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(54) **ICE MAKER AND REFRIGERATOR**

(57) The present invention discloses an ice maker and a refrigerator. The ice maker comprises an ice bin for receiving ice cubes, and an ice making and removing structure rotatably provided in the ice bin, the ice making and removing structure comprises a bracket rotatably disposed in the ice bin via a rotating shaft, and an ice making box disposed in the bracket, the bracket is operable to drive the ice making box to rotate relative to the ice bin to open or close the ice bin, the ice making box may be driven to rotate relative to the bracket between an ice making position and an ice turning position, and the ice making box defines a plurality of ice making cells. The ice maker and the refrigerator facilitate access to ice and avoids contaminating the ice making and removing structure.

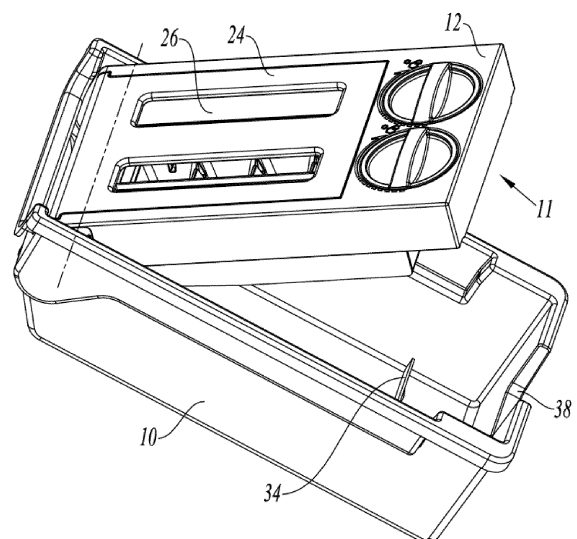


FIG. 3

Description

TECHNICAL FIELD

[0001] The present invention relates to the field of household appliance and in particular to an ice maker and a refrigerator.

BACKGROUND

[0002] Conventional manual ice makers comprise door manual ice makers, cabinet shelf manual ice makers and cabinet drawer manual ice makers. The first two types of ice makers both have fixed mounting positions and are not prone to contamination from the external; the cabinet drawer-type manual ice maker is generally placed freely in the cabinet. When ice is retrieved, an ice making and removing structure on top of an ice bin needs to be opened. At this time, it is necessary to find a clean position for the ice making and removing structure to complete retrieval of ice; meanwhile, the probability that the ice making and removing structure is contaminated is greatly increased.

[0003] In addition, a conventional ice shovel can only act to shovel ice and cannot act as a water-filling cup, and a water-filling cup needs to be additionally provided. In this way, the function of the ice shovel is made limited; both the ice shovel and the water-filling cup need to be configured, thereby increasing the cost in use.

SUMMARY

[0004] An object of the present invention is to provide an ice maker and a refrigerator to facilitate access to ice and avoids contaminating the ice making and removing structure.

[0005] To achieve one of the above objects of the present invention, an embodiment of the present invention provides an ice maker, the ice maker comprises an ice bin for receiving ice cubes, and an ice making and removing structure rotatably provided in the ice bin, the ice making and removing structure comprises a bracket rotatably disposed in the ice bin via a rotating shaft, and an ice making box disposed in the bracket, the bracket is operable to drive the ice making box to rotate relative to the ice bin to open or close the ice bin, the ice making box may be driven to rotate relative to the bracket between an ice making position and an ice turning position, and the ice making box defines a plurality of ice making cells.

[0006] As a further improvement of embodiments of the present invention, the ice making and removing structure has a first state and a second state relative to the ice bin, wherein in the first state, the bracket drives the ice making box to rotate relative to the ice bin, and wherein in the second state, the bracket together the ice making box can be removed from the ice bin.

[0007] As a further improvement of embodiments of

the present invention, the ice bin is provided with a fitting hole, the rotating shaft is fitted in the fitting hole, the rotating shaft has a flat square portion, and the fitting hole has an opening whose opening width is smaller than a diameter of the rotating shaft and larger than the width at the flat square portion.

[0008] As a further improvement of embodiments of the present invention, when the ice making and removing structure completely covers the ice bin, the flat square portion aligns with the position of the opening, and the bracket together with the ice making box can be removed from the ice bin at this time.

[0009] As a further improvement of embodiments of the present invention, a rotation axis of the bracket is perpendicular to a rotation axis of the ice making box.

[0010] As a further improvement of embodiments of the present invention, the bracket is provided with a knob, and a movement conversion mechanism provided between the knob and the ice making box, the knob is operable to cause the movement conversion mechanism to drive the ice making box to rotate, and the knob and the rotating shaft are disposed at both opposed ends of the bracket.

[0011] As a further improvement of embodiments of the present invention, the ice making and removing structure further comprises an ice-making upper cover movably disposed on the bracket, and the ice-making upper cover is operable to move relative to the bracket to fully open the ice making box or at least partially cover the ice making box.

[0012] As a further improvement of embodiments of the present invention, the ice-making upper cover is slidably disposed on the bracket, and the ice-making upper cover is provided with an hole for filling water.

[0013] As a further improvement of embodiments of the present invention, a supporting portion is disposed in the ice bin, the bracket is supported by the supporting portion when the bracket and the ice making box close the ice bin, and a shock-absorbing pad is provided between the bracket and the supporting portion.

[0014] As a further improvement of embodiments of the present invention, the ice maker further comprises an ice shovel, and an ice shovel positioning structure is provided on the ice bin to position the ice shovel in the ice bin.

[0015] As a further improvement of embodiments of the present invention, the ice shovel has an accommodating cavity for accommodating water, at least one of sides forming the accommodating cavity is provided with an ice shoveling portion, and the ice shoveling portion protrudes from other sides forming the accommodating cavity to shovel the ice.

[0016] As a further improvement of embodiments of the present invention, the ice shovel positioning structure comprises a stop rib disposed in the ice bin, and the ice shoveling portion abuts against the stop rib.

[0017] As a further improvement of embodiments of the present invention, the ice shovel further comprises a

holding portion, the ice shovel positioning structure further comprises a groove provided on one of the side walls of the ice bin, and the holding portion fits in the groove and is received in the groove.

[0018] As a further improvement of embodiments of the present invention, the ice bin comprises a bottom wall facing the ice making box, and an opening of the accommodating cavity faces the bottom wall when the ice shovel is placed in the ice bin.

[0019] To achieve one of the above objects of the present invention, another embodiment of the present invention further provides a refrigerator, comprising a cabinet defining a storage space, and a door connected to the cabinet to open or close at least part of the storage space, wherein the refrigerator further comprises the ice maker according to the above technical solution.

[0020] As compared with the prior art, the present invention has the following advantageous effects: with the technical solution being employed, since the bracket is rotatably disposed on the ice bin via a rotating shaft, the bracket is operable to drive the ice making box to rotate relative to the ice bin to open or close the ice bin. When ice needs to be taken, the bracket drives the ice making box to rotate relative to the ice bin, thereby exposing an inner cavity of the ice bin so that ice can be taken. Furthermore, it is unnecessary to find another place to place the ice making and removing structure, which not only facilitates access to the ice and but also avoids contaminating the ice making and removing structure.

[0021] Another object of the present invention is to provide an ice maker, a refrigerator and an ice shovel, the ice maker extending the function of the ice shovel and reducing the cost.

[0022] To achieve one of the above objects of the present invention, an embodiment of the present invention provides an ice maker, comprising an ice bin for receiving ice cubes, and an ice making and removing structure rotatably provided in the ice bin, wherein the ice making and removing structure comprising a bracket disposed in the ice bin and an ice making box disposed in the bracket, the ice making box may be driven to rotate relative to the bracket between an ice making position and an ice turning position, and the ice making box defines a plurality of ice making cells. The ice maker further comprises an ice shovel disposed in the ice bin, the ice shovel has an accommodating cavity for accommodating water, at least one of sides forming the accommodating cavity is provided with an ice shoveling portion, and the ice shoveling portion protrudes from other sides forming the accommodating cavity to shovel the ice.

[0023] As a further improvement of embodiments of the present invention, an ice shovel positioning structure is provided on the ice bin to position the ice shovel in the ice bin.

[0024] As a further improvement of embodiments of the present invention, the ice shovel positioning structure comprises a stop rib disposed in the ice bin, and an ice shoveling portion abuts against the stop rib.

[0025] As a further improvement of embodiments of the present invention, the ice shovel further comprises a holding portion, the ice shovel positioning structure further comprises a groove provided on one of the side walls of the ice bin, and the holding portion fits in the groove and is received in the groove.

[0026] As a further improvement of embodiments of the present invention, the stop rib is parallel to the side wall provided with the groove.

[0027] As a further improvement of embodiments of the present invention, the ice bin comprises a bottom wall facing the ice making box, and an opening of the accommodating cavity faces the bottom wall when the ice shovel is placed in the ice bin.

[0028] As a further improvement of embodiments of the present invention, the ice shovel is provided with a flow guide portion for facilitating water filling.

[0029] As a further improvement of embodiments of the present invention, the ice shovel comprises a first side portion and a second side portion adjacent to the first side portion, the ice shoveling portion is provided on the first side portion, and the flow guide portion is disposed at a junction of the first side portion and the second side portion.

[0030] As a further improvement of embodiments of the present invention, the bracket is rotatably disposed in the ice bin via a rotating shaft, and the bracket is operable to drive the ice making box to rotate relative to the ice bin to open or close the ice bin.

[0031] As a further improvement of embodiments of the present invention, the ice bin is provided with a fitting hole, the rotating shaft is fitted in the fitting hole, the rotating shaft has a flat square portion, and the fitting hole has an opening whose opening width is smaller than a diameter of the rotating shaft and larger than the width at the flat square portion.

[0032] As a further improvement of embodiments of the present invention, when the ice making and removing structure completely covers the ice bin, the flat square portion aligns with the position of the opening, and the bracket together with the ice making box can be removed from the ice bin at this time.

[0033] To achieve one of the above objects of the present invention, another embodiment of the present invention further provides a refrigerator, comprising a cabinet defining a storage space, and a door connected to the cabinet to open or close at least part of the storage space, wherein the refrigerator further comprises the ice maker according to any of the above technical solutions.

[0034] To achieve one of the above objects of the present invention, a further embodiment of the present invention further provides an ice shovel of an ice maker, wherein the ice shovel has an accommodating cavity for accommodating water, at least one of sides forming the accommodating cavity is provided with an ice shoveling portion, and the ice shoveling portion protrudes from other sides forming the accommodating cavity to shovel the ice.

[0035] As compared with the prior art, the above technical solutions of the present invention have the following advantageous effects: the ice shovel has the accommodating cavity for accommodating water, at least one of sides forming the accommodating cavity is provided with the ice shoveling portion, and the ice shoveling portion is used to shovel ice. Therefore, the ice shovel may be used to shovel ice, and also used as a container for filling water so that the function of the ice shovel is extended and the cost is reduced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0036]

FIG. 1 is a perspective view of an ice maker according to a specific embodiment of the present invention; FIG. 2 is a perspective view of the ice maker in FIG. 1 when an ice-making upper cover and an ice shovel are removed;

FIG. 3 is a perspective view of the ice maker in FIG. 1 when an ice making and removing structure rotates by a certain angle relative to an ice bin and the ice shovel is removed;

FIG. 4 is a perspective view of the ice making and removing structure in the ice maker in FIG. 3;

FIG. 5 is a perspective view of an ice bin in the ice maker of FIG. 3;

FIG. 6 is a perspective view of the ice bin of FIG. 5 as viewed in another direction;

FIG. 7 is a perspective view of the ice maker of FIG. 1 as viewed in another direction;

FIG. 8 is a perspective view of the ice shovel in the ice maker in FIG. 1;

FIG. 9 is a perspective view of the ice shovel of FIG. 8 as viewed in another direction;

FIG. 10 is a perspective view of the ice shovel of FIG. 8 as viewed in a further direction;

FIG. 11 is a perspective view of the ice shovel of FIG. 8 as viewed in a further direction.

DETAILED DESCRIPTION

[0037] The present invention will be described in detail below in conjunction with specific embodiments shown in the figures. However, these embodiments are not intended to limit the present invention. Variations in structures, methods or functions made by those having ordinary skill in the art according to these embodiments are all comprised in the extent of protection of the present invention.

[0038] In the depictions of the specific embodiments of the present invention, directional or positional relationship as indicated by terms such as "up", "down", "front", "rear", "left", "right", "vertical", "horizontal", "bottom", "in" and "out" is based on the directional or positional relationship shown in the figures usually with reference to the normal in-use state of the refrigerator, and does not

indicate that the designated position or element must be in a specific direction.

[0039] Moreover, it should be appreciated that although the terms such as "first" and "second" may be used to describe various elements or structures herein, the described objects should not be limited by the above terms. The above terms are only used to distinguish the described objects from each other. For example, a first side portion may also be referred to as a second side portion, and also the second side portion may also be referred to as the first side portion, which does not depart from the extent of protection of the present invention.

[0040] A specific embodiment provided by the present invention discloses a refrigerator comprising a cabinet and a door connected to the cabinet, wherein the cabinet defines a storage space, and the door is operable to open or close at least part of the storage space. The storage space may comprise a plurality of storage components whose number and structural forms may be configured according to different needs. The storage components usually comprise a refrigerating chamber and a freezing chamber.

[0041] The refrigerator further comprises an ice maker. The ice maker is an independent ice maker and is disposed in the storage component. Specifically, the ice maker is placed in a drawer in the storage component. In the present preferred embodiment, the ice maker is a manual ice maker. Certainly, the ice maker may also set to an electric ice maker.

[0042] As shown in FIG. 1 through FIG. 7, the ice maker comprises an ice bin 10 for receiving ice cubes, and an ice making and removing structure 11 rotatably provided in the ice bin 10. The ice making and removing structure 11 comprises a bracket 12 disposed in the ice bin 10 and an ice making box 14 disposed in the bracket 12. In the present preferred embodiment, the bracket 12 is rotatably disposed in the ice bin 10 via a rotating shaft 16, and the bracket 12 is operable to drive the ice making box 14 to rotate relative to the ice bin 10 to open or close the ice bin 10. In addition, the ice making box 14 may be driven to rotate relative to the bracket 12 between an ice making position and an ice turning position, and the ice making box 14 defines a plurality of ice making cells. Water may be filled into the plurality of ice-making cells to make ice.

[0043] In the present preferred embodiment, since the bracket 12 is rotatably disposed on the ice bin 10 via the rotating shaft 16, the bracket 12 is operable to drive the ice making box 14 to rotate relative to the ice bin 10 to open or close the ice bin 10. When ice needs to be taken, the bracket 12 drives the ice making box 14 to rotate relative to the ice bin 10, thereby exposing an inner cavity of the ice bin 10, so that ice can be taken. Furthermore, it is unnecessary to find another place to place the ice making and removing structure 11, which not only facilitates access to the ice and but also avoids contaminating the ice making and removing structure 11.

[0044] Further, the ice making and removing structure 11 has a first state and a second state relative to the ice

bin 10. In the first state, the bracket 12 drives the ice making box 14 to rotate relative to the ice bin 10. In the second state, the bracket 12 together the ice making box 14 can be removed from the ice bin 10. This arrangement not only facilitates the installation of the ice making and removing structure 11, but also allows the entire ice making and removing structure 11 to be removed from the ice bin 10 according to specific needs.

[0045] The ice bin 10 is provided with a fitting hole 18, the rotating shaft 16 is fitted in the fitting hole 18, the rotating shaft 16 has a flat square portion, and the fitting hole 18 has an opening 20 whose opening width is smaller than a diameter of the rotating shaft 16 and larger than the width at the flat square portion. As such, when the flat portion aligns with the position of the opening 20, the ice making and removing structure 11 can be removed from the ice bin 10. Specifically, when the ice making and removing structure 11 completely covers the ice bin 10, the flat square portion aligns with the position of the opening 20, and the bracket 12 together with the ice making box 14 can be removed from the ice bin 10 at this time. Such an arrangement is convenient for identification and operation. When the ice making and removing structure 11 is rotated relative to the ice bin 10 from a state in which the ice making and removing structure 11 completely covers the ice bin 10, the ice making and removing structure 11 cannot be removed from the ice bin 10, making the structure more reliable and the operation more convenient.

[0046] Further, a rotation axis of the bracket 12 is perpendicular to a rotation axis of the ice making box 14, which makes the ice maker structurally more compact. In the present preferred embodiment, the ice maker is a manual ice maker. Specifically, the bracket 12 is provided with a knob 22 for manual operation, and a movement conversion mechanism (not shown) provided between the knob 22 and the ice making box 14. The knob 22 is operable to cause the movement conversion mechanism to drive the ice making box 14 to rotate, thereby enabling the ice making box 14 to achieve the switching between the ice making position and the ice turning position. When in the ice making position, the ice making cells open upwards, and water may be filled into the ice making cells to make ice. When in the ice turning position, the ice making cells open downward, that is, faces towards the inside of the ice bin 10, so that ice cubes fall off into the ice bin 10. In addition, the knob 22 and the rotating shaft 16 are provided at opposite ends of the bracket 12.

[0047] The ice making and removing structure 11 further comprises an ice-making upper cover 24 movably disposed on the bracket 12, and the ice-making upper cover 24 is operable to move relative to the bracket 12 to fully open the ice making box 14 or at least partially cover the ice making box 14. The ice-making upper cover 24 is provided with an opening 26 for water filling. Certainly, the ice-making upper cover 24 may not be provided with the opening 26 for water filling. When water needs to be filled, the ice-making upper cover 24 is moved rel-

ative to the bracket 12 to open the ice making box 14 to fill water.

[0048] In the present preferred embodiment, the ice-making upper cover 24 is slidably disposed on the bracket 12. Certainly, the ice-making upper cover 24 may also be configured to be rotatably connected to the bracket 12, or connected to the bracket 12 in a connection manner such as snap-fitting.

[0049] With further reference to FIG. 8 through FIG. 11, the ice maker further comprises an ice shovel 28. Specifically, the ice shovel 28 is provided in the ice bin 10, the ice shovel 28 has an accommodating cavity 29 for accommodating water, at least one of sides forming the accommodating cavity 29 is provided with an ice shoveling portion 30, and the ice shoveling portion 30 protrudes from other sides forming the accommodating cavity to shovel the ice. In the present preferred embodiment, the ice shovel 28 may be used to shovel ice, and also used as a container for filling water so that the function of the ice shovel 28 is extended and the cost is reduced.

[0050] In addition, an ice shovel positioning structure 32 is provided on the ice bin 10 to position the ice shovel 28 in the ice bin 10, thereby preventing the ice shovel 28 from slipping down when the ice making and removing structure 11 rotates relative to the ice bin 10. Specifically, the ice shovel positioning structure 32 comprises a stop rib 34 disposed in the ice bin 10, and the ice shoveling portion 30 abuts against the stop rib 34. Further, the ice shovel 28 further comprises a holding portion 36, the ice shovel positioning structure 32 further comprises a groove 38 provided on one of the side walls of the ice bin 10, and the holding portion 36 fits in the groove 38 and is received in the groove 38. In addition, the stop rib 34 is parallel to the side wall provided with the groove 38.

[0051] The ice bin 10 comprises a bottom wall 40 facing the ice making box 14, a first side wall 42, a second side wall 44, a third side wall 46 and a fourth side wall 48 extending from the bottom wall 40 to the same side of the bottom wall 40, wherein the first side wall 42, the second side wall 44, the third side wall 46 and the fourth side wall 48 are sequentially connected. The groove 38 is provided on the first side wall 42, the second side wall 44 and the fourth side wall 48 are both provided with the fitting hole 18, and the fitting hole 18 is disposed closer to the third side wall 46.

[0052] A supporting portion 58 is disposed in the ice bin 10. When the bracket 12 and the ice making box 14 close the ice bin 10, the bracket 12 is supported by the supporting portion 58, and a shock-absorbing pad (not shown) is provided between the bracket 12 and the supporting portion 58. After the ice is taken out, when the bracket 12 drives the ice making box 14 to rotate relative to the ice bin 10 to close the ice bin 10, the shock-absorbing pad may greatly reduce the closing noise generated.

[0053] Specifically, the second side wall 44 and the fourth side wall 48 both have the supporting portion 58

extending toward the inner side of the ice bin 10, and the shock-absorbing pad is provided between both sides of the bracket 12 and the two supporting portions 58. The shock-absorbing pads are disposed on the bracket 12, and set as silicone shock-absorbing pads. Preferably, the silicone shock-absorbing pads are adhered to the bracket 12.

[0054] In addition, when the ice shovel 28 is placed in the ice bin 10, the opening of the accommodating cavity 29 faces the bottom wall 40. A back side of the holding portion 36 is provided with a hollow portion 50, which not only reduces the manufacturing cost, but also facilitates taking out the ice shovel 28 when the ice shovel 28 is needed.

[0055] The ice shovel 28 is provided with a flow guide portion 52 for facilitating water filling. The flow guide portion 52 is used to control the water flow and prevent the water from splashing to other places. Specifically, the ice shovel 28 comprises a first side portion 54 and a second side portion 56 adjacent to the first side portion 54, an ice shoveling portion 30 is provided on the first side portion 54, and the flow guide portion 52 is disposed at the junction of the first side portion 54 and the second side portion 56.

[0056] It should be understood that although the description is described according to the embodiments, not every embodiment only comprises 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.

[0057] 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 maker, wherein the ice maker comprises an ice bin for receiving ice cubes, and an ice making and removing structure rotatably provided in the ice bin, the ice making and removing structure comprises a bracket rotatably disposed in the ice bin via a rotating shaft, and an ice making box disposed in the bracket, the bracket is operable to drive the ice making box to rotate relative to the ice bin to open or close the ice bin, the ice making box may be driven to rotate relative to the bracket between an ice making position and an ice turning position, and the ice making box defines a plurality of ice making cells.
2. The ice maker according to claim 1, wherein the ice

making and removing structure has a first state and a second state relative to the ice bin, wherein in the first state, the bracket drives the ice making box to rotate relative to the ice bin, and wherein in the second state, the bracket together the ice making box can be removed from the ice bin.

3. The ice maker according to claim 2, wherein the ice bin is provided with a fitting hole, the rotating shaft is fitted in the fitting hole, the rotating shaft has a flat square portion, and the fitting hole has an opening whose opening width is smaller than a diameter of the rotating shaft and larger than the width at the flat square portion.
4. The ice maker according to claim 3, wherein when the ice making and removing structure completely covers the ice bin, the flat square portion aligns with the position of the opening, and the bracket together with the ice making box can be removed from the ice bin at this time.
5. The ice maker according to claim 1, wherein a rotation axis of the bracket is perpendicular to a rotation axis of the ice making box.
6. The ice maker according to claim 1, wherein the bracket is provided with a knob, and a movement conversion mechanism provided between the knob and the ice making box, the knob is operable to cause the movement conversion mechanism to drive the ice making box to rotate, and the knob and the rotating shaft are disposed at both opposed ends of the bracket.
7. The ice maker according to claim 1, wherein the ice making and removing structure further comprises an ice-making upper cover movably disposed on the bracket, and the ice-making upper cover is operable to move relative to the bracket to fully open the ice making box or at least partially cover the ice making box.
8. The ice maker according to claim 7, wherein the ice-making upper cover is slidably disposed on the bracket, and the ice-making upper cover is provided with an hole for filling water.
9. The ice maker according to claim 1, wherein a supporting portion is disposed in the ice bin, the bracket is supported by the supporting portion when the bracket and the ice making box close the ice bin, and a shock-absorbing pad is provided between the bracket and the supporting portion.
10. The ice maker according to claim 1, wherein the ice maker further comprises an ice shovel, and an ice shovel positioning structure is provided on the ice

bin to position the ice shovel in the ice bin.

11. The ice maker according to claim 10, wherein the ice shovel has an accommodating cavity for accommodating water, at least one of sides forming the accommodating cavity is provided with an ice shoveling portion, and the ice shoveling portion protrudes from other sides forming the accommodating cavity to shovel the ice. 5
- 10
12. The ice maker according to claim 11, wherein the ice shovel positioning structure comprises a stop rib disposed in the ice bin, and the ice shoveling portion abuts against the stop rib. 15
13. The ice maker according to claim 11, wherein the ice shovel further comprises a holding portion, the ice shovel positioning structure further comprises a groove provided on one of the side walls of the ice bin, and the holding portion fits in the groove and is received in the groove. 20
14. The ice maker according to claim 11, wherein the ice bin comprises a bottom wall facing the ice making box, and an opening of the accommodating cavity faces the bottom wall when the ice shovel is placed in the ice bin. 25
15. A refrigerator, comprising a cabinet defining a storage space, and a door connected to the cabinet to open or close at least part of the storage space, wherein the refrigerator further comprises the ice maker according to any of claims 1-10. 30

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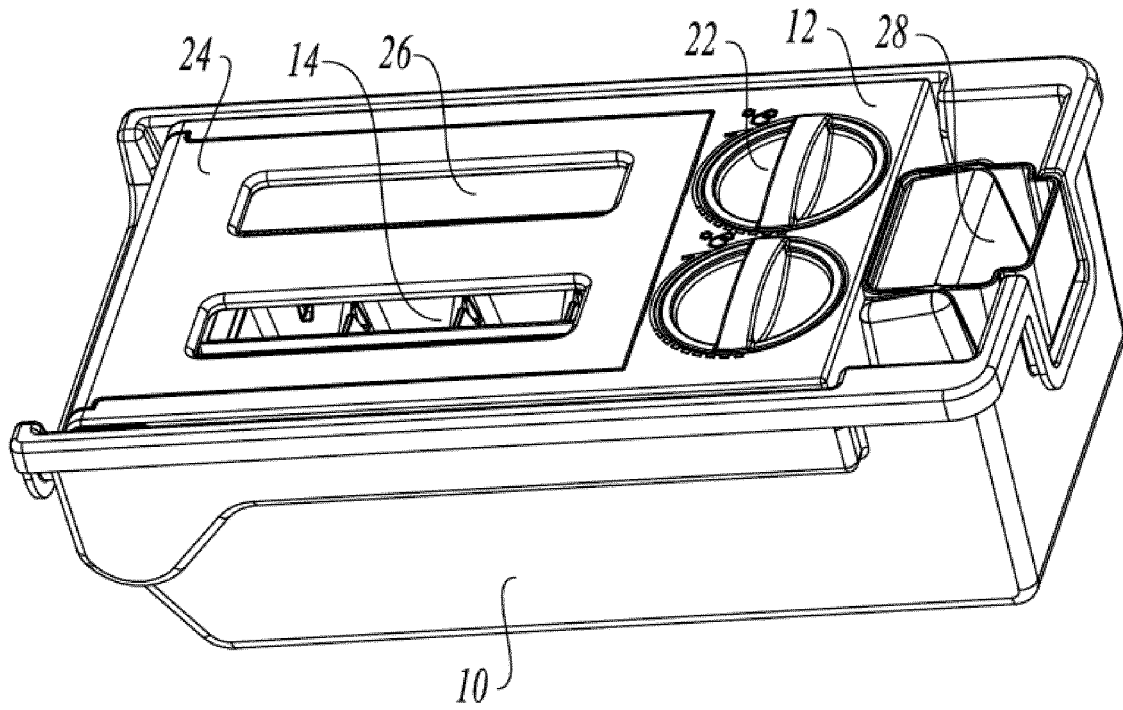


FIG. 1

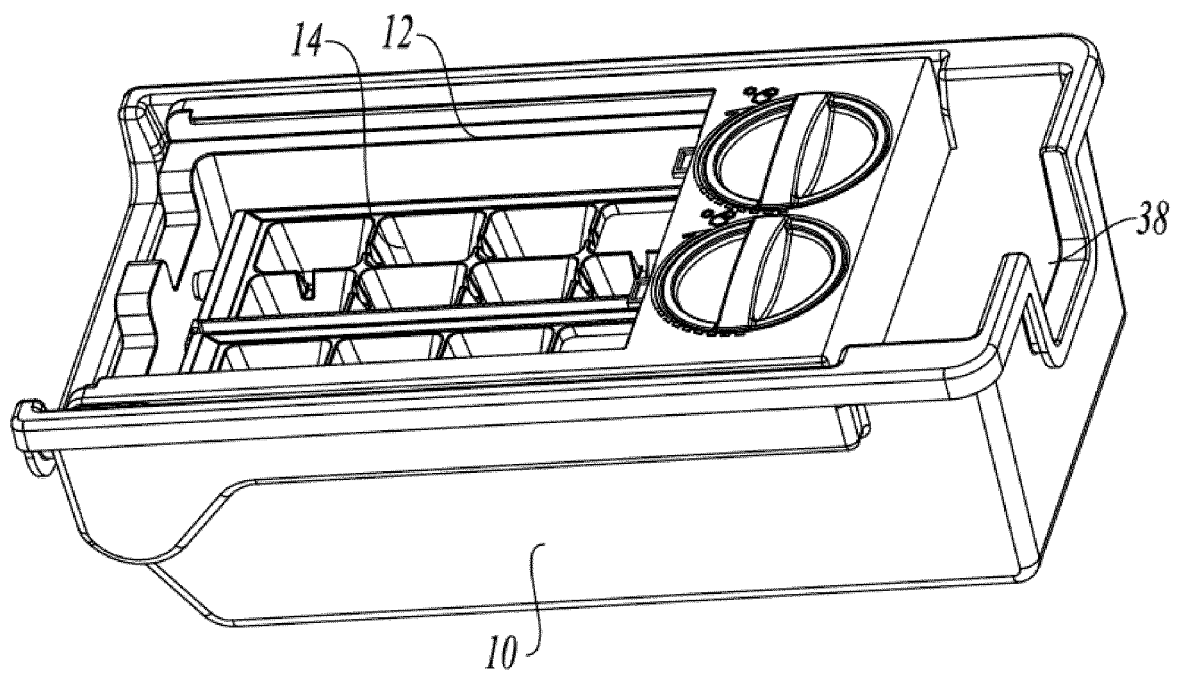


FIG. 2

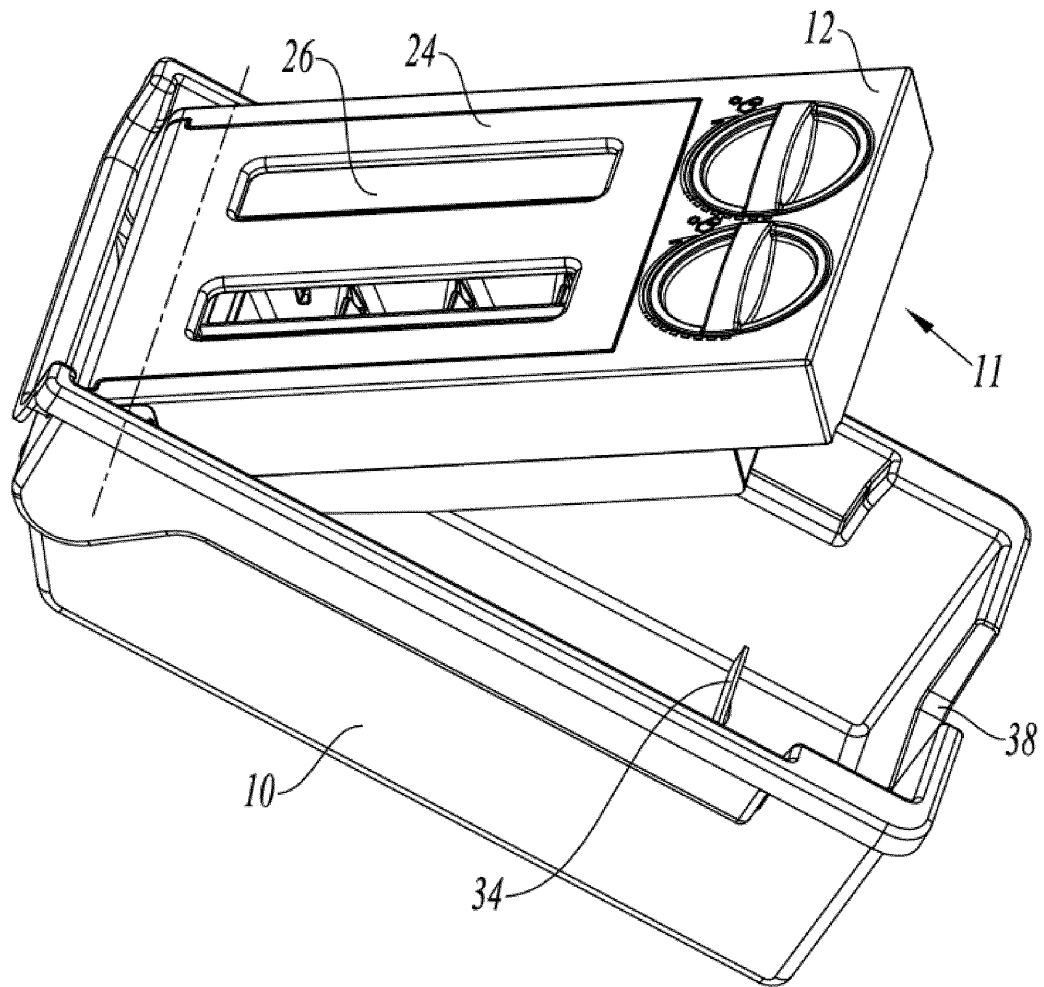


FIG. 3

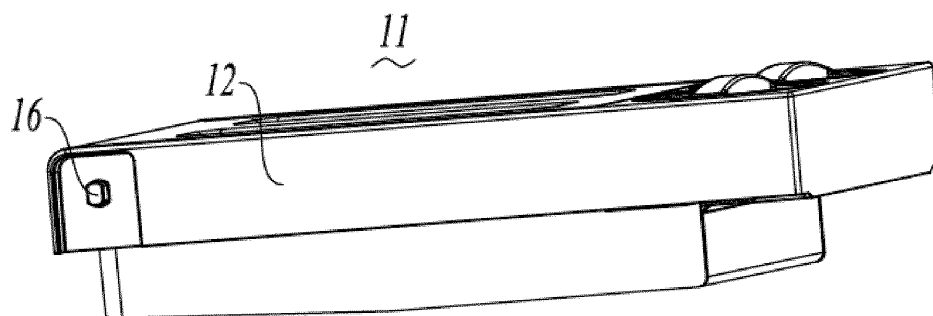


FIG. 4

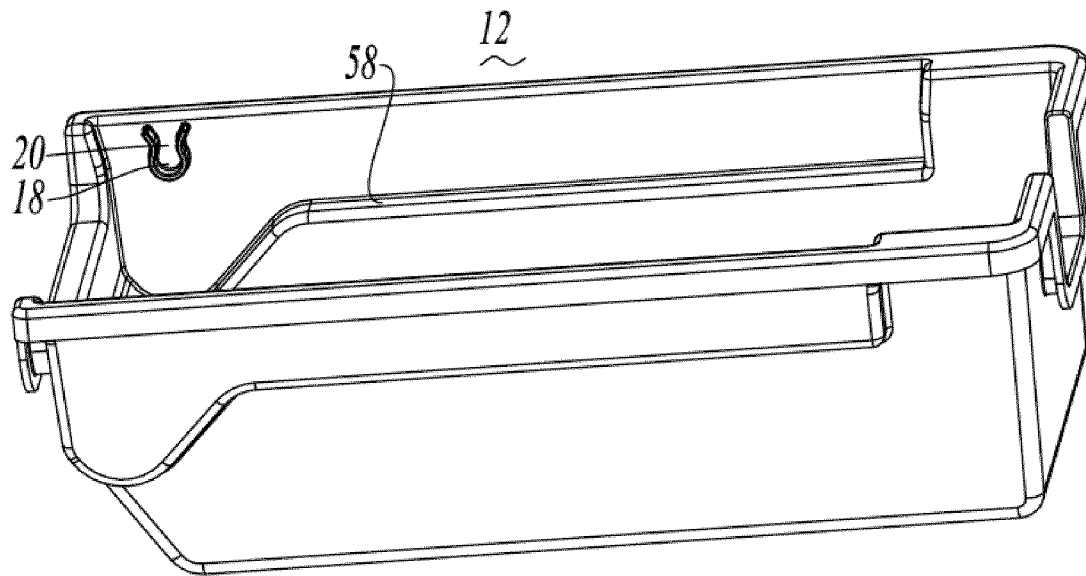


FIG. 5

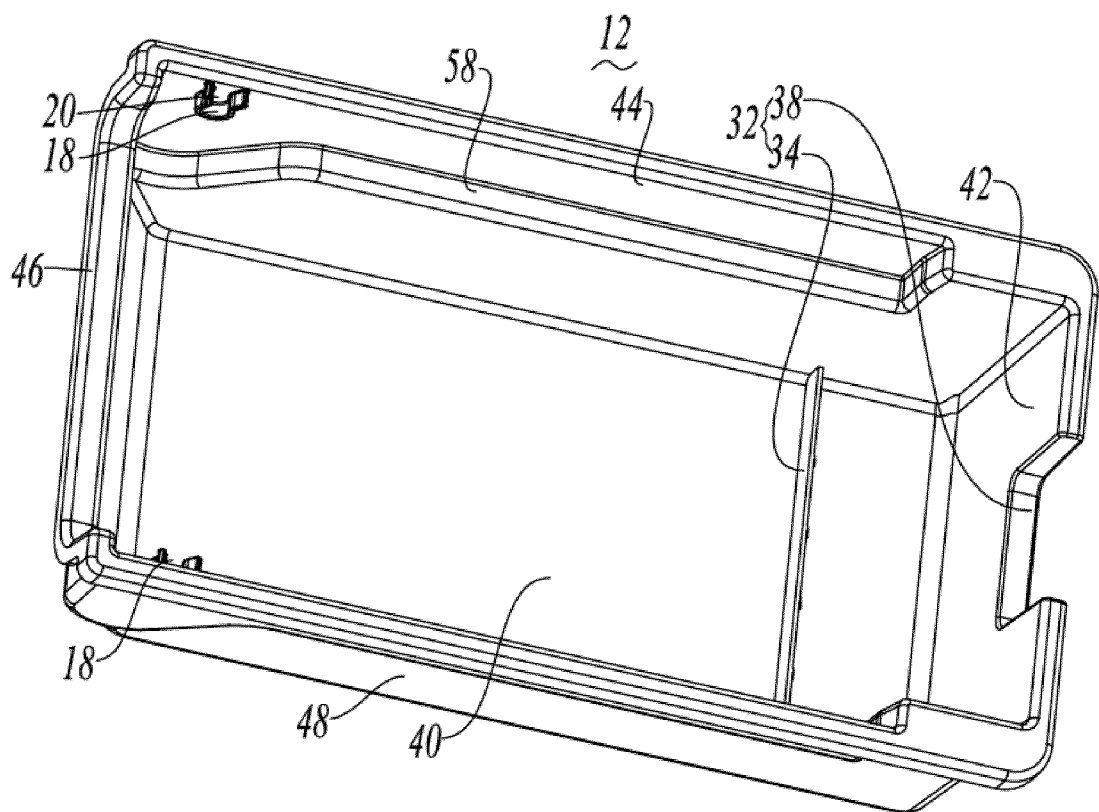


FIG. 6

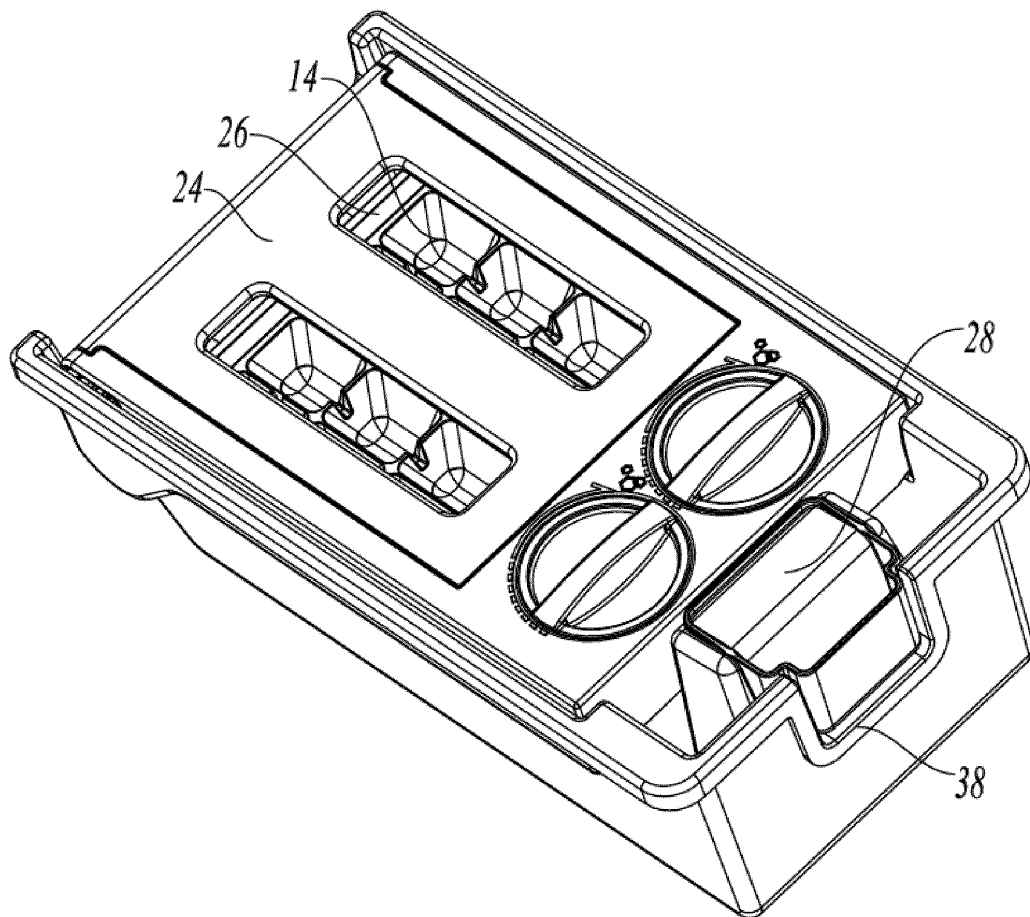


FIG. 7

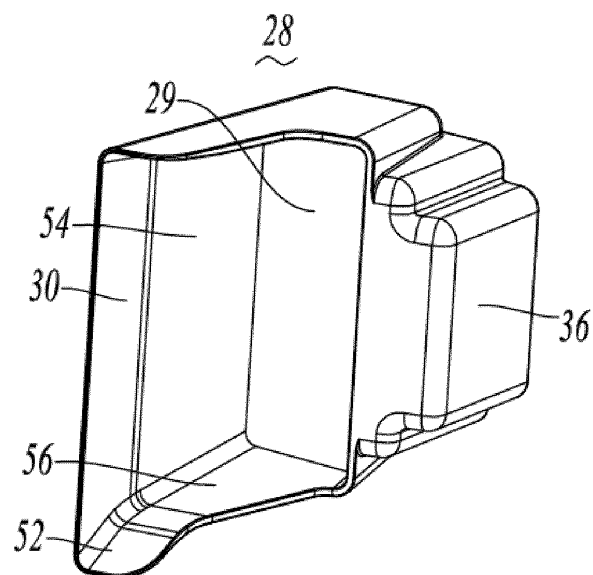


FIG. 8

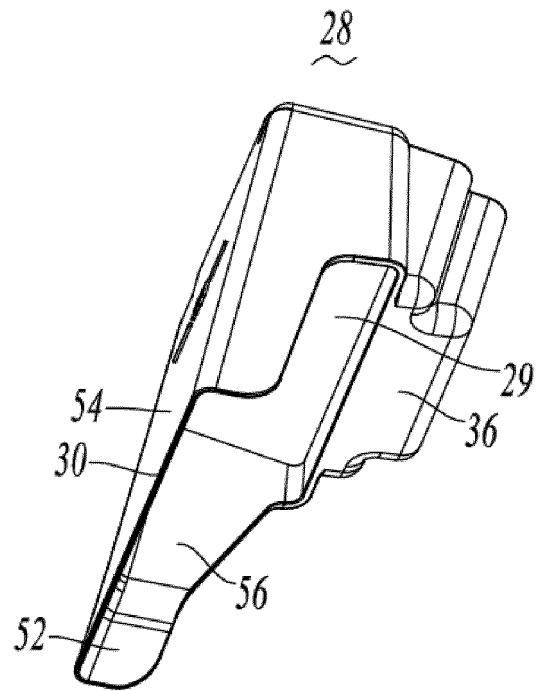


FIG. 9

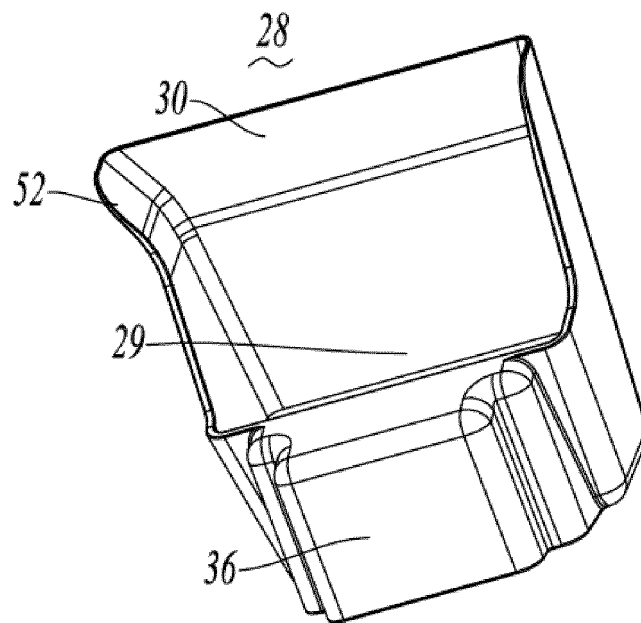


FIG. 10

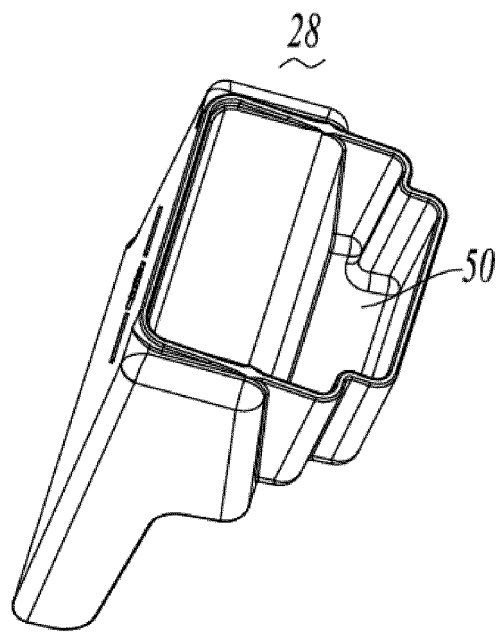


FIG. 11

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/111180

A. CLASSIFICATION OF SUBJECT MATTER

F25C 1/10(2006.01)i; F25C 5/04(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

F25C, F25D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNTXT, CNABS, CNKI, SIPOABS, DWPI, 制冰, 储冰, 贮冰, 转轴, 转动, 盒, 支架, 盖, 铲, icemaker, storage, shaft, rotate, box, bin, bracket, cover, lid, shovel

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 101738044 A (HAIER GROUP CORPORATION et al.) 16 June 2010 (2010-06-16) description, paragraphs [0031]-[0076], and figures 11-12	1-2, 5-10, 15
Y	CN 201497269 U (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 02 June 2010 (2010-06-02) description, paragraphs [0028]-[0041], and figures 1-8	1-2, 5-10, 15
A	CN 202581987 U (HISENSE RONSHEN (GUANGDONG) REFRIGERATORS CO., LTD.) 05 December 2012 (2012-12-05) entire document	1-15
A	CN 202166247 U (HEFEI MIDEA-ROYALSTAR REFRIGERATOR CO., LTD. et al.) 14 March 2012 (2012-03-14) entire document	1-15
A	CN 203116390 U (SHANGHAI DUSHI INDUSTRIAL CO., LTD.) 07 August 2013 (2013-08-07) entire document	1-15
A	CN 203432178 U (HEFEI JINGHONG ELECTRICAL CO., LTD.) 12 February 2014 (2014-02-12) entire document	1-15

☒ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

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Date of the actual completion of the international search

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Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/111180

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 2010840 A1 (BSH BOSCH SIEMENS HAUSGERAETE) 07 January 2009 (2009-01-07) entire document	1-15

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INTERNATIONAL SEARCH REPORT
Information on patent family members

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CN 201497269 U	02 June 2010	None	
CN 202581987 U	05 December 2012	None	
CN 202166247 U	14 March 2012	None	
CN 203116390 U	07 August 2013	None	
CN 203432178 U	12 February 2014	None	
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		PL 2010840 T3	31 May 2017
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