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(54) **ICE MAKING ASSEMBLY AND REFRIGERATOR**

(57) The present invention provides an ice-making assembly, comprising: an ice mold having a plurality of ice cells for containing ice-making water; a refrigerant pipe extending from one end to the other end of the ice mold and located at a bottom of the ice mold; a heating wire located at the bottom of the ice mold and spaced apart from the refrigerant pipe; wherein the ice-making assembly further comprises a heat-conducting member and a bottom cover, the heat-conducting member is disposed between the ice mold and the bottom cover, the refrigerant pipe and the heating wire are positioned between the ice mold and the heat-conducting member, the heat-conducting member supports at least a portion of the refrigerant pipe and at least a portion of the heating wire such that the at least a portion of the refrigerant pipe

and the at least a portion of the heating wire are in direct contact with the ice mold to transfer cold and heat to the ice mold; the heat-conducting member comprises a top wall adjacent to the ice mold, an opposite bottom wall and two side walls connecting the top wall with the bottom wall, where the top wall, the bottom wall and the two side walls enclose an airflow chamber which is through in a direction from one end to the other end of the ice mold, heat-dissipating ribs extending from the top wall to the bottom wall are provided in the airflow chamber, a water outlet is formed at an end of the bottom wall, the bottom cover surrounds the bottom wall and the two side walls, and the heat-conducting member is fixed relative to the ice mold via the bottom cover.

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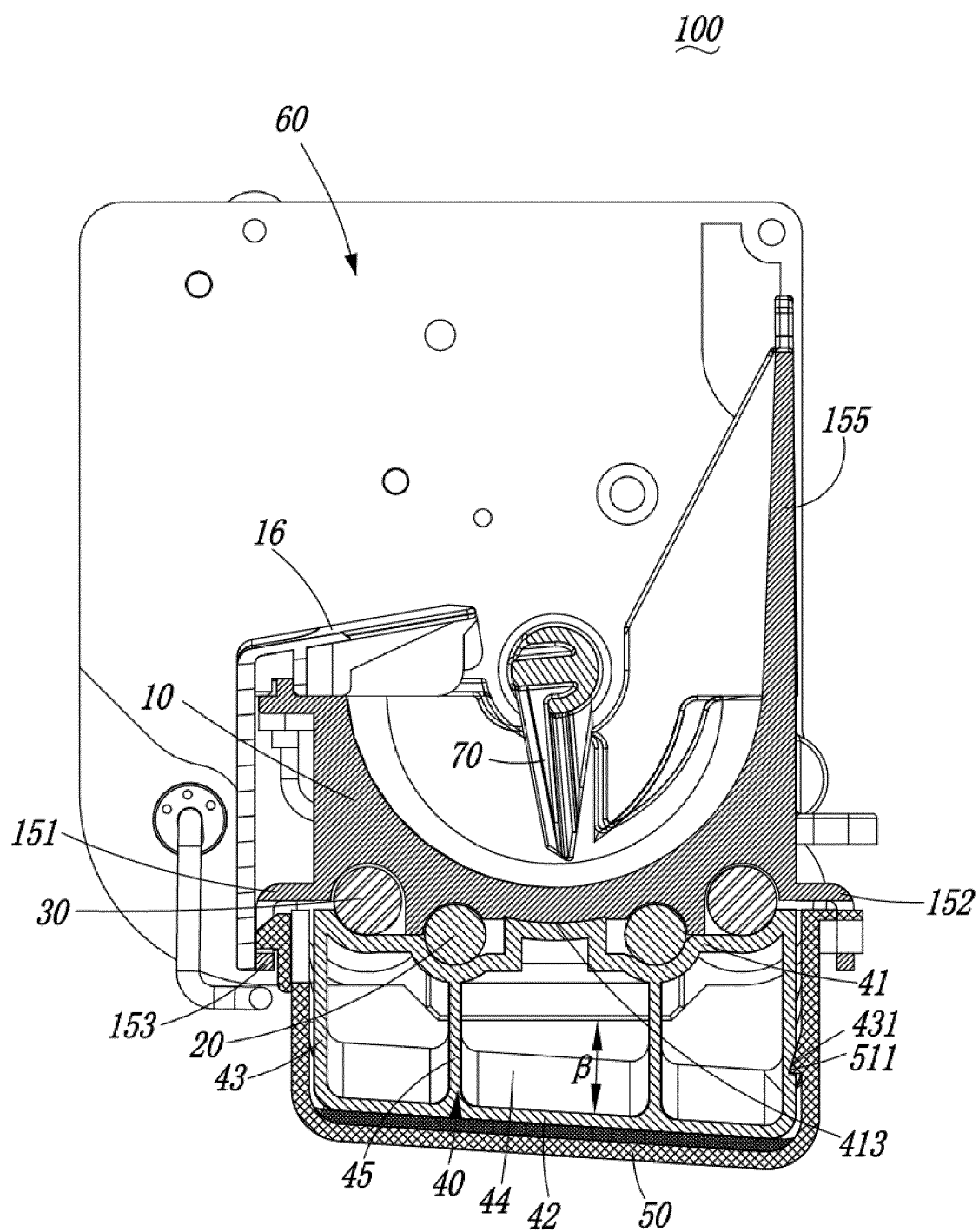


Fig.1

Description

TECHNICAL FIELD

[0001] The present invention relates to the field of refrigerating appliances, and particularly to an ice-making assembly and a refrigerator.

BACKGROUND

[0002] An ice maker is usually disposed in a freezing chamber of a refrigerator to make ice by virtue of the cold air in the freezing chamber. As for a refrigerator with a refrigerating chamber above the freezing chamber, a user needs to bend down to open the door body of the freezing chamber upon taking out of ice. To enable the user to conveniently take ice, an independent ice-making chamber is disposed in the refrigerating chamber or a door body of the refrigerating chamber of some conventional refrigerators, the ice maker is disposed in the ice-making chamber, and a dispenser associated with the ice maker is disposed on an outer side of the door body. The cold air of the freezing chamber and the evaporator chamber is introduced through an air duct into the air-making chamber to achieve the supply of cold to the ice maker. Such an ice making manner is also referred to as air-cooled ice making.

[0003] However, the ice-making efficiency in the air-chilled ice-making manner is low, and the air duct occupies a large space, thus occupying the storage space of the refrigerator itself. For this reason, there occurs a manner of making ice through direct contact between the refrigeration pipeline and the ice-maker, and the manner is referred to as direct-cooling ice-making. The direct-cooling ice-making has advantages such as quick ice making and a small occupation of space. Therefore, how to achieve effective connection of the refrigeration pipeline and an ice mold of the ice maker is particularly important. It is desirable to achieve convenient installation of the ice maker, achieve stable ice making of the ice maker, and ensure that there is no water resulting from the melting of the frost at the bottom of the ice maker or the water resulting from the melting of the frost can be drained in time. Therefore, the prior art needs to be further improved.

SUMMARY

[0004] An object of the present invention is to provide an ice making assembly which is convenient to install and has a high ice-making efficiency.

[0005] Another object of the present invention is to provide a refrigerator in which an ice-making assembly is convenient to mount and the ice-making efficiency is high.

[0006] In order to achieve one of the above-mentioned objects, the present invention provides an ice-making assembly, comprising:

an ice mold having a plurality of ice cells for containing ice-making water;

a refrigerant pipe extending from one end to the other end of the ice mold and located at a bottom of the ice mold;

a heating wire located at the bottom of the ice mold and spaced apart from the refrigerant pipe;

wherein the ice-making assembly further comprises a heat-conducting member and a bottom cover surrounding the outside of the heat-conducting member, the heat-conducting member is disposed between the ice mold and the bottom cover, the refrigerant pipe and the heating wire are positioned between the ice mold and the heat-conducting member, the heat-conducting member supports at least a portion of the refrigerant pipe and at least a portion of the heating wire such that the at least a portion of the refrigerant pipe and the at least a portion of the heating wire are in direct contact with the ice mold to transfer cold and heat to the ice mold;

the heat-conducting member comprises a top wall adjacent to the ice mold, an opposite bottom wall and two side walls connecting the top wall with the bottom wall, where the top wall, the bottom wall and the two side walls enclose an airflow chamber which is through in a direction from one end to the other end of the ice mold, heat-dissipating ribs extending from the top wall to the bottom wall are provided in the airflow chamber, a water outlet is formed at an end of the bottom wall, the bottom cover surrounds the bottom wall and the two side walls, and the heat-conducting member is fixed relative to the ice mold via the bottom cover.

[0007] As a further improvement of an embodiment of the present invention, wherein the top wall is provided with a first groove and a second groove respectively matching outer shapes of the refrigerant pipe and the heating wire, a portion of the refrigerant pipe is received in the first groove, a portion of the heating wire is received in the second groove, and the heat-dissipating ribs are positioned corresponding to the first groove.

[0008] As a further improvement of an embodiment of the present invention, wherein the bottom cover comprises a first enclosing wall and a second enclosing wall corresponding to the two side walls, a snap-fitting protrusion is provided on one of each enclosing wall and the corresponding side wall, a snap-fitting slot is provided on the other of each enclosing wall and the corresponding side wall, and the heat-conducting member and the bottom cover are fixedly connected via the snap-fitting protrusion and the snap-fitting slot.

[0009] As a further improvement of an embodiment of the present invention, wherein the ice-making assembly further comprises a housing fixed to the ice mold, the housing has a first edge and a second edge respectively corresponding to the first enclosing wall and the second enclosing wall, a lug provided with a snap-fitting hook or

hook slot extends from the first edge and the second edge respectively, the two enclosing walls are respectively provided with a hook slot or snap-fitting hook, and the bottom cover and the housing are fixedly connected via the hook slot and snap-fitting hook.

[0010] As a further improvement of an embodiment of the present invention, wherein an ice guide is fixedly connected to the front end of the ice mold, and the ice guide extends downwards to a position flush with the snap-fitting hook.

[0011] As a further improvement of an embodiment of the present invention, wherein the housing and the ice mold are integrally formed, the housing further comprises a back plate extending upwardly from an end perpendicular to an extension direction of the ice mold, and the ice-making assembly is mounted to an interior of the refrigerator by a mounting structure on the back plate.

[0012] As a further improvement of an embodiment of the present invention, wherein the refrigerant pipe is configured in a U-shape, the top wall is further provided with a convex portion extending in a direction from one end to the other of the ice mold, the convex portion is located in the interior of the U-shape of the refrigerant pipe, and the convex portion is in direct contact with the bottom of the ice mold.

[0013] As a further improvement of an embodiment of the present invention, wherein in a direction of the bottom cover from one end to the other end of the ice mold, a protruding rim protruding upwards is disposed at both ends of the bottom cover, and the heat-conducting member is snap-fitted between the two protruding rims.

[0014] As a further improvement of an embodiment of the present invention, wherein the ice-making assembly further comprises a driving mechanism connected to an end of the ice mold, the bottom wall is arranged to be inclined downwards in a direction from one end of the ice mold connected to the driving mechanism to the other end, and the bottom wall is inclined downwards in a front-rear direction.

[0015] As a further improvement of an embodiment of the present invention, wherein the ice-making assembly further comprises a housing fixed with the ice mold, one end of the housing away from the driving mechanism forms an upwardly-extending end plate, a water filling trough is disposed on an outer side of the end plate relative to the ice mold, the water filling trough is communicated with the ice cells, and the water filling trough, the ice mold and the housing are integrally formed.

[0016] In order to achieve one of the above-mentioned objects, the present invention provides a refrigerator, comprising:

- a cabinet defining a refrigerating chamber and a freezing chamber;
- a door body movably connected to the cabinet and configured to open and close the refrigerating chamber;
- an ice-making chamber disposed in the door body;

a refrigerating system comprising a compressor and a condenser connected to an outlet side of the compressor;

wherein the ice-making assembly according to any one of embodiments above is disposed in the ice-making chamber, and the refrigerant pipe is connected to the refrigerating system.

[0017] As compared with the prior art, in embodiments of the present invention, the heat-conducting member is fixed to the ice mold via the bottom cover; upon assembling, the only thing to do is placing the refrigerant pipe and the heating wire between the ice mold and the heat-conducting member, and connecting the bottom cover with the ice mold, so as to achieve heat transfer of the refrigerant pipe and the heating wire to the ice mold. The mounting is very convenient. Meanwhile, the heat-conducting member and the heat-dissipating ribs thereof can also achieve heat exchange with the air in the airflow chamber, thereby facilitating the supply of cold to other portions. The manner in which the refrigerant pipe and the heating wire simultaneously contact the ice mold and heat-conducting member enables a higher utilization ratio of cold and heat and a faster heat transfer, thereby enabling an improvement in ice-making efficiency.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018]

FIG 1 is an exploded perspective view of an ice-making assembly according to a preferred embodiment of the present invention;

FIG 2 is a cross-sectional view of the ice-making assembly of FIG 1;

FIG 3 is a perspective view of a heat-conducting member of the ice-making assembly of FIG 1;

FIG 4 is a cross-sectional view of the heat-conducting member of FIG 3;

FIG 5 is a schematic view of a refrigerator according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION

[0019] The present invention will be described in detail in conjunction with embodiments shown in the figures. However, the embodiments are not intended to limit the present invention. Structural, methodological or functional variations made by those having ordinary skill in the art according to the embodiments are all included in the protection scope of the present invention.

[0020] It should be appreciated that terms indicating spatial relative positions such as "up", "down", "in" and "out" used in the text herein are intended to describe a relationship of one unit or feature shown in figures relative to another unit or feature for an easy description purpose. The terms indicating spatial relative positions may be intended to include different orientations besides the ori-

entations shown in the figures in use or operation of the device.

[0021] Referring to FIG 1 through FIG 4, a preferred embodiment of the present invention provides an ice-making assembly 100 comprising an ice mold 10, and a refrigerant pipe 20 and a heating wire 30 located at a bottom of the ice mold 10, wherein the ice mold 10 has a plurality of ice cells for containing ice-making water, the refrigerant pipe 20 extends from one end to the other end of the ice mold 10, and the heating wire 30 is spaced apart from the refrigerant pipe 20, and preferably spaced apart from the refrigerant pipe 20 in a direction substantially perpendicular to an extension direction of the ice mold 20. The refrigerant pipe 20 is configured to supply cold to the ice mold 10 to freeze water in the ice cells, and the heating wire 30 is configured to supply heat to the ice mold 10 to facilitate release of ice cubes from the ice mold 10. In the present embodiment, a direction in which the ice mold extends lengthwise from one end to the other end is taken as a transverse direction, a side from which the ice cubes are released from the ice mold is taken as a front side, the opposite side is taken as a rear side, and a direction perpendicular to the transverse direction and the front-rear direction is taken as a vertical direction.

[0022] The ice-making assembly 100 further comprises a heat-conducting member 40 and a bottom cover 50 surrounding the outside of the heat-conducting member 40, wherein the heat-conducting member 40 is disposed between the ice mold 10 and the bottom cover 50, the refrigerant pipe 20 and the heating wire 30 are positioned between the ice mold 10 and the heat-conducting member 40, and the heat-conducting member 40 supports at least a portion of the refrigerant pipe 20 and at least a portion of the heating wire 30 such that the at least a portion of the refrigerant pipe 20 and the at least a portion of the heating wire 30 are in direct contact with the ice mold 10 to transfer cold and heat to the ice mold 10. With the heat exchange being performed by direct contact, the transfer of heat and cold is more efficient, thereby greatly improving the ice-making efficiency.

[0023] Specifically, the heat-conducting member 40 comprises a top wall 41 adjacent to the ice mold 10, an opposite bottom wall 42 and two side walls 43 connecting the top wall 41 with the bottom wall 42, wherein the top wall 41, the bottom wall 42 and the two side walls 43 enclose an airflow chamber 44 which is through in a direction from one end to the other end of the ice mold 10, heat-dissipating ribs 45 extending from the top wall 41 to the bottom wall 42 are provided in the airflow chamber 44, a water outlet 421 is formed at an end of the bottom wall 42, the bottom cover 50 surrounds the bottom wall 42 and the two side walls 43, and the heat-conducting member 40 is fixed to the ice mold 10 via the bottom cover 50. In this way, during assembly, the heat transfer of the refrigerant pipe 20 and the heating wire 30 to the ice mold 10 may be achieved only by placing the refrigerant pipe 20 and the heating wire 30 between the ice

mold 10 and the heat-conducting member 40, and connecting the bottom cover 50 with the ice mold 10. The mounting is very convenient. Meanwhile, the heat-conducting member 40 and the heat-dissipating ribs thereof can also achieve heat exchange with the air in the airflow chamber, thereby facilitating the supply of cold to other portions such as an ice bin below the ice-making assembly 100 to prevent the stored ice cubes from melting. In addition, upon deicing, the heat-conducting member 40 may also melt the frost by virtue of the heat of the heating wire 30, and the water resulting from the melting of the frost may be directly discharged through the water outlet 421. The manner in which the refrigerant pipe 20 and the heating wire 30 simultaneously contact the ice mold 10 and the heat-conducting member 40 enables a higher utilization ratio of cold and heat and a faster heat transfer, thereby enabling an improvement in ice-making efficiency. In addition, if the ice mold needs to be cleaned, regardless of disassembly or installation, it is only necessary to connect the ice mold with the bottom cover by aligning relevant parts in position, so that the installation is very convenient.

[0024] Referring to FIG 3, the top wall 41 of the heat-conducting member 40 is provided with a first groove 411 and a second groove 412 respectively matching the outer shapes of the refrigerant pipe 20 and the heating wire 30, and a portion of the refrigerant pipe 20 is received in the first groove 411 and a portion of the heating wire 30 is received in the second groove 412. A portion of the refrigerant pipe 20 in contact with the ice mold 10 is constructed in a U-shape, the heating wire 30 is also constructed in a U-shape, the refrigerant pipe 20 and the heating wire 30 are arranged oppositely, i.e., the two U-shapes open in opposite directions, and the refrigerant pipe 20 is located on an inner side of the U-shape of the heating wire 30. The ice-making assembly 100 further comprises a driving mechanism 60 at an end of the ice mold 10, and the driving mechanism 60 is used to bring an ice discharger 70 on the ice mold 10 to rotate to perform deicing. An open end of the U-shape of the heating wire 30 faces towards the driving mechanism 60 to facilitate making electrical connection. The open end of the U-shape of the refrigerant pipe 20 faces away from the driving mechanism 60 to facilitate connection with the refrigeration pipeline. In order to accelerate the conduction of the cold, the heat-dissipating ribs 45 are arranged at positions corresponding to the first grooves 411, so that the heat-dissipating ribs 42 are closer to the refrigerant pipe 20, thereby facilitating the absorption of the cold of the refrigerant pipe 20, and thereby improving the refrigerating efficiency. The heat-conducting member 40 is preferably made of a metal, such as an integrally-formed aluminum member. The heat-conducting member 40 is convenient to manufacture and meanwhile has high heat conductivity.

[0025] In addition, in order to further improve the heat exchange efficiency between the refrigerant pipe 20 and the ice mold 10, the top wall 41 of the heat-conducting

member 10 is further provided with a convex portion 413 extending in a direction from one end to the other end of the ice mold 10, the convex portion 413 is in direct contact with the bottom of the ice mold 10, the convex portion 413 is located in an interior of the U-shape of the refrigerant pipe, and the heat-conducting member 40 receives the cold on the refrigerant pipe 20 and further conducts the cold to the ice mold 10 again through the convex portion 413, thereby quickening the conduction of cold and improving the ice-making efficiency. Furthermore, a surface of the convex portion 413 facing the airflow chamber forms a groove 414, that is, a wall thickness of the top wall 41 of the heat-conducting member 10 is substantially uniform, so that the surface area in contact with the airflow can be increased, thereby improving the heat exchange efficiency. The refrigerant pipe 20 is wrapped by the ice mold 10 and the heat-conducting member 40. Frost will be formed on a surface inside the airflow chamber 44 of the heat-conducting member 40. As the heating wire 30 is activated to de-ice, the heat-conducting member 40 meanwhile absorbs heat to melt the frost, and the water resulting from the melting of the frost flows to the bottom wall 42 directly along the surface inside the airflow chamber 44; in order to speed up water drainage, the bottom wall 42 may be arranged to be inclined downwards in a direction from one end of the ice mold 10 connected to the driving mechanism 60 to the other end, with an inclination angle α being in a range of about 0.5-2.5 degrees. Furthermore, the bottom wall 42 is inclined downwards in a front-rear direction, with an inclination angle β being in a range of 3-5 degrees. The water outlet 421 is disposed at an end of the bottom wall 42 away from the driving mechanism 60 and at a rear end of the heat conducting member 40, i.e., at the lowest part of the bottom wall 42, so that the water resulting from the melting of the frost can be sufficiently drained. Furthermore, a water blocking edge 423 is provided at an end of the bottom wall 42 away from an end of the driving mechanism 60 to prevent overflow when the water resulting from the melting of the frost is excessive.

[0026] Further referring to FIG 2 and FIG 3, the bottom cover 50 comprises a first enclosing wall 51 and a second enclosing wall 52 corresponding to the two side walls, wherein a snap-fitting protrusion 511 is provided on one of each enclosing wall and the corresponding side wall, and a snap-fitting slot 431 is provided on the other of each enclosing wall and the corresponding side wall, and the heat-conducting member 40 and the bottom cover 50 are fixedly connected via the snap-fitting protrusion 511 and the snap-fitting slot 431. Preferably, in the present embodiment, three snap-fitting slots 431 are disposed at an interval on each side wall 43 in an extension direction of the ice mold 10 from one end to the other end, and the first enclosing wall 51 and the second enclosing wall 52 are respectively provided with snap-fitting protrusions 511 corresponding to the snap-fitting slots 431. Upon mounting, it is only necessary to align the position the heat-conducting member 40 with the position

of the bottom cover 50, and press the heat-conducting member 40 between the first enclosing wall 51 and the second enclosing wall 52, and mount the heat-conducting member 40 in position with the bottom cover 50 when a snap-fitting sound is heard. A thermal insulation panel 55 may be disposed between the bottom cover 50 and the bottom wall of the heat-conducting member 40 to insulate the heat transfer from the heat-conducting member 40 to the bottom cover 50 and prevent frost from being formed on the bottom cover 50.

[0027] In the direction of the bottom cover 50 from one end to the other end of the ice mold 10, a protruding rim 54 protruding upwards is disposed at both ends of the bottom cover 50. The heat-conducting member 40 is snap-fitted between the two protruding rims 54. The first enclosing wall 51, the second enclosing wall 52 and the two protruding rims 54 enable the accurate positioning of the heat-conducting member 40 relative to the bottom cover 50 in two directions, so that the positioning and the fixing of the heat-conducting member 40 is more reliable.

[0028] The ice-making assembly 100 further comprises a housing 15 fixed to the ice mold 10, wherein the housing 15 has a first edge 151 and a second edge 152 respectively corresponding to the first enclosing wall 51 and the second enclosing wall 52, a lug 153 provided with a snap-fitting hook or hook slot extends from the first edge 151 and the second edge 152 respectively, the two enclosing walls are respectively provided with a hook slot or snap-fitting hook, and the bottom cover 50 and the housing 15 are fixedly connected via the hook slot and snap-fitting hook. As such, the heat-conducting member 40 may be maintained in a relatively fixed position, thereby enabling the refrigerant pipe 20 and the heating wire 30 to keep in contact with the ice mold 10, so that the heat transfer is more reliable. In the present embodiment, preferably two lugs 153 extend downwards from the first edge 151 and the second edge 152, respectively, namely, two lugs 153 are provided at a front end of the ice mold 10, two lugs 153 are provided at a rear end of the ice mold 10, hook slots are provided on the lugs 153, and snap-fitting hooks are correspondingly provided on the two enclosing walls 51 and 52. An ice guide 16 is fixedly connected to the front end of the ice mold 10 to prevent falling ice cubes from hitting the snap-fitting hooks or the hook slots upon deicing. The ice guide 16 extends downwards to a position flush with the snap-fitting hooks.

[0029] The housing 15 and the ice mold 10 are integrally formed to simplify the installation of the entire ice-making assembly 100. The housing 15 has a front end and an opposite rear end, the rear end of the housing 15 forms an upwardly-extending back plate 155, a mounting structure is provided on the back plate 155 for mounting the ice-making assembly 100 inside the refrigerator, and the driving mechanism 60 may be mounted on the housing 15. As such, only the housing 15 needs to be fixedly connected to the refrigerator, so the mounting is more convenient. In addition, one end of the housing 15 away from the driving mechanism 60 forms an upwardly-ex-

tending end plate 156, a water filling trough 18 is disposed on an outer side of the end plate 156 relative to the ice mold 10, a water filling port communicated with an inner cavity of the ice mold 10 is disposed at a position of the water filling trough 18 adjacent to the ice mold 10, that is to say, the water filling trough is communicated with the ice cells. The water filling trough 18 and the ice mold 10 are also integrally formed, thereby avoiding the problem of water leakage during the water filling process.

[0030] In the ice-making assembly according to the above-mentioned embodiment, it is not necessary to provide heat-dissipating fins at the bottom of the ice mold; upon mounting, it is only necessary to align parts in position and snap-fit the bottom cover relative to the ice mold; the ice mold may directly contact the refrigerant pipe and the heating wire under the action of the heat-conducting member, thereby reducing the mounting space of the ice maker and increasing the evaporation area of the refrigeration pipeline; furthermore, it is unnecessary to additionally provide the heating wire and the heating and heat-conducting member to melt the frost into water and drain the resultant water. The mounting is very convenient and the cost is lower.

[0031] Referring to FIG 5, a refrigerator in an embodiment provided by the present invention comprises a cabinet 910, a door body 920 movably connected to the cabinet and a refrigerating system, wherein the cabinet 910 defines a chilling compartment, a fan for introducing cold air into the chilling compartment is further provided in the cabinet, the chilling compartment comprises a refrigerating chamber 91 and a freezing chamber 92, the refrigerating chamber 91 and the freezing chamber 92 are provided from top to bottom, the door body 920 is used for opening and closing the refrigerating chamber 91, either the refrigerating chamber 91 or the door body 920 is provided with an ice-making chamber, and an ice-making assembly 100 (not shown) is provided in the ice-making chamber, an ice bin 200 is provided below the ice-making assembly, a dispenser (not shown) selectively communicated with the ice-making chamber is provided on the door body 920, and ice cubes prepared by the ice-making assembly 100 fall into the ice bin 200 for storage and can be discharged from the dispenser. In the present embodiment, the ice-making chamber is preferably disposed on the door body 920 of the refrigerating chamber, and the chilling compartment comprises a freezing chamber and a refrigerating chamber, and certainly, the chilling compartment may comprise more chambers, such as a temperature variable chamber.

[0032] The refrigerating system comprises a compressor 913 and a condenser connected to an outlet side of the compressor 913, the refrigerant pipe 20 of the above-mentioned ice-making assembly 100 is connected to the refrigerating system, the compressor 913 is disposed at the bottom of the cabinet 910, an evaporator 912 for supplying cold to the freezing chamber 92 and the refrigerating chamber 91 is disposed in a rear of the freezing chamber, and the evaporator 912 may be connected to

both sides of the compressor and the condenser in series or in parallel with the refrigerant pipe 20 for supplying cold for the ice-making. Since the installation of the ice making assembly 100 itself is more convenient, the overall assembling of the refrigerator is also more convenient, thereby reducing the manufacturing cost of the refrigerator.

[0033] It should be understood that although the description is described according to the embodiments, not every embodiment only includes one independent technical solution, that such a description manner is only for the sake of clarity, that those skilled in the art should take the description as an integral part, and that the technical solutions in the embodiments may be suitably combined to form other embodiments understandable by those skilled in the art.

[0034] The detailed descriptions set forth above are merely specific illustrations of feasible embodiments of the present invention, and are not intended to limit the scope of protection of the present invention. All equivalent embodiments or modifications that do not depart from the art spirit of the present invention should fall within the scope of protection of the present invention.

Claims

1. An ice-making assembly, comprising:

an ice mold having a plurality of ice cells for containing ice-making water;
a refrigerant pipe extending from one end to the other end of the ice mold and located at a bottom of the ice mold;
a heating wire located at the bottom of the ice mold and spaced apart from the refrigerant pipe; wherein the ice-making assembly further comprises a heat-conducting member and a bottom cover surrounding the outside of the heat-conducting member, the heat-conducting member is disposed between the ice mold and the bottom cover, the refrigerant pipe and the heating wire are positioned between the ice mold and the heat-conducting member, the heat-conducting member supports at least a portion of the refrigerant pipe and at least a portion of the heating wire such that the at least a portion of the refrigerant pipe and the at least a portion of the heating wire are in direct contact with the ice mold to transfer cold and heat to the ice mold;
the heat-conducting member comprises a top wall adjacent to the ice mold, an opposite bottom wall and two side walls connecting the top wall with the bottom wall, where the top wall, the bottom wall and the two side walls enclose an air-flow chamber which is through in a direction from one end to the other end of the ice mold, heat-dissipating ribs extending from the top wall to

- the bottom wall are provided in the airflow chamber, a water outlet is formed at an end of the bottom wall, the bottom cover surrounds the bottom wall and the two side walls, and the heat-conducting member is fixed relative to the ice mold via the bottom cover.
2. The ice-making assembly according to claim 1, wherein the top wall is provided with a first groove and a second groove respectively matching outer shapes of the refrigerant pipe and the heating wire, a portion of the refrigerant pipe is received in the first groove, a portion of the heating wire is received in the second groove, and the heat-dissipating ribs are positioned corresponding to the first groove.
 3. The ice-making assembly according to claim 1, wherein the bottom cover comprises a first enclosing wall and a second enclosing wall corresponding to the two side walls, a snap-fitting protrusion is provided on one of each enclosing wall and the corresponding side wall, a snap-fitting slot is provided on the other of each enclosing wall and the corresponding side wall, and the heat-conducting member and the bottom cover are fixedly connected via the snap-fitting protrusion and the snap-fitting slot.
 4. The ice-making assembly according to claim 3, wherein the ice-making assembly further comprises a housing fixed to the ice mold, the housing has a first edge and a second edge respectively corresponding to the first enclosing wall and the second enclosing wall, a lug provided with a snap-fitting hook or hook slot extends from the first edge and the second edge respectively, the two enclosing walls are respectively provided with a hook slot or snap-fitting hook, and the bottom cover and the housing are fixedly connected via the hook slot and snap-fitting hook.
 5. The ice-making assembly according to claim 4, wherein an ice guide is fixedly connected to the front end of the ice mold, and the ice guide extends downwards to a position flush with the snap-fitting hook.
 6. The ice-making assembly according to claim 4, wherein the housing and the ice mold are integrally formed, the housing further comprises a back plate extending upwardly from an end perpendicular to an extension direction of the ice mold, and the ice-making assembly is mounted to an interior of the refrigerator by a mounting structure on the back plate.
 7. The ice-making assembly according to claim 1, wherein the refrigerant pipe is configured in a U-shape, the top wall is further provided with a convex portion extending in a direction from one end to the other of the ice mold, the convex portion is located in the interior of the U-shape of the refrigerant pipe, and the convex portion is in direct contact with the bottom of the ice mold.
 8. The ice-making assembly according to claim 1, wherein in a direction of the bottom cover from one end to the other end of the ice mold, a protruding rim protruding upwards is disposed at both ends of the bottom cover, and the heat-conducting member is snap-fitted between the two protruding rims.
 9. The ice-making assembly according to claim 1, wherein the ice-making assembly further comprises a driving mechanism connected to an end of the ice mold, the bottom wall is arranged to be inclined downwards in a direction from one end of the ice mold connected to the driving mechanism to the other end, and the bottom wall is inclined downwards in a front-rear direction.
 10. The ice-making assembly according to claim 9, wherein the ice-making assembly further comprises a housing fixed with the ice mold, one end of the housing away from the driving mechanism forms an upwardly-extending end plate, a water filling trough is disposed on an outer side of the end plate relative to the ice mold, the water filling trough is communicated with the ice cells, and the water filling trough, the ice mold and the housing are integrally formed.
 11. A refrigerator, comprising:
 - a cabinet defining a refrigerating chamber and a freezing chamber;
 - a door body movably connected to the cabinet and configured to open and close the refrigerating chamber;
 - an ice-making chamber disposed in the door body;
 - a refrigerating system comprising a compressor and a condenser connected to an outlet side of the compressor;
 - wherein the ice-making assembly according to any one of claims 1-10 is disposed in the ice-making chamber, and the refrigerant pipe is connected to the refrigerating system.

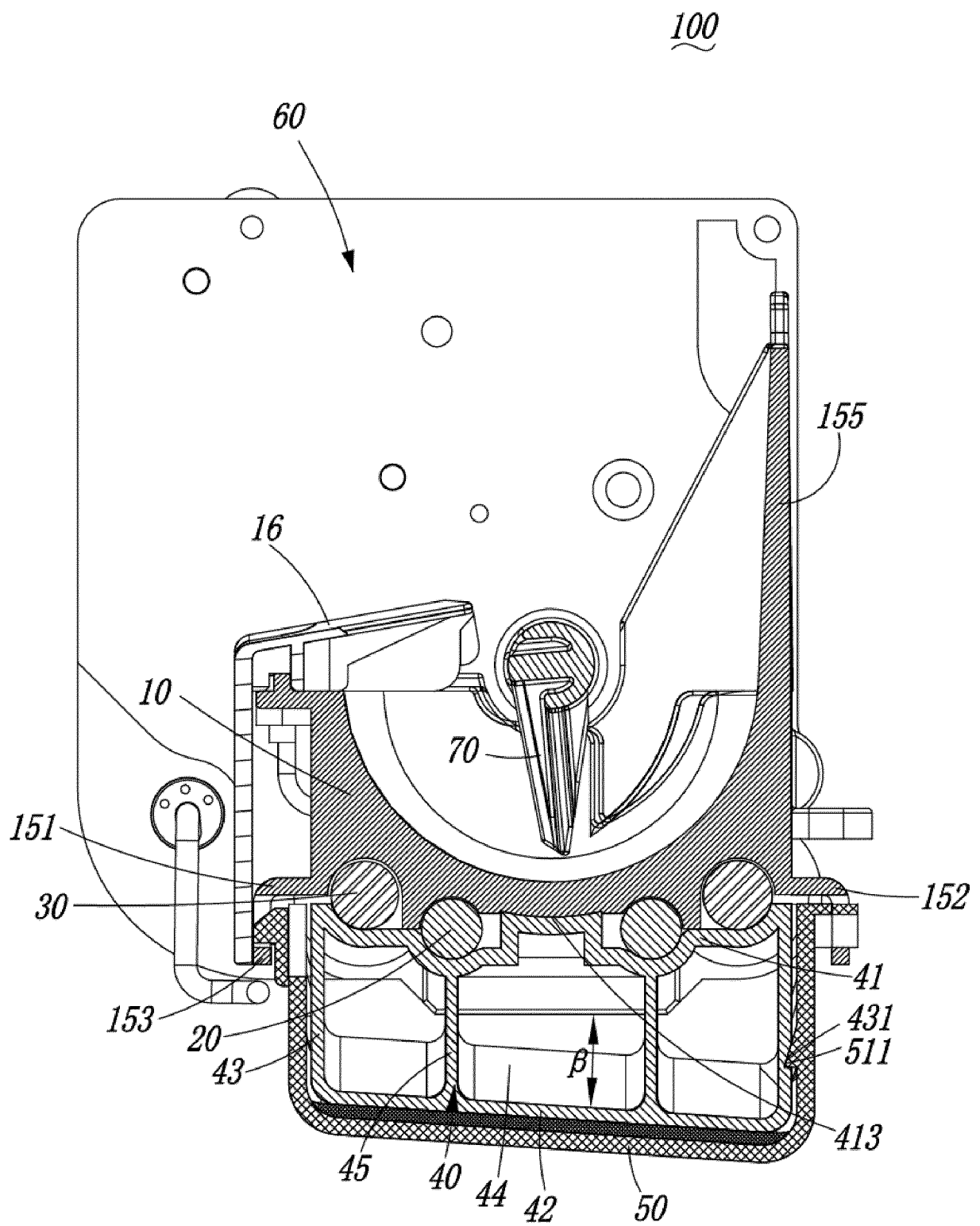


Fig.1

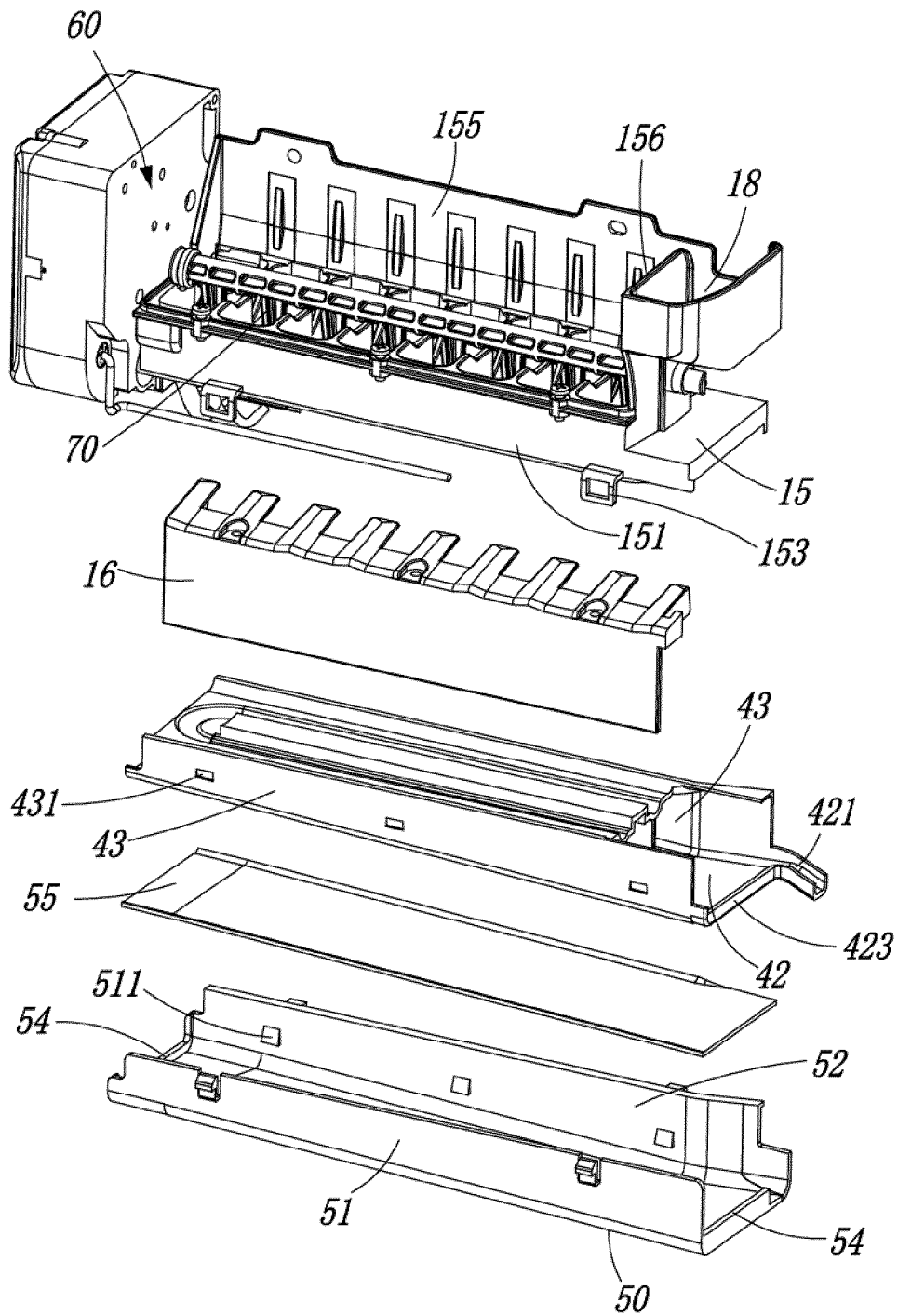


Fig. 2

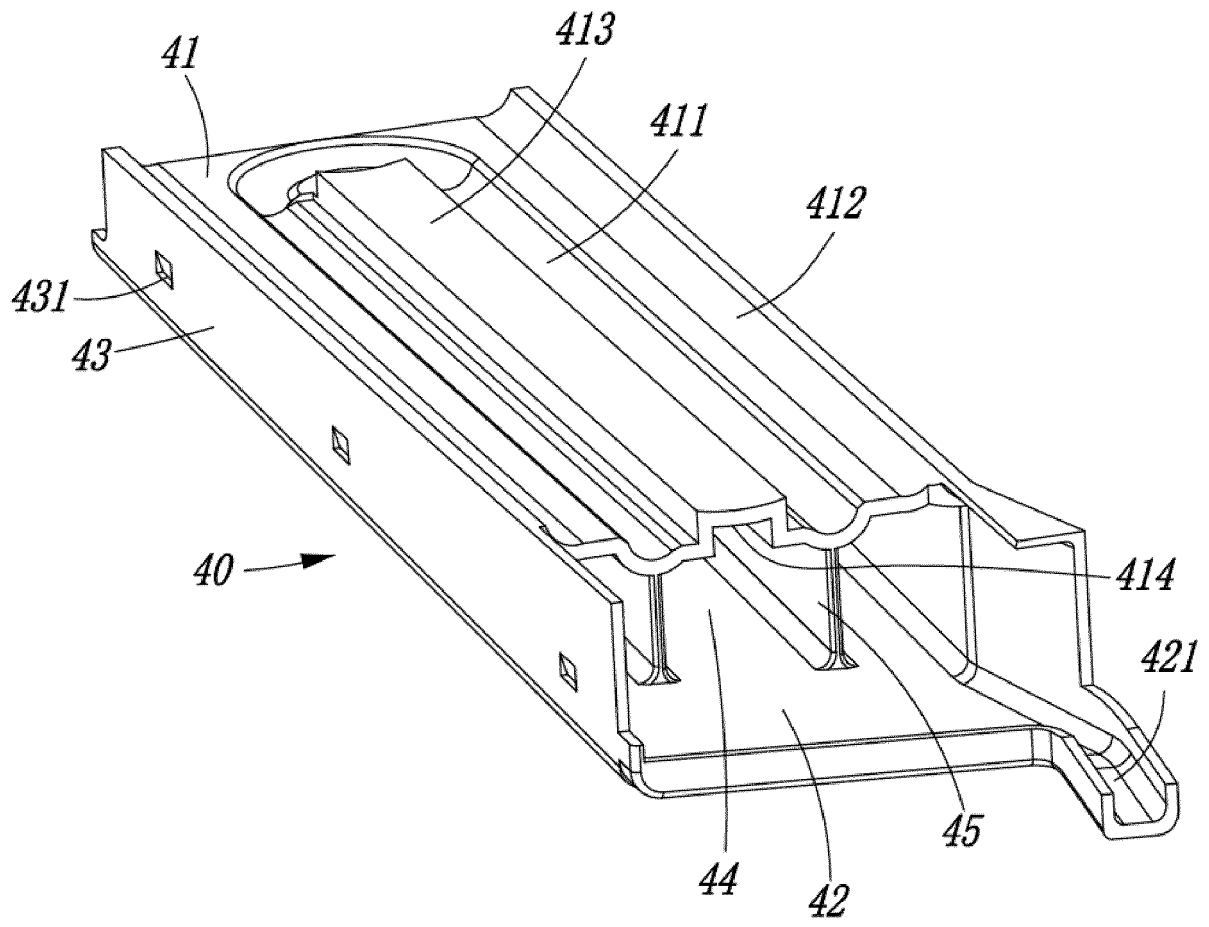


Fig. 3

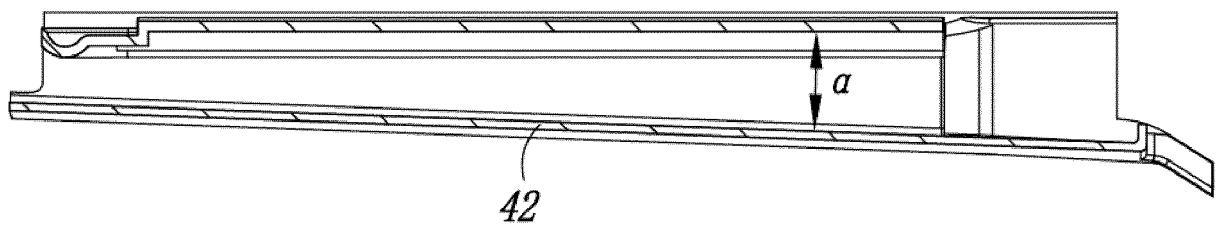


Fig. 4

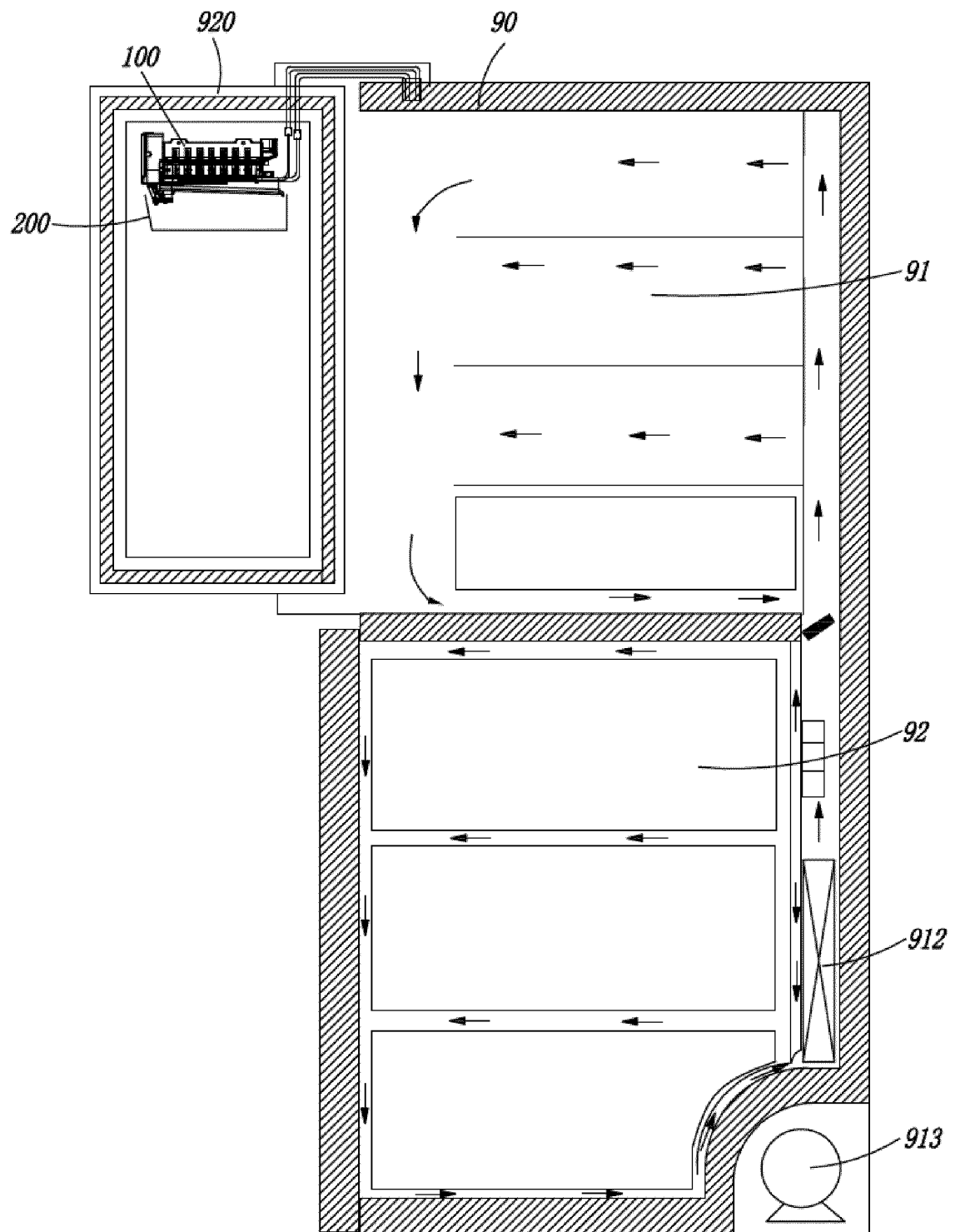


Fig. 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2021/143523

5	A. CLASSIFICATION OF SUBJECT MATTER	
	F25C 1/24(2018.01)i; F25D 11/02(2006.01)i	
	According to International Patent Classification (IPC) or to both national classification and IPC	
	B. FIELDS SEARCHED	
10	Minimum documentation searched (classification system followed by classification symbols) F25C1 F25D11 F25D21 F25D23 F25D17	
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNABS, CNTXT, CNKI, DWPI: 冰 盒 模 格 盘 制 冷 冷 却 蒸 发 管 固 定 支 撑 翅 片 肋 片 筋 ice mould mold box grid pan plate refrigerat+ cool+ evaporat+ tube pipe conduit fix+ fast+ support+ fin	
	C. DOCUMENTS CONSIDERED TO BE RELEVANT	
20	Category*	Citation of document, with indication, where appropriate, of the relevant passages
	Y	CN 102116563 A (SAMSUNG ELECTRONICS CO., LTD.) 06 July 2011 (2011-07-06) description, paragraphs [0046]-[0115] and figures 1-12
	Y	KR 2020011908 A (DAE CHANG CO LTD) 05 October 2020 (2020-10-05) description, paragraphs [0029]-[0043] and figures 1-6
25	A	CN 110440504 A (HISENSE RONSHEN (GUANGDONG) REFRIGERATORS CO., LTD.) 12 November 2019 (2019-11-12) entire document
	A	CN 205580041 U (ZHONGSHAN DONLIM WEILIELECTRICAL APPLIANCES CO., LTD.) 14 September 2016 (2016-09-14) entire document
30	A	US 2019011160 A1 (BSH HOME APPLIANCES CORP. et al.) 10 January 2019 (2019-01-10) entire document
35		
	☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.	
40	* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	
45	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
	Date of the actual completion of the international search	Date of mailing of the international search report
	11 March 2022	31 March 2022
50	Name and mailing address of the ISA/CN	Authorized officer
	China National Intellectual Property Administration (ISA/ CN) No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088, China	
55	Facsimile No. (86-10)62019451	Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

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