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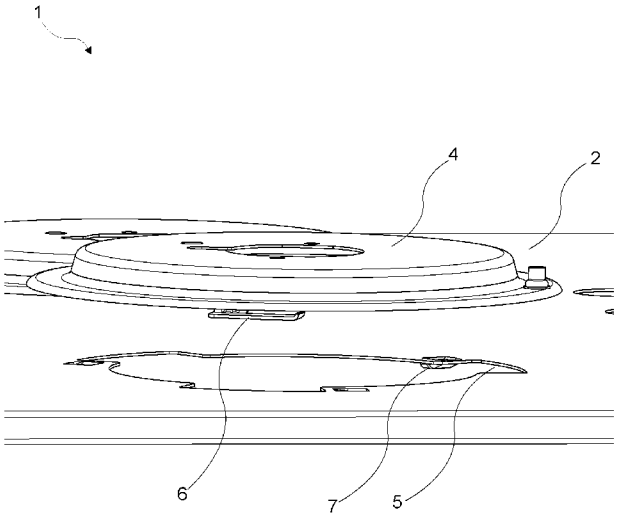
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(54) Title: A COOKTOP

Figure 3



(57) Abstract: The present invention relates to a cooktop (1) comprising a burner plate (2) having a flat surface and a plurality of cooking zones; a plurality of burner groups (3), each arranged in a cooking zone, enabling the flame to reach the vessel wherein the cooking occurs, and a plurality of burner connection elements (4) that are arranged on the burner plate (2) so as to be positioned between the burner plate (2) and each burner group (3) and that support the burner group (3) that is placed thereon.

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Description

A COOKTOP

[0001] The present invention relates to a cooktop comprising a burner connection element having a holder.

[0002] In state of the art embodiments, cooking devices comprise burner groups having at least one burner plate whereon cooking vessels, for example pots are placed and a plurality of burner heads that enable the vessels to be heated on the burner plate. The burner groups are placed into the respective housings on the burner plate by means of metal burner connection elements. In cooktops having metal burner plates, the burner groups are mounted after fixing the burner connection elements onto the burner plate by means of adhesive materials such as silicone.

[0003] During the use of the cooktop, the adhesive material used for mounting the burner connection element to the burner plate loses its adhesive properties over time, and therefore, the problem of disconnection of the burner connection element from the burner plate occurs.

[0004] In the state of the art United States Patent Application No. US2532461, a cooktop is disclosed, having a connection element for realizing the connection of the burner group.

[0005] The aim of the present invention is the realization of a cooktop wherein ease of assembly is provided.

[0006] The cooktop realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof comprises a burner plate having a flat surface and a plurality of cooking zones; a plurality of burner groups, each arranged in a cooking zone, enabling the flame to reach the vessel wherein the cooking occurs, and a plurality of burner connection elements that are arranged on the burner plate so as to be positioned between the burner plate and each burner group and that support the burner group placed thereon. In the mixing chamber arranged in the burner group , the flammable gas and the ambient air are mixed and the vessels placed on the burner head are heated with the flames coming out of the holes. The burner group is placed on the burner plate by means of the burner connection element.

[0007] The cooktop of the present invention comprises at least one holder that is arranged on the burner connection element and that is fitted into the housing so as to enable the burner connection element to be fixed on the burner plate; at least one opening that is arranged on the burner plate and through which the holder is passed, and at least one support that is arranged on the base of the burner plate and whereon the holder is placed when the burner connection element is placed on the burner plate. The holder disposed onto the burner connection element by welding is placed on the support so as to enable the burner connection element to be attached to the burner plate. Thus, the burner connection element is fixed to the burner plate without the need for using adhesives and the burner connection element is prevented from being dislodged from the burner plate during the use of the cooktop. Consequently, the safety of the cooktop is improved.

[0008] In an embodiment of the present invention, the cooktop comprises the burner connection element having the holder that is seated on the support by passing through the opening when rotated around the axis parallel to the burner plate after being placed on the burner plate. The burner connection element is placed onto the burner plate after the holder is aligned with opening. Thus, when the burner connection element is rotated after being placed on the burner plate, the holder is moved so as to be placed on the support arranged at the base of the burner plate.

[0009] In another embodiment of the present invention, the cooktop comprises the holder having a first arm that extends in a direction perpendicular to the base of the burner connection element and a second arm that extends from the first arm in a direction parallel to the base of the burner connection element. In this embodiment, the holder is L-shaped. By means of the first arm that extends from the burner connection element towards the burner plate, the second arm passes through the opening and extends towards the base of the burner plate.

[0010] In another embodiment of the present invention, the cooktop comprises the support that is arranged on the burner plate in an angled manner. The inclined structure of the support provides an inclined surface like a ramp

whereon the support can be moved. When the burner connection element is rotated, the holder moves in the rotation direction of the burner connection element and moves forward on the inclined surface of the support. As the holder moves forward on the support, the inclined surface of the support enables the holder to be moved both in the horizontal direction and in the vertical direction so as to move away from the burner plate. Thus, the vertical movement of the holder enables the burner connection element to be pressed towards the burner plate and a firm connection is provided between the burner plate and the burner connection element.

[0011] In another embodiment of the present invention, the holder is produced from an elastic material. The holder stretches while moving on the inclined surface of the support and enables the burner connection element to be pressed onto the burner plate with the vertical force the holder applies on the burner connection element.

[0012] In an embodiment of the present invention, the cooktop comprises at least one insulation element arranged on the burner connection element surface that is seated on the burner plate. When moved onto the support, the holder moves the burner connection element towards the burner plate, and thus, the insulation element is enabled to be squeezed between the burner connection element and the burner plate.

[0013] In another embodiment of the present invention, the cooktop comprises the support that is obtained by applying embossment on the surface of the burner plate. In this embodiment, the support is obtained during the production of the burner plate and formed by applying embossment on the sheet metal.

[0014] By means of the present invention, a cooktop is realized, wherein the burner connection element is fixed on the burner plate by means of the holders arranged thereon and ease of use is provided.

[0015] The cooktop realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

[0016] Figure 1 – is the perspective view of a cooktop comprising the burner connection element.

[0017] Figure 2 – is the perspective view of the burner plate and the burner connection element in an embodiment of the present invention.

[0018] Figure 3 – is the perspective view of burner connection element and the burner plate before the burner connection element is placed on the burner plate in another embodiment of the present invention.

[0019] Figure 4 – is the bottom view of the burner connection element and the burner plate before the burner connection element is placed on the burner plate in another embodiment of the present invention.

[0020] Figure 5 – is the perspective view of the burner connection element in another embodiment of the present invention.

[0021] Figure 6 - the bottom schematic view of the burner plate before the holder is placed on the support in another embodiment of the present invention.

[0022] Figure 7 - the bottom schematic view of the burner plate after the holder is placed on the support in another embodiment of the present invention.

[0023] The elements in the figures are numbered as follows:

1. Cooktop
2. Burner plate
3. Burner group
4. Burner connection element
5. Opening
6. Holder
7. Support
8. First arm
9. Second arm
10. Insulation element

[0024] The cooktop (1) comprises a burner plate (2) having a flat surface and a plurality of cooking zones; a plurality of burner groups (3), each arranged in a cooking zone, enabling the flame to reach the vessel wherein the cooking occurs, and a plurality of burner connection elements (4) that are arranged on the burner plate (2) so as to be positioned between the burner plate (2) and each burner group (3) and that support the burner group (3) that is placed thereon (Figure 1 and Figure 2).

[0025] The cooktop (1) of the present invention comprises

[0026] - at least one holder (6) that is arranged on the burner connection element (4) and that is fitted into an opening (5) so as to enable the burner connection element (4) to be fixed on the burner plate (2),

[0027] - at least one opening (5) that is arranged on the burner plate (2) and through which the holder (6) is passed,

[0028] - at least one support (7) that is arranged at the base of the burner plate (2) and whereon the holder (6) is seated when the burner connection element (4) is placed on the burner plate (2)

[0029] (Figure 1).

[0030] The burner group (3) that corresponds to each cooking zone on the burner plate (2) is mounted to the burner plate (2) by means of the burner connection element (4) that is fixed on the burner plate (2). The holder (6) arranged on the burner connection element (4) is passed through the opening (5) and seated on the support (7) disposed at the base of the burner plate (2) When the holder (6) is seated on the support (7) that extends outwards from the base of the burner plate (2), the holder (6) is prevented from moving in the vertical direction and thus, the burner connection element (4) is prevented from being dislodged from the burner plate (2).

[0031] In an embodiment of the present invention, the cooktop (1) comprises the burner connection element (4) having the holder (6) that is seated on the support (7) by passing through the opening (5) when rotated around the axis parallel to the burner plate (2) after being placed on the burner plate (2). In this embodiment, a plurality of holders (6) are arranged on the burner connection element (4) and a plurality of openings (5) and a plurality of supports (7) corresponding to each holder (6) are disposed on the burner plate (2). When the burner connection element (4) positioned on the burner plate (2) so as to be in parallel with the burner plate (2) is rotated around an axis parallel to the burner plate (2) and seated onto the burner plate (2), the holders (6) are fitted into the supports (7) by passing through the openings (5) (Figure 3 and Figure 4).

[0032] In another embodiment of the present invention, the cooktop (1) comprises the holder (6) having a first arm (8) that extends in a direction

perpendicular to the base of the burner connection element (4) and a second arm (9) that extends from the first arm (8) in a direction parallel to the base of the burner connection element (4). The second arm (9) on the holder (6) is fitted into the support (7) by passing through the opening (5). Thus, the holder (6) holds onto the base of the burner plate (2) by means of the second arm (9) and the burner connection element (4) is prevented from moving in the vertical direction (Figure 5).

[0033] In another embodiment of the present invention, the cooktop(1) comprises the support (7) that is arranged on the burner plate (2) in an angled manner. The support (7) extends outwards from the burner plate (2) surface in an angled manner and thus, an inclined surface whereon the holder (6) can move is formed. While moving forward along the inclined surface, the holder (6) moves away from the base of the burner plate (2) in the vertical direction. Thus, the holder (6) pulls the burner connection element (4) towards the burner plate (2) and forms a firm connection between the burner connection element (4) and the burner plate (2).

[0034] In another embodiment of the present invention, the holder (6) is produced from an elastic material. The holder (6) that is preferably produced from sheet metal stretches while moving on the support (7) and applies force on the burner connection element (4) towards the burner plate (2). Thus, the burner connection element (4) is pressed towards the burner plate (2) and the formation of a gap between the burner plate (2) and the burner connection element (4) is prevented.

[0035] In an embodiment of the present invention, the cooktop (1) comprises at least one insulation element (10) arranged on the burner connection element (4) surface that is seated on the burner plate (2). When the burner connection element (4) is placed on the burner plate (2), the insulation material (10) is squeezed between the burner connection element (4) and the burner plate (2). Thus, a leak-proof connection is provided between the burner connection element (4) and the burner plate (2) (Figure 4).

[0036] In another embodiment of the present invention, the cooktop (1) comprises the support (7) that is obtained on the burner plate (2) by embossment. In this embodiment, the support (7) is obtained during the production of the

burner plate (2) and formed by embossment applied on the sheet metal. Thus, the burner plate (2) and the support (7) are formed as single piece and ease of production is provided.

[0037] In the cooktop (1) of the present invention, the burner connection element (4) is fixed on the burner plate (2) by placing the holder (6) on the burner connection element (4) to the support (7) on the burner plate (2). Thus, the mounting of the burner connection element (4) to the burner plate (2) is facilitated.

Claims

1. A cooktop (1) **comprising** a burner plate (2) having a flat surface and a plurality of cooking zones; a plurality of burner groups (3), each arranged in a cooking zone, enabling the flame to reach the vessel wherein the cooking occurs, and a plurality of burner connection elements (4) that are arranged on the burner plate (2) so as to be positioned between the burner plate (2) and each burner group (3) and that support the burner group (3) that is placed thereon, **characterized by**

   - at least one holder (6) that is arranged on the burner connection element (4) and that is fitted into an opening (5) so as to enable the burner connection element (4) to be fixed on the burner plate (2),

   - at least one opening (5) that is arranged on the burner plate (2) and through which the holder (6) is passed,

   - at least one support (7) that is arranged at the base of the burner plate (2) and whereon the holder (6) is seated when the burner connection element (4) is placed on the burner plate (2).
2. A cooktop (1) as in Claim 1, **characterized by** the burner connection element (4) having the holder (6) that is seated on the support (7) by passing through the opening (5) when rotated around the axis parallel to the burner plate (2) after being placed on the burner plate (2).
3. A cooktop (1) as in Claim 1 or 2, **characterized by** the holder (6) having a first arm (8) that extends in a direction perpendicular to the base of the burner connection element (4) and a second arm (9) that extends from the first arm (8) in a direction parallel to the base of the burner connection element (4).
4. A cooktop (1) as in any one of Claims 1 to 3, **characterized by** the support (7) that is placed on the burner plate (2) in an angled manner.
5. A cooktop (1) as in Claim 4, **characterized by** the holder (6) that is produced from elastic material.
6. A cooktop (1) as in any one of the above claims, **characterized by** at least one insulation element (10) arranged on the burner connection element (4) surface that is seated on the burner plate (2).
7. A cooktop (1) as in any one of the above claims, **characterized by** the support (7) that is formed by applying embossment on the surface of the burner plate

(2).

Figure 1

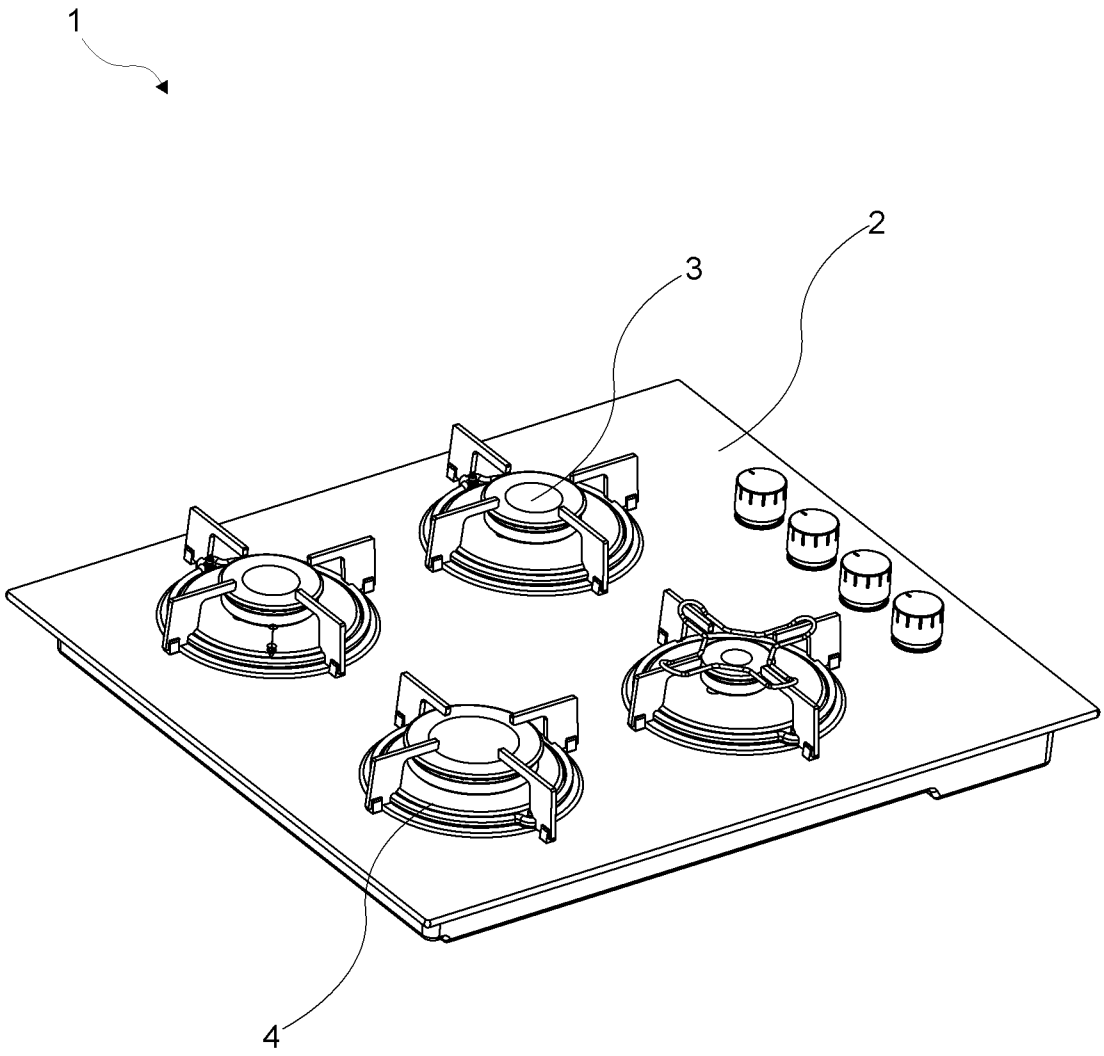


Figure 2

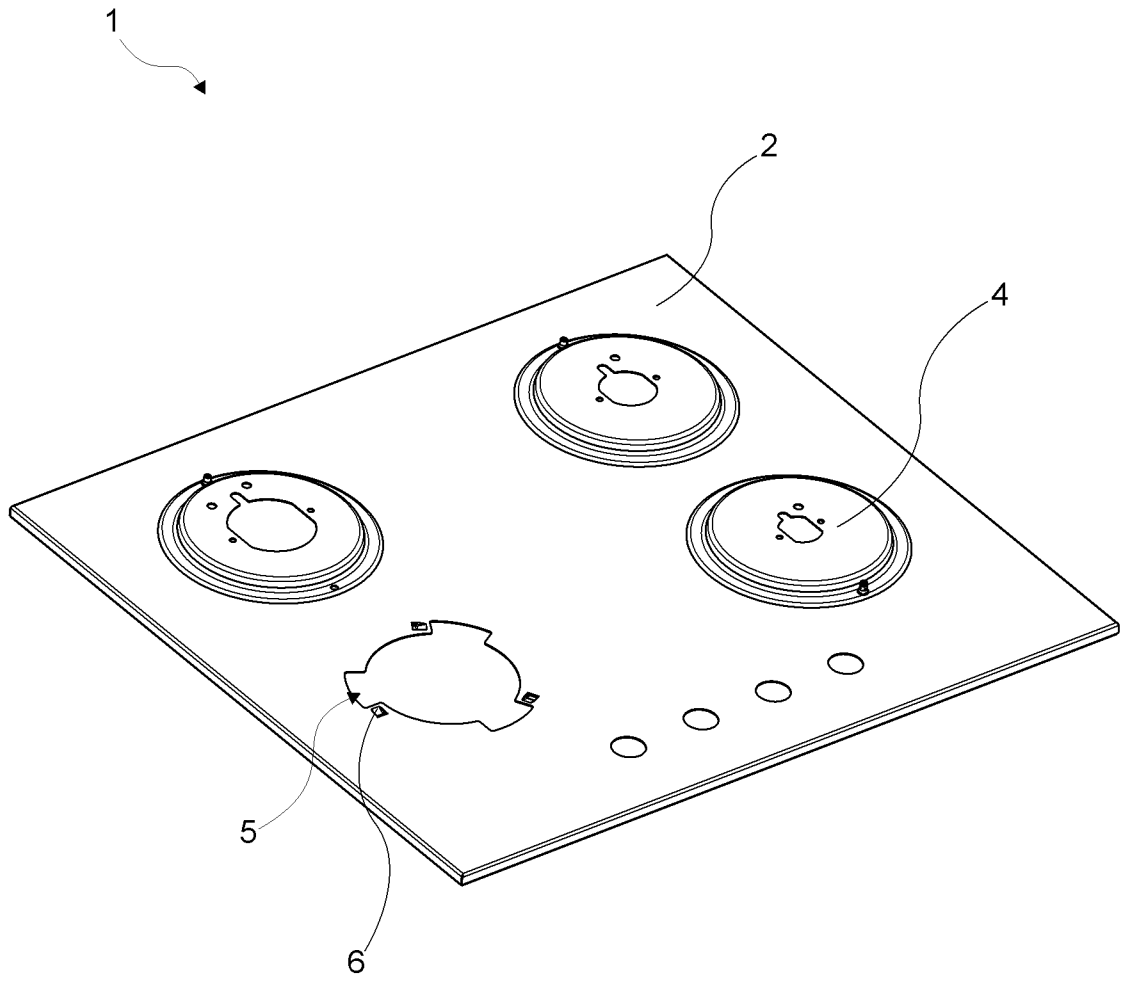


Figure 3

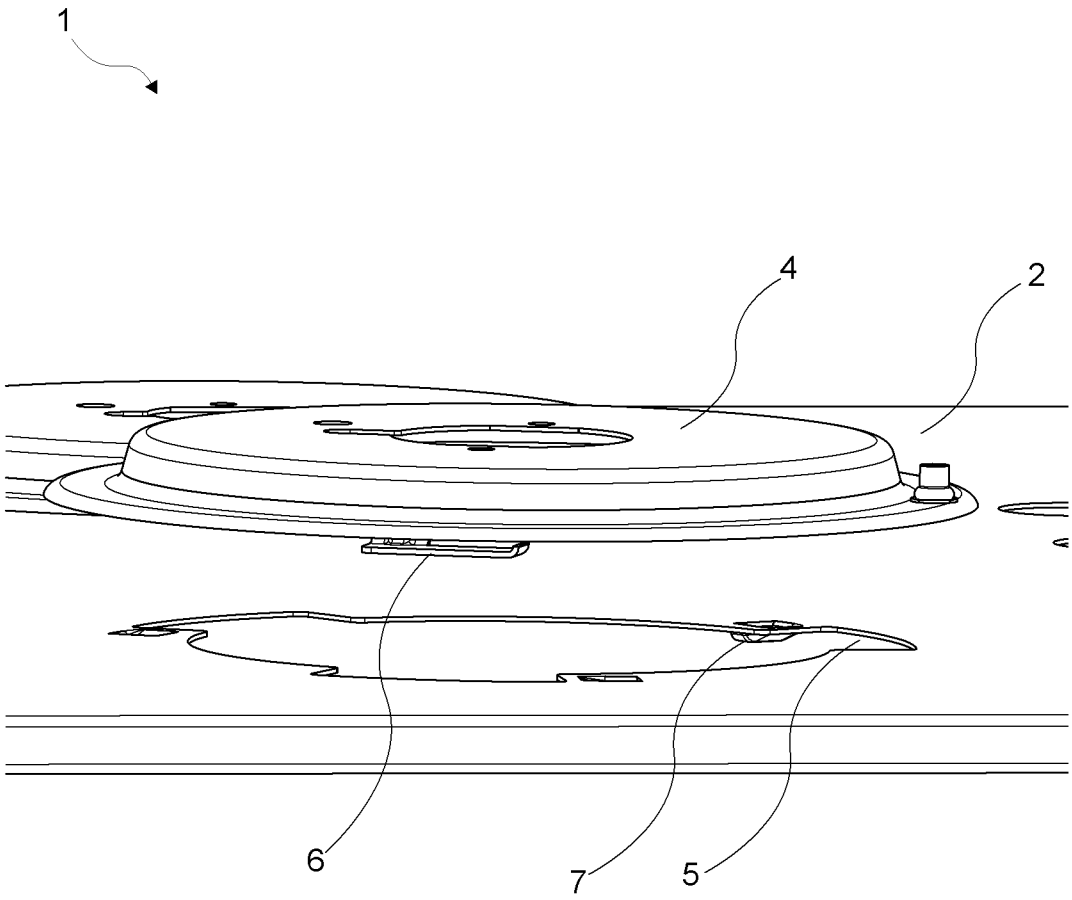


Figure 4

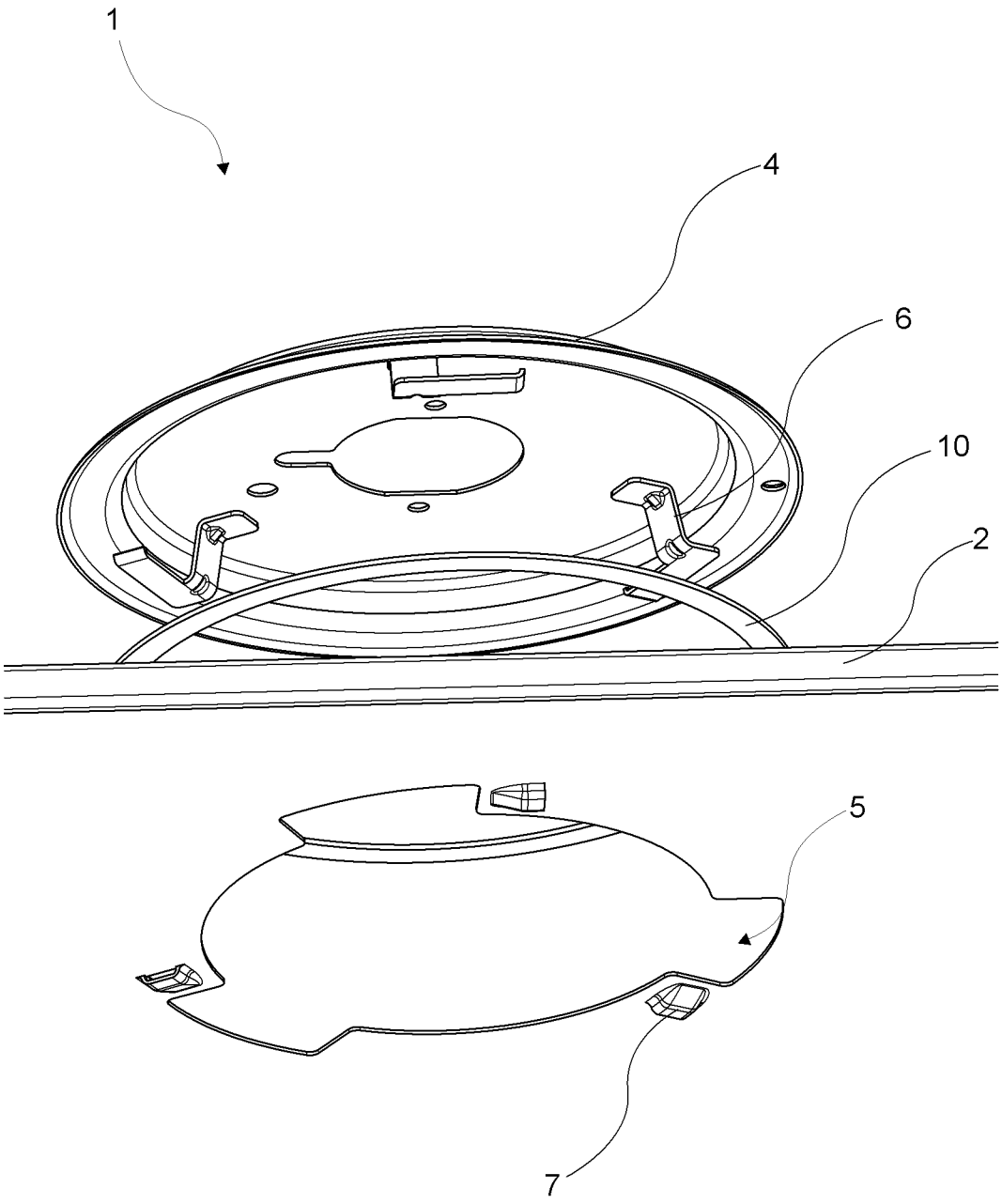


Figure 5

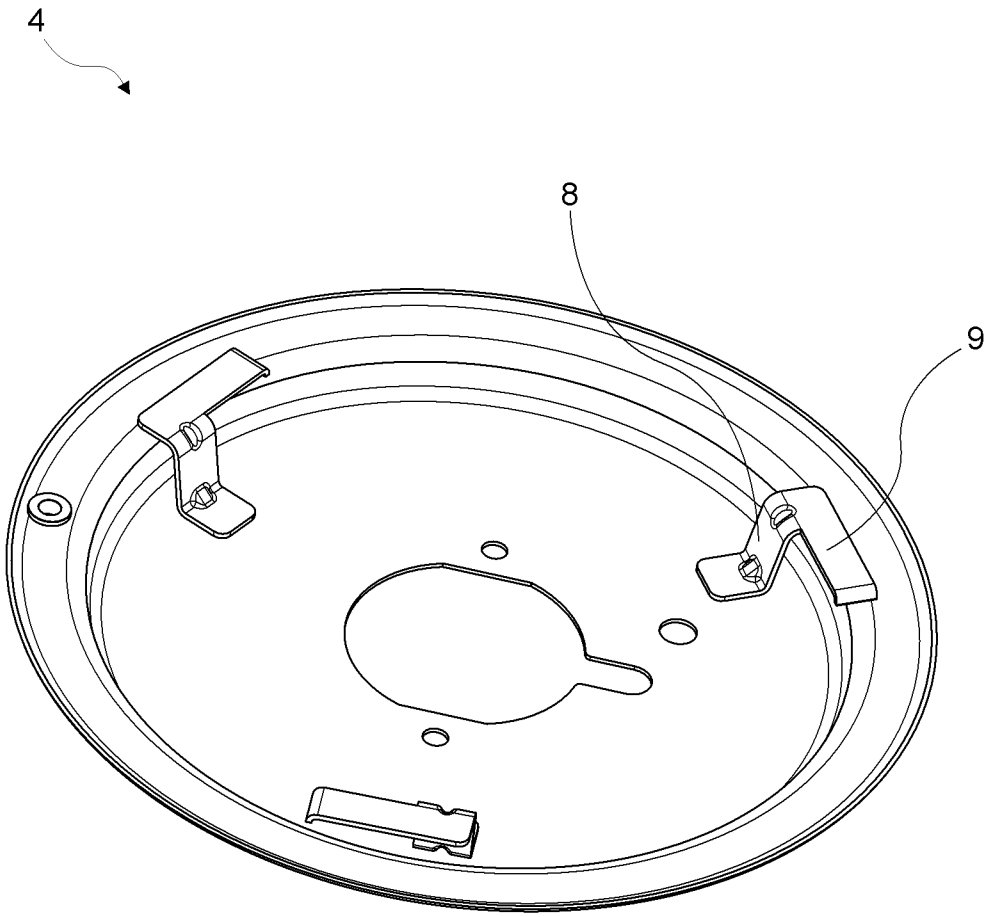


Figure 6

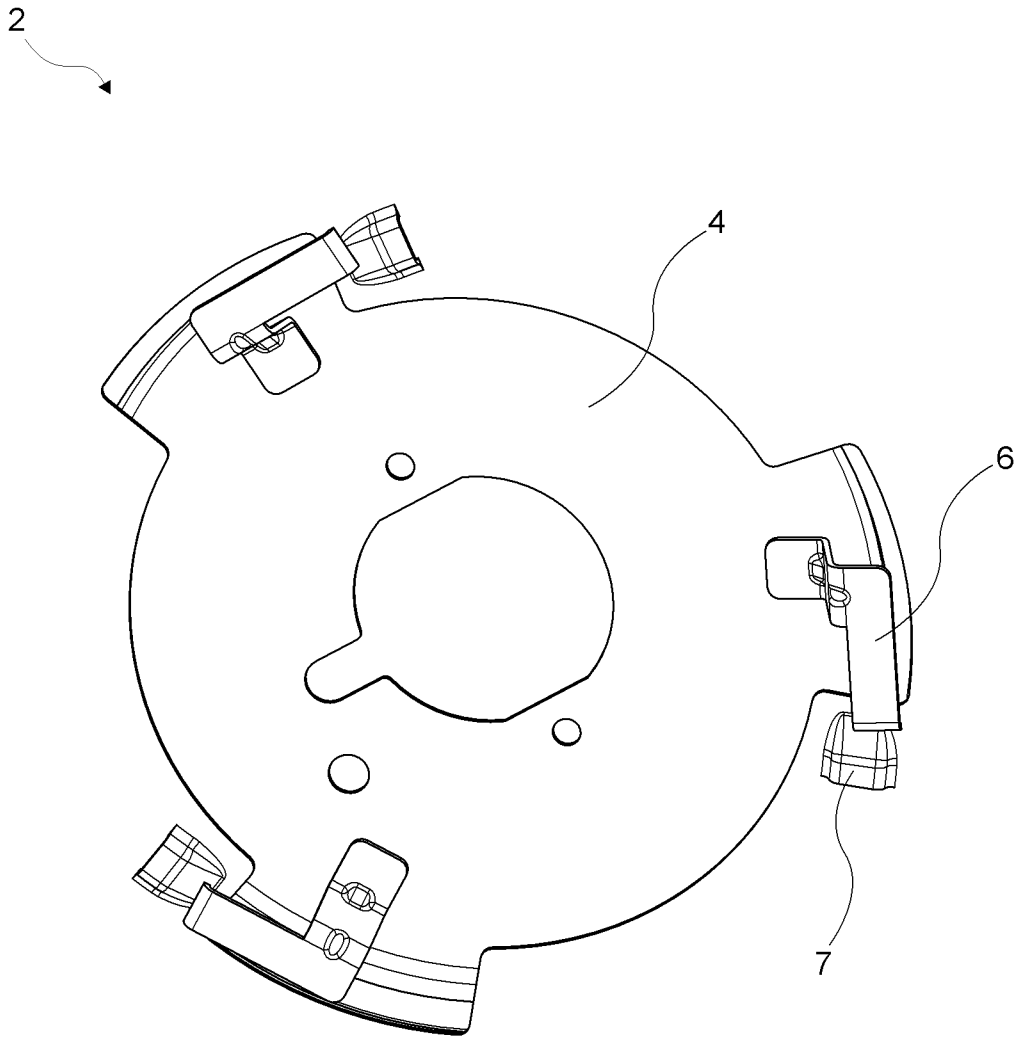
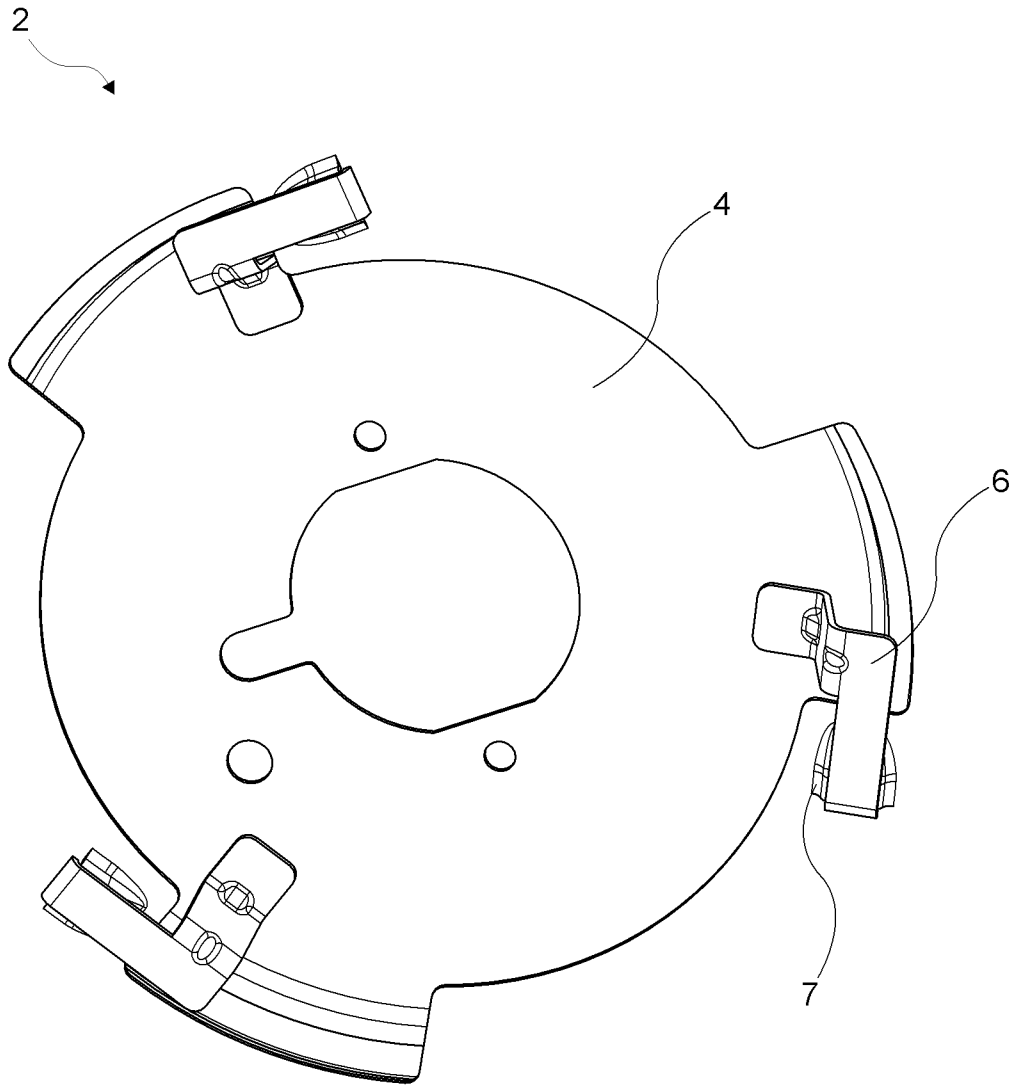


Figure 7



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/058311

A. CLASSIFICATION OF SUBJECT MATTER
INV. F24C3/08
ADD.

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

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)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 865 615 A (SIMPSON ANTHONY W [US] ET AL) 2 February 1999 (1999-02-02) Col 1, line 67-col. 2, line 2; col. 2, lines 63-65; figure 4	1-7
X	US 5 623 917 A (DINASO JOSEPH [US] ET AL) 29 April 1997 (1997-04-29) figure 10	1
A	EP 2 778 538 A1 (WHIRLPOOL CO [US]) 17 September 2014 (2014-09-17) figures	1-7
A	EP 1 406 043 A1 (BURNER SYSTEMS INT BSI [FR]) 7 April 2004 (2004-04-07) figure 2	1-7

☐ 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	Date of mailing of the international search report
1 June 2018	11/06/2018

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2018/058311

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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