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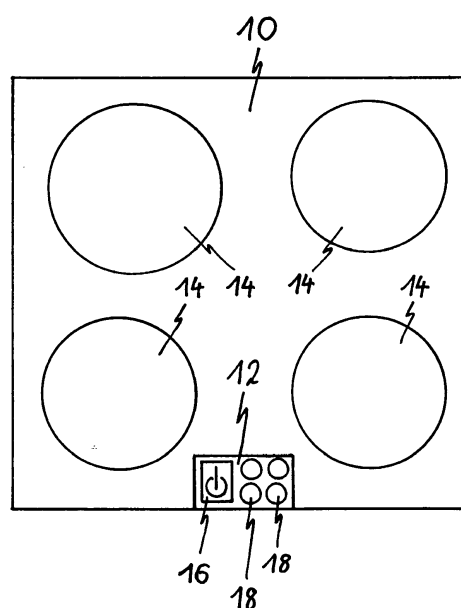
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(54) **An induction cooking hob with a pot detection device**

(57) The present invention relates to an induction cooking hob with a pot detection device. The induction cooking hob includes a cooking surface (10) comprising one or more cooking zones (14). Each cooking zone (14) comprises or corresponds with at least one induction coil. The induction cooking hob includes an input unit (12) and a display unit (12). The input unit (12) comprises an on-off key (18) for activating the pot detection device. The pot detection device is provided for identifying the cooking zone(s) (14) and/or induction coil(s) covered by a cooking vessel. The display unit (12) is provided for indicating the cooking zone(s) (14) and/or induction coil(s) covered by the cooking vessel. The input unit (12) comprises at least one power switch for a manual setting of the power to be supplied to the identified cooking zone (s) (14) and/or induction coil(s), respectively. Further, the present invention relates to a method for starting the operation of an induction cooking hob with a pot detection device.

FIG. 1



Description

[0001] The present invention relates to an induction cooking hob with a pot detection device. Further, the present invention relates to a method for starting the operation of an induction cooking hob with a pot detection device.

[0002] In an induction cooking hob, the pot detection device checks, if a cooking vessel is adapted to said induction cooking hob. The pot detection device further detects those cooking zones of the cooking hob, on which the cooking vessel is positioned. When the pot detection recognises that the cooking vessel is suitable for the induction cooking hob and placed in a correct position, then the selected power is supplied.

[0003] Normally, the user selects the desired power and places the cooking vessel on a cooking surface. Then, the power is automatically supplied to the cooking zone. However, there is time limit for placing the cooking vessel correctly on the cooking zone. If the user exceeds said time limit, then the power will not be supplied to the cooking zone. In this case, the user possibly does not recognise that no power is supplied to the cooking zone.

[0004] It is an object of the present invention to provide an induction cooking hob, which overcomes the above problems.

[0005] The object of the present invention is achieved by the induction cooking hob according to claim 1.

[0006] The present invention relates to an induction cooking hob with a pot detection device, wherein:

- the induction cooking hob includes a cooking surface comprising one or more cooking zones,
- each cooking zone comprises or corresponds with at least one induction coil,
- the induction cooking hob includes an input unit and a display unit,
- the input unit comprises an on-off key for activating the pot detection device,
- the pot detection device is provided for identifying the cooking zone(s) and/or induction coil(s) covered by a cooking vessel,
- the display unit is provided for indicating the cooking zone(s) and/or induction coil(s) covered by the cooking vessel, and
- the input unit comprises at least one power switch for a manual setting of the power to be supplied to the identified cooking zone(s) or induction coil(s), respectively.

[0007] The main idea of the present invention is that the power is manually set by the user, after the pot detection device has identified the cooking zone(s) and/or induction coil(s) covered by the cooking vessel. The on-off key activates only the pot detection device, but not the cooking zone(s) and/or induction coil(s). The cooking zone(s) and/or induction coil(s) are activated, when the user has manually set the power.

[0008] According to a preferred embodiment of the present invention the input unit and the display unit are formed as a touch screen.

[0009] Preferably, the display unit illustrates the cooking surface.

[0010] For example, the display unit comprises at least one symbol representing the cooking zone(s).

[0011] In particular, the power switch is integrated within or corresponds with the symbol representing the cooking zone(s). Further, the pot detection device may be provided for checking, if the cooking vessel placed on the cooking surface is adapted to the induction cooking hob.

[0012] For example, the pot detection device is provided for detecting a current through the induction coil(s).

[0013] Alternatively or additionally, the pot detection device may be provided for detecting a voltage at the induction coil(s).

[0014] Further, the pot detection device may be provided for detecting a phase shift of the current through and/or the voltage at the induction coil(s).

[0015] The object of the present invention is further achieved by the method according to claim 10.

[0016] The inventive method for starting the operation of an induction cooking hob with a pot detection device comprises the step of:

- activating the pot detection device after the induction cooking hob has been activated by a user,
- identifying the cooking zone(s) and/or induction coil(s) covered by a cooking vessel,
- indicating the cooking zone(s) and/or induction coil(s) covered by the cooking vessel by a display unit,
- inviting the user to set the power for the displayed cooking zone(s) and/or induction coil(s) by an input unit, and
- activating the cooking zone(s) and/or induction coil(s) with the power set by the user.

[0017] The core of the inventive method is that the power is manually set by the user, after the pot detection device has identified the cooking zone(s) and/or induction coil(s) covered by the cooking vessel.

[0018] In particular, the method is provided for the induction cooking hob with a pot detection device described above.

[0019] Novel and inventive features of the present invention are set forth in the appended claims.

[0020] The present invention will be described in further detail with reference to the drawings, in which

FIG 1 illustrates a top view of an induction cooking hob with four cooking zones according to a first embodiment of the present invention, and

FIG 2 illustrates a top view of the induction cooking hob with six cooking zones according to a second embodiment of the present invention.

[0021] FIG 1 illustrates a top view of an induction cooking hob with four cooking zones 14 according to a first embodiment of the present invention. The induction cooking hob includes a cooking surface 10 and an input and display unit 12.

[0022] In this embodiment, the cooking surface 10 comprises four cooking zones 14. In general, the cooking surface 10 may comprise an arbitrary number of cooking zones 14. Each cooking zone 14 includes or corresponds with one or more induction coils. Each induction coil is connected to a high-frequency generator and to a control unit. The induction coils of one cooking zone 14 may be arranged side-by-side or into each other.

[0023] In this example, the input and display unit 12 is a touch screen, so that the input area and display area are identical. Alternatively, the cooking hob may comprise an input unit and a display unit formed as separate components.

[0024] The cooking hob comprises a pot detection device for detecting a cooking vessel. The pot detection device recognises, if the cooking vessel is placed on the cooking surface 10. Further, the pot detection device determines the cooking zone 12, on which the cooking vessel is positioned. Moreover, the pot detection device ascertains if the cooking vessel is even suitable for the induction cooking hob. Preferably, the pot detection device is activated by pressing an on-off key 16.

[0025] The input and display unit 12 comprises a schematic picture of the cooking surface 10. The four cooking zones 14 are illustrated by corresponding symbols 18 on the input and display unit 12.

[0026] If a suitable cooking vessel is put onto the cooking surface 10 and the on-off key 16 is pressed by the user, then the pot detection device recognises said cooking vessel. After that, the input and display unit 12 indicates by illuminating the corresponding symbol 18 or symbols 18, which cooking zone 14 or cooking zones 14, respectively, is or are covered by said cooking vessel. Then, the user can set the power for said cooking zone 14 or cooking zones 14, respectively, by touching an according key of the input and display unit 12. For example, the key or keys for setting the power is or are arranged within the corresponding symbol 18. Only those induction coils covered by the cooking vessel are activated. If the cooking vessel covers two cooking zones 14, then the according induction coils are activated.

[0027] When the cooking vessel is removed from the cooking surface 10, then the induction coils are deactivated. For a predetermined period of time, the pot detection device is activated again. If the cooking vessel is placed on the substantially same position again, then the induction coils are activated in the same way.

[0028] If the cooking zone 14 is partially covered by the cooking vessel and an addition cooking vessel is placed within the same cooking zone 14, then the pot detection device indicates that a new cooking vessel is present. Now, the user has to set the power for the induction coils covered by said new cooking vessel.

[0029] FIG 2 illustrates a top view of the induction cooking hob with six cooking zones 14 according to a second embodiment of the present invention. This induction cooking hob also includes the cooking surface 10 and the input and display unit 12. In this embodiment, the cooking surface 10 comprises six cooking zones 14. Accordingly, the input and display unit 12 comprises a schematic picture of the cooking surface 10, wherein the six cooking zones 14 are illustrated by six corresponding symbols 18.

[0030] Although illustrative embodiments of the present invention have been described herein with reference to the accompanying drawings, it is to be understood that the present invention is not limited to that precise embodiments, and that various other changes and modifications may be affected therein by one skilled in the art without departing from the scope or spirit of the invention. All such changes and modifications are intended to be included within the scope of the invention as defined by the appended claims.

[0031] List of reference numerals

- 10 cooking surface
- 12 input and display unit
- 14 cooking zone
- 16 on-off key
- 18 symbol

Claims

1. An induction cooking hob with a pot detection device, wherein:
 - the induction cooking hob includes a cooking surface (10) comprising one or more cooking zones (14),
 - each cooking zone (14) comprises or corresponds with at least one induction coil,
 - the induction cooking hob includes an input unit (12) and a display unit (12),
 - the input unit (12) comprises an on-off key (18) for activating the pot detection device,
 - the pot detection device is provided for identifying the cooking zone(s) (14) and/or induction coil(s) covered by a cooking vessel,
 - the display unit (12) is provided for indicating the cooking zone(s) (14) and/or induction coil(s) covered by the cooking vessel, and
 - the input unit (12) comprises at least one power switch for a manual setting of the power to be supplied to the identified cooking zone(s) (14) and/or induction coil(s), respectively.

2. The induction cooking hob according to claim 1,
characterized in, that
the input unit (12) and the display unit (12) are formed
as a touch screen. 5
3. The induction cooking hob according to claim 1 or 2,
characterized in, that
the display unit (12) illustrates the cooking surface
(10). 10
4. The induction cooking hob according to any one of
the preceding claims,
characterized in, that
the display unit (12) comprises at least one symbol
(18) representing the cooking zone(s) (14). 15
5. The induction cooking hob according to any claim 4,
characterized in, that
the power switch is integrated within or corresponds
with the symbol (18) representing the cooking zone
(s) (14). 20
6. The induction cooking hob according to any one of
the preceding claims,
characterized in, that 25
the pot detection device is provided for checking, if
the cooking vessel placed on the cooking surface is
adapted to the induction cooking hob.
7. The induction cooking hob according to any one of 30
the preceding claims,
characterized in, that
the pot detection device is provided for detecting a
current through the induction coil(s). 35
8. The induction cooking hob according to any one of
the preceding claims,
characterized in, that
the pot detection device is provided for detecting a
voltage at the induction coil(s). 40
9. The induction cooking hob according to any one of
the preceding claims,
characterized in, that 45
the pot detection device is provided for detecting a
phase shift of the current through and/or the voltage
at the induction coil(s).
10. A method for starting the operation of an induction
cooking hob with a pot detection device, wherein said 50
method comprises the step of:
- activating the pot detection device after the in-
duction cooking hob has been activated by a
user, 55
 - identifying the cooking zone(s) (14) and/or in-
duction coil(s) covered by a cooking vessel,
 - indicating the cooking zone(s) (14) and/or in-
- duction coil(s) covered by the cooking vessel by
a display unit (12),
- inviting the user to set the power for the dis-
played cooking zone(s) (14) and/or induction
coil(s) by an input unit (12), and
- activating the cooking zone(s) (14) and/or in-
duction coil(s) with the power set by the user.
11. The method according to claim 10,
characterized in, that
the method is provided for the induction cooking hob
with a pot detection device according to any one of
the claims 1 to 9.

FIG. 1

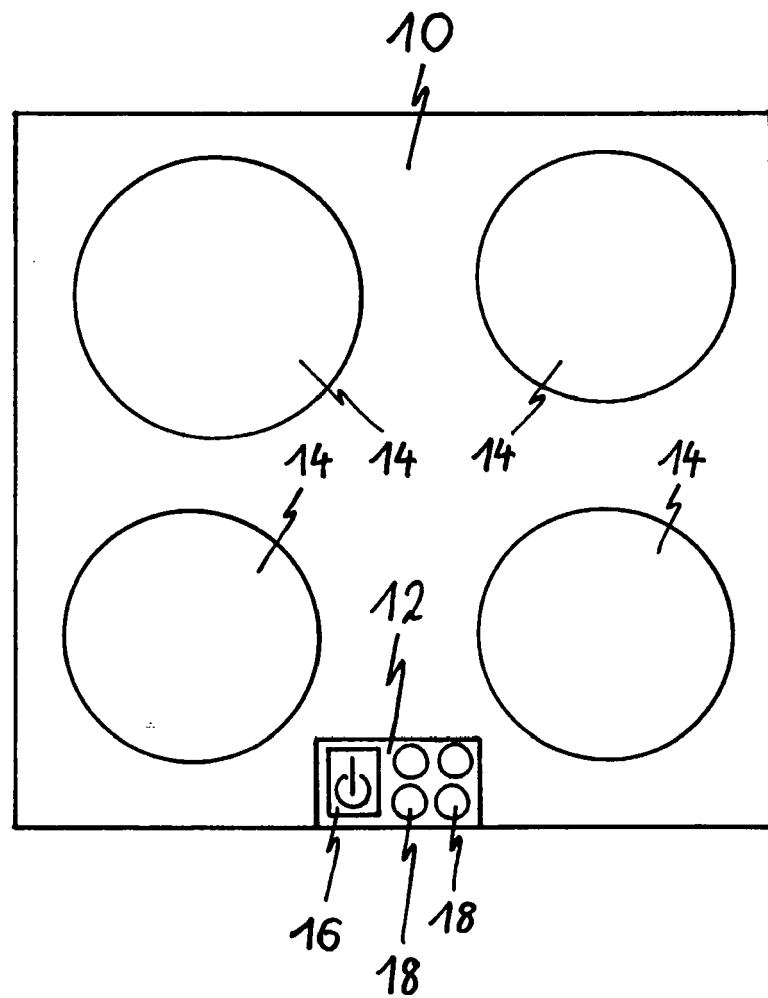
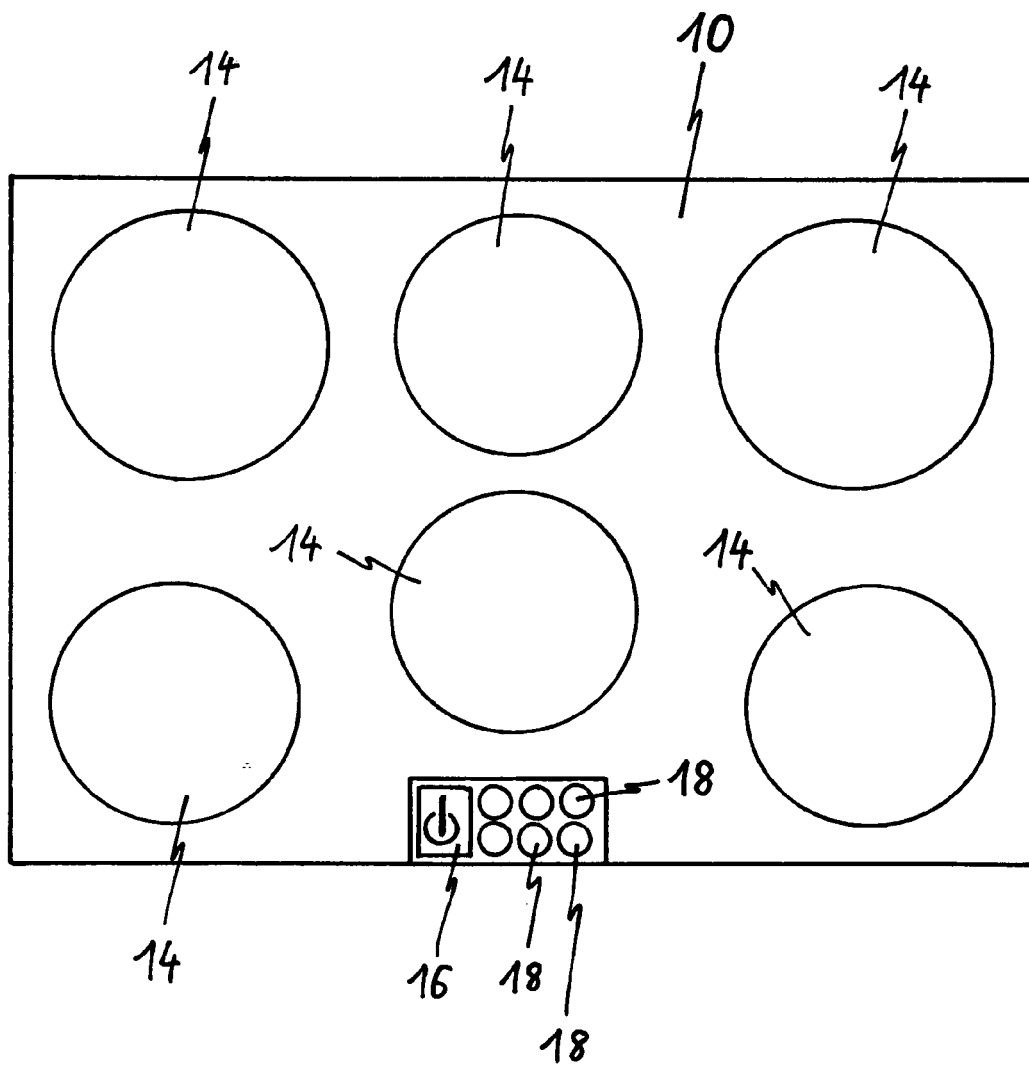


FIG. 2





EUROPEAN SEARCH REPORT

Application Number
EP 11 00 2525

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 863 039 A1 (BRANDT IND [FR]) 3 June 2005 (2005-06-03) * page 2, line 24 - line 32 * * page 4, line 18 - line 28 * * page 5, line 12 - line 24 * * page 6, line 26 - page 7, line 16 * * page 15, line 19 * * figure 1 *	1-11	INV. H05B6/12
X	WO 2009/053279 A1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]; CASANOVA LACUEVA DAVID [ES]; GARDE) 30 April 2009 (2009-04-30) * page 1, line 25 - page 2, line 11 * * page 3, line 25 - page 4, line 20 * * page 5, line 14 - page 7, line 17 * * page 9, line 10 - line 23 * * figure 2 *	1-11	
			TECHNICAL FIELDS SEARCHED (IPC)
			H05B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 5 September 2011	Examiner Pierron, Christophe
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 11 00 2525

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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