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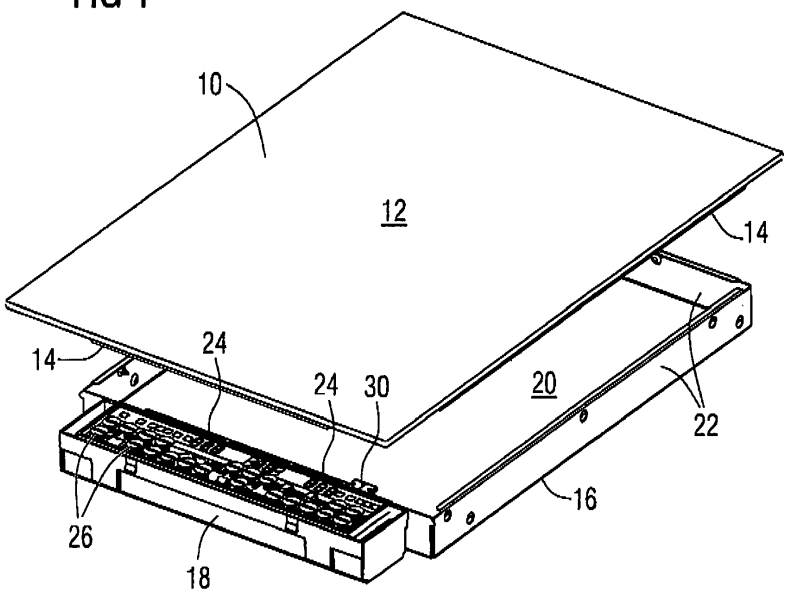
(54) **A cooking hob with one or more heating systems**

(57) The present invention relates to a cooking hob with one or more heating systems. The cooking hob includes at least one upper part (10) provided for supporting cookware and/or food stuff, and at least one lower part (16) provided for containing at least one heating element inside said lower part (16). The at least one lower part (16) is arranged below the at least one upper part (10). The cooking hob includes at least one housing (18) provided for containing at least one control unit, at least one display (24) and/or control elements (26). The at least one housing (18) is arranged at the side of or adjacent to the at least one lower part (16) and below the at least one upper part (10). The at least one housing (18) is attached at a side wall (22) of the at least one lower part (16).

FIG 1



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Description

[0001] The present invention relates to a cooking hob with one or more heating systems.

[0002] Some cooking hobs, which are part of a modular range of hobs, comprise different kinds of heating systems and/or heating elements, e.g. induction coils, radiant heating elements, woks and/or teppans. Usually, said heating systems correspond with separate control units, displays and control elements. This structure causes a cooking hob with a high number of parts. Such kind of cooking hob is very complex.

[0003] It is an object of the present invention to provide a cooking hob provided for one or more heating systems, wherein said cooking hob comprises a low number of parts and wherein heat sensitive elements of the cooking hob are protected from heat and/or humidity.

[0004] The object of the present invention is achieved by the cooking hob according to claim 1.

[0005] The cooking hob according to the present invention is provided with one or more heating systems, wherein:

- the cooking hob includes at least one upper part provided for supporting cookware and/or food stuff,
- the cooking hob includes at least one lower part provided for containing at least one heating element inside said lower part,
- the at least one lower part is arranged below the at least one upper part,
- the cooking hob includes at least one housing provided for containing at least one control unit, at least one display and/or control elements,
- the at least one housing is arranged at the side of or adjacent to the at least one lower part and below the at least one upper part, and
- the at least one housing is attached at a side wall of the at least one lower part.

[0006] The main idea of the present invention is the separate arrangement of the heating elements on the one hand and the control units, displays and/or control elements on the other hand in the lower part and the housing, respectively. The separate housing protects the control units, displays and/or control elements from heat, wetness and humidity. Further, the lower part and the housing are arranged side-by-side and below the upper part, so that the cooking hob has a compact form.

[0007] According to a preferred embodiment of the present invention the at least one upper part includes a glass-ceramic panel. The glass-ceramic panel allows a flat form of the cooking hob and contributes to compact form of the cooking hob.

[0008] Further, the at least one upper part includes frame elements, fixing springs and/or fixing snaps at its lower side for fixing the at least one lower part. The frame elements, the fixing springs and/or the fixing snaps are simply mountable.

[0009] Preferably, the at least one lower part includes a bottom part and four side walls, so that the lower part is formed as a box with an open top side. The lower part provides a closed casing together with the upper part.

[0010] In particular, the at least one lower part is made of metal sheets. The metal sheets are heat resistant.

[0011] Further, the at least one housing includes a bottom part and four side walls, so that the housing is formed as a box with an open top side. The housing provides an efficient protection for the control units, displays and/or control elements.

[0012] Preferably, the at least one housing is made of plastics.

[0013] For example, the at least one housing is attached by at least one hook at the side wall of the at least one lower part. Alternatively, the housing is attached by screws at the side wall of the lower part.

[0014] Further, the side wall of the at least one lower part includes at least one recess for inserting the at least one hook of the housing.

[0015] In order to connect the lower part and the upper part, the side walls of the lower part are connected to the frame elements by screws or by spring elements or by snap elements.

[0016] At last, the frame elements may be glued at a lower side of the glass-ceramic panel.

[0017] The novel and inventive features believed to be the characteristic of the present invention are set forth in the appended claims.

[0018] The invention will be described in further detail with reference to the drawings, in which

FIG 1 illustrates a schematic perspective exploded view of a cooking hob according to a preferred embodiment of the present invention,

FIG 2 illustrates a schematic perspective view of a lower part of the cooking hob according to the preferred embodiment of the present invention,

FIG 3 illustrates a schematic perspective view of a housing for the cooking hob according to the preferred embodiment of the present invention, and

FIG 4 illustrates a schematic exploded side view of the cooking hob according to the preferred embodiment of the present invention.

[0019] FIG 1 illustrates a schematic perspective exploded view of a cooking hob according to a preferred embodiment of the present invention. The cooking hob includes an upper part 10, a lower part 16 and a housing 18.

[0020] The upper part 10 of the cooking hob comprises a glass-ceramic panel 12 and four frame elements 14. The frame elements 14 are attached at the bottom side of the glass-ceramic panel 12. The frame elements 14

form substantially a rectangle at the bottom side of the glass-ceramic panel 12. In this example, the frame elements 14 are formed as L-shaped profile parts made of metal. The glass-ceramic panel 12 covers the lower part 16 of the cooking hob and the housing 18.

[0021] The lower part 16 of the cooking hob comprises a bottom part 20 and four side walls 22. The lower part 16 is formed as a flat box with an open top side. The bottom part 20 and the side walls 22 are formed as metal sheets. The lower part 16 of the cooking hob contains heating elements, which are not shown in FIG 1.

[0022] The housing 18 is arranged besides the lower part 16 and below the upper part 10. The housing 18 is attached at one of the side walls 22 of the lower part 16. In this example, housing 18 is suspended at the side wall 22 by a hook 30, wherein said hook 30 is inserted in a recess of the side wall 22. Alternatively, the housing 18 may be attached at the side wall 22 by screws or rivets.

[0023] Displays 24 and control elements 26 are arranged within the housing 18. The displays 24 are provided to indicate the status of corresponding heating elements within the lower part 16. The control elements 26 are provided to activate and deactivate said heating elements by the user. Further, one or more control circuits are arranged in the housing 18 below the displays 24 and/or the control elements 26. The control circuits are provided to control the heating elements.

[0024] FIG 2 illustrates a schematic perspective view of the lower part 16 of the cooking hob according to the preferred embodiment of the present invention. FIG 2 shows the bottom part 20 and the four side walls 22 of the lower part 16. FIG 2 clarifies that the lower part 16 is formed as a flat box with an open top side.

[0025] The housing 18 is attached at one of the four side walls 22 of the lower part 16. In FIG 2 the housing 18 is attached at the rear side wall 22 of the lower part 16. The housing 18 is attached at the side wall 22 by two hooks 30. Said hooks 30 are inserted top down into corresponding recesses of the rear side wall 22.

[0026] The displays 24 and the control elements 26 of the cooking hob are arranged within the housing 18. The one or more control circuits are arranged in the housing 18 below the displays 24 and/or the control elements 26.

[0027] FIG 3 illustrates a schematic perspective view of the housing 18 for the cooking hob according to the preferred embodiment of the present invention. FIG 3 shows the empty housing 18 without any displays 24, control elements 26 and control circuits.

[0028] FIG 3 clarifies that the housing 18 is formed as a box with an open top side. In this example, the housing 18 is formed as a single-piece part and made of plastics. The hooks 30 are arranged at an outer side of a rear side wall of the housing 18. Said rear side wall of the housing 18 is provided to lie against the corresponding side wall 22 of the lower part 16. A recess 28 is formed in said rear side wall of the housing 18. The recess 28 is provided for electric cables between the heating elements in the lower part 16 on the one hand and the displays 24, control elements 26 and/or control circuits on the other hand.

[0029] At an outer side of a front side wall of the housing 18 further hooks 38 are arranged. In this example, two further hooks 38 are formed at the outer side of the front side wall of the housing 18. Said further hooks 38 can be connected with the corresponding frame element 14 attached at the lower side of the glass ceramic panel 12.

[0030] Since the side wall of the housing 18 lies against the side wall 22 of the lower part 16, a double side wall is arranged between the heating elements on the one hand and the displays 24, control elements 26 and/or control circuits on the other hand. Thus, the displays 24, the control elements 26 and/or the control circuits are protected against heat. Since the housing 18 is formed as single-piece part and made of plastics, the displays 24, the control elements 26 and/or the control circuits are protected against humidity and wetness.

[0031] All necessary electronic components of the cooking hob may be arranged within the housing 18. The housing 18 may contain several layers 40 and 42 of electric and/or electronic components. In this example, the housing 18 contains a first layer 40 and a second layer 42. The electric and/or electronic components are arranged at the layers 40 and 42. In general, the housing 18 may contain one or more layers 40 and 42.

[0032] FIG 4 illustrates a schematic exploded side view of the cooking hob according to the preferred embodiment of the present invention. FIG 4 clarifies that the glass-ceramic panel 12 covers the lower part 16 as well as the housing 18.

[0033] In this example, the frame elements 14 comprise round holes 34 and slot holes 36, and the side walls 22 comprise corresponding screw holes 32. The round holes 34, slot holes 36 and the screw holes 32 allow a connection between the upper part 10 and the lower part 16 by screws. Alternatively, the round holes 34 and/or slot holes 36 may be arranged in the side walls 22 of the lower part 16, and the corresponding screw holes 32 may be arranged in the frame elements 14.

[0034] The frame elements 14 are formed as L-shaped profile parts and glued at the lower side of the glass-ceramic panel 12. In this example, the horizontal circumference of the frame formed by the frame elements 14 is marginally bigger than the horizontal circumference of the lower part 16 and the attached housing 18.

[0035] FIG 4 clarifies that the housing 18 and the lower part 16 have substantially the same height. Thus, the upper part 10, the lower part 16 and the housing 18 form a compact cooking hob. Said cooking hob requires only few materials.

[0036] The cooking hob according to the present invention may comprise several lower parts 16 arranged side-by-side and directly below the upper part 10. In this case, one or more housings 18 may be arranged beside the lower parts 16 and also directly below the upper part 10.

[0037] The present invention is particularly suitable for large cooking hobs and/or for cooking hobs with different

heating systems, e.g. induction coils, radiant heating elements, woks and/or teppans. Further, the present invention is also suitable for a range of hobs, wherein each may comprise a different heating system. For example, the upper part 10 may comprise grill plates made of iron or steel. Said iron or steely grill plates may be arranged beside or within the glass-ceramic panel.

[0038] Although an illustrative embodiment of the present invention has been described herein with reference to the accompanying drawings, it is to be understood that the present invention is not limited to that preferred embodiment, 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.

List of reference numerals

[0039]

10	upper part
12	glass-ceramic panel
14	frame element
16	lower part
18	housing
20	bottom part
22	side wall
24	display
26	control element
28	recess
30	hook
32	screw hole
34	round hole
36	slot hole
38	further hook
40	first layer
42	second layer

Claims

1. A cooking hob with one or more heating systems, wherein:

   - the cooking hob includes at least one upper part (10) provided for supporting cookware and/or food stuff,
   - the cooking hob includes at least one lower part (16) provided for containing at least one heating element inside said lower part (16),
   - the at least one lower part (16) is arranged below the at least one upper part (10),
   - the cooking hob includes at least one housing (18) provided for containing at least one control unit, at least one display (24) and/or control elements (26),
   - the at least one housing (18) is arranged at the side of or adjacent to the at least one lower part (16) and below the at least one upper part (10), and
   - the at least one housing (18) is attached at a side wall (22) of the at least one lower part (16).

2. The cooking hob according to claim 1,
characterized in, that
the at least one upper part (10) includes a glass-ceramic panel (12).

3. The cooking hob according to claim 1 or 2,
characterized in, that
the at least one upper part (10) includes frame elements (14), fixing springs and/or fixing snaps at its lower side for fixing the at least one lower part (16).

4. The cooking hob according to any one of the preceding claims,
characterized in, that
the at least one lower part (16) includes a bottom part (20) and four side walls (22), so that the lower part (16) is formed as a box with an open top side.

5. The cooking hob according to any one of the preceding claims,
characterized in, that
the at least one lower part (16) is made of metal sheets.

6. The cooking hob according to any one of the preceding claims,
characterized in, that
the at least one housing (18) includes a bottom part and four side walls, so that the housing (18) is formed as a box with an open top side.

7. The cooking hob according to any one of the preceding claims,
characterized in, that

the at least one housing (18) is made of plastics.

8. The cooking hob according to any one of the preceding claims,
characterized in, that
the at least one housing (18) is attached by at least one hook (30) at the side wall (22) of the at least one lower part (16).

9. The cooking hob according to claim 8,
characterized in, that
the side wall (22) of the at least one lower part (16) includes at least one recess (28) for inserting the at least one hook (30) of the housing (18).

10. The cooking hob according to any one of the claims 4 to 9,
characterized in, that
the side walls (22) of the lower part (16) are connected to frame elements (14) by screws, hooks, springs and/or snaps.

11. The cooking hob according to any one of the claims 2 to 10,
characterized in, that
the frame elements (14) are glued at a lower side of the glass-ceramic panel (12).

FIG 1

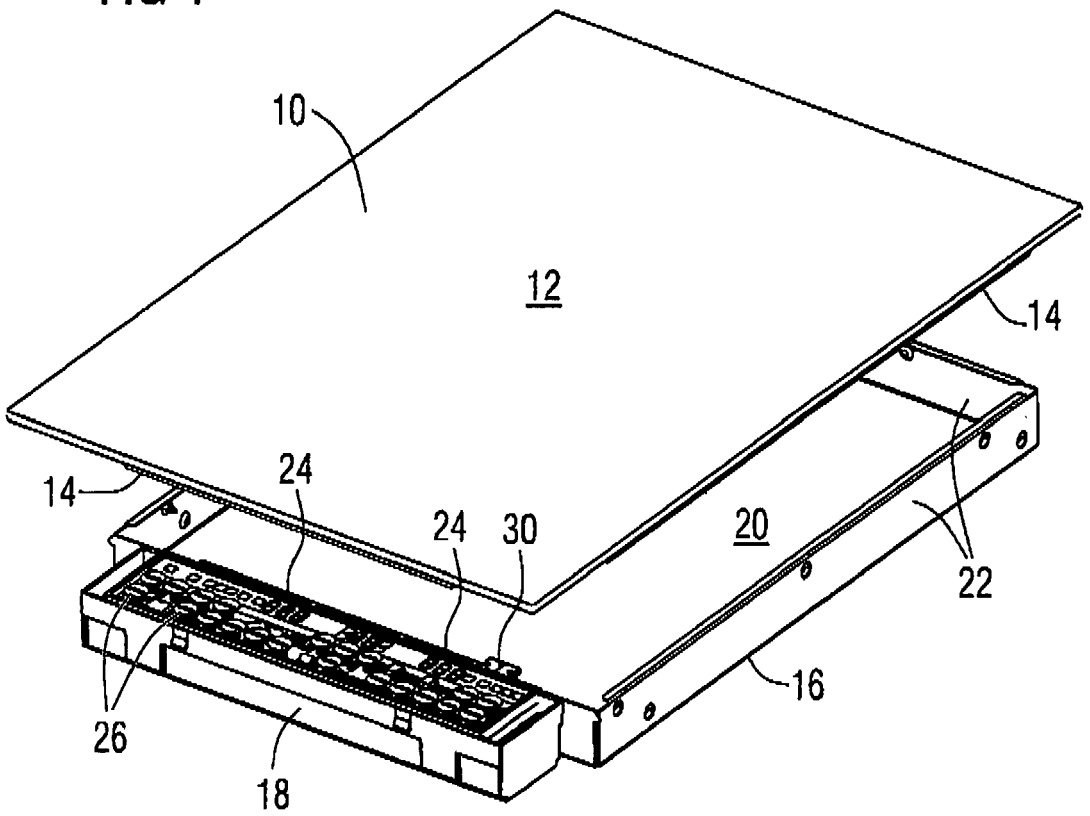


FIG 2

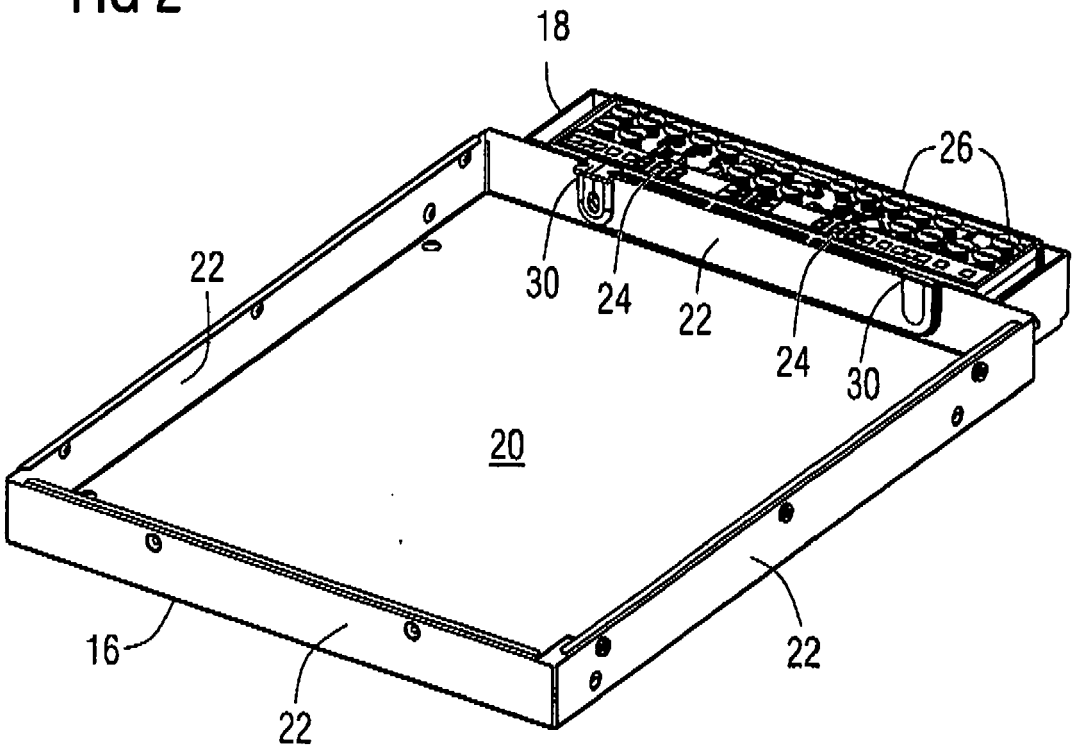


FIG 3

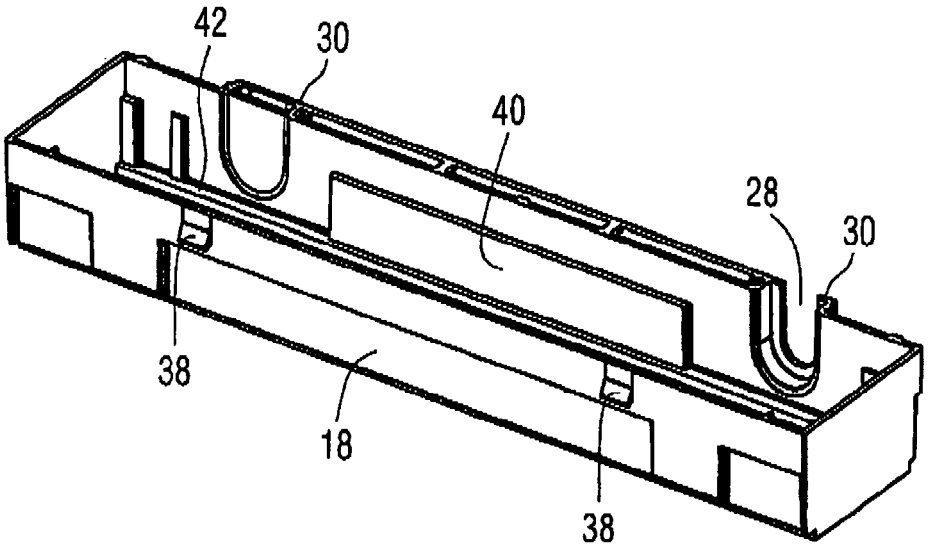
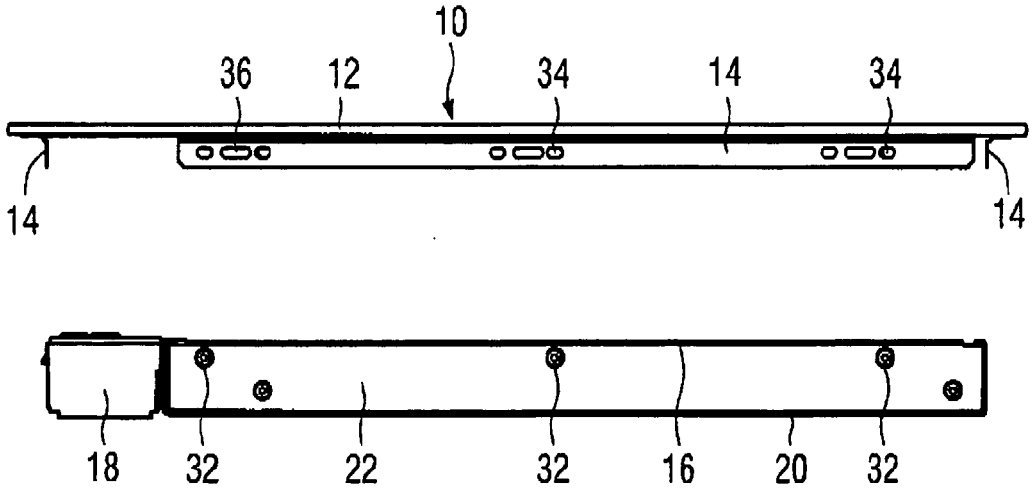


FIG 4



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EUROPEAN SEARCH REPORT

Application Number
EP 10 00 6213

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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	23 August 2010	Rodriguez, Alexander

CATEGORY OF CITED DOCUMENTS

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EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims

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The Hague	23 August 2010	Rodriguez, Alexander

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