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(54) **A dishwasher**

(57) A dishwasher of the present invention comprises a front door (1); at least one illuminator (3) positioned on a lateral surface (1a) of the front door (1); a horizontal surface (4a) positioned on illuminator (3), at least one vertical surface (4b) connected to the horizontal surface (4a) and an apparatus (4) at least one end of which is opened to the horizontal surface (4a), at least one an-

other end of which is opened to the vertical surface and comprising at least one light path. After a decorative panel is mounted to the front door (1), apparatus (4) is situated such that the apparatus is provided on the illuminator (3) and the vertical surface (4b) is provided on the decorative panel. Therefore, the illuminator (3), which is related to the working modes of the machine, can be seen even the device is off.

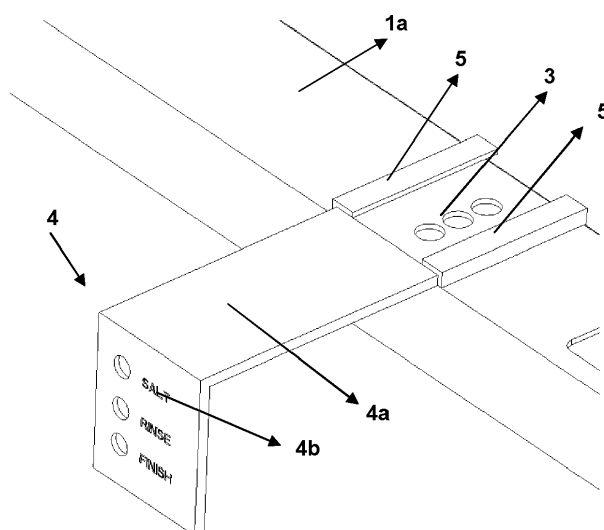


Figure 2

Description

Technical Field

[0001] The present invention relates to a dishwasher comprising an apparatus which directs the light of an illuminator provided at the lateral surface of the front door.

Prior Art

[0002] In dishwashers which are known as built-in dishwashers in prior art, a decorative panel can be mounted on the front door of the machine. Decorative panel can be in different colors, patterns and sizes according to the preferences of the user. Due to the decorative panel mounted on the front door of said dishwashers, the control panel which is situated on the front face of the front door in the said conventional dishwashers, which controls the functions of the device and which shows information about working modes of the device, cannot be situated on a front face of the front door in the built-in dishwashers. Preferably, control panel in the built-in dishwashers is situated on a lateral surface of the front door. Control panel situated on the lateral surface is become inaccessible during the operation of the dishwasher. Therefore, the user cannot see the information about the working mode during the washing.

[0003] In the patent document no EP1151717 B1 which discloses one of the embodiments concerning the solution of the said problem; a refraction element is located on a control panel on the lateral surface of the front door. Refraction element extends forwardly from the upper lateral surface of the front door and enables, by refracting the light of the illuminators on the control panel, the illuminators to become visible from the front face while the front door is closed.

[0004] In the patent document no EP1702551A1 which discloses another embodiment of prior art, illuminators on the control panel are located on the front face of the front door. In order to make the illuminators visible from the decorative panel, an opening is formed on the decorative panel and a control front panel of the invention is situated in the opening.

[0005] Therefore, illuminators are moved to the top of the decorative panel. However, in the said embodiment the decorative panel needs to be treated. Therefore, the embodiment is not applicable by a user.

Brief Description of the Invention

[0006] The dishwasher of the present invention comprises at least one front door and at least one illuminator positioned on at least one lateral surface of the front door; at least one horizontal surface positioned on the front door so as to be placed on the said illuminator, at least one vertical surface which is connected to the horizontal surface and provided on at least one decorative panel on the front door when horizontal surface is placed on

the illuminator; at least one illuminating apparatus at least one end of which is provided on the horizontal surface, at least one another end of which is positioned on the vertical surface and comprising at least one light path.

[0007] Said apparatus is provided on the illuminator and conveys the light of the illuminator to the end on the vertical surface of the light path by directing the light along the light path. Apparatus has a movable structure and can be positioned on a decorative panel, where the vertical surface is mounted to the front door. Therefore, illuminator is moved onto the panel.

[0008] The dishwasher of the present invention solves the problem that the illuminators, which show the working information, cannot be seen during the operation of the device in the built-in type dishwashers. Moreover, the apparatus used in the invention enables ease of application since the apparatus can easily be mounted to the device by the user.

Objective of the Invention

[0009] The aim of the present invention is to develop a dishwasher comprising an illuminating apparatus.

[0010] The other aim of the present invention is to develop a dishwasher comprising an illuminating apparatus which can easily be mounted on the decorative panel, where a decorative panel can be mounted to the front door of the dishwasher.

Description of Drawings

[0011]

Figure 1 is a perspective view of the front door of the dishwasher in an embodiment of the dishwasher of the present invention.

Figure 2 is a detailed view of the illuminating apparatus in an embodiment of the dishwasher of the present invention.

Figure 3 is another view of the illuminating apparatus in an embodiment of the dishwasher of the present invention.

[0012] The parts in the figures are individually enumerated and the corresponding terms of reference numbers are as follows:

Front door	(1)
Lateral surface	(1a)
Control panel	(2)
Illuminator	(3)
Illuminating apparatus	(4)
Horizontal surface	(4a)
Vertical surface	(4b)
Connector	(5)

Description of the Invention

[0013] In an embodiment of the dishwasher of the present invention, a view of the front door of the dishwasher is illustrated in Figure 1. The dishwasher of the present invention comprises at least one front door (1) on which at least one decorative panel (not illustrated) is placed. At the at least one lateral surface (1a) of the front door (1), preferably at least one control panel (2) and at least one illuminator (3) which shows working mode of the machine are situated.

[0014] The machine comprises at least one illuminating apparatus (4) to enable the visibility of the illuminator (3) on the front door (1) while the machine is operating. Illuminating apparatus (4) comprises at least one horizontal surface (4a) and at least one vertical surface (4b) which is connected to the horizontal surface (4a). The apparatus (4) is situated on the front door (1) such that the said horizontal surface (4a) is placed on the illuminator (3). When the lateral surface (4a) is positioned on the front door (1), it entirely covers preferably the illuminator (3). Vertical surface (4b), connected to the horizontal surface (4a), is situated on the decorative panel on the front door (1) when the horizontal surface (4a) is positioned on the illuminator (3).

[0015] At least one light path (not illustrated) is located on the illuminating apparatus (4). Light path directs the light of the illuminator on the apparatus (4). Light path can be formed by passing at least one fiber optical cable (not illustrated) through the apparatus (4) or by making the apparatus of transparent material and building at least one area in the apparatus (4), having refractive index different from the one of the apparatus (4). One end of the light path opens preferably to the face of the horizontal surface (4a) of the apparatus (4) which contacts with the illuminator (3). Light path goes through in the horizontal surface (4a) and vertical surface (4b) and preferably opens to the end of the light path at the face of the vertical surface (4b) which users can see. Thus; the light of the illuminator (3) becomes visible at the vertical surface by being directed. Preferably, different light paths are used for different illuminators (3). These light paths reach to different light path ends on the vertical surface (4b) without crossing. Therefore, different ends are illuminated for different signals.

[0016] In figure 2, an exemplary embodiment of the invention is illustrated. In the said embodiment, three different illuminators (3) are positioned on the door (1). Three light paths on the apparatus (4) convey the light of the illuminators (3) to the Three light path exits which are on the vertical surface (4b). The ends of the light paths are shaped as typeface and symbol characters.

[0017] The apparatus (4) of the invention in the exemplary embodiment in the figures is positioned on the door (1) by at least one connector (5) on the door (1). This connector (5) enables the apparatus (4) to be hinged slidingly to the front door (1). Therefore, the apparatus (4) can be dismantled for the assembly of the decorative

door and its location can be adjusted by remount after assembly. The connector (5) enables the apparatus (4) to move to the outside of the machine (in -X direction) as shown in Figure 2 and to move towards the inside of the machine (in +X direction) as shown in Figure 3. The ends of the light paths on the horizontal surface (4) have such a size that the ends remain on the illuminator (3) when the apparatus (4) move in +X and -X direction; thus ensuring the light of the illuminator (3) to be conveyed to the vertical surface (4b) in different horizontal positions.

Claims

1. A dishwasher comprising at least one front door (1) and at least one illuminator (3) positioned on at least one lateral surface (1a) of the front door (1) **characterized by** comprising at least one horizontal surface (4a) positioned on the front door (1) so as to be placed on the said illuminator (3), at least one vertical surface (4b) which is connected to the horizontal surface (4a) and provided on at least one decorative panel on the front door (1) when horizontal surface (4a) is placed on the illuminator (3); at least one illuminating apparatus (4) at least one end of which is positioned on the horizontal surface (4a), at least one another end of which is positioned on the vertical surface (4b) and comprising at least one light path.
2. A dishwasher according to the claim 1 **characterized by** comprising at least one connector (5) which enables the apparatus (4) to be mounted as sliding hinge to the front door (1) and which is positioned on the front door (1).
3. A dishwasher according to the claim 2 **characterized in that** the connector (5) is such a connector (5) that it enables the apparatus (4) to move towards the inside of the machine (+X) and/or to move to the outside of the machine (- X).

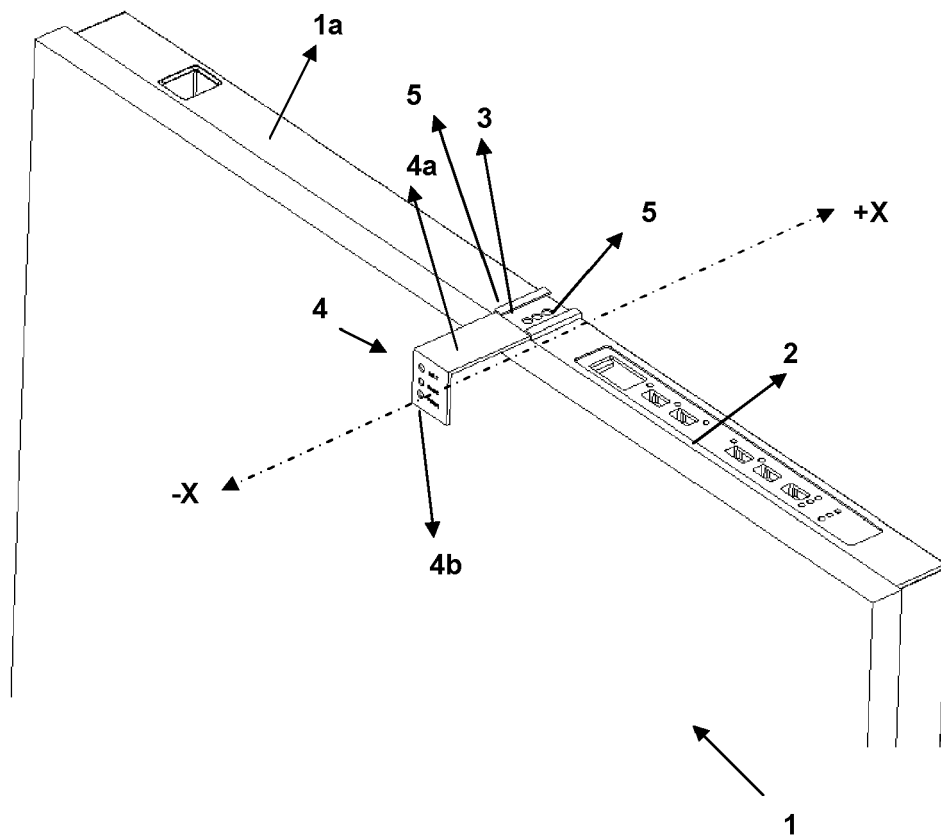


Figure 1

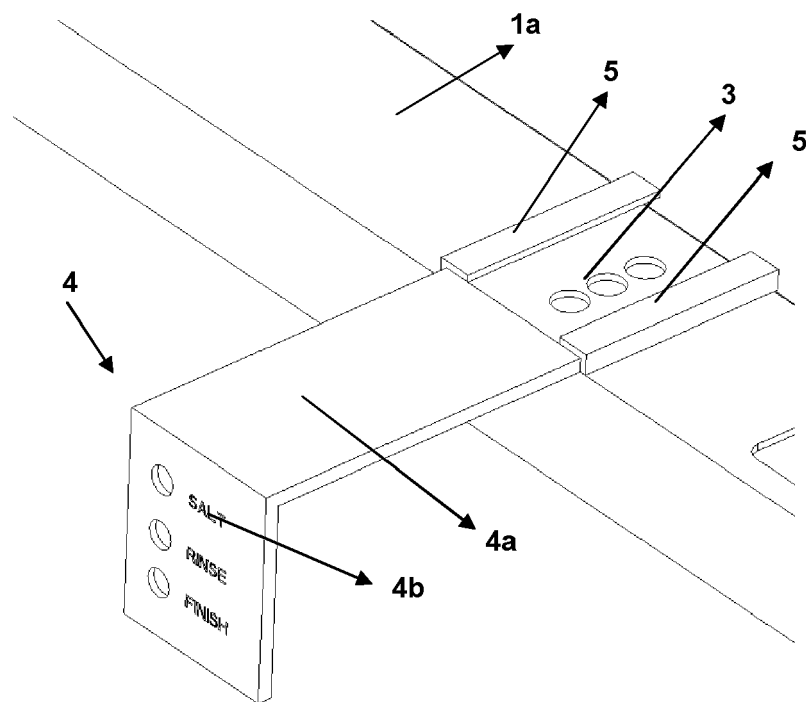


Figure 2

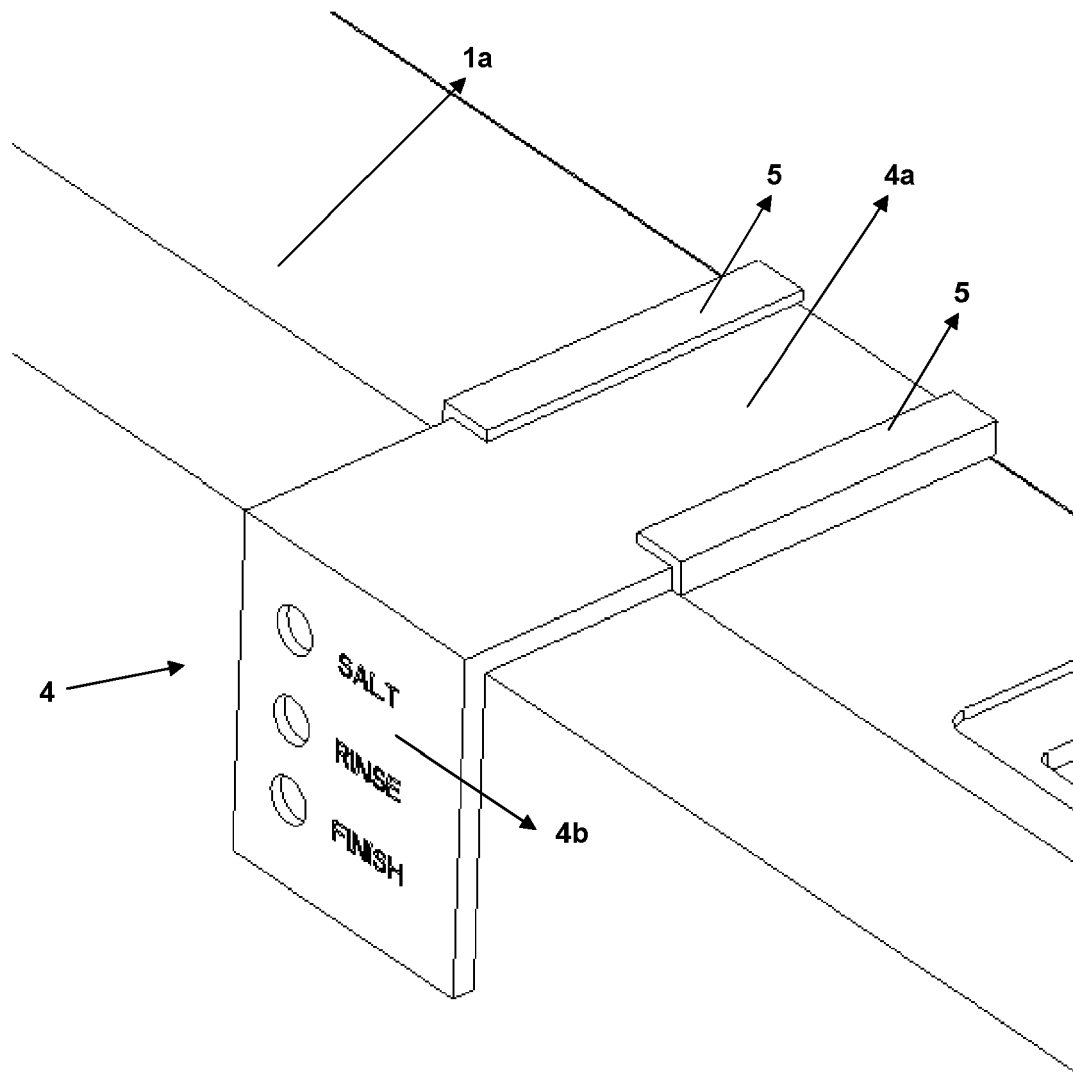


Figure 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 1151717 B1 [0003]
- EP 1702551 A1 [0004]