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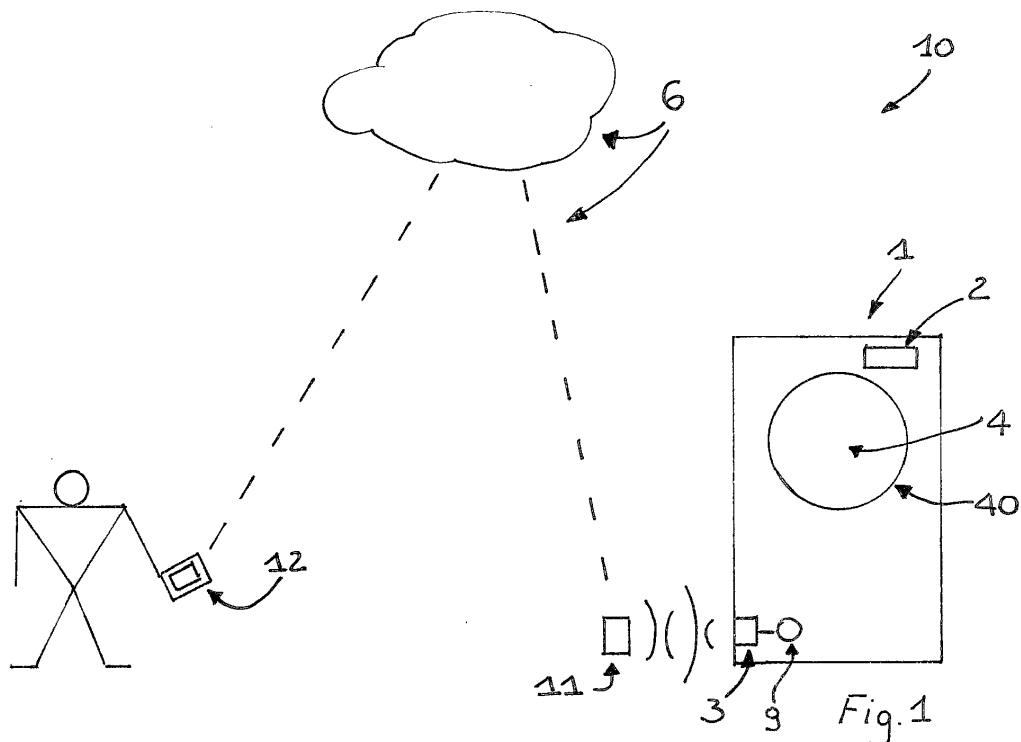
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(54) **A HOUSEHOLD APPLIANCE WITH A USER INTERFACE**

(57) A household appliance comprising:
-a user interface (2);
-connection means (3) for connection with a remote device;
-an enabling system (9) for enabling the remote control, which makes it possible for commands to be given re-

motely to the household appliance (1) through the connection means (3);

The user interface (2) comprises a selector (20) exclusively dedicated for activation and/or deactivation of said enabling system (9).



Description

[0001] The object of the present invention is a household appliance equipped with a user interface. In particular, it refers to a household appliance that can communicate with a remote device.

[0002] There is a known washing machine that can be interfaced with a portable phone, by means of which the user is able to give commands remotely. Before the operator can use this function, he/she must activate a "remote control" function, navigating on the user interface display of the washing machine (for safety reasons). Using his/her own portable phone or connecting to the Internet in some other manner, the operator can then remotely give a specific command, e.g. for starting the washing cycle.

[0003] In this context, the technical task underlying the present invention is to offer a household appliance that makes it possible to increase the speed of interaction between the user and the household appliance. A further aim of the present invention is to improve the functions of the household appliance, as well as the safety thereof, when it receives a command from a remote device. The defined technical task and the specified aims are substantially achieved by a household appliance comprising the technical characteristics set forth in one or more of the appended claims.

[0004] Further characteristics and advantages of the present invention will become more apparent from the approximate and thus non-limiting description of a preferred, but not exclusive, embodiment of a household appliance, as illustrated in the accompanying drawings, of which:

- Figure 1 is a schematic view of a system that incorporates a household appliance according to the present invention;
- Figure 2 shows a component of the household appliance appearing in Figure 1.

[0005] A household appliance is indicated by the reference number 1 in the accompanying figures. The household appliance 1 comprises a user interface 2. Advantageously, the user interface 2 is located on the front panel of the household appliance 1.

[0006] The household appliance 1 comprises connection means 3 for connection with a remote device. As clarified in further detail below, this connection is advantageously of an indirect type, mediated by the Internet.

[0007] The household appliance 1 also comprises an enabling system 9 for enabling the remote control, which makes it possible for commands to be given remotely to the household appliance 1 through the connection means 3.

[0008] The enabling system 9 enables remote control of the household appliance 1. Remote control is understood as receiving and implementing specific instructions coming from the remote device. For example, this control

activity can comprise starting a treatment cycle, modifying the treatment cycle and possibly also stopping this cycle.

[0009] The enabling system 9 is incorporated in a printed circuit board for controlling the household appliance 1.

[0010] Typically, the connection means 3 is wireless. The connection means 3 comprises a radio transceiver. As explained more fully below, the connection means 3 is designed to interact with a router (typically external to the household appliance 1). In Figure 1, this router is indicated by the reference number 11. This is usually the router found in the home or on the premises in which the household appliance 1 is located. The router, in turn, enables communication with the Internet to which a remote user can also connect so as to interact with the household appliance 1. In Figure 1, the Internet is indicated by the reference number 6.

[0011] The selector 20 is exclusively dedicated for activation and/or deactivation of the enabling system 9 for enabling the remote control. In fact, the selector 20 is capable of enabling or disabling implementation, on the part of the household appliance 1, of instructions coming from a remote device (these instructions arrive through the connection means 3).

[0012] Advantageously, the selector 20 is a mechanical type of selector.

[0013] In the preferred solution, the selector 20 is a button 21. It can be a button of various types, including touch, capacitive and mechanical buttons. Upon pressing the button 21 once, the system 9 for enabling the remote control is activated and when the button 21 is pressed a second time, the system 9 for disabling the remote control is deactivated.

[0014] The household appliance 1 preferably comprises/is an apparatus for washing and/or drying, typically for washing and/or drying clothes. For example, it could be a washing machine or dryer or a washer dryer.

[0015] The household appliance 1 advantageously comprises a treatment compartment 4 for the treatment of articles. In the case of a washing machine, washer dryer or dryer, a rotating drum is usually present inside the compartment 4.

[0016] The household appliance 1 comprises an access door 40 for access to the treatment compartment 4 so as to make it possible for a user insert and remove the articles. Advantageously, the door 40 makes it possible to insert the articles inside the drum. The opening of the door 4 determines deactivation of the enabling system 9 for enabling the remote control. This is very important in terms of safety. In fact, the opening of the door 40 marks a potentially dangerous situation, for example a child may have inserted in the compartment 4 objects that should not undergo any sort of treatment by the household appliance 1 (or worse, the child may have even climbed into the compartment 4). The door 40 must be closed in order for the remote control to be enabled on the household appliance 1.

[0017] The user interface 2 is conveniently located

above the door 40.

[0018] The household appliance 1 is suitable for receiving commands, simultaneously or substantially simultaneously, by means of the user interface 2 and by means of the connection means 3. Therefore, the user can intervene remotely or directly on the household appliance 1. The two situations are not mutually exclusive. This makes it possible to improve ease of use and flexibility in use. The household appliance 1 can possibly be commanded by a plurality of separate devices connected online.

[0019] As illustrated in the accompanying figures, the dedicated button 21 for activation of the enabling system 9 for enabling the remote control is at least partially encircled by other buttons. It is preferably located at the centre of a ring 5 of additional buttons 21. In the solution shown in Figure 2, the ring 5 has three buttons (located at either side of and below the dedicated button 21 for activation of the enabling system 9). Advantageously, the button 21 and the ring 5 of additional buttons are separate, with respect to the remaining selectors 50 of the same interface 2.

[0020] Advantageously, the operation of the enabling system 9 is indicated by the illumination of a light signal located on the user interface 2 (e.g. a LED located on the user interface 2). In this regard, the dedicated button 21 for activation of the enabling system 9 can be encircled by a light guide 210 that is illuminated in an operative configuration in which the enabling system 9 is active. This facilitates the user who, when facing the household appliance 1, can quickly understand whether the enabling system 9 is active or not. This is important also considering the implications for safety associated with the use of remote control means.

[0021] The object of the present invention is also a system 10 that comprises:

- a household appliance 1 having one or more of the technical characteristics described hereinabove;
- a first connection device 11 for connection to the Internet 6, the connection means 3 of the household appliance being in communication with the first connection device 11 for connection to the Internet 6; as mentioned above, the first device 11 can consist of a router (e.g. a domestic router);
- a second (advantageously portable) device 12 that can be connected to the Internet 6 for remote control of the household appliance.

[0022] Advantageously, the second device 12 is a smartphone and it thus functions as a user interface, substituting for the one afforded on the household appliance. Advantageously, this takes place by means of an App.

[0023] An example of how the present invention can operate is described herein below.

[0024] A user selects a treatment cycle using the interface 2 of the household appliance and activates the enabling system 9 for enabling the remote control by

means of the selector 20. At this point, the user can go elsewhere. Using an Internet connection (e.g. his/her own smartphone), the user can intervene so as to start, modify or stop treatment. The enabling system 9 must be active in order to carry out this procedure. In the case in which the user wishes only to monitor operation of the household appliance 1, it is possible to intervene even if the enabling system 9 is deactivated; it is sufficient to use the connection means 3. The invention thus conceived makes it possible to achieve multiple advantages.

[0025] First of all, it makes it possible to improve the user control modes of the household appliance, making activation of the enabling system 9 for enabling the remote control faster and more intuitive.

[0026] The invention thus conceived is susceptible to numerous modifications and variants, all of which falling within the scope of the inventive concept characterizing the invention. Moreover, all details may be replaced with other technically equivalent elements. All the materials used, as well as the dimensions, may in practice be of any type, according to needs.

Claims

1. A household appliance comprising:

- a user interface (2);
- connection means (3) for connection with a remote device;
- an enabling system (9) for enabling the remote control, which makes it possible for commands to be given remotely to the household appliance (1) through the connection means (3);

characterised in that the user interface (2) comprises a dedicated selector (20) for activation and/or deactivation of said enabling system (9).

2. The household appliance according to claim 1, **characterised in that** said selector (20) is a mechanical selector.

3. The household appliance according to claim 1 or 2, **characterised in that** said selector (20) is a button (21).

4. The household appliance according to any one of the preceding claims, **characterised in that** it comprises:

- a treatment compartment (4) for the treatment of articles;
- an access door (40) for access to the treatment compartment (4) so as to make it possible for a user to insert and remove articles, the opening of the door (4) determining deactivation of said enabling system (9) for enabling the remote con-

trol.

5. The household appliance according to any one of the preceding claims, **characterised in that** it is suitable for receiving commands, substantially simultaneously, by means of the user interface (2) and by means of the connection means (3). 5

6. The household appliance according to any one of the preceding claims, **characterised in that** said dedicated button (21) for the activation of the enabling system (9) is at the centre of a ring (5) of additional buttons. 10

7. The household appliance according to any one of the preceding claims, **characterised in that** said dedicated button (21) for the activation of the enabling system (9) is encircled by a light guide that is illuminated in an operative configuration in which the enabling means (9) is active. 15
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8. The household appliance according to any one of the preceding claims, **characterised in that** said connection means (3) for connection with a remote device is wireless. 25

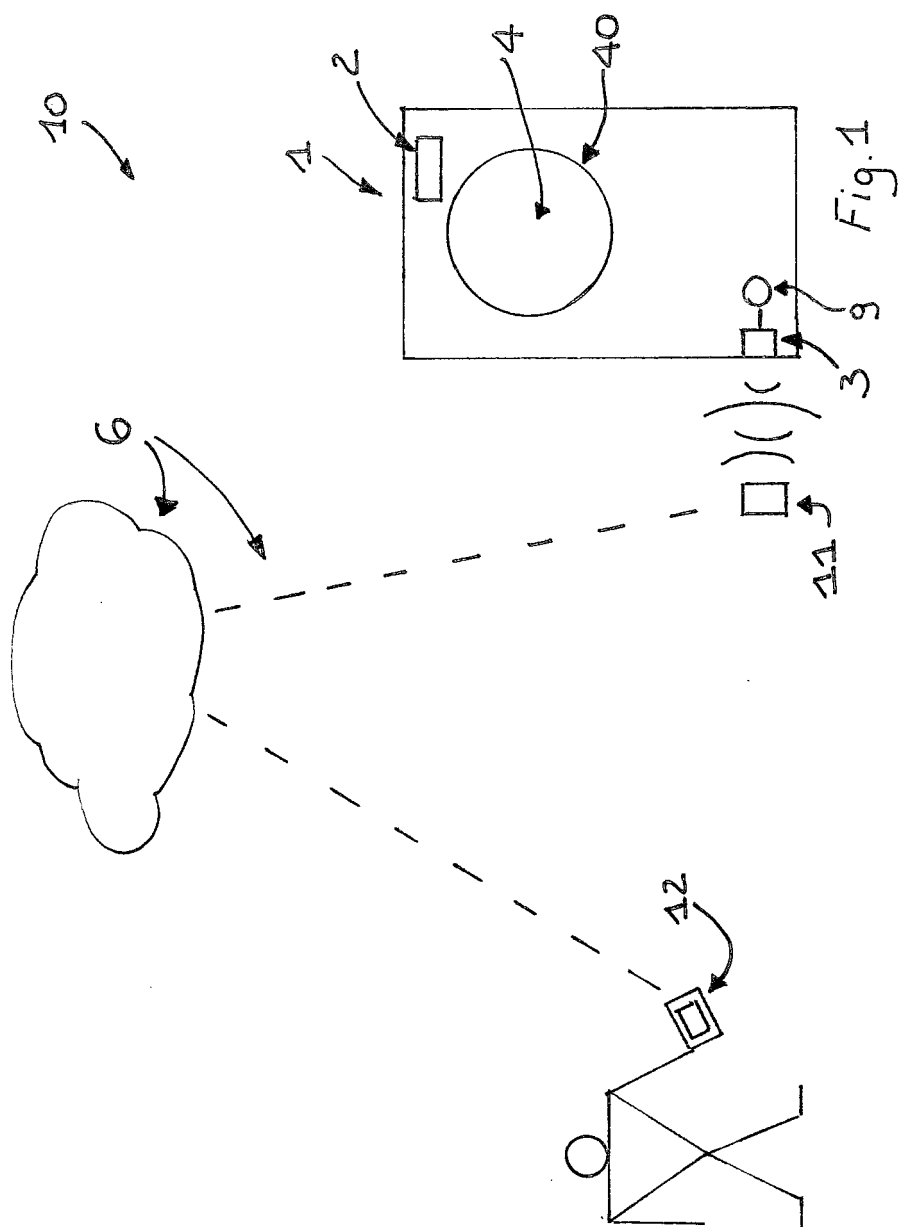
9. The household appliance according to any one of the preceding claims, **characterised in that** it comprises/is a household washing and/or drying apparatus. 30

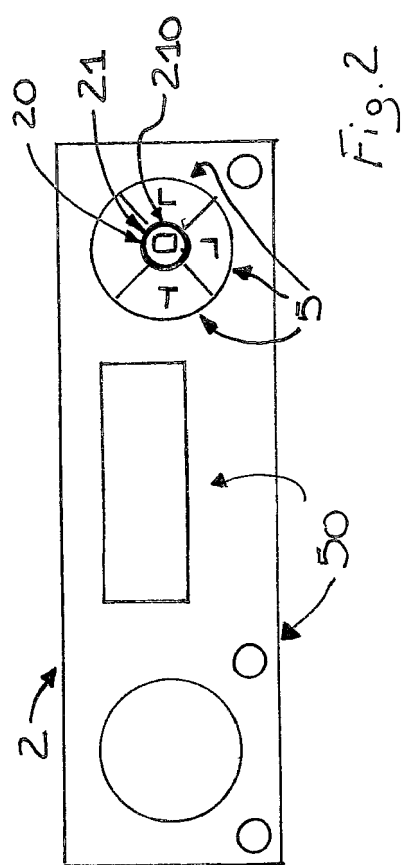
10. A system comprising:
 - a household appliance (1) according to any one of claims 1 to 9; 35
 - a first connection device (11) for connection to the Internet (6), the connection means (3) of the household appliance being in communication with the first connection device (11);
 - a second, portable device (12) that can be connected to the Internet (6) for remote control of the household appliance (1). 40

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EUROPEAN SEARCH REPORT

Application Number
EP 16 15 0786

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 31 March 2016	Examiner Stroppa, Giovanni
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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5 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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