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(54) **Table top dishwasher**

(57) A table top dishwasher is disclosed which comprises:

- (a) a tub (10) for accommodating articles to be cleaned;
- (b) a cover member (12, 94) forming a water-tight hood over said tub (10), said hood comprising a door (16, 94, 102) which is movable between a raised opened position in which it provides access to the tub and a lowered closed position in which the door forms part of the water-tight hood; and
- (c) an electric switching means (60) adapted to change its switching condition when the door (16, 94, 102) is moved into or out of the fully closed position.

In accordance with the invention the switching means comprises:

- a spring-biased push button switch (71) provided in proximity of the tub (10), wherein a first activation element (78) is associated to the push button (72); and
- a second activation element (62) which is provided at the door (16, 94, 102);
- wherein one of said first and second activation elements (62, 78) comprises a magnet while the other one of said first and second activation elements comprises a ferromagnetic element or a second magnet, and wherein said first and second activation elements are arranged to be located in close proximity when the door (16, 94, 102) is closed, so that the push button (72) is actuated by the action of the magnetic force induced between the first and second activation elements when the door is closed.

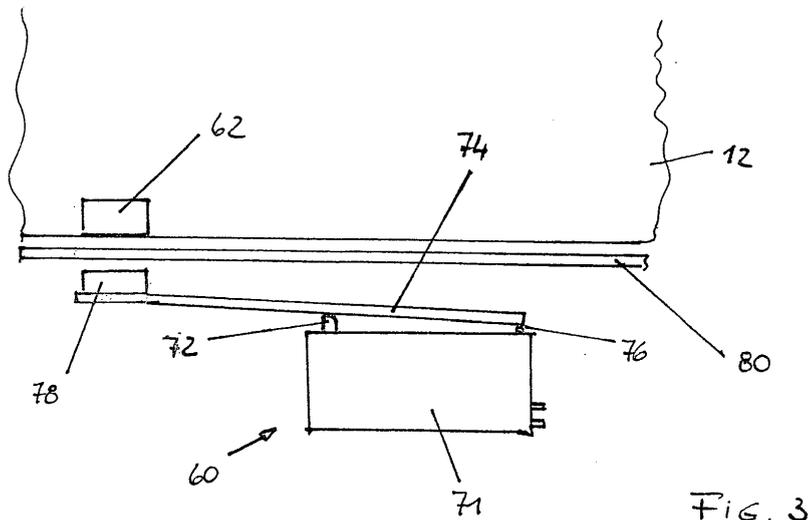


Fig. 3

Description

[0001] The present invention relates to a table top dishwasher, that is to a compact dishwasher which in contrast to common built-in devices is designed to be placed on top of a kitchen worktop or which can be used as a portable device.

[0002] The present invention in particular is concerned with table top dishwashers comprising a tub for accommodating articles to be cleaned, a cover member forming a water-tight hood over said tub, said hood comprising a door which is movable between a raised opened position in which it provides access to the tub and a lowered closed position in which the door forms part of the water-tight hood, and an electric switching means which is adapted to change its switching condition when the door is moved into or out of the fully closed position.

[0003] While in table top dishwashers often similar components can be used as in built-in dishwashers, this does not apply to the provision of electric switching means for sensing the position of the door. That is, in built-in dishwashers in which the door in its closed position is vertical and is rotatable about hinges which are provided in the lower part of the door so that the door in the opened position forms a tray on which a dishwasher basket can be placed, the electric switching means that is employed to detect whether or not the door is closed usually is provided at the upper edge of the door and commonly is integrated in the door lock. Thus, a widely used switching means for sensing the closed position of the door comprises a striker that is provided at the door which in the fully closed position of the door engages a catcher which is provided in the fixed portion of the door lock.

[0004] In a table top dishwasher in which the hood comprises a door that is movable between a raised opening position in which it provides access to the tub and a lowered closing position in which the door forms part of the water-tight hood, such known electrical switching means for sensing the position of the door cannot be employed because the door lock necessarily has to be provided close to the tub such as at the upper front edge of the tub, i.e. in a region which is prone to become wet during operation or handling of the dishwasher and in which for this reason the provision of electrical components is prohibitive or requires certain safety measures for its implementation.

[0005] In order to solve the above problem it further has been suggested in the prior art to detect the position of the door by contactless switches and in particular by the use of electric switching means which are activated by magnetic reed switches or hall sensors, as it is suggested in DE 10 2006 036 551 A1 and also in DE 10 2006 037 494 B4.

[0006] However, the use of hall sensors or reed switches in dishwashers is considered to be disadvantageous because due to safety regulations which are applicable in most European countries, such as international safety

standard IEC 60335-1 or its Germany counterpart DIN EN 60335-1, manufacturers had to provide two sets of reed switch mechanisms in combination with class B certified safety software as provided for in international standard IEC 60730, which is undesirable in terms of system complexity and manufacturing costs.

[0007] It is an object of the present invention to provide a table top dishwasher in which the above problems are solved. Therefore, the present invention aims at providing a table top dishwasher which is equipped with an electric switching means that changes its switching condition when the door is moved into or out of the fully closed position, in which dishwasher the electric switching means is effectively protected against ingress of water, and which yet is of a simpler and less complex design than heretofore solutions.

[0008] The above objects are solved by a table top dishwasher as it is defined in claim 1, in which the switching means comprises:

- a spring-biased push button switch provided in proximity of the tub, wherein a first activation element is associated to the push button; and
- a second activation element which is provided at the door;
- wherein one of said first and second activation elements comprises a magnet while the other one of said first and second activation elements comprises a ferromagnetic element or a second magnet, and wherein said first and second activation elements are arranged to be located in close proximity when the door is closed, so that the push button is actuated by the action of the magnetic force induced between the first and second activation elements when the door is closed.

[0009] In such a design a standard push button switch can be employed similarly as was done in known built-in dishwashers wherein the switching means was provided as part of the door lock arrangement, wherein however in accordance with the present invention the activation of the push button switch is effected magnetically, i.e. rather than using a reed switch or hall sensor a standard electro-mechanical switch is used in which the mechanic force for displacement of the push button is provided by a magnetic activation element. While both the first and the second activation elements can be magnets, also only one of the first and the second activation elements can be a magnet, whereas the respective other activation element comprises a ferromagnetic element, such as a block made of iron or an iron containing alloy. In this manner, the electric push button switch, despite being provided in proximity to the water-filled tub, can be provided in a region of the dishwasher which cannot be reached by water from within the tub, such as within an hermetically sealed housing provided in the tub, or out-

side the tub in a housing region between the exterior side of the washing tub and the interior side of the outer dishwasher housing.

[0010] Preferred embodiments of the present invention are defined in the dependent claims.

[0011] In particular, the door can comprise at least along one of its edges a sealing surface which in the closing position engages an upper rim of the tub. Thus, the door which carries the second activation element can be designed to directly engage the upper rim of the tub, wherein in order to prevent escape of water a sealing is provided at the engaging surfaces. While resilient sealings, such as profiled rubber sealings, could be provided both at the and the upper rim of the tub, for ease of construction it is preferred that only one of the mating sealing surfaces is a resilient sealing surface whereas the respective other sealing surface is a rigid surface of the respective component.

[0012] While the present invention can be used with advantage in any type of table top dishwasher in which the electric switching means for sensing the position of the door shall be provided in proximity to the tub, i.e. in any table top dishwashers in which the hood comprises a door which is movable between a raised opened position and a lowered closed position, the dishwasher can comprise a lower housing section containing the tub and a door which is a hood-shaped member which is hingedly connected to the lower housing section and which in the closing position sealingly engages the upper rim of the lower housing section. Whereas the hood-shaped door thus could be hingedly connected to the upper rim of the tub, such as by providing for hinges along the rear edge of the tub, the door also can be designed so as to engage only a portion of the upper rim of the tub, for example the upper rim of the front wall of the tub, wherein the door hinges are provided in a rear portion of the dishwasher at a housing section that is raised with respect to the upper rim of the tub. Furthermore, while the door can be hinged to the fixed portions of the dishwasher by any kind of hinge, the hood-shaped door also can be hingedly connected to the tub or the lower housing section by means of levers which are pivotably connected to the door and the lower housing section of the dishwasher.

[0013] In accordance with a further preferred embodiment of the table top dishwasher suggested herein, the cover member which forms a watertight hood over the tub comprises a fixed section that is connected to the tub, wherein the door is hingedly or rotatably connected to the fixed section. In such embodiments the fixed section of the cover member can comprise two fixed sidewall members which are connected to a fixed central member which covers a part of the central region of the tub, wherein the door covers the remaining part of the central region of the tub. The door can be hingedly connected to the fixed section, for example by hinges which are provided at the said fixed central region, or can be rotatably connected to the fixed section, for example by rotatably connecting the door to the fixed sidewall members.

[0014] A particular compact design can be achieved by providing for a cover member which has a generally cylindrical shape wherein the fixed section of the cover member comprises two substantially semi-circular side regions and an arcuate central region which spans about half of the generally half-cylindrical shape, in combination with an arcuate door which in the closed position spans the remaining half of the generally half-cylindrical shape.

[0015] In preferred embodiments the switching means comprises a pivotable lever which at a first position engages the push button and which at a second position carries the first activation element. By providing for such a lever arrangement, the magnetic force induced between the first and second activation elements when the door is closed can be suitably transformed into an appropriate mechanical force for activation of the push button. In this manner any kind of spring-biased push button can be employed, irrespective of the force that is required to overcome the spring force to activate the switch, because by selecting the distances of the first and second position from the pivot point of the lever, any desired force can be transmitted.

[0016] In further preferred embodiments the first activation element can comprise a plunger which is arranged so as to be movable substantially in a direction parallel to the path of movement of the push button. Thus, the first activation element can comprise a magnetic or ferromagnetic plunger that is received within a sleeve which is perceptible to a magnetic field, such as a plastic sleeve, which plunger is located to engage either the push button of the electric switch as such as or a pivotable lever which engages the push button. Employing such a first activation element, standard push button switches can be used which thus need not to be modified for use in a dishwasher made in accordance with the present invention.

[0017] While the spring-biased push button switch can be provided with its own watertight housing so as to be arranged within or close to the tub, in preferred embodiments the switch is located in a housing section at the exterior side of the tub, which further facilitates the design and manufacturing of the dishwasher.

[0018] Thus, the spring-biased push button can be located at the exterior side of a front or sidewall of the tub, or, in embodiments in which the tub has a double walled side or front wall within such side or front wall.

[0019] While the electric switching means can be employed to directly control components of the dishwasher, such as the circulation pump, an interior light, or means for outputting an alarm signal that the door is not completely closed, preferably the dishwasher comprises control means for controlling operation of the dishwasher based on the switching condition of the electric switching means, so that a single switch can be used for triggering operation of several components of the dishwasher. Thus, the control means can be adapted to interrupt a washing cycle when, based on the switching condition of the electric switching means, it is detected that the door is not fully closed, so as to shut off the water supply

to the circulation pump, and/or to trigger an alarm signal such as a display message, warning light, or an acoustic warning signal, or can switch on an interior light for illumination of the tub when the switching means detects that the door is opened. Similarly, the control means can be adapted to restart operation of the dishwasher when the switching means detects that the door has reached its fully closed position, wherein such restart can be triggered automatically or an input request can be transmitted to the user, such as by an optic or acoustic signal so as to prompt the user to manually restart operation of the dishwasher.

[0020] In a further embodiment of the present invention the electric switching means assumes a first switching condition when the door is in the closed position and assumes a second switching condition as soon as the door leaves the closed position. While such first and second switching conditions thus can be employed to control operation of the dishwasher in dependency of whether or not the door is in the fully closed position, the electric switching means further can be adapted to assume a third switching condition when the door is in an opened position in which it provides access to the tub. In this manner, the operation of the dishwasher or components thereof can be controlled in dependency of the position of the door on its path between the position when the door has left the fully closed position until it reaches the fully opened position. Thus, when the door is opened, the circulation pump is shut off as soon as it is detected that the door has left the fully closed position so as to prevent water from leaking from the machine to the exterior. When the door has been opened further to an extent which allows access to the interior of the tub, the signal provided by the electric switching means can be used to switch on the interior light of the dishwasher so as to illuminate the interior of the dishwasher, which interior light is maintained in the inactivated position for small opening angles of the door.

[0021] Preferred embodiments of the present invention are described in further detail below by reference to the drawings in which:

- Fig. 1 is a schematic perspective view of a first embodiment of a dishwasher made in accordance with the present invention;
- Fig. 2 is a cross-sectional view of the dishwasher shown in Fig. 1;
- Fig. 3 is a schematic view of a switching arrangement of the dishwasher of the present invention;
- Fig. 4 is an alternative embodiment of the switching arrangement shown in Fig. 3;
- Fig. 5 to 7 schematically show further embodiments of the dishwasher of the present invention;

and

Fig. 8 illustrates a further embodiment of a switching arrangement.

[0022] Fig. 1 shows a table top dishwasher comprising a tub 10 and a cover member 12, which forms a hood over tub 10. Cover member or hood 12 is a generally cylindrical member comprising a fixed hood portion 14 and a rotatable door 16. Door 16 is rotatably supported at substantially semi-circular side portions 18 of the fixed hood portion so as to be pivotable about a horizontal axis 20. Within tub 10 there is provided a basket 22 which comprises a plurality of holders 24 for accommodating and fixing during a washing cycle a plurality of articles to be cleaned.

[0023] Within tub 10 there further are provided means for circulating cleaning liquid throughout the interior of the dishwasher, such as a spray arm 25 that is located below basket 22, and a circulation pump (not shown) and optionally a separate drain pump. In the lower portion of the dishwasher which comprises tub 10 there further can be located any electrical components required for operation of the dishwasher, such as a power supply, a controller and the like, as well as operating switches 26 and a display 28.

[0024] As shown in Fig. 1, cover member 12 is a generally cylindrical or semi-cylindrical part, wherein approximately half of the arcuate surface shell is provided by the central region 15 of fixed hood portion 14 and the other half thereof is provided by central region 30 of door 16. Door 16 is rotatable about axis 20 between the opened position shown in Fig. 1 and a closed position which is reached by rotating door 16 in a counterclockwise direction in Fig. 1 until the lower edge 34 of door 16 contacts a respective sealing surface provided at tub 10.

[0025] In particular, as shown schematically in Fig. 2, central region 15 of fixed hood portion 14 comprises a rim 32 which projects radially downwards into the gap between central region 15 and rotatable door 16. A top seal 40 extends along the rear side of rim 32 to engage a sealing surface which is provided at the rear or top edge of rotatable door 16 and which is formed by a rim 38 that projects radially outwards along the edge of door 16.

[0026] In order to provide for a sealing along the front or lower edge 34 of door 16, a rim 42 extends along the lower edge 34 of rotatable door 12 at the interior side thereof, so as to provide for an abutment surface which upon closing door 16 engages a bottom seal 44 which extends along the upper front edge of washing tub 10.

[0027] In the embodiment shown in Fig. 1 door 16 further comprises a handle 50 which facilitates closing of the door and which at the same time provides for a stop which delimits rotation of door 16 at the fully opened position shown in Fig. 1. At the bottom side of lower edge 34 of the door there is provided a catch member 54 which in the closed position of the door is received within a corresponding recess 56 provided at the front wall of tub

10, wherein a latch provided within recess 56 maintains the door in the closed position during operation of the dishwasher. In the embodiment shown in Fig. 1 the latch within recess 56 comprises a spring biased member which when closing door 16 engages catch member 54 and which can be released by pressing a knob 58.

[0028] In the embodiment shown in Fig. 1 side seals 36 extend in proximity to the front edge of the semi-circular side portions 18 of fixed hood portion 14. When rotatable door 16 is closed, door 16 contacts with its interior side the side seals 36, wherein the outermost regions of the interior side of door 16 thus forms abutment surfaces 46 for engagement of side seal 36. In order to make room for the provision of abutment surfaces 46, pivot arms 48 by which rotatable door 16 is pivotably hinged to be rotatable about axis 20 are provided with a bend portion 52 which contacts the inner face of door 16 at a distance from the lateral edge.

[0029] As is shown in Fig. 2, the dishwasher is equipped with an electrical switching means for detecting whether or not door 16 has reached the fully closed position, which switching means comprises a push button switch 71 which is provided close to the front upper edge of tub 10 and which will be explained in further detail below by reference to Figs. 3 and 4. As push button switch 71 is provided in a housing region between the exterior side of tub 10 and the interior side of the front housing wall 64 of the dishwasher, switch 71 is effectively protected against contact with water that is circulated within tub 10 or within the interior of cover member 12 during operation of the dishwasher. Switch 71 is a spring-biased push button switch, in which a first activation element 78 (shown in Figs. 3 and 4) is associated to the push button. A second activation element 62 is provided at the door close to its front edge. At least one of the first and second activation elements is magnetic whereas the respective other one of the two activation elements either is also a magnet or is made of a ferromagnetic material. When moving door 16 into the closed position, the second activation element 62 approaches the first activation element of switch 78, wherein due to the proximity of the first and second activation element a magnetic force is created between these two elements which magnetic force is used to change the switching condition of switch 71. Fig. 2 further schematically shows a control unit 66 to which push button switch 71 is connected. Control unit 66 controls the various components of the dishwasher such as a water supply, a circulation pump 68 which supplies spray arm 25 with water, heating means 70 for heating the water to circulation pump 68, an interior light for illuminating the interior of hood 12, display member 28, and the like.

[0030] In Fig. 3 there is shown an enlarged view of electrical switching means 60, the mayor component of which is switch 71. Switch 71 is a push button switch comprising a spring-biased push button 72 which in the released state projects upwardly from the housing of switch 71 and which when depressed provides for a

change of the switching condition of switch 71. A lever 74 is connected to switch 71 at a pivot point 76 so that lever 74 when pressed down activates push button 72. At its free end lever 74 carries an activation element 78 which in the above description has been referred to as first activation element. At least one of the first activation element 78 and the second activation element 62 comprises a magnetic material, whereas the respective other activation element comprises likewise a magnetic material or a ferromagnetic material. In this manner, a magnetic force is created when the second activation element 62 approaches the first activation element 78. In the embodiment shown in Fig. 3, the materials of the first and second activation elements are selected such that a repulsive magnetic force is created when activation elements 62 and 78 approach each other. Activation elements 62 and 78 thus provide for a contact-less activation of switch 60 through a wall section 80 which in the embodiment shown in Fig. 2 is the upper edge of the front wall of tub 10.

[0031] Fig. 4 shows an alternative embodiment of the switching arrangement shown in Fig. 3. In the Fig. 4 embodiment a similar spring-biased push button switch 71 is employed which changes its switching condition when push button 72 is depressed. However, while in Fig. 3 a one-sided lever 74 is employed, in the embodiment shown in Fig. 4 lever 82 is a two-sided lever which is pivotable about a pivot point 84 so as to define a first lever arm 86 and a second lever arm 88. Lever arm 86 is aligned to engage push button 72 and lever arm 88 at its free end carries the first activation element 78. While again at least one of the two activation elements 62 and 78 comprises a magnetic material, in the embodiment shown in Fig. 4 the materials are selected such that an attractive magnetic force is created between the first and second activation elements when these elements approach each other. In Fig. 4 there further is shown a stop 90 which supports lever arm 88 when door 16 is opened and hence no attractive force acts on first activation element 78.

[0032] In Figs. 5 to 7 there are shown variants of the dishwasher shown in Figs. 1 and 2 which differ from such embodiment in the design of the hood. Thus, whereas in the embodiment shown in Figs. 1 and 2 the hood 12 has a fixed portion 14 in combination with a rotatable door 16, in the embodiment schematically depicted in Fig. 5 the dishwasher comprises a lower housing section 92 which contains the tub and to which there is hingedly connected a hood 94. Hood 94 is connected to the lower housing section 92 by means of one or more hinges 96 which are provided at a rear wall or sidewall of the lower housing section, so that hood 94 can be tilted into an opened position in which it provides access to the tub.

[0033] Fig. 6 schematically shows an embodiment similar to that of Fig. 5 in which, however, hood 94 is connected to the lower housing section not by means of a hinge but rather via lever arms 98 and 100 which provide for a combined lifting and rotating opening move-

ment of hood 94. In the embodiments shown in Figs. 5 and 6 sealing surfaces are provided along the lower edge of hood 94 at all sides of the hood, which sealing surfaces engage corresponding sealing surfaces extending along the upper edge of housing section 92. Furthermore it should be understood that the upper edge of lower section 92 could coincide with the upper edge of the tub or, at least in parts thereof, may be raised above the upper edge of the tub.

[0034] Fig. 7 shows a further variant in which the hood, similar as that shown in Fig. 1 comprises a fixed hood portion 14 that comprises two sidewall portions 18 which in the embodiment shown in Figs. 7 are substantially semicircular but which of course could have any other desired shape, as well as a central portion 15 which forms a roof over the rear portion of the tub. In the embodiment of Fig. 7 a tiltable door 102 is hingedly connected to the fixed hood portion 14 along one or more hinges 104 which connect the rear edge of door 102 with the front edge of the central region of fixed hood portion 14.

[0035] Common to all the embodiments shown in Figs. 1, 2 and 5 to 7 is that when the door is closed, the door approaches the tub from above so that any means for sensing whether or not the door has reached the fully closed position have to be provided in proximity of the tub, which can be accomplished by the contact-less switching arrangement which was explained above by reference to Figs. 3 to 4.

[0036] In Fig. 8 there is shown a further variant of the switching means 60 which differs from the embodiment shown in Fig. 3 in the design of the first activation element. In the embodiment shown in Fig. 8, the first activation element 78' is designed as a plunger which is received within a hollow housing section 106 which can be an integral part of a bottom or sidewall of tub 10. When door 12 which carries the second activation element 62 is lowered into its closed position, the attractive magnetic force between first activation element 78' and second activation element 62 will lift first activation element 78' so that the spring-biased push button 72 is released and thus lifts lever 74. In the embodiment of Fig. 8 the first activation element 78' needs not to be fixedly connected with lever 74 but rather can be designed as a separate part which only is engaged by lever 74.

Reference signs

[0037]

10 tub
12 cover member
14 fixed hood portion
15 central region of 14
16 rotatable door

18 side portion
20 horizontal axis
22 basket
24 holder
25 spray arm
26 operating switch
28 display
30 central region of 16
32 rim at 15
34 lower edge of 16
36 side seal
38 rim at rear edge of 16
40 top seal
42 rim at front edge of 16
44 bottom seal
46 abutment surface
48 arm
50 handle
52 bend in 48
54 catch member
56 recess
58 knob
60 switch means
62 2nd activation element
64 housing
66 control unit
68 circulation pump
70 heating unit
71 push button switch

| | | | | |
|---------|------------------------------------|----|----|--|
| 72 | push button | | | net while the other one of said first and second activation elements comprises a ferromagnetic element or a second magnet, and wherein said first and second activation elements are arranged to be located in close proximity when the door (16, 94, 102) is closed, so that the push button (72) is actuated by the action of the magnetic force induced between the first and second activation elements when the door is closed. |
| 74 | lever (one-sided) | | | |
| 76 | pivot point | 5 | | |
| 78 | 1 st activation element | | | |
| 80 | housing wall | | 10 | |
| 82 | lever (two-sided) | | | 2. The dishwasher of claim 1, wherein the door (16) comprises at least along one of its edges (34) a sealing surface (42) which in the closing position, engages an upper rim of the tub (10). |
| 84 | pivot point | | | |
| 86, 88 | lever arms | 15 | | 3. The dishwasher of claim 1 or 2, comprising a lower housing section (92) containing the tub (10) and a door (94, 102) which is a hood-shaped member which is hingedly connected to the lower housing section and which in the closing position sealingly engages the upper rim of the lower housing section. |
| 90 | stop | | | |
| 92 | lower housing section | | 20 | |
| 94 | hood | | | |
| 96 | hinge | | | |
| 98, 100 | levers | 25 | | 4. The dishwasher of claim 1 or 2, wherein the cover member (12) comprises a fixed section (14) that is connected to the tub (10), and wherein the door (102) is hingedly connected to the fixed section. |
| 102 | tiltable door | | | |
| 104 | hinge | | 30 | 5. The dishwasher of claim 1 or 2, wherein the cover member (12) comprises a fixed section (14) that is connected to the tub (10), and wherein the door (16) is rotatably connected to the fixed section. |

Claims

1. A table top dishwasher, comprising:

(a) a tub (10) for accommodating articles to be cleaned;

(b) a cover member (12, 94) forming a watertight hood over said tub (10), said hood comprising a door (16, 94, 102) which is movable between a raised opened position in which it provides access to the tub and a lowered closed position in which the door forms part of the watertight hood; and

(c) an electric switching means (60) adapted to change its switching condition when the door (16, 94, 102) is moved into or out of the fully closed position, the switching means comprising:

- a spring-biased push button switch (71) provided in proximity of the tub (10), wherein a first activation element (78) is associated to the push button (72); and

- a second activation element (62) which is provided at the door (16, 94, 102);

- wherein one of said first and second activation elements (62, 78) comprises a mag-

35 6. The dishwasher of any one of the preceding claims, wherein said switching means (60) comprises a pivotable lever (74, 82) which at a first position engages the push button (72) and which at a second position carries the first activation element (78).

40 7. The dishwasher of claim 6, wherein the distance between the second position and the fulcrum (76, 84) of the lever (74, 82) is larger than the distance between the first position and the fulcrum of the lever.

45 8. The dishwasher of any one of the preceding claims, wherein the first activation element (78) comprises a plunger which is arranged so as to be movable substantially in a direction parallel to the path of movement of the push button.

50 9. The dishwasher of any one of the preceding claims, wherein the spring-biased push button switch (71) is located in a housing section at the exterior side of the tub (10).

55 10. The dishwasher of claim 9, wherein the spring-biased push button switch (71) is located at the exterior side of a front or side wall (64) of the tub (10).

11. The dishwasher of any one of the preceding claims, further comprising control means (66) for controlling operation of the dishwasher based on the switching condition of the electric switching means (60). 5
12. The dishwasher of claim 11, wherein the control means (66) is adapted to interrupt a washing cycle, to trigger an alarm signal and/or to operate an interior light for illumination of the tub 1(10) based on the switching condition of the electric switching means (60). 10
13. The dishwasher of any one of the preceding claims, wherein the electric switching means (60) assumes a first switching condition when the door (16, 94, 102) is in the closed position and assumes a second switching condition as soon as the door leaves the closed position. 15
14. The dishwasher of claim 13, wherein the electric switching means assumes (66) a third switching condition when the door (16, 94, 102) is in an opened position in which it provides access to the tub (10). 20

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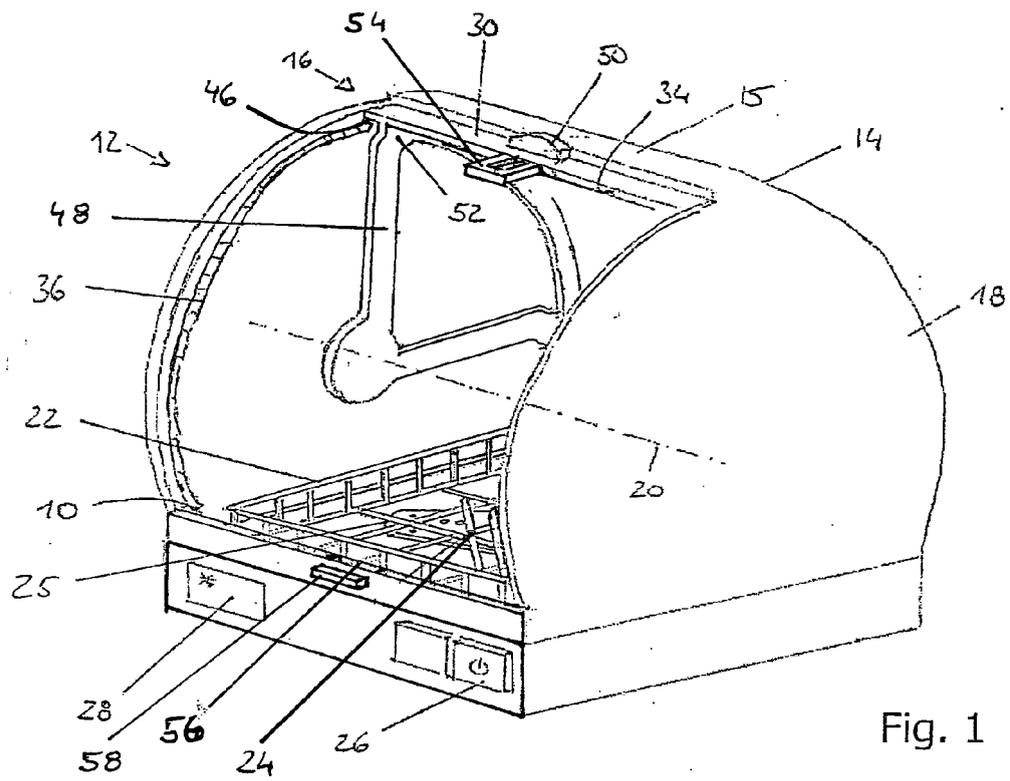


Fig. 1

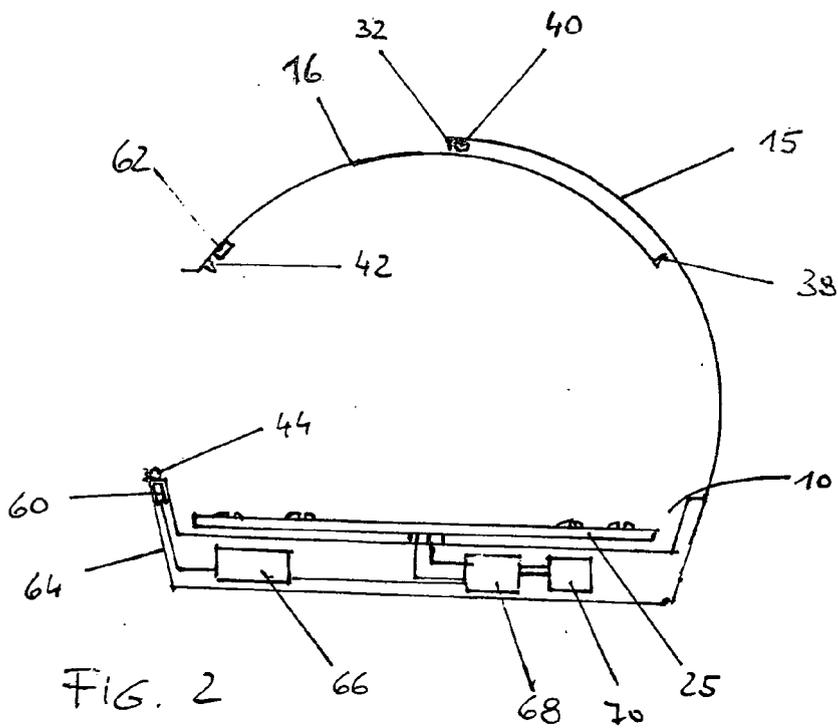
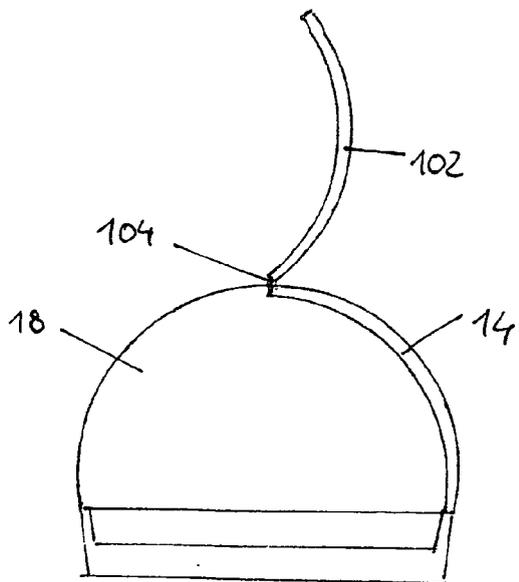
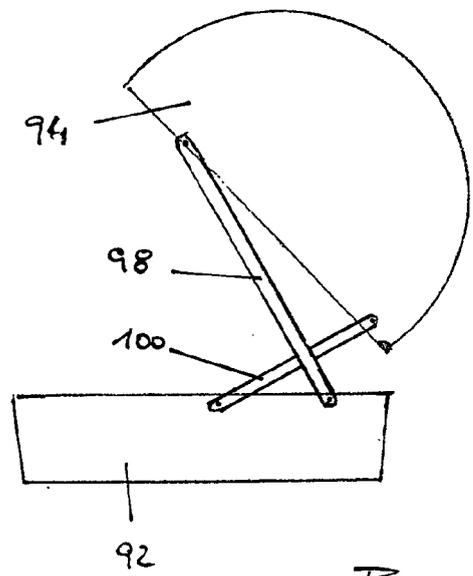
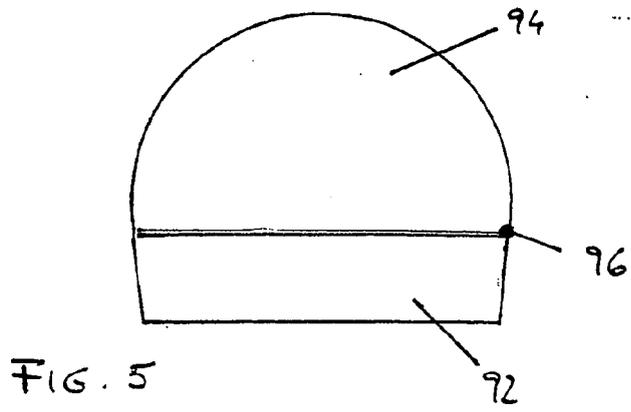


FIG. 2



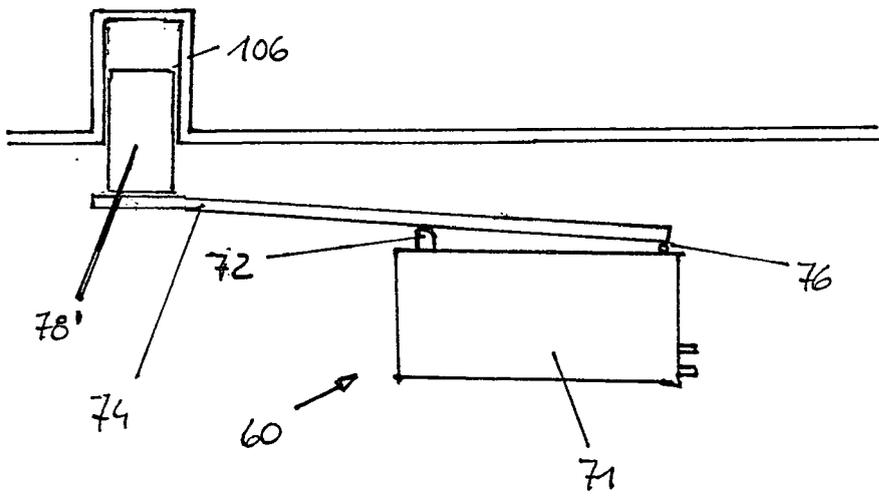
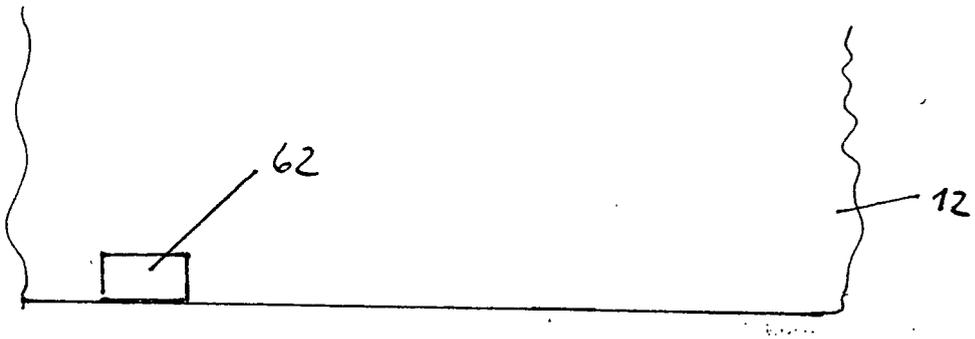


FIG. 8



EUROPEAN SEARCH REPORT

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