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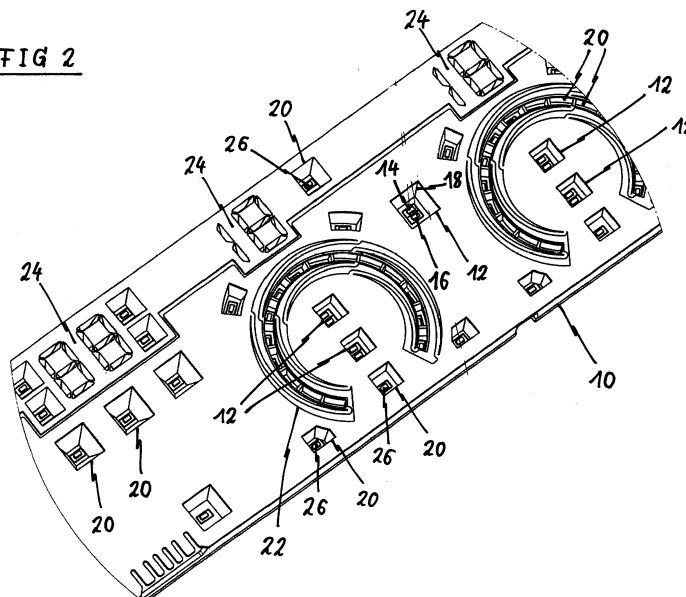
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(54) USER INTERFACE FOR A DOMESTIC APPLIANCE

(57) The present invention relates to a user interface (10) for a domestic appliance, in particular for a cooking hob. The user interface (10) comprises at least one control element (22) and at least one illumination unit (12, 20) and/or display unit. The illumination unit (12, 20) and/or display unit are provided for generating alternately at least two light signals of different colours. One or more illumination units (12, 20) and/or display units cor-

respond with one control element (22). The light signals represent a switching status of the control element (22). The illumination unit (12, 20) includes either at least two light source elements (14, 16) of different colours or one light source element (26) generating alternately at least two different colours. The illumination unit (12, 20) includes a light funnel (18) for receiving the light source elements (14, 16; 26).

FIG 2**EP 3 270 065 A1**

Description

[0001] The present invention relates to a user interface for a domestic appliance, in particular for a cooking hob. Further, the present invention relates to a domestic appliance.

[0002] The user interfaces for domestic appliances comprise a lot of control elements and indicators. Therefore, the user interface requires a large area for said control elements and indicators. The arrangement of the control elements and indicators on the user interface should have a clear structure, so that the user can easily operate the user interface. Further, the user should easily recognize the operational state of the domestic appliance and the current switching statuses of the control elements. However, it is often difficult for the user to recognize the current switching status of each control element.

[0003] It is an object of the present invention to provide a user interface for a domestic appliance, which allows a clear representation of the control elements and comprises a compact design.

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

[0005] According to the present invention a user interface for a domestic appliance, in particular for a cooking hob, is provided, wherein

- the user interface comprises at least one control element,
- the user interface comprises at least one illumination unit and/or display unit,
- the illumination unit and/or display unit are provided for generating alternately at least two light signals of different colours,
- one or more illumination units and/or display units correspond with one control element,
- the light signals represent a switching status of the control element, and
- the illumination unit includes either at least two light source elements of different colours or one single light source element generating alternately at least two different colours.

[0006] The core of the present invention is the multi-coloured representation of the control elements and the switching statuses of said control elements. Said multi-coloured representation requires only a little space and allows a compact design of the user interface. The multi-coloured representation provides very clear information to the user. The light signals indicate the current switching status of the control element on the one hand and show always the position of said control element on the other hand.

[0007] For example, the illumination unit may include a light funnel for receiving the light source elements.

[0008] Further, the display unit may include at least one TFT device and/or LCD device. The TFT device and/or LCD device allow the representation of different

colours by low complexity.

[0009] Preferably, the at least two light source elements of one illumination unit are light emitting diodes, wherein said light emitting diodes are alternately activated or activatable.

[0010] In particular, the single light source element of one illumination unit is an RGB light emitting diode, wherein said RGB light emitting diode generates alternately at least two different colours.

[0011] The user interface may be arranged or arrangeable beneath a transparent or semi-transparent glass ceramic panel.

[0012] According to a preferred embodiment of the present invention, at least one control element is a key element being alternately in a first switching status and a second switching status, wherein two light signals of the corresponding illumination unit indicate said first switching status and second switching status, respectively.

[0013] For example, the key element is a touch key element.

[0014] Alternatively, the key element may be a push-button.

[0015] Further, the user interface may comprise at least one touch slide element for adjusting at least one parameter value by the user, wherein a series of illumination units corresponds with said touch slide element.

[0016] In particular, the series of illumination units is provided for indicating the current parameter value.

[0017] Further, the series of illumination units may be provided for indicating the position of the corresponding touch slide element. The series of illumination units is provided for several purposes.

[0018] In particular, each illumination unit of the series of illumination units corresponds with a certain parameter value or a certain range of parameter values.

[0019] Preferably, the illumination units corresponding with parameter values lower than an adjusted parameter value generate light of one colour, while the illumination units corresponding with parameter values higher than the adjusted parameter value generate light of another colour.

[0020] For example, at least one touch slide element is a linear touch slide element.

[0021] Alternatively or additionally, at least one touch slide element is a circular type touch slide element.

[0022] Further, the present invention relates to a domestic appliance, in particular a cooking hob, wherein the domestic appliance comprises at least one user interface mentioned above.

[0023] Novel and inventive features of the present invention are set forth in the appended claims.

[0024] The present invention will be described in further detail with reference to the drawing, in which

FIG 1 illustrates a schematic perspective view of a user interface according to a preferred embodiment of the present invention, and

FIG 2 illustrates a schematic detailed perspective view of the user interface according to the preferred embodiment of the present invention.

[0025] FIG 1 illustrates a schematic perspective view of a user interface 10 according to a preferred embodiment of the present invention. In this example, the user interface 10 is provided for a cooking hob, wherein said user interface 10 is arrangeable or arranged beneath a glass ceramic panel. Said glass ceramic panel may be transparent or semi-transparent.

[0026] The user interface 10 comprises a number of illumination units 12. For example, each illumination unit 12 correspond with one key element. In particular, said key element is a touch key element. Preferably, the illumination unit 12 is arranged beneath the corresponding key element in each case. The illumination unit 12 includes a first light source element 14, a second light source element 16 and a light funnel 18. The first light source element 14 and the second light source element 16 generate light of different colours. Preferably, the light source elements 14 and 16 are light emitting diodes (LED). Alternatively, the illumination unit 12 includes an RGB LED instead of two light source elements 14 and 16. Said RGB LED may generate light of different colours.

[0027] The first light source element 14 and the second light source element 16 are alternately activated or activatable. In a similar way, two different colours of light from the RGB LED are alternately activated or activatable. Thus, each illumination unit 12 is provided for sending two different light signals. Furthermore, each illumination unit 12 may be provided for sending more than two different light signals.

[0028] The light signal depends on the current switching status of the corresponding key element. For example, the first light source element 14 is activated, if the key element is in a deactivated switching status, while the second light source element 16 is activated, if the key element is in an activated switching status. Thus, the colour of the second light source element 16 indicates the activated switching status of the key element, while the colour of the first light source element 14 indicates the deactivated switching status of the key element. The key element is always illuminated by the corresponding illumination unit 12. Moreover, the illumination unit 12 indicates always the position of the corresponding key element on the user interface 10 in all switching statuses.

[0029] Further, the user interface 10 comprises a number of touch slide elements 22. In this example, the user interface 10 comprises four circular type touch slide elements 22. Alternatively or additionally, the user interface 10 may comprise linear touch slide elements 22. The touch slide element 22 is provided for adjusting a parameter value by the user.

[0030] Moreover, the user interface 10 comprises a number of display devices 24 including one or two seven-segment displays. In this example, the user interface 10 comprises five display devices 24, wherein a central display device 24 includes two seven-segment displays,

while the other four play devices 24 include one seven-segment display in each case.

[0031] FIG 2 illustrates a schematic detailed perspective view of the user interface 10 according to the preferred embodiment of the present invention. FIG 2 shows a central portion of the user interface 10.

[0032] The user interface 10 comprises the illumination units 12 including the first light source element 14, the second light source element 16 and the light funnel 18. Further, the user interface 10 comprises the touch slide elements 22 and the display devices 24.

[0033] Additionally, the user interface 10 comprises a plurality of further illumination units 20. Each further illumination unit 20 includes the light funnel 18 and only one single light source element 26. Preferably, the light source element 26 is a light emitting diode (LED). The light source element 26 either generates light of one colour or is an RGB LED generating two or more different colours. Alternatively, the further illumination units 20 may include the first light source element 14 and the second light source element 16 instead of the one single light source element 26.

[0034] A series of further illumination units 20 is arranged beneath each circular type touch slide element 22. Each illumination unit 20 of the series of illumination units 20 corresponds with a certain parameter value or a certain range of parameter values. If said illumination units 20 generate two different colours, then the parameter value adjusted by the touch slide element 22 may be represented by the series of further illumination units 20. For example, if a minimum parameter value is adjusted, then all further illumination units 20 of the series generate a first colour. In a similar way, if a maximum parameter value is adjusted, then all further illumination units 20 of the series generate a second colour. If another parameter value is adjusted, then the illumination units 20 corresponding with parameter values lower than the adjusted parameter value generate the second colour, while the illumination units 20 corresponding with parameter values higher than the adjusted parameter value generate the first colour. Thus, the adjusted parameter value is indicated by the series of further illumination units 20. Additionally, the touch slide elements 22 are always illuminated by the series of further illumination units 20.

[0035] Alternatively or additionally to the illumination units 12 and 20, the user interface 10 may comprise at least one display unit. In particular, the display unit includes at least one TFT device and/or LCD device. The TFT device and/or LCD device allow the representation of different colours by low complexity. The display unit is provided for representing signals of different colours. The display unit may be also provided for representing more than two signals of different colours. In general, arbitrary displaying technologies representing two or more colours are suitable for the inventive user interface 10.

[0036] The user interface 10 according to the present invention allows a clear representation of the control el-

ements and the switching statuses of said control elements. The multi-coloured representation requires only a little space and allows a compact design of the user interface 10. The multi-coloured representation provides very clear information to the user.

[0037] Although an illustrative embodiment of the present invention has been described herein with reference to the accompanying drawing, it is to be understood that the present invention is not limited to that precise 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

[0038]

- 10 user interface
- 12 illumination unit
- 14 first light source element
- 16 second light source element
- 18 light funnel
- 20 further illumination unit
- 22 touch slide element
- 24 display device
- 26 single light source element

Claims

1. A user interface (10) for a domestic appliance, in particular for a cooking hob, wherein
 - the user interface (10) comprises at least one control element (22),
 - the user interface (10) comprises at least one illumination unit (12, 20) and/or display unit,
 - the illumination unit (12, 20) and/or display unit are provided for generating alternately at least two light signals of different colours,
 - one or more illumination units (12, 20) and/or display units correspond with one control element (22),
 - the light signals represent a switching status of the control element (22), and
 - the illumination unit (12, 20) includes either at least two light source elements (14, 16) of different colours or one single light source element (26) generating alternately at least two different colours.
2. The user interface according to claim 1, **characterised in that** the illumination unit (12, 20) includes a light funnel (18) for receiving the light source elements (14, 16;

26).

3. The user interface according to claim 1 or 2, **characterised in that** the display unit includes at least one TFT device and/or LCD device.
4. The user interface according to any one of the preceding claims, **characterised in that** the at least two light source elements (14, 16) of one illumination unit (12) are light emitting diodes, wherein said light emitting diodes are alternately activated or activatable.
5. The user interface according to any one of the preceding claims, **characterised in that** the single light source element (26) of one illumination unit (20) is an RGB light emitting diode, wherein said RGB light emitting diode generates alternately at least two different colours.
6. The user interface according to any one of the preceding claims, **characterised in that** the user interface (10) is arranged or arrangeable beneath a transparent or semi-transparent glass ceramic panel.
7. The user interface according to any one of the preceding claims, **characterised in that** at least one control element is a key element being alternately in a first switching status and a second switching status, wherein two light signals of the corresponding illumination unit (12) indicate said first switching status and second switching status, respectively, and wherein preferably the key element is a touch key element or a push-button.
8. The user interface according to any one of the preceding claims, **characterised in that** the user interface (10) comprises at least one touch slide element (22) for adjusting at least one parameter value by the user, wherein a series of illumination units (20) corresponds with said touch slide element (22).
9. The user interface according to claim 8, **characterised in that** the series of illumination units (20) is provided for indicating the current parameter value.
10. The user interface according to claim 8 or 9, **characterised in that** the series of illumination units (20) is provided for

indicating the position of the corresponding touch slide element (22) .

11. The user interface according to any one of the claims 8 to 10,
characterised in that
each illumination unit (20) of the series of illumination units (20) corresponds with a certain parameter value or a certain range of parameter values.
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12. The user interface according to claim 11,
characterised in that
the illumination units (20) corresponding with parameter values lower than an adjusted parameter value generate light of one colour, while the illumination units (20) corresponding with parameter values higher than the adjusted parameter value generate light of another colour.
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13. The user interface according to any one of the claims 8 to 12,
characterised in that
at least one touch slide element (22) is a linear touch slide element.
20
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14. The user interface according to any one of the claims 8 to 13,
characterised in that
at least one touch slide element (22) is a circular type touch slide element.
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15. A domestic appliance, in particular a cooking hob,
characterised in that
the domestic appliance comprises at least one user interface (10) according to any one of the claims 1 to 14.
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FIG 1

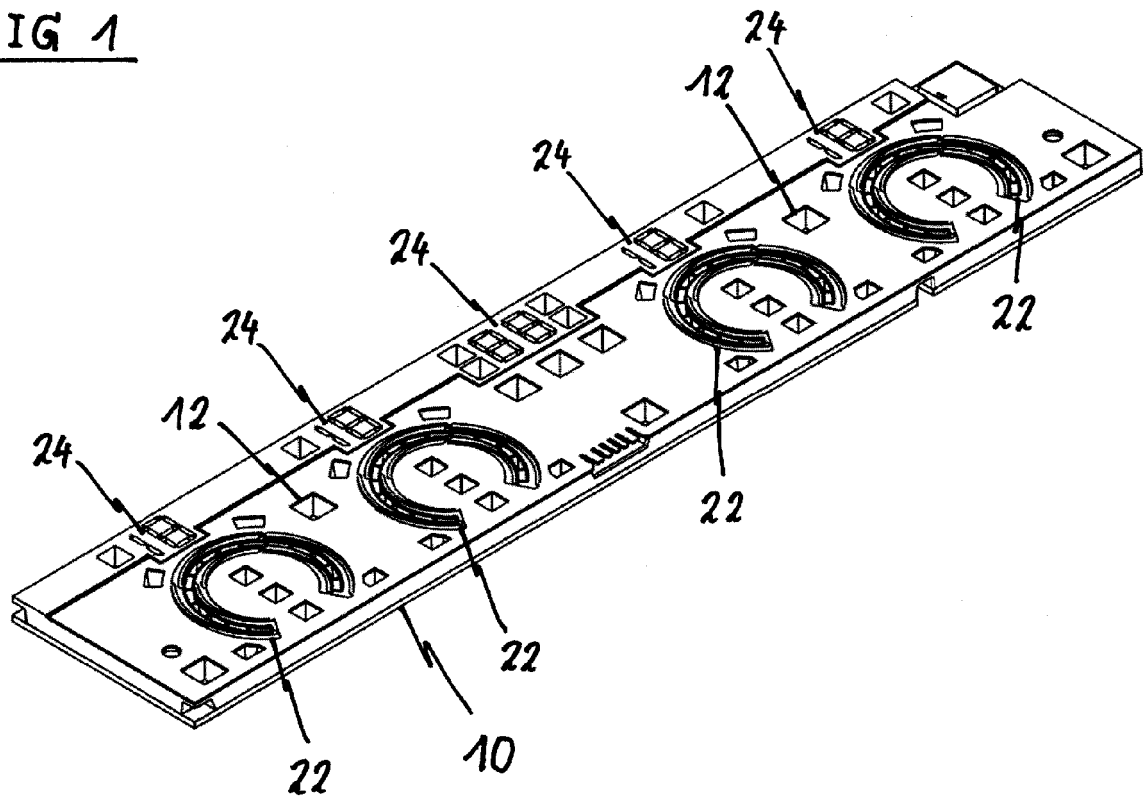
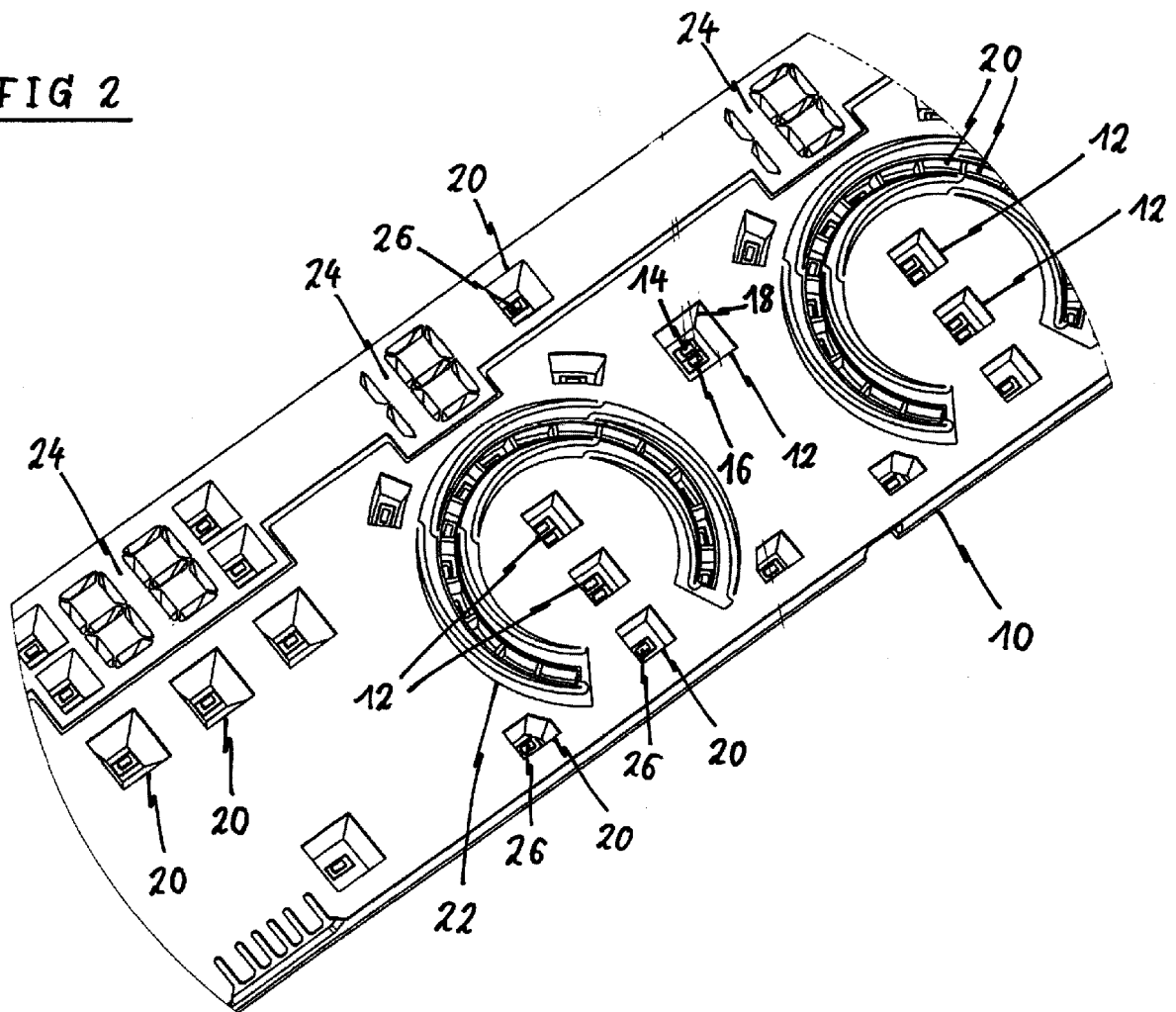


FIG 2





EUROPEAN SEARCH REPORT

Application Number
EP 16 17 9370

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Place of search The Hague		Date of completion of the search 23 November 2016	Examiner Fest, Gilles
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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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23-11-2016

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