(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 379 789 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
07.11.2012 Bulletin 2012/45

(21) Application number: **09771344.0**

(22) Date of filing: **09.12.2009**

(51) Int Cl.:
D06F 39/00 *(2006.01)*

(86) International application number:
PCT/EP2009/066713

(87) International publication number:
WO 2010/076138 (08.07.2010 Gazette 2010/27)

(54) **A HOUSEHOLD APPLIANCE HAVING KEY LOCK FUNCTION**

HAUSHALTSGERÄT MIT ZUGANGSSPERRE

APPAREIL ÉLECTROMÉNAGER DOTÉ D'UNE FONCTION DE VERROUILLAGE DE TOUCHE

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

(30) Priority: **30.12.2008 TR 200810039**

(43) Date of publication of application:
26.10.2011 Bulletin 2011/43

(73) Proprietor: **Arçelik Anonim Sirketi**
34950 Istanbul (TR)

(72) Inventors:
- **BAYATLI, Engin**
  34950 Istanbul (TR)
- **OZCAN, Ersoy**
  34950 Istanbul (TR)
- **PARMAKSIZ, Sezgin**
  34950 Istanbul (TR)
- **UNAL, Baris**
  34950 Istanbul (TR)

(56) References cited:
EP-A1- 0 859 296
DE-A1- 4 031 266
JP-A- 2000 082 352

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 379 789 B1

Description

[0001] The present invention relates to a household appliance wherein the key functions are blocked by the key lock being activated while operating the household appliance, as known from EP-0,859,296 A1.

[0002] In household appliances, for example in washing machines, key lock function, which is also named as the child lock, is used in order that the user interface functions such as program cancellation, program pause or new program start can be deactivated. The key lock function is activated and deactivated automatically or as a result of using a predefined input combination of the push buttons or of the program selector switch, which are situated on the control panel. For example, the user activates the key lock by pressing more than one push button situated on the control panel, and when he/she presses the same push buttons again, the key lock is deactivated. As long as the key lock is activated, intervention of the user to the household appliance to change the operating program is not possible. In the state of the art, while a household appliance operates, even if the key lock is activated, the operation of the household appliance can be stopped in an emergency situation by disconnecting it from the main supply, for example by unplugging the household appliance or pressing the on/off button, and can be restarted; in other words, the on/off button is made independent of the key lock; however, to deactivate the key lock in a fast manner, there is no method other than the reapplication of the push button input combination, which is defined in the software, by the user.

[0003] In the state of the art Japanese Patent Application No JP2000082352, in a household appliance, a child lock switch provides the operation switches to change from the unlocking mode to the locking mode or from the locking mode to the unlocking mode, and even when the child lock is activated, this does not affect the main power switch, and on - off functions of the machine are performed.

[0004] In the state of the art German Patent No DE4031266, when the rotary selector switch situated in a household appliance is brought to the end mode and kept in this mode for a certain period of time, the washing program is terminated independently of the child lock and can be restarted.

[0005] The aim of the present invention is the realization of a household appliance, the key lock function of which is provided to be easily cancelled by the user when required.

[0006] The household appliance realized in order to attain the aim of the present invention is explicated in the claims.

[0007] In the household appliance, on the control panel, an on/off switch having on/off function, more than one push button determining the auxiliary functions to be applied, and a start button providing the selected program to be started are located. Automatically or when the user presses the push button combination, which is defined in the software, for example two push buttons simultaneously, the key lock function is activated by the microcontroller and the functions of the push buttons are blocked.

[0008] In the embodiment of the present invention, in the period of time between the turning on and off of the household appliance, if the key lock function is activated by the user or automatically in any one of the waiting modes exclusive of the run mode, then in the same waiting mode, the key lock function is provided to be cancelled without using the push button combination defined in the software and only by turning the on/off switch off and on once.

[0009] The household appliance of the present invention is preferably a washing machine, and the on/off switch has the function of selecting the program, such as cotton, synthetic or wool fabric washing program, that will be applied, as well as the on/off option, and when the on/off switch is brought to the on/off position, it provides the energy to be cut off and when it leaves the on/off position and is brought to any position which indicates the washing programs, it provides the household appliance to be energized.

[0010] In this embodiment, in the household appliance, in the period of time between the energizing of the household appliance by bringing the switch to the on position and the de-energizing of the household appliance by bringing the switch to the off position, if the key lock function is activated in any one of the waiting modes such as the idle, end, pause and time delay modes, excluding the run mode, then in the same waiting mode, the key lock function is cancelled without using the push button combination defined in the software and only by bringing the switch to the on/off position and then again to the initial program option.

[0011] In an embodiment of the present invention, in the household appliance, an on/off switch that only provides the household appliance to be turned on and off and independently of this switch, a program selector switch that provides the program, which will be applied, to be selected are situated.

[0012] In this embodiment, if the key lock function is activated in any one of the waiting modes of the household appliance exclusive of the run mode, the household appliance is turned off and on only by pressing the on/off switch regardless of the position of the program selector switch, and the key lock function is provided to be cancelled. In other words, beside the on/off function, also the function of cancelling the key lock is loaded to the on/off switch.

[0013] In the household appliance of the present invention, according to whether an off signal is received from the on/off switch or not, the microcontroller distinguishes that the household appliance is turned off either by "cutting off the energy from the main supply / unplugging the household appliance" or by "the on/off switch being brought to the off position by the user", and if the microcontroller detects that the household appliance is

turned off by being disconnected from the main supply or by being unplugged, it does not cancel the key lock function.

[0014] If the microcontroller detects that the household appliance in the waiting mode is turned off without cutting off the energy from the main supply and by the switch being brought to the off position by the user, the microcontroller cancels the key lock function. Thus, cancellation of the key lock function without user request is prevented.

[0015] The household appliance realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

[0016] Figure 1 - is the perspective view of a household appliance.

[0017] Figure 2 - is the schematic view of a control panel and a microcontroller in an embodiment of the present invention.

[0018] Figure 3 - is the schematic view of a control panel and a microcontroller in another embodiment of the present invention.

[0019] The elements illustrated in the figures are numbered as follows:

[0020] 1 - Household appliance

[0021] 2 - Control panel

[0022] 3, 103 - Switch

[0023] 4 - Push button

[0024] 5 - Start button

[0025] 6 - Microcontroller

[0026] 7 - Program selector switch

[0027] The household appliance (1) comprises a control panel (2), a switch (3, 103) which is located on the control panel (2) and which has an on/off function, more than one push button (4) which determines the auxiliary functions (F), that will be applied, according to the preference of the user, a start button (5) which provides the selected program (P) to be started and when desired, which provides the program (P) to be paused by being pressed again, and a microcontroller (6) which has a non-volatile memory and a processor, and which activates the key lock function (KL) automatically or when the push button (4) input combination that is predefined by the producer and that is preferably indicated on the control panel (2) is applied by the user, and which blocks the functions of the push buttons (4) and the start button (5).

[0028] The household appliance (1) is set in the run mode (I) and in the waiting modes (II) in the period of time elapsing between the energizing of the household appliance (1) by bringing the switch (3, 103) to the on position and the de-energizing of the household appliance (1) by bringing the switch (3, 103) to the off position.

[0029] The household appliance (1) changes to the run mode (I) when the program (P) is selected and the start button (5) is pressed after the switch (3, 103) is brought to the on position, and the household appliance (1) remains in the run mode (I) until the selected program (P) ends. The household appliance (1) is set in the waiting mode (II) in the periods of time excluding the run mode (I), for example in the period of time elapsing after the switch (3, 103) is brought to the on position at the beginning and until the start button (5) is pressed, or in the periods of time elapsing after the applied program (P) ends and until the switch (3, 103) is brought to the off position by the user. When the user presses the start button (5) while the household appliance (1) is in the run mode (I), the household appliance (1) changes to the waiting mode (II) from the run mode (I) and when the user presses the start button (5) again, the household appliance (1) changes to the run mode (I) from the waiting mode (II).

[0030] The household appliance (1) of the present invention (1) has a microcontroller (6) which provides the key lock function (KL) to be cancelled without applying the defined push button (4) combination and only by turning the switch (3, 103) off and on in the waiting mode (II) if the key lock function (KL) is activated by the user or automatically in any waiting mode (II) wherein no program (P) is applied and in the period of time between the energizing of the household appliance (1) by bringing the switch (3, 103) to the on position for the operation of the household appliance (1) and the de-energizing of the household appliance (1) by bringing the switch (3, 103) to the off position in order that the household appliance (1) is turned off after the applied program (P) ends.

[0031] In the household appliance (1) of the present invention, if there is no continuing program (P) and if the switch (3, 103) is on and in the waiting mode (II), and when the key lock function (KL) is activated automatically or by the user applying the push button (4) input combination, the same push button (4) input combination is not required to be applied again to cancel the key lock function (KL) and the key lock function (KL) is cancelled only by turning the switch (3, 103) off and on once.

[0032] Since the key lock function (KL) is preferred to be activated while the household appliance (1) is in the run mode (I), when the key lock function (KL) is activated, the microcontroller (6) does not allow the key lock function (KL) to be passivated by turning the switch (3, 103) off and on in the run mode (I). When the switch (3, 103) is turned off and on while the household appliance (1) is in the run mode (I), only the operation of the household appliance (1) is cut and then resumed, and the active state of the key lock function (KL) does not change. In the run mode (I), the key lock function (KL) can be cancelled only by applying the predefined push button (4) input combination, as in the state of the art.

[0033] In an embodiment of the present invention, the household appliance (1) has the feature of washing laundry, and comprises a rotary switch (3) which serves to turn the household appliance (1) on and off and beside the on/off option, which has the function of selecting the program (P), such as cotton, synthetic or wool fabric washing program (P), that will be applied, and which provides the energy to be cut off when brought to the on/off position, and which provides the household appliance (1) to be energized when brought to any position indicating

the washing programs (P) by leaving the on/off position (Figure 2). After being energized by bringing the switch (3) to the on position and until being turned off, the household appliance (1) is either in the run mode (I) or in the waiting modes (II) such as the idle mode, end mode, pause mode or time delay mode.

[0034] The run mode (I) is the mode wherein, after the program (P) is selected and the auxiliary function (F) adjustments are made, the selected program (P) and the auxiliary function (F) are applied by the user pressing the start button (5). In this mode, the household appliance (1), for example, receives water from the outside, washes and rinses the laundry and finishes the program by spinning the laundry.

[0035] The idle mode, being one of the waiting modes (II), is the mode wherein no program (P) is operated at the beginning in the household appliance (1) and wherein, by the user, the program (P) selection is performed by means of the switch (3) and the selection of the auxiliary functions (F) is performed by means of the push buttons (4) and thus, for example, the operating temperature and the spin speed are adjusted.

[0036] The end mode, being one of the waiting modes (II), is the mode, which is set after the run mode (I) ends. In this mode, the household appliance (1) can be turned off by bringing the switch (3) to the off position or a new program (P) can be started by changing the switch (3) to the idle mode. For example, the washed laundry is unloaded and other laundry is loaded, and after the program (P) is selected, the run mode (I) is set by pressing the start button (5).

[0037] The pause mode, being one of the waiting modes (II), is the mode which is set by the user pressing the start button (5) with pause function for the second time after the run mode (I) is started by pressing the start button (5). When the start button (5) is pressed again, the run mode (I) is reset.

[0038] The time delay mode, being one of the waiting modes (II), is the mode wherein the program (P), which is selected in the idle mode, stands by to be started later when desired. To apply the time delay mode, the user has to define the time delay selection and period by means of the push buttons (4) after performing the program (P) selection.

[0039] In this embodiment, if the key lock function (KL) is activated in any one of the waiting modes (II) such as the idle, end, pause and time delay mode, excluding the run mode (I), then in the same waiting mode (II), the microcontroller (6) provides that the key lock function (KL) is cancelled only by the switch (3) being brought to the on/off option and then again to the program (P) option (Figure 2).

[0040] In another embodiment of the present invention, the household appliance (1) comprises a switch (103) that only provides the household appliance (1) to be turned on and off, and independently of this switch (103), a program selector switch (7) that provides the program (P), which will be applied, to be selected. In this embodiment, if the key lock function (KL) is activated in any one of the waiting modes (II) exclusive of the run mode (I), the microcontroller (6) provides the key lock function (KL) to be cancelled by the household appliance (1) being turned off and on once only by the switch (103) being pressed regardless of the position of the program selector switch (7) (Figure 3).

[0041] In this embodiment, for example when the key lock function (KL) is activated before pressing the start button (5) and in the situation that any program (P) is selected by the program selector switch (7), an intervention with the program selector switch (7) to unlock the active key lock (KL) is not required and only turning the switch (103) off and on once is sufficient.

[0042] While the household appliance (1) operates, in unexpected situations such as power failures originating from the main supply or unplugging of the household appliance (1), the key lock function (KL) is not cancelled. According to whether it receives an off signal from the switch (3, 103) or not, the microcontroller (6) distinguishes that the household appliance (1) is turned off either by "cutting off the energy from the main supply" or by "the switch (3, 103) being brought to the off position by the user", and if the microcontroller (6) detects that the household appliance (1) is turned off not by the user but by being disconnected from the main supply or by being unplugged, it does not cancel the key lock function (KL), and if the microcontroller (6) detects that the user turned the household appliance (1) off by bringing the switch (3, 103) to the off position in the waiting mode (II), it cancels the key lock function (KL).

[0043] The microcontroller (6) takes only the intervention of the user into consideration to cancel the key lock function (KL) in a practical manner and does not take the turning off of the household appliance (1), which happens as a result of the power failure originating from the main supply, into consideration, and thus, prevents the key lock function (KL) from being cancelled without user request.

[0044] In the household appliance (1) of the present invention, in order to passivate the key lock function (KL), instead of applying the push button (4) input combination, which is present in the software, only turning the switch (3, 103) off and on once is sufficient and thus, the user can cancel the key lock function (KL) in a fast and practical manner when required. The key lock function (KL) is cancelled only by the intervention of the user and in an unexpected situation such as a power failure originating from the main supply, the microcontroller (6) detects that the household appliance (1) is not turned off by the intervention of the user and thus, does not cancel the key lock function (KL).

[0045] It is to be understood that the present invention is not limited to the embodiments disclosed above and an expert in the technique can easily introduce different embodiments. These should be considered within the scope of the protection postulated by the claims of the present invention.

Claims

1. A household appliance (1) comprising a control panel (2), a switch (3, 103) which is located on the control panel (2) and which has an on/off function, more than one push button (4) which determines the auxiliary functions (F) to be applied, a start button (5) which provides the selected program (P) to be started and when desired, which provides the program (P) to be paused by being pressed again, and a microcontroller (6) which activates the key lock function (KL) automatically or when the predefined push button (4) input combination is applied by the user, **characterized by** the microcontroller (6) which provides the key lock function (KL) to be cancelled without applying the defined push button (4) combination and only by turning the switch (3, 103) off and on in the waiting mode (II) if the key lock function (KL) is activated in any waiting mode (II) exclusive of the run mode (I) in the total period of time between the energizing of the household appliance (1) by bringing the switch (3, 103) to the on position and the de-energizing of the household appliance (1) by bringing the switch (3, 103) to the off position.

2. A household appliance (1) as in Claim 1, having the feature of washing laundry and **characterized by** - the switch (3) which serves to turn the household appliance (1) on and off, and which has the function of selecting the program (P), such as cotton, synthetic or wool fabric washing program (P), that will be applied, as well as the on/off option, and which provides the energy to be cut off when brought to the on/off position, and which provides the household appliance (1) to be energized when brought to any position indicating the washing programs (P) by leaving the on/off position, and - the microcontroller (6) which, in the waiting mode (II), provides that the key lock function (KL) is cancelled only by the switch (3) being brought to the on/off option and then again to the program (P) option if the key lock function (KL) is activated in any one of the waiting modes (II) such as the idle, end, pause and time delay mode, excluding the run mode (I).

3. A household appliance (1) as in Claim 1, **characterized by -** the switch (103) which only provides the household appliance (1) to be turned on and off, - independently of this switch (103), by a program selector switch (7) which provides the program (P), that will be applied, to be selected, and - by the microcontroller (6) which provides the key lock function (KL) to be cancelled by the household appliance (1) being turned off and on only by the switch (103) being pressed regardless of the position of the program selector switch (7), if the key lock function (KL) is activated in any one of the waiting modes (II) exclusive of the run mode (I).

4. A household appliance (1) as in any one of the above Claims, **characterized by** the microcontroller (6) which, according to whether it receives an off signal from the switch (3, 103) or not, distinguishes that the household appliance (1) is turned off either by "cutting off the energy from the main supply" or by "the switch (3, 103) being brought to the off position by the user", and which does not cancel the key lock function (KL) by the detection that the household appliance (1) is turned off by being disconnected from the main supply, and which cancels the key lock function (KL) by the detection that the user turned the household appliance (1) off by bringing the switch (3, 103) to the off position.

Patentansprüche

1. - Haushaltsgerät (1), **umfassend** ein Steuerfeld (2), einen Schalter (3, 103), der sich am Steuerfeld (2) befindet und der eine Ein/Aus-Funktion aufweist, mehrere Drucktasten (4), die die Hilfsfunktionen (F) bestimmen, die angewandt werden, eine Starttaste (5), die dafür sorgt, dass das ausgewählte Programm (P) gestartet wird, und bei Bedarf dafür sorgt, dass das Programm (P) unterbrochen wird, indem sie erneut gedrückt wird, und eine Mikrosteuerung (6), die die Tastensperrfunktion (KL) automatisch oder dann, wenn vom Benutzer die im Voraus definierte Eingabekombination von Drucktasten (4) angewandt wird, aktiviert,
gekennzeichnet durch eine Mikrosteuerung (6), die dafür sorgt, dass die Tastensperrfunktion (KL) im Wartemodus (II) ohne Anwenden der definierten Kombination von Drucktasten (4) und **durch** bloßes Aus- und Einschalten des Schalters (3, 103) aufgehoben wird, wenn die Tastensperrfunktion (KL) in einem Wartemodus (II) mit Ausnahme des Ausführungsmodus (I) in der Gesamtzeit zwischen dem Einschalten des Haushaltsgeräts (1), indem der Schalter (3, 103) in die Einschaltposition gebracht wird, und dem Ausschalten des Haushaltsgerät (1), indem der Schalter (3, 103) in die Ausschaltposition gebracht wird, aktiviert wurde.

2. - Haushaltsgerät (1) nach Anspruch 1, das die Funktion des Waschens von Wäsche aufweist, und **gekennzeichnet durch**

   - den Schalter (3), der dazu dient, das Haushaltsgerät (1) ein- und auszuschalten, und der die Funktion aufweist, das Programm (P) auszuwählen, etwa ein Baumwoll-, Synthetik- oder Wollwaschprogramm (P), das angewandt wird, sowie die Ein/Aus-Option, und der dafür sorgt, dass die Energieversorgung unterbrochen wird, wenn er in die Ein/Aus-Position gebracht wird, und der dafür sorgt, dass das Haushaltsgerät

(1) eingeschaltet wird, wenn er in eine beliebige Position gebracht wird, die die Waschprogramme (P) anzeigt, indem er die Ein/Aus-Position verlässt, und

- die Mikrosteuerung (6), die im Wartemodus (II) dafür sorgt, dass die Tastensperrfunktion (KL) aufgehoben wird, indem lediglich der Schalter (3) in die Ein/Aus-Option und dann erneut in die Programm-(P)-Option gebracht wird, wenn die Tastensperrfunktion (KL) in einem beliebigen Wartemodus (II) wie etwa Leerlauf-, End-, Pausen- und Verzögerungsmodus mit Ausnahme des Betriebsmodus (I) aktiviert wurde.

3. - Haushaltsgerät (1) nach Anspruch 1, **gekennzeichnet durch**

- den Schalter (103), der nur dafür sorgt, dass das Haushaltsgerät (1) ein- und ausgeschaltet wird,
- unabhängig von diesem Schalter (103) einen Programmauswahlschalter (7), der dafür sorgt, dass das Programm (P), das angewantd wird, ausgewählt wird, und
- die Mikrosteuerung (6), die dafür sorgt, dass die Tastensperrfunktion (KL) **durch** bloßes Ein- und Ausschalten des Haushaltsgeräts (1) aufgehoben wird, indem der Schalter (103) gedrückt wird, unabhängig von der Position des Programmauswahlschalters (7), wenn die Tastensperrfunktion (KL) in einem beliebigen Wartemodus (II) mit Ausnahme des Betriebsmodus (I) aktiviert wurde.

4. . Haushaltsgerät (1) nach einem der vorangehenden Ansprüche, **gekennzeichnet durch** die Mikrosteuerung (6), die, je nachdem, ob sie ein Aussignal vom Schalter (3, 103) empfängt oder nicht, unterscheidet, ob das Haushaltsgerät (1) **durch** "Unterbrechen der Energieversorgung vom Stromnetz" oder "dadurch, dass der Schalter (3, 103) vom Benutzer in die Ausschaltposition gebracht wird", ausgeschaltet wird, und die die Tastensperrfunktion (KL) nicht aufhebt, wenn sie erkennt, dass das Haushaltsgerät (1) ausgeschaltet wird, indem es vom Stromnetz getrennt wird, und die die Tastensperrfunktion (KL) aufhebt, wenn sie erkennt, dass der Benutzer das Haushaltsgerät (1) ausgeschaltet hat, indem er den Schalter (3, 103) in die Ausschaltposition gebracht hat.

Revendications

1. - Un électroménager (1) **comprenant** un panneau de commande (2), un bouton (3, 103) qui est disposé sur le panneau de commande (2) et qui a une fonction ON/OFF, plus d'un bouton-poussoir (4) qui détermine les fonctions auxiliaires (F) à appliquer, un bouton de démarrage (5) qui permet le commencement du programme sélectionné (P) et lorsque l'on le désire, qui permet au programme (P) d'être mis en pause en étant poussé à nouveau, et un microcontrôleur (6) qui actionne la fonction de verrouillage de clavier (KL) automatiquement ou lorsque la combinaison d'entrée prédéfinie pour le bouton-poussoir (4) est appliquée par l'utilisateur,
caractérisé par le microcontrôleur (6) qui permet à la fonction de verrouillage de clavier (KL) d'être annulée sans appliquant la combinaison définie pour le bouton-poussoir (4) et seulement par la mise du bouton (3, 103) à la position OFF et ON dans le mode d'attente (II) si la fonction de verrouillage de clavier (KL) est activée dans un mode d'attente (II) sauf le mode de fonctionnement (I) dans la période de temps totale entre l'activation de l'électroménager (1) en mettant le bouton (3, 103) à la position ON et la désactivation de l'électroménager (1) en mettant le bouton (3, 103) à la position OFF.

2. - Un électroménager (1) selon la Revendication 1, ayant la caractéristique de lavage du linge et **caractérisé par**

- le bouton (3) qui sert à allumer et éteindre l'électroménager (1), et qui a la fonction de sélectionner le programme (P) tel que le programme (P) de lavage de coton, synthétique ou laine, qui sera appliqué, ainsi que l'option ON/OFF, et qui permet à l'énergie d'être coupée lorsqu'il est mis à la position ON/OFF, et qui permet à l'électroménager (1) d'être allumé lorsqu'il est mis à une position indiquant les programmes de lavage (P) en laissant la position ON/OFF, et
- le microcontrôleur (6) qui, en mode d'attente (II), assure que la fonction de verrouillage de clavier (KL) est annulée seulement en mettant le bouton (3) à la position ON/OFF et puis à nouveau à la position de programme (P) si la fonction de verrouillage de clavier (KL) est activée dans l'une quelconques des modes d'attente (II) telles que repos, fin, mettre en pause et temporisation, sauf le mode de fonctionnement (I).

3. - Un électroménager (1) selon la Revendication 1, **caractérisé par**

- le bouton (103) qui ne permet à l'électroménager (1) que d'être allumé et éteint,
- indépendamment de ce bouton (103), **par** un bouton de sélection de programme (7) qui permet la sélection du programme (P) à appliquer, et
- **par** le microcontrôleur (6) qui permet l'annulation de la fonction de verrouillage de clavier (KL) en éteignant et allumant l'électroménager (1) seulement en poussant le bouton (103) quelle

que soit la position du bouton de sélection de programme (7), si la fonction de verrouillage de clavier (KL) est activée dans l'une quelconque des modes d'attente (II) sauf le mode de fonctionnement (I).

4. - Un électroménager (1) selon l'une quelconque des revendications précédentes, **caractérisé par** le microcontrôleur (6) qui, selon qu'il reçoit un signal OFF du bouton (3, 103) ou non, décide que l'électroménager (1) est éteint soit en « coupant l'énergie de l'alimentation principale ou en « mettant le bouton (3, 103) à position OFF par l'utilisateur », et qui n'annule pas la fonction de verrouillage de clavier (KL) en détectant que l'électroménager (1) est éteint en étant débranché, et qui annule la fonction de verrouillage de clavier (KL) en détectant que l'utilisateur a éteint l'électroménager (1) en mettant le bouton (3, 103) à la position OFF.

Figure 1

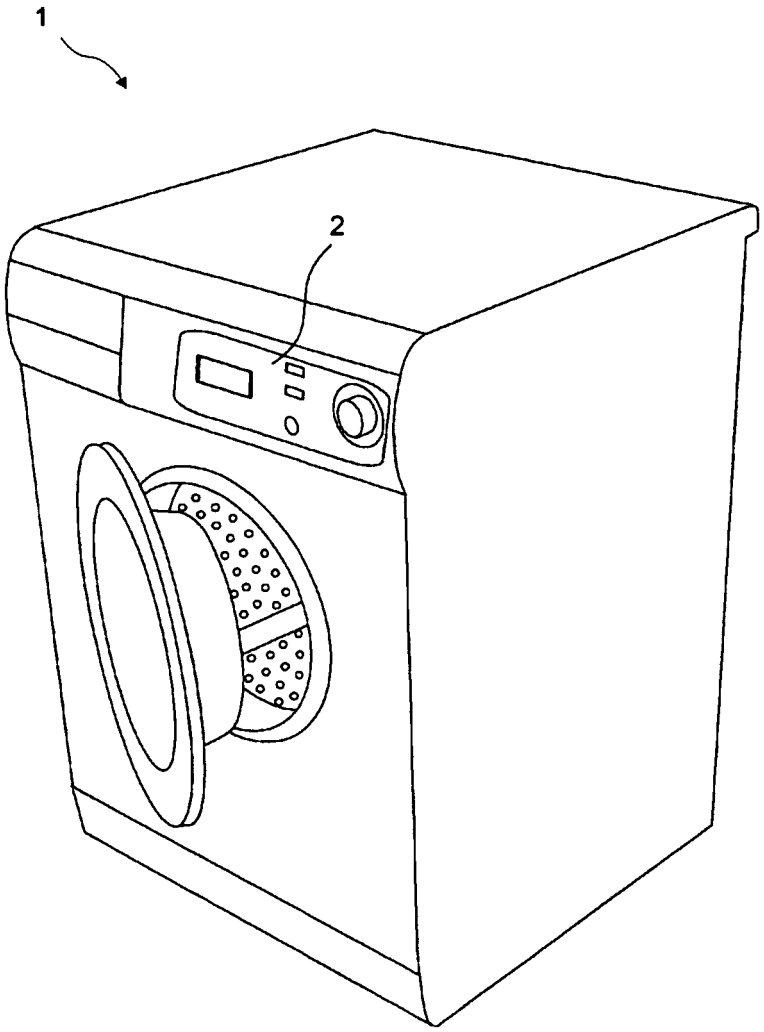


Figure 2

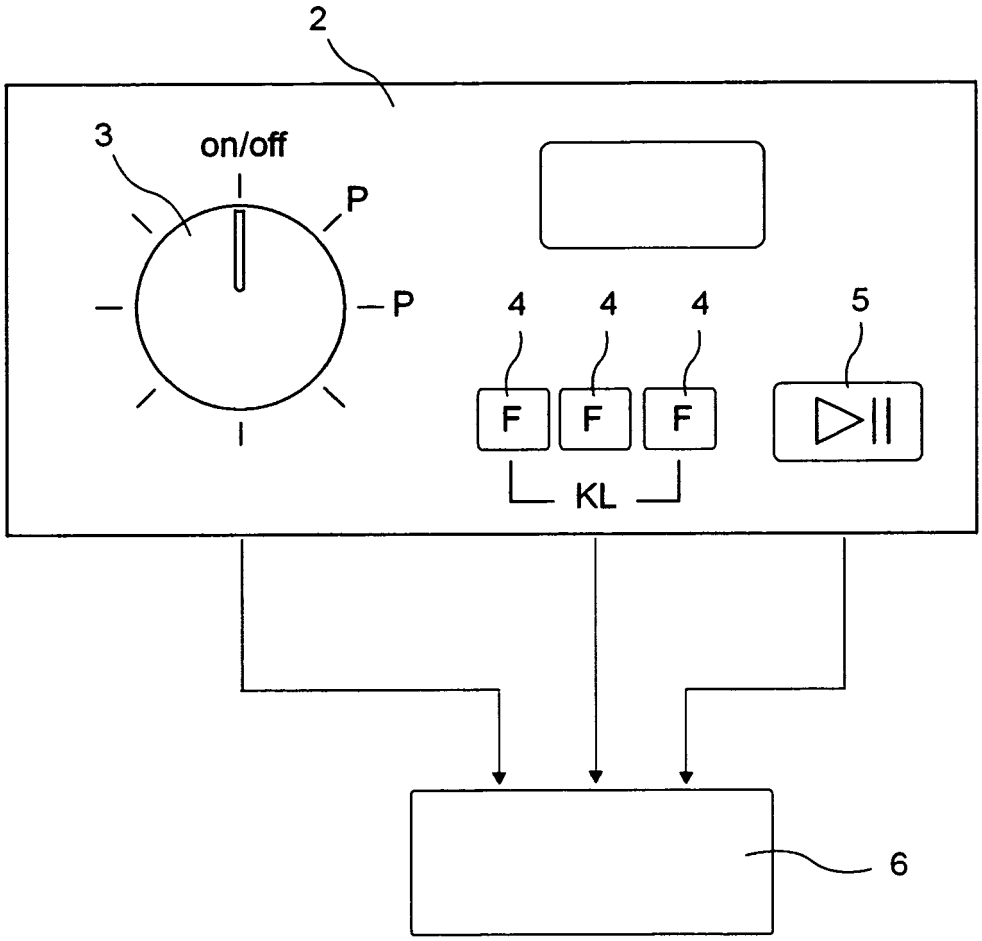
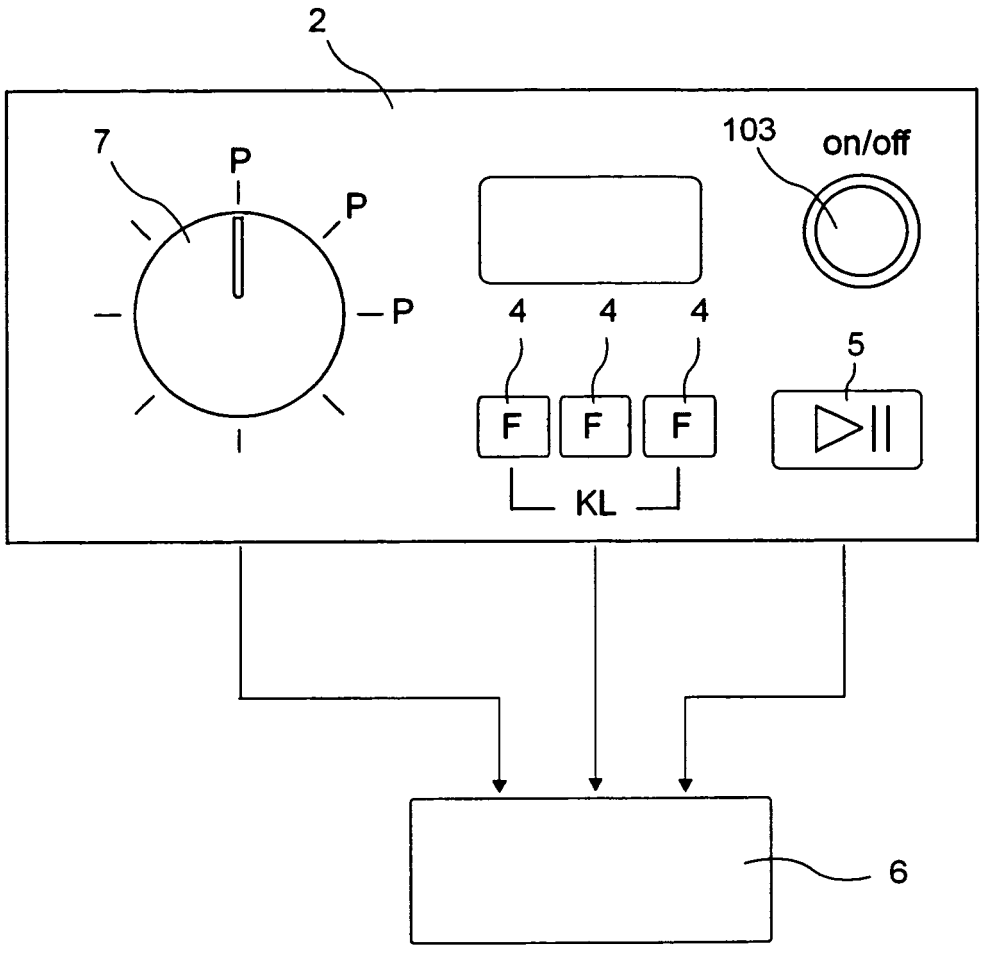


Figure 3



REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 0859296 A1 **[0001]**
- JP 2000082352 B **[0003]**
- DE 4031266 **[0004]**