microwave oven 300 with the outside, the air inlet guiding member 400 can communicate the air outlet 122 with the air inlet through hole so as to communicate the inside of the microwave oven 300 with the outside. In specific, the air inlet guiding member 400 can define a chamber whose front and back ends are opened. Thus the outside air with a lower temperature can be led into the microwave oven 300 to subject to heat exchange with the air inside the microwave oven 300 with a higher temperature by taking advantage of the air inlet guiding member 400, the hot air after subjecting to heat exchange is discharged outside the refrigerator 1 sequentially through the surface of the microwave oven 300 and the air outlet 122. Thus the heat dissipation effect of the microwave oven 300 can be further improved, thereby enabling the performance of the microwave oven 300 to be more reliable.

[0030] Wherein, as shown in Fig. 2-Fig. 4, the air inlet 121 and the air outlet 122 can be provided in a back surface of the refrigerator body 100 (the front-back direction is indicated by arrow B as shown in Figs. 1-3 and

Fig. 5). In specific, the air inlet 121 and the air outlet 122 can be provided in a back plate of the microwave oven compartment 120. Thus enabling the structure of the refrigerator 1 to be more reasonable, and making the appearance of the refrigerator 1 to be more neat and beautiful without affecting the heat dissipation effect of the microwave oven 300.

[0031] Optionally, the air inlet guiding member 400 can be installed to a back plate 140 of the refrigerator body 100. That is, the air inlet guiding member 400 can be installed to a back plate of the microwave oven compartment 120. Thus the stability of the air inlet guiding member 400 in the microwave oven compartment 120 can be improved, thereby improving the heat dissipation reliability of the microwave oven 300.

[0032] Fig. 2 and Fig. 5 show a refrigerator 1 according to a specific embodiment of the present disclosure. As shown in Fig. 2 and Fig. 5, the air inlet guiding member 400 can be provided with a line groove 410, and a power line of the microwave oven 300 is provided in the line groove 410. Thus not only enable the microwave oven 300 to connect to a power supply more convenient, but also limit the orientation of power line of the microwave oven 300 by taking advantage of the line groove 410, thereby avoid the power line of the microwave oven 300 being too messy and damaged.

[0033] Optionally, the refrigerator 1 can further include a fan (not shown in figures) provided in the microwave oven compartment 120 and adjacent to the air outlet 122. In this way, the hot air inside the microwave oven compartment 120 can be compulsory discharged, thereby further improving the heat dissipation effect of the microwave oven 300, so as to further improve the performance reliability of the microwave oven 300.

[0034] Advantageously, as shown in Fig. 2, the refrigerator 1 can further include an air inlet cover 500 which can be provided at the air inlet 121. That is, the air inlet cover 500 can be provided to the back plate 140 of the refrigerator body 100, and can be provided at the air inlet 121. In this way, not only the air inlet guiding member 400 and the microwave oven 300 can be protected, but also debris can be prevented from getting into the microwave oven compartment 120 from the air inlet 121 by taking advantage of the air inlet cover 500.

[0035] More advantageously, as shown in Fig. 2, the refrigerator 1 can further include an air outlet cover 600 which can be provided at the air outlet 122. In other words, the air outlet cover 600 can be provided to the refrigerator body 100 and can be provided at the air outlet 122. In this way, not only the air inlet guiding member 400 and the microwave oven 300 can be protected, but also debris can be prevented from getting into the microwave oven compartment 120 from the air outlet 122 by taking advantage of the air outlet cover 600.

[0036] Reference throughout this specification to "an embodiment," "some embodiments," "one embodiment," "another example," "an example," "a specific example," or "some examples," means that a particular feature,

structure, material, or characteristic described in connection with the embodiment or example is included in at least one embodiment or example of the present disclosure. Thus, the appearances of the phrases such as "in some embodiments," "in one embodiment," "in an embodiment," "in another example," "in an example," "in a specific example," or "in some examples," in various places throughout this specification are not necessarily referring to the same embodiment or example of the present disclosure. Furthermore, the particular features, structures, materials, or characteristics may be combined in any suitable manner in one or more embodiments or examples.

[0037] Although explanatory embodiments have been shown and described, it would be appreciated by those skilled in the art that the above embodiments cannot be construed to limit the present disclosure, and changes, alternatives, and modifications can be made in the embodiments without departing from principles and scope of the present disclosure.

Claims

1. A refrigerator (1), comprising:

a refrigerator body (100) defining a refrigeration compartment and a microwave oven compartment (120) therein, and provided with an air inlet (121) and an air outlet (122) communicating the microwave oven compartment (120) with outside;

a door body (210, 220) provided to the refrigerator body (100) so as to open and close the refrigeration compartment;

a microwave oven (300) arranged in the microwave oven compartment (120), **characterised in that** an air inlet guiding member (400) is provided in the microwave oven compartment (120);

an air inlet through hole provided in the microwave oven (300) to communicating the inside of the microwave oven (300) with the outside, and the air inlet guiding member (400) communicates the air inlet (121) with the air inlet through hole so as to communicate the inside of the microwave oven (300) with the outside, wherein the air inlet guiding member (400) is provided with a line groove (410) and a power line of the microwave oven (300) is provided in the line groove (410).

2. The refrigerator (1) according to claim 1, wherein the air inlet (121) and the air outlet (122) are provided at a back surface of the refrigerator body (100).

3. The refrigerator (1) according to claim 2, wherein the air inlet guiding member (400) is installed on a back

plate (140) of the refrigerator body (100).

4. The refrigerator (1) according to claim 1, further comprising: an air inlet cover (500) provided at the air inlet (121).

5. The refrigerator (1) according to claim 1, further comprising: an air outlet cover (600) provided at the air outlet (122).

6. The refrigerator (1) according to claim 1, further comprising: a fan provided in the microwave oven compartment (120) and adjacent to the air outlet (122).

7. The refrigerator (1) according to claim 1, wherein the microwave oven (300) comprises an oven body (310) and an oven door (320), and the oven door (320) is installed to the oven body (310) via a slide track to open and close the oven body (310).

8. The refrigerator (1) according to claim 1, wherein the refrigeration compartment comprises a cold storage compartment (110) located above the microwave oven compartment (120) and a freezing compartment (130) located below the microwave oven compartment (120).

Patentansprüche

1. Kühlschrank (1), umfassend:

ein Kühlschrankgehäuse (100), das ein Kühlfach und ein Mikrowellenherdfach (120) darin definiert und mit einem Lufteinlass (121) und einem Luftauslass (122) versehen ist, über welche das Mikrowellenherdfach (120) mit einem Äußeren kommuniziert;

ein Türgehäuse (210, 220), mit dem das Kühlschrankgehäuse (100) ausgestattet ist, um so das Kühlfach zu öffnen und zu schließen;

einen Mikrowellenherd (300), der in dem Mikrowellenherdfach (120) angeordnet ist,

dadurch gekennzeichnet, dass

in dem Mikrowellenherdfach (120) ein Lufteinlassführungselement (400) vorgesehen ist;

in dem Mikrowellenherd (300) ein Lufteinlassdurchgangsloch vorgesehen ist, so dass das Innere des Mikrowellenherds (300) mit dem Äußeren kommunizieren kann, wobei das Lufteinlassführungselement (400) eine Kommunikation des Lufteinlasses (121) mit dem Lufteinlassdurchgangsloch zur Verfügung stellt, so dass das Innere des Mikrowellenherds (300) mit dem Äußeren kommuniziert,

wobei das Lufteinlassführungselement (400)

mit einer Leitungsnut (410) versehen ist, wobei eine Energieversorgungsleitung des Mikrowellenherds (300) in der Leitungsnut (410) vorgesehen ist.

2. Kühlschrank (1) nach Anspruch 1, wobei der Luft-einlass (121) und der Luftauslass (122) an einer Rückseite des Kühlschrankgehäuses (100) vorgesehen sind. 5
3. Kühlschrank (1) nach Anspruch 2, wobei das Luft-einlassführungselement (400) an einer Rückplatte (140) des Kühlschrankgehäuses (100) installiert ist. 10
4. Kühlschrank (1) nach Anspruch 1, weiterhin umfassend: eine Lufteinlassabdeckung (500), die an dem Lufteinlass (121) vorgesehen ist. 15
5. Kühlschrank (1) nach Anspruch 1, weiterhin umfassend: eine Luftauslassabdeckung (600), die an dem Luftauslass (122) vorgesehen ist. 20
6. Kühlschrank (1) nach Anspruch 1, weiterhin umfassend: ein Gebläse, das in dem Mikrowellenherdfach (120) und benachbart zu dem Luftauslass (122) vorgesehen ist. 25
7. Kühlschrank (1) nach Anspruch 1, wobei der Mikrowellenherd (300) ein Herdgehäuse (310) und eine Herdtür (320) umfasst, wobei die Herdtür (320) an dem Herdgehäuse (310) über eine Schiebeführung installiert ist, um das Herdgehäuse (310) zu öffnen und zu schließen. 30
8. Kühlschrank (1) nach Anspruch 1, wobei das Kühlfach ein Kühlaufbewahrungsfach (110) umfasst, das über dem Mikrowellenherdfach (120) angeordnet ist, sowie ein Gefrierfach (130), das unterhalb des Mikrowellenfachs (120) angeordnet ist. 35

Revendications

1. Réfrigérateur (1) comprenant : 40

un corps de réfrigérateur (100) définissant un compartiment de réfrigération et un compartiment de four à micro-ondes (120) à l'intérieur de ce dernier, et prévu avec une entrée d'air (121) et une sortie d'air (122) faisant communiquer le compartiment de four à micro-ondes (120) avec l'extérieur ; 50

un corps de porte (210, 220) prévu sur le corps de réfrigérateur (100) afin d'ouvrir et de fermer le compartiment de réfrigération ; 55

un four à micro-ondes (300) agencé dans le compartiment de four à micro-ondes (120), caractérisé en ce que :

un élément de guidage d'entrée d'air (400) est prévu dans le compartiment de four à micro-ondes (120) ;

un trou débouchant d'entrée d'air prévu dans le four à micro-ondes (300) pour faire communiquer l'intérieur du four à micro-ondes (300) avec l'extérieur, et l'élément de guidage d'entrée d'air (400) fait communiquer l'entrée d'air (121) avec le trou débouchant d'entrée d'air afin de faire communiquer l'intérieur du four à micro-ondes (300) avec l'extérieur,

dans lequel l'élément de guidage d'entrée d'air (400) est prévu avec une rainure de ligne (410) et une ligne de courant du four à micro-ondes (300) est prévue dans la rainure de ligne (410).

2. Réfrigérateur (1) selon la revendication 1, dans lequel l'entrée d'air (120) et la sortie d'air (122) sont prévues au niveau d'une surface arrière du corps de réfrigérateur (100).
3. Réfrigérateur (1) selon la revendication 2, dans lequel l'élément de guidage d'entrée d'air (400) est installé sur une plaque arrière (140) du corps de réfrigérateur (100).
4. Réfrigérateur (1) selon la revendication 1, comprenant en outre : un couvercle d'entrée d'air (500) prévu au niveau de l'entrée d'air (121).
5. Réfrigérateur (1) selon la revendication 1, comprenant en outre : un couvercle de sortie d'air (600) prévu au niveau de la sortie d'air (122).
6. Réfrigérateur (1) selon la revendication 1, comprenant en outre : un ventilateur prévu dans le compartiment de four à micro-ondes (120) et adjacent à la sortie d'air (122).
7. Réfrigérateur (1) selon la revendication 1, dans lequel le four à micro-ondes (300) comprend un corps de four (310) et une porte de four (320), et la porte de four (320) est installée sur le corps de four (310) via une voie de coulissement pour ouvrir et fermer le corps de four (310).
8. Réfrigérateur (1) selon la revendication 1, dans lequel le compartiment de réfrigération comprend un compartiment de stockage de froid (110) positionné au-dessus du compartiment de four à micro-ondes (120) et un compartiment de congélation (130) positionné au-dessous du compartiment de four à micro-ondes (120).

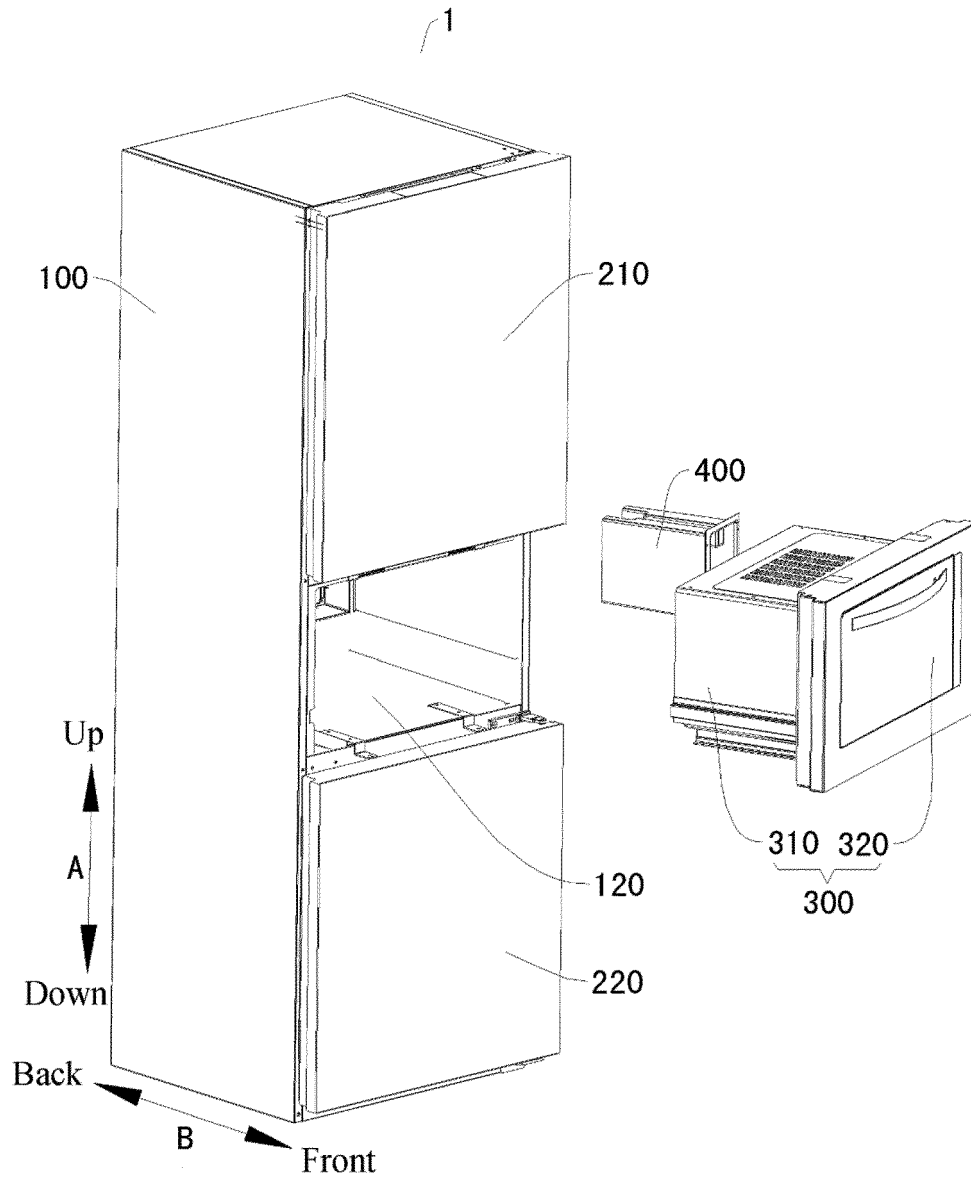


Fig. 1

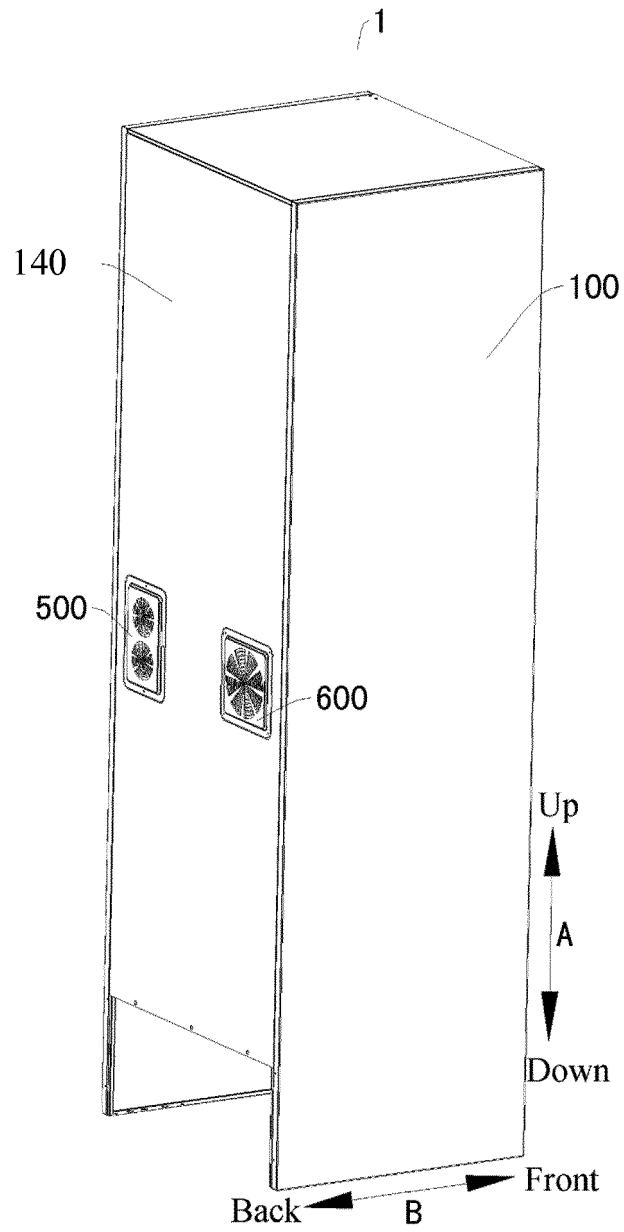


Fig. 2

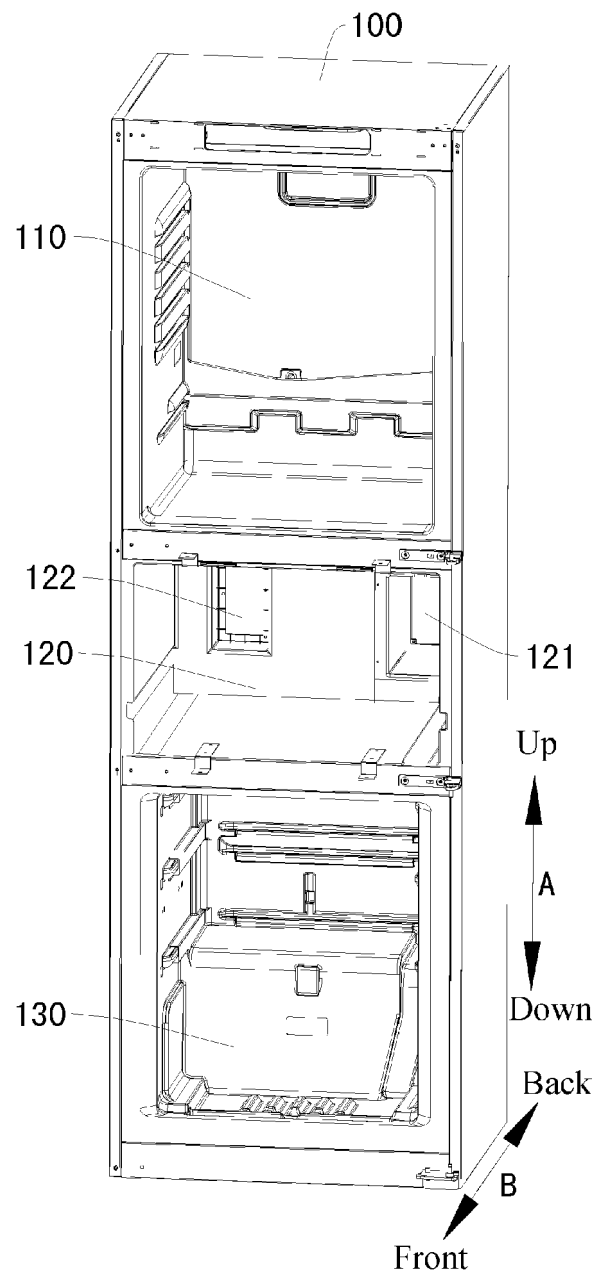


Fig. 3

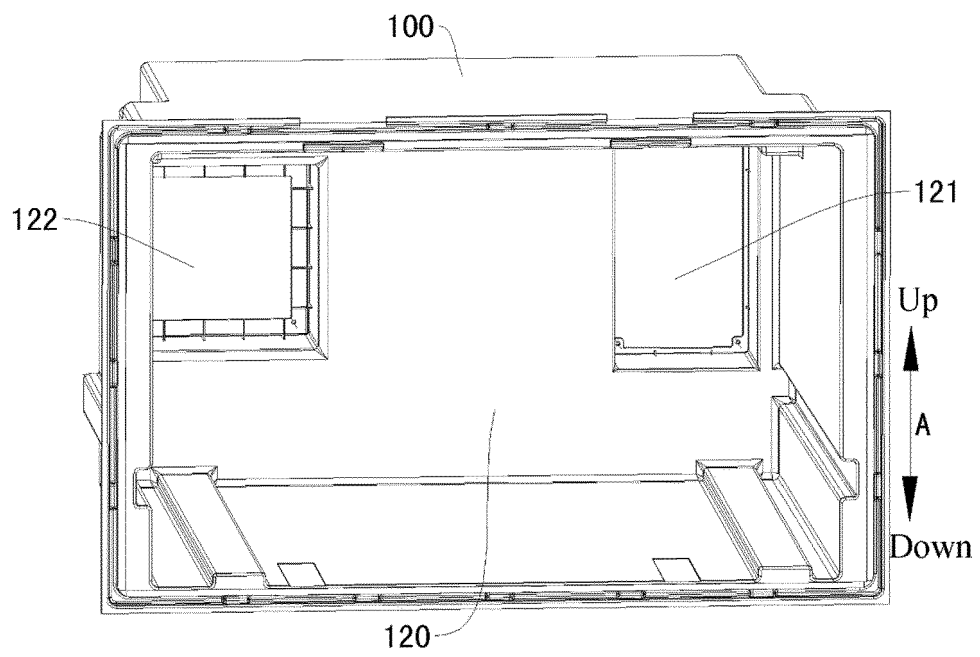


Fig. 4

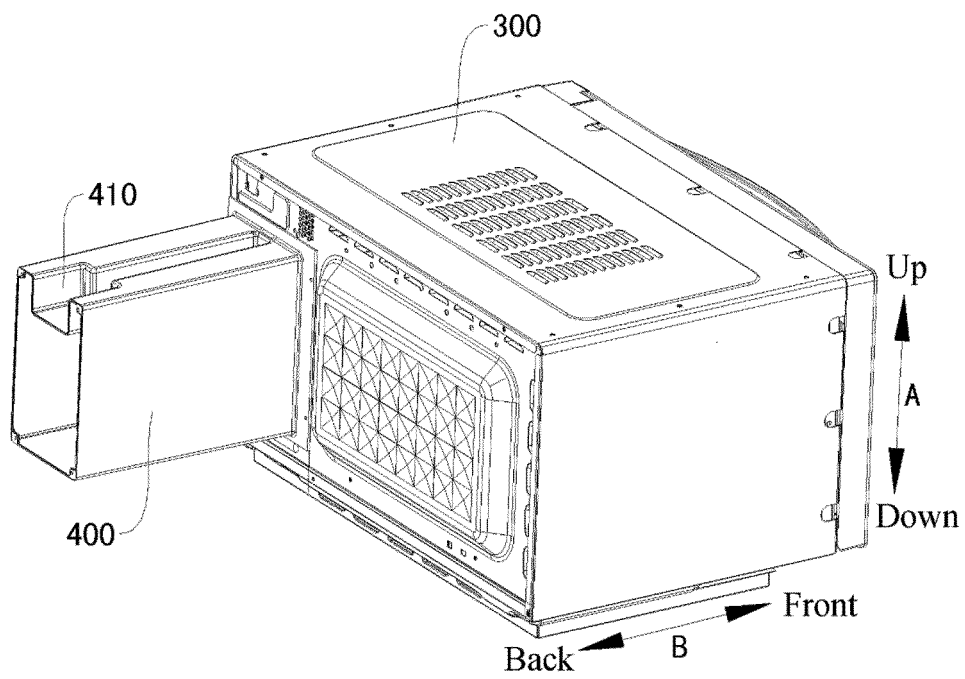


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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