(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 3 249 305 A1

(12) EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication:
29.11.2017 Bulletin 2017/48

(21) Application number: **15878449.6**

(22) Date of filing: **30.03.2015**

(51) Int Cl.:
F24C 15/10 *(2006.01)*

(86) International application number:
PCT/CN2015/075400

(87) International publication number:
WO 2016/115772 (28.07.2016 Gazette 2016/30)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA

(30) Priority: **22.01.2015 CN 201510033747**

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(54) GAS STOVE

(57) A gas stove includes a panel (10), a pot support (20), a decoration strip (30) and a connecting piece (40). The pot support (20) is arranged on an upper side of the panel (10), and a lower part of the pot support (20) defines a positioning hole (21); the decoration strip (30) is arranged between the panel (10) and the pot support (20), and the decoration strip (30) is connected to the panel (10); one end of the connecting piece (40) is connected to the decoration strip (30), and the other end of the connecting piece (40) is detachably embedded in the positioning hole (21).

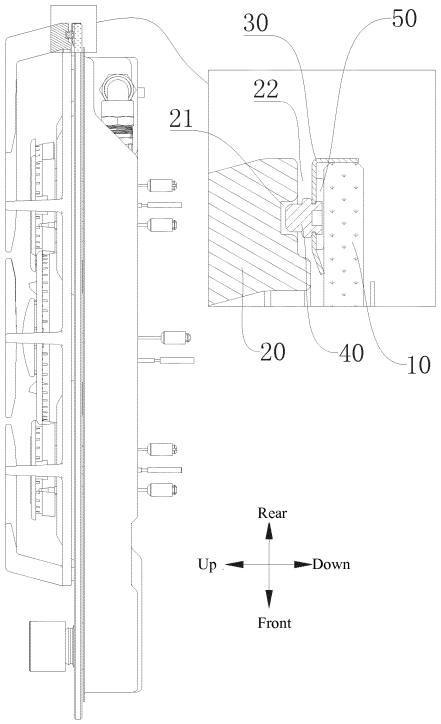

Fig. 3

EP 3 249 305 A1

Description

FIELD

[0001] The present disclosure relates to a technical field of household appliances, and particularly, to a gas stove.

BACKGROUND

[0002] A pot support assembly is usually positioned and fixed on a gas stove in such a way that a positioning hole is added in a tempered glass panel, a fixing pin is installed by means of the positioning hole, and the pot support is provided with a hole corresponding to the fixing pin for fixing and positioning. This method is highly demanding on quality of the tempered glass panel, and has strict requirements on the number, size and pitch of holes, thereby reducing a degree of freedom of an overall design, increasing manufacturing costs, leading to a significant increase in abnormal breakage of the tempered glass panel, decreasing a limit temperature difference which the tempered glass panel can withstand, and shortening service life. The method for positioning and fixing the pot support assembly has room for improvement.

SUMMARY

[0003] Embodiments of the present disclosure seek to solve at least one of the problems existing in the related art to at least some extent. Accordingly, the present disclosure provides a gas stove whose panel is subject to a small chance of abnormal breakage.

[0004] The gas stove according to embodiments of the present disclosure includes a panel; a pot support provided on the panel, and having a lower part defining a positioning hole; a decoration strip provided between the panel and the pot support, and connected with the panel; a connecting piece having a first end connected with the decoration strip and a second end detachably embedded in the positioning hole.

[0005] For the gas stove according to embodiments of the present disclosure, the pot support can be positioned and fixed on the panel by means of the connecting piece and the decoration strip. Such a positioning method does not require provision of any positioning hole in the panel, so that a quality requirement for the panel is reduced, and a trepanning process is omitted, thereby lowering manufacturing costs; meanwhile, overall structural stability of the panel is improved, abnormal breakage is significantly reduced, and a limit temperature difference which the panel can withstand is considerably increased, thereby prolonging service life of the panel. This structure is reliable, simple and efficient, and can reduce a breakage rate of the panel effectively and improve product quality.

[0006] Furthermore, the gas stove according to embodiments of the present disclosure can have the following additional technical features.

[0007] According to an embodiment of the present disclosure, a plurality of positioning holes are provided and spaced apart along a length direction of the decoration strip, the decoration strip defines a plurality of fixing holes corresponding to the plurality of positioning holes, and the first end of each connecting piece is inserted in the corresponding fixing hole.

[0008] According to an embodiment of the present disclosure, the gas stove further includes an adhesive layer provided between the decoration strip and the panel, the decoration strip being connected with the panel through the adhesive layer.

[0009] According to an embodiment of the present disclosure, the decoration strip includes: a flat plate parallel to the panel and spaced apart from the panel in an up-down direction, the fixing holes being defined in the flat plate and the adhesive layer being provided between the flat plate and the panel; a left side plate provided to a left end of the flat plate and extending along a lower left direction to abut against the panel; and a right side plate provided to a right end of the flat plate and extending along a lower right direction to abut against the panel.

[0010] According to an embodiment of the present disclosure, the decoration strip further includes a rear edge plate provided at a rear side of the flat plate, extending downwards, and having a front side abutting against a rear side face of the panel.

[0011] According to an embodiment of the present disclosure, the decoration strip further includes a front edge plate provided at a front side of the flat plate and extending frontwards and downwards along a width direction of the decoration strip to abut against the panel.

[0012] According to an embodiment of the present disclosure, the pot support has a lower surface defining a groove recessed upwards and shaped corresponding to the decoration strip, the decoration strip is located in the groove, and the positioning hole is defined in a lower wall face of the groove.

[0013] According to an embodiment of the present disclosure, the lower surface of the pot support is provided with a plurality of foot pads, and the plurality of foot pads are individually supported on the panel.

[0014] According to an embodiment of the present disclosure, the flat plate, the left side plate, the right side plate, the rear edge plate and the front edge plate are formed integrally.

[0015] According to an embodiment of the present disclosure, the connecting piece is configured as a positioning rivet.

[0016] 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

[0017]

Fig. 1 illustrates a schematic view of a gas stove according to an embodiment of the present disclosure.

Fig. 2 illustrates a top view of a gas stove according to an embodiment of the present disclosure.

Fig. 3 illustrates a sectional view of a gas stove according to an embodiment of the present disclosure.

Fig. 4 illustrates an exploded schematic view of a gas stove according to an embodiment of the present disclosure.

Fig.5 illustrates an exploded schematic view of a gas stove according to an embodiment of the present disclosure from another view angle.

Fig. 6 illustrates a schematic view of a pot support of a gas stove according to an embodiment of the present disclosure.

Reference numerals:

[0018]

gas stove 100,

panel 10, pot support 20, positioning hole 21, groove 22, foot pad 23, decoration strip 30, flat plate 31, fixing hole 311, left side plate 32a, right side plate 32b, rear edge plate 33, front edge plate 34, connecting piece 40, adhesive layer 50.

DETAILED DESCRIPTION

[0019] Embodiments of the present disclosure will be described in detail in the following, and examples of the embodiments will be shown in drawings. The same or similar elements and the elements having same or similar functions are denoted by like reference numerals throughout the descriptions. The embodiments described herein with reference to drawings are explanatory, and intended to interpret the present disclosure. The embodiments shall not be construed to limit the present disclosure.

[0020] A gas stove 100 according to embodiments of the present disclosure will be described in detail with reference to the drawings.

[0021] Referring to Figs. 1 to 6, the gas stove 100 according to an embodiment of the present disclosure includes a panel 10, a pot support 20, a decoration strip 30 and a connecting piece 40. The pot support 20 is provided on the panel 10, and a lower part of the pot support 20 defines a positioning hole 21. The decoration strip 30 is provided between the panel 10 and the pot support 20, and the decoration strip 30 is connected with the panel 10. A first end of the connecting piece 40 is connected with the decoration strip 30, while a second end of the connecting piece 40 is detachably embedded in the positioning hole 21.

[0022] For the gas stove 100 according to an embodiment of the present disclosure, by providing the decoration strip 30 and the connecting piece 40, and defining the positioning hole 21 in the pot support 20 in which the second end of the connecting piece 40 is detachably embedded, the pot support 20 can be positioned and fixed on the panel 10 by means of the connecting piece 40 and the decoration strip 30, when the decoration strip 30 is connected with the panel 10 and the first end of the connecting piece 40 is connected with the decoration strip 30. Such a positioning method does not require provision of any positioning hole in the panel 10, so that a quality requirement for the panel 10 is reduced, and a trepanning process is omitted, thereby lowering manufacturing costs; meanwhile, overall structural stability of the panel 10 is improved, abnormal breakage is significantly reduced, and a limit temperature difference which the panel 10 can withstand is considerably increased. This structure is reliable, simple, efficient and capable of reducing a breakage rate of the panel 10 effectively and improving product quality.

[0023] As shown in Fig. 1, the gas stove 100 includes the panel 10, the pot support 20, the decoration strip 30 and the connecting piece 40. The panel 10, the decoration strip 30 and the pot support 20 are placed sequentially from the bottom up, i.e. the decoration strip 30 is located between the pot support 20 and the panel 10. The panel 10 can be configured as a glass panel. For example, the panel 10 is a tempered glass panel. One or a plurality of pot supports 20 can be provided. As shown in Fig. 1, three pot supports 20 are provided, and arranged on the panel 10 along a horizontal direction side by side.

[0024] As shown in Fig. 6, the positioning hole 21 is defined in a lower surface of the pot support 20, the first end of the connecting piece 40 is connected with the decoration strip 30, and the second end of the connecting piece 40 is inserted in the positioning hole 21. When the decoration strip 30 is connected with the panel 10, the connecting piece 40 can be fixed on the panel 10 by means of the decoration strip 30, such that relative positions between the first end of the connecting piece 40 and the panel 10 are fixed to achieve positioning and fixation of the connecting piece 40 on the panel 10.

[0025] When the second end of the connecting piece 40 is inserted in the positioning hole 21 of the pot support 20, the second end of the connecting piece 40 achieves positioning and fixture to the pot support 20. Thus, the pot support 20 can be positioned and fixed to the panel 10 by means of the connecting piece 40. Such a positioning and fixing method requires no positioning hole in the panel 10, and instead, the positioning and connection between the connecting piece 40 and the panel 10 can be achieved by the positioning and connection between the decoration strip 30 and the panel 10. Compared with a positioning and fixing structure with a rivet inserted into a hole, the connection and fixation by the connection be-

tween the decoration strip 30 and the panel 10 is more reliable.

[0026] As shown in Figs. 4 to 6, a plurality of positioning holes 21 can be provided and spaced apart along a length direction of the decoration strip 30. The decoration strip 30 can be provided with a plurality of fixing holes 311, and the plurality of fixing holes 311 correspond to the plurality of positioning holes 21 respectively. The first end of each connecting piece 40 is inserted into the corresponding fixing hole 311, and the second end of each connecting piece 40 is inserted into the corresponding positioning hole 21. The pot support 20 can be connected with the decoration strip 30 in an insertion manner by means of the connecting pieces 40. As shown Figs. 3 to 5, the connecting piece 40 can be a positioning rivet.

[0027] The decoration strip 30 can be connected with the panel 10 in various ways. Optionally, as shown in Fig. 3, according to some embodiments of the present disclosure, the gas stove 100 further includes an adhesive layer 50. The adhesive layer 50 is provided between the decoration strip 30 and the panel 10, such that the decoration strip 30 can adhere to the panel 10 by means of the adhesive layer 50. This connection manner is reliable and facilitates production and assembly, and meanwhile, the panel 10 is less likely to be broken during an operation of binding the decoration strip 30 to the panel 10 using an adhesive.

[0028] As shown in Fig. 3, the adhesive layer 50 can be located at the fixing hole 311, i.e. when the first end of the connecting piece 40 is inserted in the fixing hole 311, the adhesive layer 50 is also provided between the connecting piece 40 and the panel 10, and hence the connecting piece 40 can be fixed on the panel 10 through the adhesive layer 50. Therefore, the connecting piece 40 and the decoration strip 30 together can adhere to the panel 10 by means of the adhesive.

[0029] As shown in Fig. 5, the decoration strip 30 includes a flat plate 31, a left side plate 32a and a right side plate 32b, and the fixing hole 311 is defined in the flat plate 31. The left side plate 32a and the right side plate 32b are arranged at a left end and a right end of the flat plate 31 respectively. The left side plate 32a extends from the left end of the flat plate 31 along a lower left direction to abut against the panel, i.e. a lower end of the left side plate 32a abuts against the panel 10; the right side plate 32b extends from the right end of the flat plate 31 along a lower right direction to abut against the panel, i.e. a lower end of the right side plate 32b abuts against the panel 10.

[0030] The flat plate 31 is supported by the side plates 32a and 32b to be parallel to and spaced apart from the panel 10, and the adhesive layer 50 is provided between the flat plate 31 and the panel 10. A height of the space between the flat plate 31 and the panel 10 is equal to a height of the adhesive layer 50, and when the connecting piece 40 passes through the fixing hole 311, the space can avoid the connecting piece 40. That is, the side plates 32a and 32b can serve to retain a basic height of the adhesive layer and keep clear for a height of the connecting piece 40.

[0031] The side plates 32a, 32b and the adhesive layer 50 are provided such that the decoration strip 30 can be fixed on the panel 10 by way of adhesion and support. Specifically, the decoration strip 30 is bonded with the panel 10 through the adhesive layer 50 and supported on the panel 10 through the two side plates 32a and 32b. The decoration strip 30 can be connected with the panel 10 in various manners, along with many connection points distributed in appropriate locations. The connection between the decoration strip 30 and the panel 10 is firm, and the decoration strip 30 is placed with high stability.

[0032] At the same time, it is possible to ensure the decoration strip 30 as a whole is parallel to the panel 10 by utilizing heights of the side plates 32a and 32b of the decoration strip 30 and a height of a lower end of the connecting piece 40 after assembled. In addition, the two side plates 32a and 32b can also act to position in a left and right direction when the decoration strip 30 is installed, to ensure accuracy of an installation position of the decoration strip 30.

[0033] Further, the decoration strip 30 further includes a rear edge plate 33. The rear edge plate 33 is provided at a rear side of the flat plate 31 and extends downwards, and a front side of the rear edge plate 33 abuts against a rear side face of the panel 10. Thus, when the decoration strip 30 is installed to the panel 10, the rear edge plate 33 can act to position from a front-rear direction to make the installation position of the decoration strip 30 more accurate.

[0034] As shown in Fig. 5, the decoration strip 30 can further include a front edge plate 34. The front edge plate 34 is provided at a front side of the flat plate 31 and extends frontwards and downwards along a width direction of the decoration strip 30 to abut against the panel 10. As shown in Fig. 5, the width direction of the decoration strip 30 represents the front-rear direction, the front edge plate 34 extends frontwards and downwards, and a lower end of the front edge plate 34 abuts against the panel 10. The front edge plate 34 can further enhance the stability and reliability of installing the decoration strip 30 on the panel 10.

[0035] Optionally, the flat plate 31, the left side plate 32a, the right side plate 32b, the rear edge plate 33 and the front edge plate 34 are formed integrally. The integral structure is easy to mold and guarantees overall structural stability of the decoration strip 30.

[0036] As shown in Fig. 6, the lower surface of the pot support 20 is provided with a groove 22 recessed upwards, and a shape of the groove 22 corresponds to a shape of the decoration strip 30. When the pot support 20, the decoration strip 30 and the panel 10 are assembled together, the decoration strip 30 can be located in the groove 22, and the positioning hole 21 is defined in a lower wall face of the groove 22. The groove 22 can serve to avoid and accommodate the decoration strip 30,

so as to make the structure of the gas stove 100 more compact and ensure stability of installation of the pot support 20.

[0037] As shown in Fig. 6, the lower surface of the pot support 20 can be provided with a plurality of foot pads 23, and the plurality of foot pads 23 are individually supported on the panel 10 to further ensure the stability of the pot support 20 on the panel 10 during use. The foot pads 23 can be made of a material having a non-slip property to increase a friction between the pot support 20 and the panel 10, such that the pot support 20 is less likely to be displaced on the panel 10 and becomes more reliable in use.

[0038] In conclusion, the gas stove 100 according to embodiments of the present disclosure includes the panel 10, the pot support 20 placed on the panel 10, the decoration strip 30 for positioning the pot support 20, the positioning rivet installed to the decoration strip 30, and the adhesive layer 50 for binding the decoration strip 30 with the panel 10. The pot support 20 includes the groove 22 for avoiding the decoration strip 30, the positioning hole 21 for positioning in the groove 22, and the foot pads 23 for a non-slip effect.

[0039] Referring to Figs. 1 to 6, during the assembling of the gas stove 100 according to embodiments of the present disclosure, the positioning rivet can be fitted in the fixing hole 311 of the decoration strip 30 to be combined into a decoration strip assembly, and the decoration strip assembly is bonded with the panel 10 through the adhesive layer to form a panel assembly. When the decoration strip assembly is assembled with the panel 10, the rear edge plate 33 of the decoration strip 30 is utilized to determine front and rear distances of the decoration strip 30, and the side plates 32a and 32b of the decoration strip 30 are utilized to determine left and right distances of the decoration strip 30; meanwhile, the heights of the side plates 32a and 32b of the decoration strip 30 and a height of a lower end of the positioning rivet after assembled are utilized to ensure that the decoration strip 30 as a whole is parallel to the panel 10.

[0040] When the pot support 20 is placed on the panel 10, the positioning rivet projecting from an upper surface of the decoration strip 30 is fitted with the positioning hole 21 recessed inwards in the pot support 20, so as to fix the position of the pot support 20; meanwhile, the foot pads 23 of the pot support 20 increases the friction on the panel 10 to ensure the stability of the pot support 20 on the panel 10 during use. This installation manner improves in mass manufacturing efficiency, significantly reduces the breakage rate of the panel caused by trepanning the panel 10 to install the positioning rivet to position the pot support 20, and enhances the ability of the panel 10 to withstand the limit temperature difference.

[0041] For the gas stove 100 according to embodiments of the present disclosure, the way of positioning and fixing the pot support 20 and the panel 10 is reliable, simple and efficient, and can reduce the breakage rate of the tempered glass panel 10 effectively and improve production efficiency.

[0042] Other constitutions and operations of the gas stove 100 according to embodiments of the present disclosure are known to those skilled in the art and hence will not be elaborated herein.

[0043] In the specification, it is to be understood that terms such as "central," "length," "width," "thickness," "upper," "lower," "front," "rear," "left," "right," "vertical," "horizontal," "inner," "outer," "axial," "radial" and "circumferential" 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. Thus, the terms used herein should not be construed to limit the present disclosure.

[0044] In the description of the present invention, the term "a plurality of' means two or more than two, unless specified otherwise.

[0045] In the present invention, unless specified or limited otherwise, a structure in which a first feature is "on" or "below" a second feature may include an embodiment in which the first feature is in direct contact with the second feature, and may also include an embodiment in which the first feature and the second feature are not in direct contact with each other, but are contacted via an additional feature formed therebetween. Furthermore, a first feature "on," "above," or "on top of' a second feature may include an embodiment in which the first feature is right or obliquely "on," "above," or "on top of' the second feature, or just means that the first feature is at a height higher than that of the second feature; while a first feature "below," "under," or "on bottom of' a second feature may include an embodiment in which the first feature is right or obliquely "below," "under," or "on bottom of' the second feature, or just means that the first feature is at a height lower than that of the second feature.

[0046] 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.

[0047] Reference throughout this specification to "an embodiment," "some embodiments," "an example," or the like 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 above phrases 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.

[0048] Although explanatory embodiments have been shown and described, it would be appreciated by those skilled in the art that the above embodiments are explanatory and cannot be construed to limit the present disclosure, and changes, modifications, alternatives and variations can be made in the embodiments without departing from the scope of the present disclosure.

Claims

1. A gas stove, comprising:

a panel;
a pot support provided on the panel, and having a lower part defining a positioning hole;
a decoration strip provided between the panel and the pot support, and connected with the panel;
a connecting piece having a first end connected with the decoration strip and a second end detachably embedded in the positioning hole.

2. The gas stove according to claim 1, wherein a plurality of positioning holes are provided and spaced apart along a length direction of the decoration strip, the decoration strip defines a plurality of fixing holes corresponding to the plurality of positioning holes, and the first end of each connecting piece is inserted in the corresponding fixing hole.

3. The gas stove according to claim 1 or 2, further comprising an adhesive layer provided between the decoration strip and the panel, the decoration strip being connected with the panel through the adhesive layer.

4. The gas stove according to claim 3, wherein the decoration strip comprises:

a flat plate parallel to the panel and spaced apart from the panel in an up-down direction, the fixing holes being defined in the flat plate and the adhesive layer being provided between the flat plate and the panel;
a left side plate provided to a left end of the flat plate and extending along a lower left direction to abut against the panel; and
a right side plate provided to a right end of the flat plate and extending along a lower right direction to abut against the panel.

5. The gas stove according to claim 4, wherein the decoration strip further comprises:

a rear edge plate provided at a rear side of the flat plate, extending downwards, and having a front side abutting against a rear side face of the panel.

6. The gas stove according to claim 5, wherein the decoration strip further comprises:

a front edge plate provided at a front side of the flat plate and extending frontwards and downwards along a width direction of the decoration strip to abut against the panel.

7. The gas stove according to claim 1, wherein the pot support has a lower surface defining a groove recessed upwards and shaped corresponding to the decoration strip, the decoration strip is located in the groove, and the positioning hole is defined in a lower wall face of the groove.

8. The gas stove according to claim 7, wherein the lower surface of the pot support is provided with a plurality of foot pads, and the plurality of foot pads are individually supported on the panel.

9. The gas stove according to claim 6, wherein the flat plate, the left side plate, the right side plate, the rear edge plate and the front edge plate are formed integrally.

10. The gas stove according to any one of claims 1 to 9, wherein the connecting piece is configured as a positioning rivet.

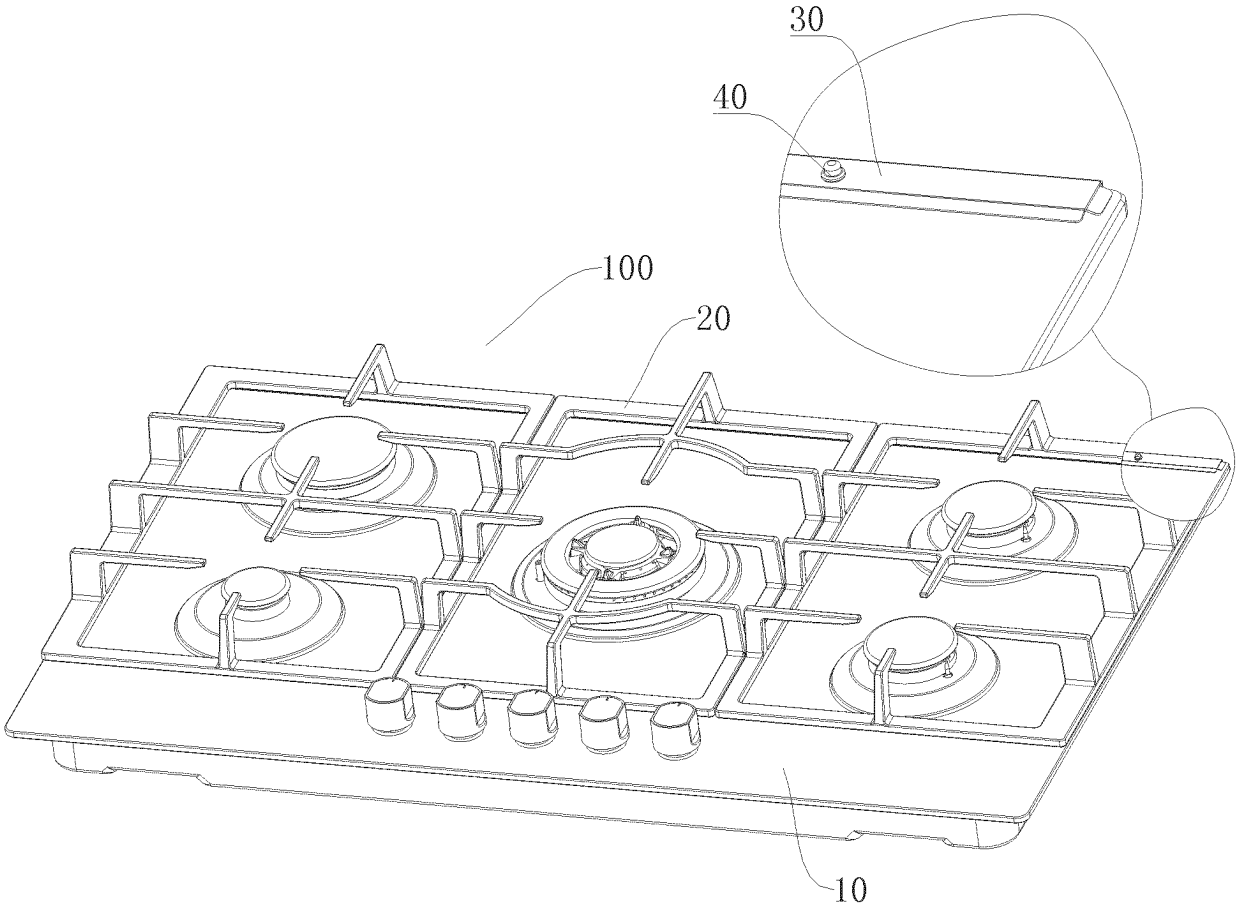

Fig. 1

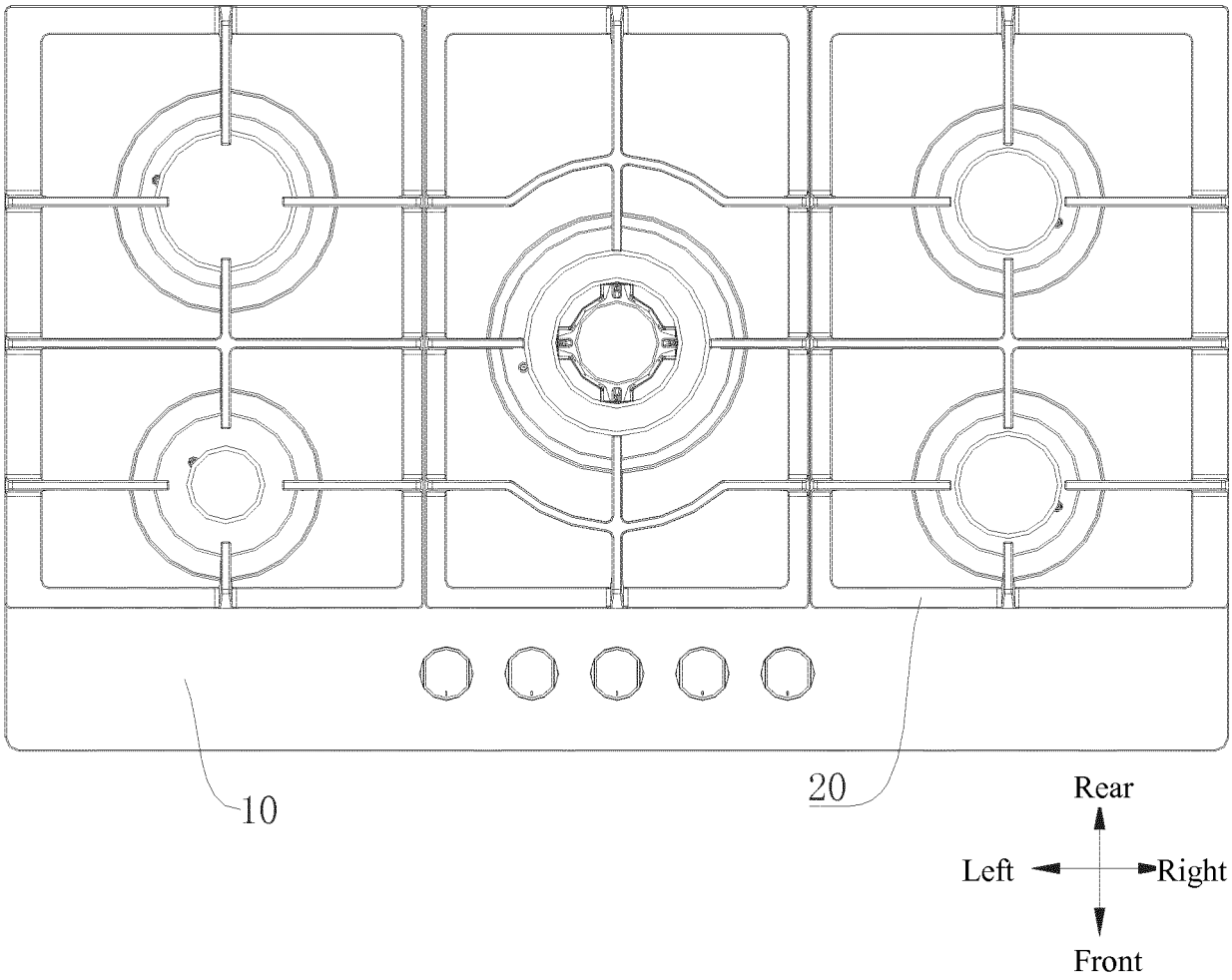

Fig. 2

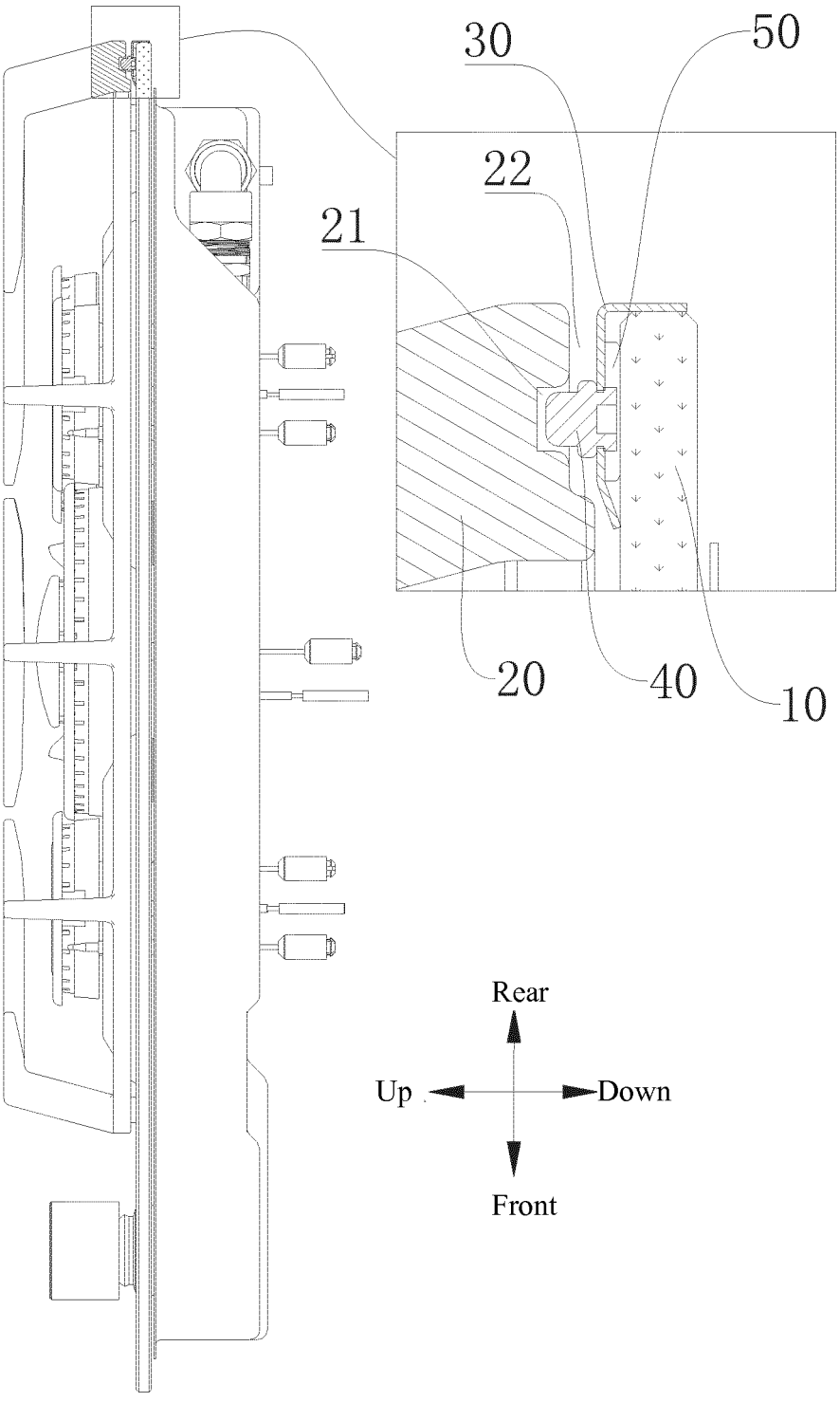

Fig. 3

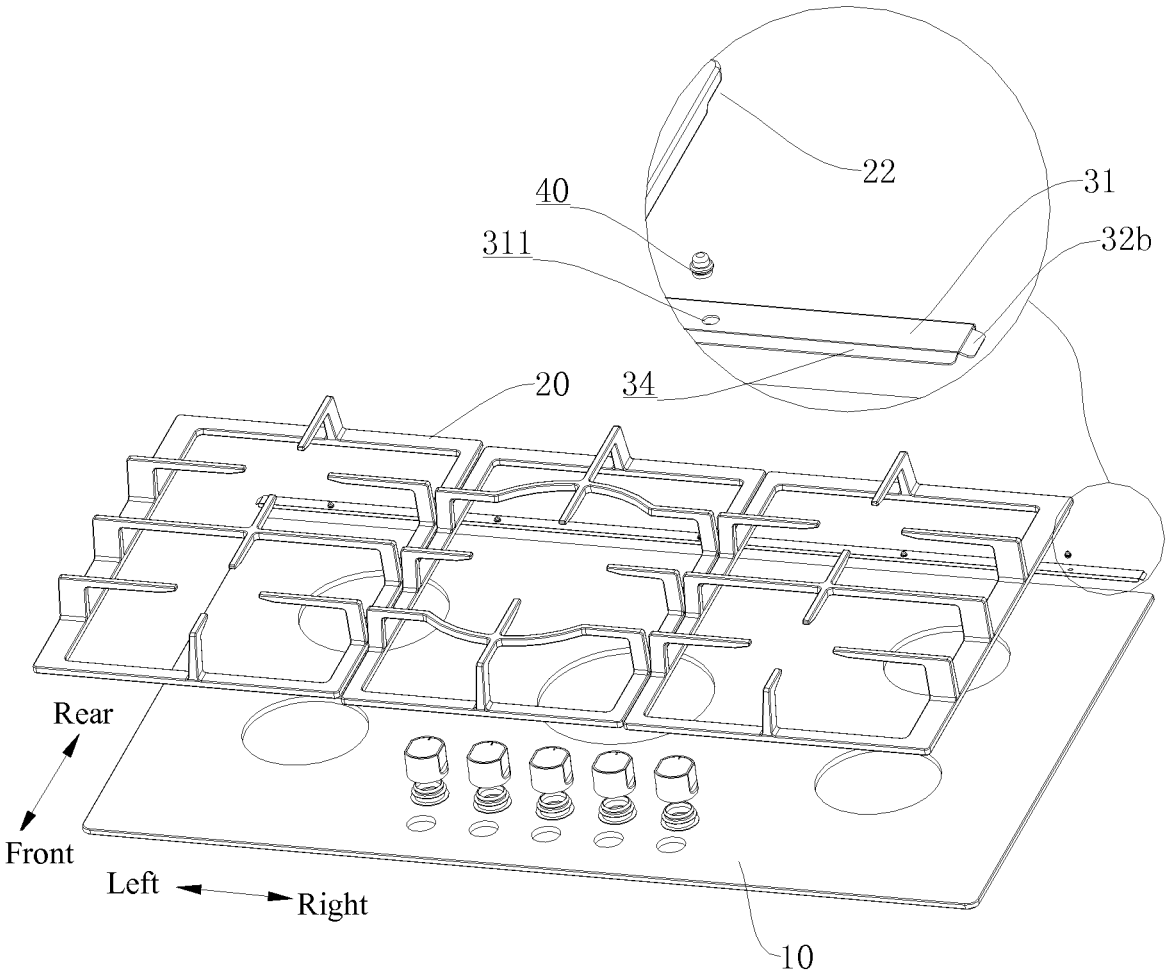

Fig. 4

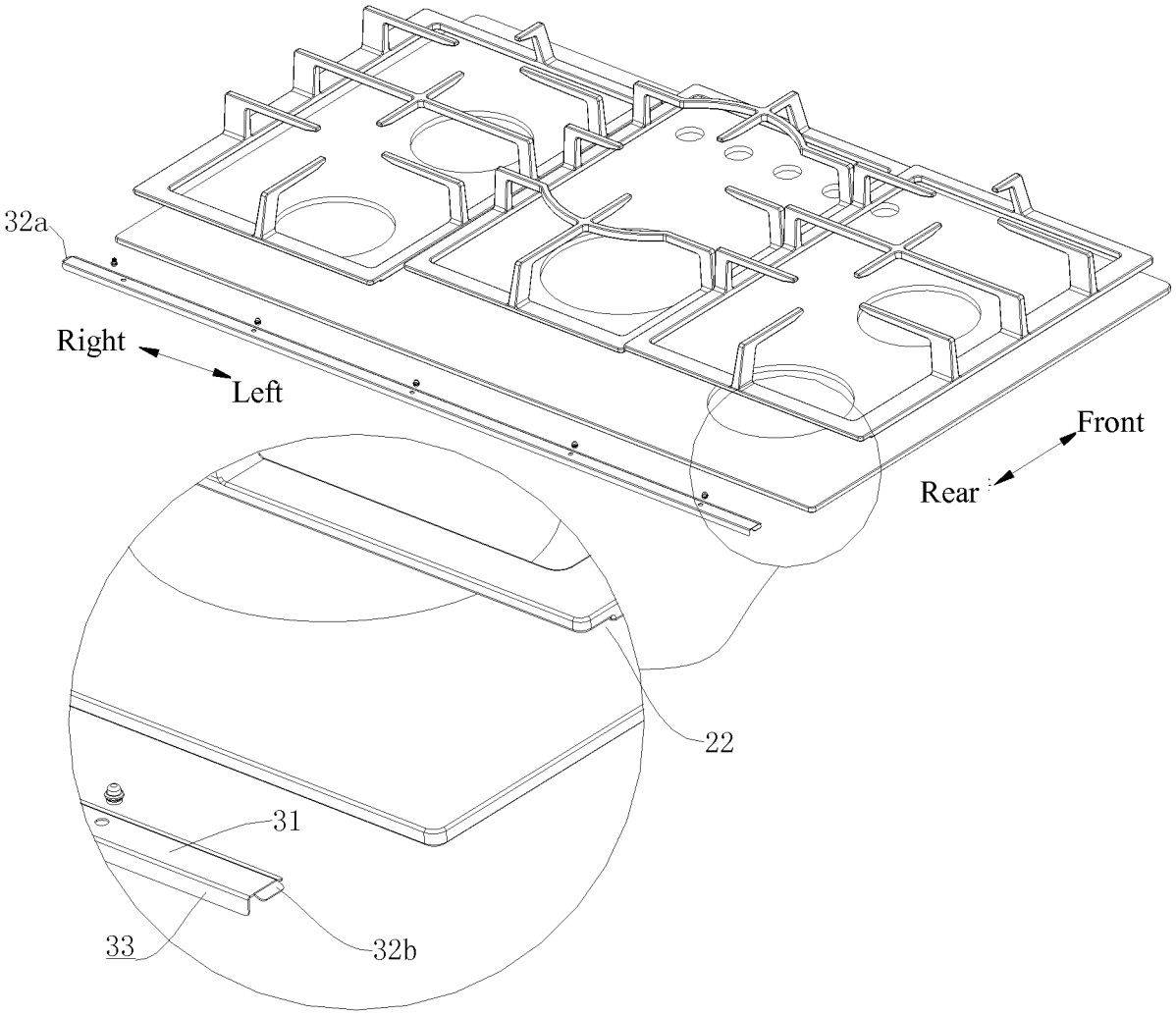

Fig. 5

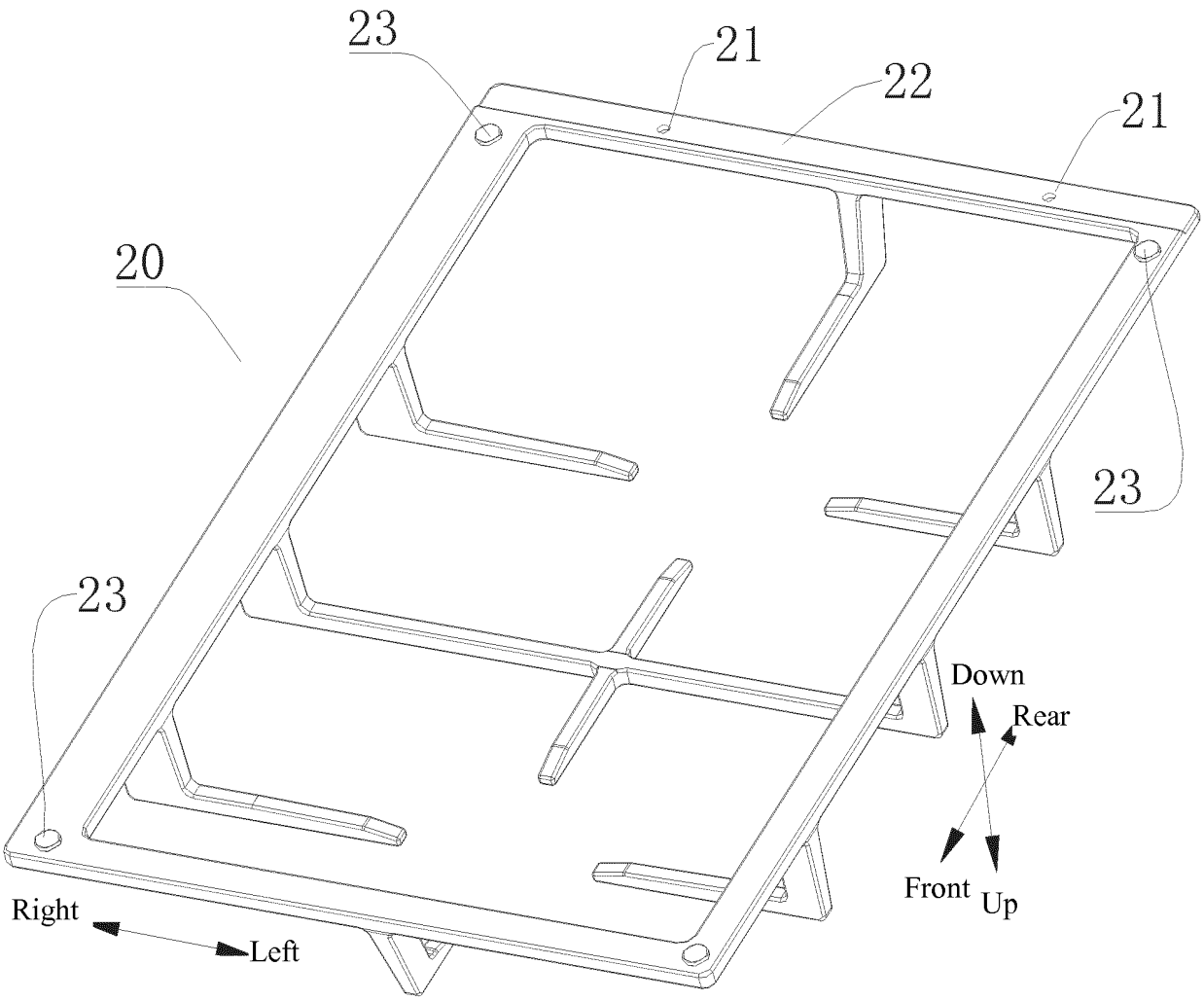

Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2015/075400

A. CLASSIFICATION OF SUBJECT MATTER

F24C 15/10 (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)

F24C 15, F24C 3

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)

CNPAT, CNKI, WPI, EPODOC: wok stand, locate, decorate, strake, bordure, stove, gas, vessel, foot, holder, support, fastness, fasten, hole, concave, protrude, groove, connect, margin

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6279567 B1 (SCHOTT AG et al.), 28 August 2001 (28.08.2001), description, column 4 line 66 to column 7 line 48, and figures 1-12	1-10
A	CN 203024212 U (MIDEA GROUP CO., LTD.), 26 June 2013 (26.06.2013), the whole document	1-10
A	JP 2002188817 A (MATSUSHITA DENKI SANGYO KK), 05 July 2002 (05.07.2002), the whole document	1-10
A	JP 2004251500 A (INNAI CORP. et al.), 09 September 2004 (09.09.2004), the whole document	1-10

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

* 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

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"P" document published prior to the international filing date but later than the priority date claimed

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
09 October 2015 (09.10.2015)	**03 November 2015 (03.11.2015)**
Name and mailing address of the ISA/CN: State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No.: (86-10) 62019451	Authorized officer **LI, Qian** Telephone No.: (86-10) **62084188**

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2015/075400

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
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Form PCT/ISA/210 (patent family annex) (July 2009)