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(54) Cooker bottom case and cooker having the same

(57) A cooker bottom case and a cooker having the same are provided. The cooker bottom case is disposed with a support frame (1) on an inner surface thereof. A fastening and fixing device (2) is further disposed on the inner surface of the cooker bottom case. The fastening and fixing device is used to fasten and fix the support frame (1). Through the solution, the mounting efficiency of the support frame can be greatly increased, thereby improving the production efficiency of cookers.

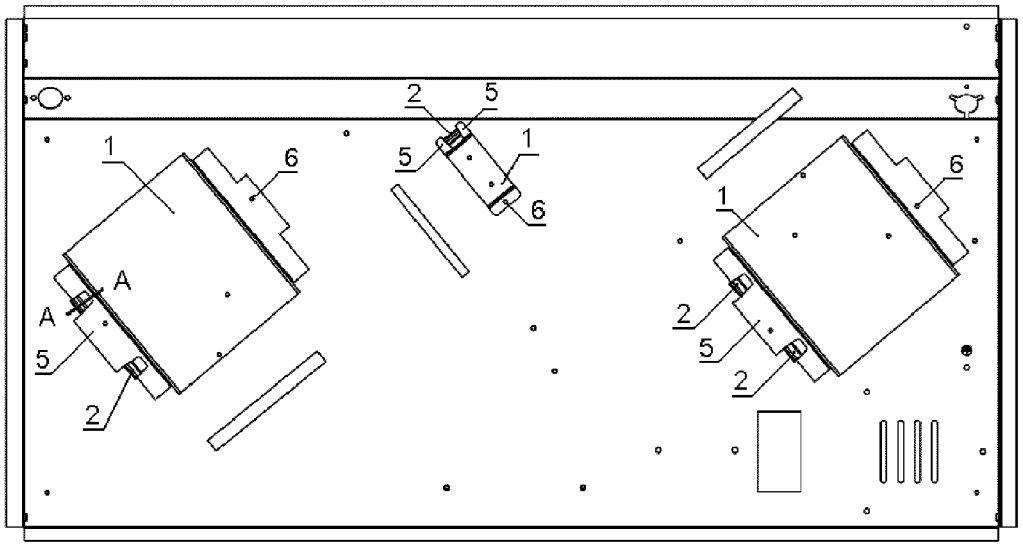


FIG. 2

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Description

BACKGROUND OF THE INVENTION

Field of Invention

[0001] The present invention relates to the field of cookers and cooker components, and more particularly to a cooker bottom case.

Related Art

[0002] In an existing cooker bottom case, when a support frame needs to be fixed, bolt connection is mostly adopted to fix the support frame. Although such a fixing mode largely meets the requirements for fixing the support frame, its defects become increasingly prominent, which are mainly embodied in the following aspects. First, the positioning of bolt holes is completely dependent on subjective judgment and experience, and thus is time and labor consuming, resulting in low mounting efficiency. Secondly, as a large number of bolt holes exist, and the bolt holes have the same or similar shapes, errors easily occur during mounting. Thirdly, if only bolt connection is adopted for fixing, loosening easily occurs, especially during transportation. Therefore, the procedure of fixing the support frame has become a bottleneck for improvement of the production efficiency of cookers, and the fixing mode using only bolts can no longer meet the requirements for highly efficient production of cookers.

SUMMARY OF THE INVENTION

[0003] In order to solve the above technical problems, the present invention provides a cooker bottom case and a cooker having the same.

[0004] The cooker bottom case according to the present invention is disposed with a support frame on an inner surface thereof, in which a fastening and fixing device is further disposed on the inner surface of the cooker bottom case; and the fastening and fixing device is used to fasten and fix the support frame.

[0005] Preferably, the fastening and fixing device includes a pressing portion and a protrusion portion; one end of the protrusion portion is connected to a case body of the cooker bottom case, and the other end of the protrusion portion extends to form the pressing portion; and the protrusion portion is in an arc shape.

[0006] Preferably, the fastening and fixing device is formed by stamping a bottom wall and/or a side wall of the cooker bottom case.

[0007] Preferably, the fastening and fixing device is disposed on a bottom wall and/or a side wall of the cooker bottom case.

[0008] Preferably, the fastening and fixing device is disposed on the inner surface of the cooker bottom case by welding, riveting, bolt connection, snap-fit connection or adhesion.

[0009] Preferably, the fastening and fixing device is in a sheet structure and is made of an elastic material.

[0010] Preferably, a bolt hole is disposed on the support frame; and the support frame is further fixed on the inner surface of the cooker bottom case by bolt connection after being fastened and fixed by the fastening and fixing device.

[0011] Preferably, a stop portion is disposed on the support frame; and the stop portion is used to prevent the support frame from moving perpendicular to an extending direction of the fastening and fixing device after being fastened and fixed by the fastening and fixing device.

[0012] Preferably, the stop portion includes two protrusions, and in a use state, the two protrusions clamp the fastening and fixing device.

[0013] Preferably, the stop portion includes a protrusion, and in a use state, the protrusion is located between two adjacent fastening and fixing devices.

[0014] The present invention further provides a cooker, disposed with the cooker bottom case described above.

[0015] Preferably, the cooker is a gas cooker, an electromagnetic cooker or a combination of the gas cooker and the electromagnetic cooker.

[0016] The present invention mainly has the following beneficial effects.

1. Through the solutions according to the present invention, the mounting efficiency of the support frame can be greatly increased, thereby improving the production efficiency of cookers.
2. Through the solutions according to the present invention, the number of bolts required can be significantly reduced, thereby reducing the material consumption and lowering the cost.
3. Through the solutions according to the present invention, the support frame can be dismounted more easily.
4. Through the solutions according to the present invention, the support frame may be conveniently mounted on a side wall of the cooker bottom case.
5. Through the solutions according to the present invention, the fixing effect of the support frame is enhanced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] The invention will become more fully understood from the detailed description given herein below for illustration only, and thus are not limitative of the present invention, and wherein:

FIG. 1 is a schematic structural view of an embodiment of a cooker bottom case not disposed with any support frame according to the present invention;

FIG. 2 is a schematic structural view of an embodiment of a cooker bottom case according to the

present invention; and

FIG. 3 is a sectional view along Line A-A in FIG. 2.

[0018] In the above drawings: 1 - support frame, 2 - fastening and fixing device, 3 - pressing portion, 4 - protrusion portion, 5 - stop portion, 6 - bolt hole.

DETAILED DESCRIPTION OF THE INVENTION

[0019] In order to make the objectives, solutions and beneficial effects of the present invention more comprehensible, the present invention is described in further detail below with reference to the accompanying drawings and preferred embodiments.

[0020] As shown in FIG. 2, the present invention provides an embodiment of a cooker bottom case. The cooker bottom case is disposed with a support frame 1 on an inner surface thereof. The function of the support frame 1 is to provide a supporting and fixing platform for mounting cooker components inside the cooker bottom case. Herein, the cooker components include, but are not limited to, valves and pipelines. A fastening and fixing device 2 is further disposed on the inner surface of the cooker bottom case. The inner surface of the cooker bottom case includes an upper surface of a bottom wall of the cooker bottom case and an inner side surface of a side wall of the cooker bottom case. In this embodiment, the support frame 1 and the fastening and fixing device 2 are only disposed on the upper surface of the bottom wall of the cooker bottom case. However, the support frame 1 and the fastening and fixing device 2 may also be disposed on the inner side surface of the side wall of the cooker bottom case, which may be easily achieved according to the solutions of the present invention. The fastening and fixing device 2 is used to fasten and fix the support frame 1, so as to fix the support frame 1 on the inner surface of the cooker bottom case. The support frame 1 is a constituent of the cooker bottom case. The structure of the cooker bottom case of this embodiment before the support frame 1 is disposed is shown in FIG. 1.

[0021] As shown in FIG. 3, the fastening and fixing device 2 includes a pressing portion 3 and a protrusion portion 4. The pressing portion 3 is used to press and fix the support frame 1. One end of the protrusion portion 4 is connected to a case body of the cooker bottom case, and the other end of the protrusion portion 4 extends to form the pressing portion 3, that is, the protrusion portion 4 and the pressing portion 3 are integrally formed in structure. The protrusion portion 4 is used to provide a pressure for the pressing portion 3. The protrusion portion 4 is in an arc shape, so that the pressure provided by the protrusion portion 4 for the pressing portion 3 is elastic. Moreover, as one end of the protrusion portion 4 is connected to the case body of the cooker bottom case, the connection position may stop the support frame 1, and as the pressing portion 3 may press and fix the support frame 1, the fastening and fixing device 2 can fasten and fix the support frame 1. In this embodiment, the fastening and fixing device 2 is formed by stamping the bottom wall of the cooker bottom case, that is, the fastening and fixing device 2 and the case body of the cooker bottom case are integrally formed in structure.

[0022] In order to achieve a better fixing effect of the support frame 1, the support frame 1 is further fixed on the inner surface of the cooker bottom case by bolt connection after being fastened and fixed by the fastening and fixing device 2. Compared with the mode of fixing the support frame 1 by using only bolts in the prior art, according to the solution of this embodiment, as the support frame 1 is already fastened and fixed by the fastening and fixing device 2 before being fixed by bolt connection, the mounting efficiency of the fixing procedure using bolts is increased, and a better fixing effect can be achieved by using less bolts. In order to achieve bolt connection, bolt holes 6 are disposed on the support frame 1 and the case body of the cooker bottom case correspondingly.

[0023] In order to achieve a better fixing effect of the support frame 1, a stop portion 5 is disposed on the support frame 1. The stop portion 5 is used to prevent the support frame 1 from moving perpendicular to an extending direction of the fastening and fixing device 2 after being fastened and fixed by the fastening and fixing device 2. Herein, the extending direction of the fastening and fixing device 2 refers to a direction in which the protrusion portion 4 extends out of the pressing portion 3. In this embodiment, three support frames 1 are disposed on the bottom wall of the cooker bottom case. Two of the support frames 1 have the same shape, and the stop portions 5 of the two support frames 1 each include a protrusion, and in a use state, the protrusion is located between two adjacent fastening and fixing devices 2. The stop portion 5 of the other support frame 1 includes two protrusions, and in a use state, the two protrusions clamp the fastening and fixing device 2. The stop portion 5 not only facilitates fixing, but also helps to determine the position of the support frame 1 to be placed during mounting, so that the mounting efficiency can be increased.

[0024] Only a part of preferred embodiments of the present invention are described above, and other embodiments may be derived by making modifications and replacements to some technical features. For example, the fastening and fixing device and the case body of the cooker bottom case are mutually independent, rather than integrally formed, which is different from the above embodiments, and the fastening and fixing device is disposed on the inner surface of the cooker bottom case by welding, riveting, bolt connection, snap-fit connection or adhesion. Specifically, the fastening and fixing device is in a sheet structure and is made of an elastic material such as an elastic steel or plastic material. In another example, three or more fastening and fixing devices may be used for fastening and fixing one support frame. In another example, when two or more fastening and fixing devices are used for fastening and fixing one support frame, the extending directions of the fastening and fixing devices are not parallel to each other, but intersect each

other, which is different from the above embodiments. In another example, the fastening and fixing device shall not be understood as being limited to the specific solutions of the above embodiments, but shall be understood in its broad sense so as to encompass all solutions in the prior that can produce a pressure and are applicable to the present invention, such as a solution of producing a pressure through a spring.

[0025] The present invention further provides an embodiment of a cooker, disposed with the cooker bottom case described above. Specifically, the cooker may be a gas cooker, an electromagnetic cooker or a combination of the gas cooker and the electromagnetic cooker.

[0026] Further, it should be noted that, the present invention shall not be construed as being limited to the implementation manner described above, but shall be construed as encompassing all possible implementation manners determined based on the claims and the disclosure of the specification of the present invention.

Claims

1. A cooker bottom case, disposed with a support frame on an inner surface thereof, **characterized in that**:

   a fastening and fixing device is disposed on the inner surface of the cooker bottom case; and
   the fastening and fixing device is used to fasten and fix the support frame.

2. The cooker bottom case according to claim 1, **characterized in that**:

   the fastening and fixing device comprises a pressing portion and a protrusion portion;
   one end of the protrusion portion is connected to a case body of the cooker bottom case, and the other end of the protrusion portion extends to form the pressing portion; and
   the protrusion portion is in an arc shape.

3. The cooker bottom case according to claim 1, **characterized in that**:

   the fastening and fixing device is formed by stamping a bottom wall and/or a side wall of the cooker bottom case.

4. The cooker bottom case according to claim 1, **characterized in that**:

   the fastening and fixing device is disposed on a bottom wall and/or a side wall of the cooker bottom case.

5. The cooker bottom case according to claim 1, **characterized in that**:

   the fastening and fixing device is disposed on the inner surface of the cooker bottom case by welding, riveting, bolt connection, snap-fit connection or adhesion.

6. The cooker bottom case according to claim 1, **characterized in that**:

   the fastening and fixing device is in a sheet structure and is made of an elastic material.

7. The cooker bottom case according to claim 1, **characterized in that**:

   a bolt hole is disposed on the support frame; and the support frame is further fixed on the inner surface of the cooker bottom case by bolt connection after being fastened and fixed by the fastening and fixing device.

8. The cooker bottom case according to any one of claims 1 to 7, **characterized in that**:

   a stop portion is disposed on the support frame; and
   the stop portion is used to prevent the support frame from moving perpendicular to an extending direction of the fastening and fixing device after being fastened and fixed by the fastening and fixing device.

9. The cooker bottom case according to claim 8, **characterized in that**:

   the stop portion comprises two protrusions, and in a use state, the two protrusions clamp the fastening and fixing device.

10. The cooker bottom case according to claim 8, **characterized in that**:

    the stop portion comprises a protrusion, and in a use state, the protrusion is located between two adjacent fastening and fixing devices.

11. A cooker, disposed with the cooker bottom case according to any one of claims 1 to 10.

12. The cooker according to claim 11, **characterized in that**:

    the cooker is a gas cooker, an electromagnetic cooker or a combination of the gas cooker and the electromagnetic cooker.

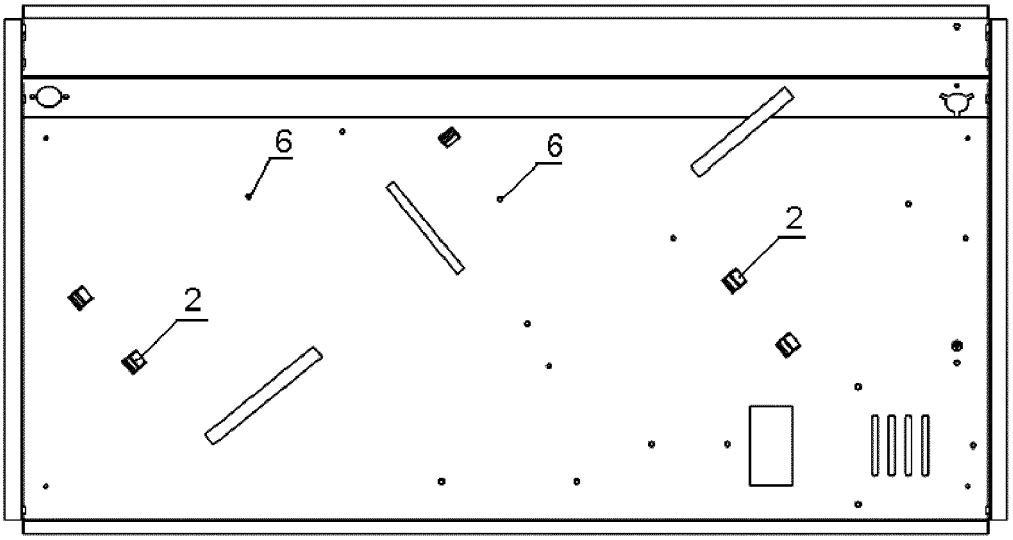


FIG. 1

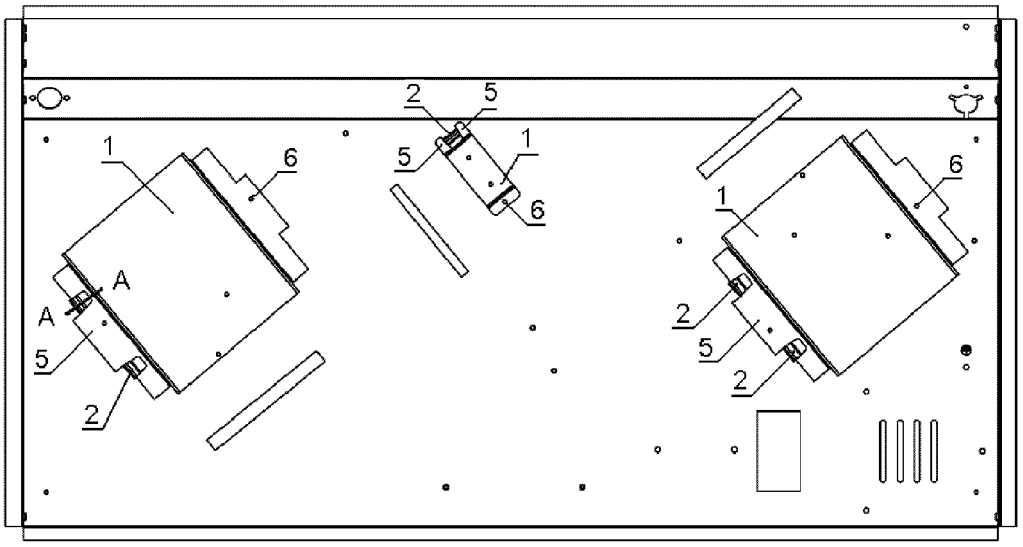


FIG. 2

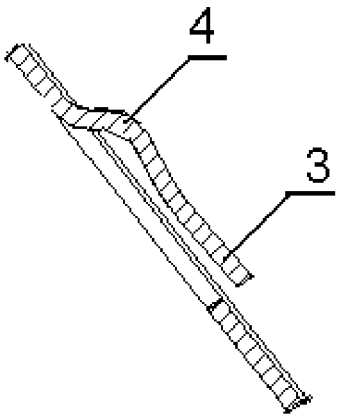


FIG. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 11 18 3493

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 32 04 760 A1 (LICENTIA GMBH [DE]) 18 August 1983 (1983-08-18) * abstract; figure 1 * * page 4, lines 26-30 * * claim 1 *	1,3-6, 8-12	INV. F24C15/10 F24C7/06
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	18 January 2012	Moreno Rey, Marcos

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 18 3493

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