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(54) **METHOD AND DEVICE FOR DOSING WATER IN A STEAM CHAMBER**

(57) The invention relates to a method of controlling a garment care device. The garment care device comprises a steam chamber, a water pump, and a user trigger means to activate the water pump for dosing water in the steam chamber. The method comprising a step of determining (101), upon the user trigger means is activated, a water flow rate for the water pump, based on the previous OFF duration (d_OFF) during which the user trigger means was not activated for the previous time, the previous ON duration (d_ON) during which the user trigger means was activated for the previous time. The method also comprises a step of activating (102) the water pump with said water flow rate.

This solution allows obtaining a high steam generation repeatedly, and to get consistent steam generation every time steam is generated.

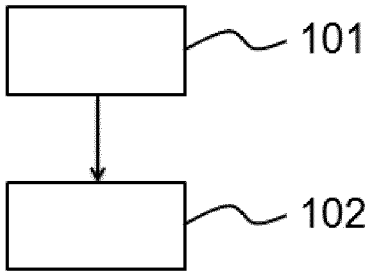

FIG.1

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Description

FIELD OF THE INVENTION

[0001] The invention relates to a method and device for dosing water in a steam chamber.

[0002] The invention may be used in the field of garment care.

BACKGROUND OF THE INVENTION

[0003] In a conventional steam iron, water is dosed into the steam chamber by gravity from a water reservoir built in the iron body. The water flows into the steam chamber and consequently the steam generation starts. The steam paths are typically short and designed with minimal obstruction for easy flow of water.

[0004] The ironing steam rates for such irons are rather low in view that limited water is dosed into the steam chamber to avoid water accumulation and splashing in steam chamber.

[0005] Another type of device comprises a base connected to an iron via a hose. When user wants steam to be generated by the device, user activates a trigger so that water is pumped into the steam chamber of the iron by an electrical water pump. Many of such systems are provided with an external base containing the water reservoir and the water pump. Water is thus carried from the base to the iron via the hose. Alternatively, water reservoir and pump can be arranged in the iron housing itself in case the device is a handheld device.

[0006] In these types of devices, the iron has a relatively limited thermal mass, resulting in that the steam chamber of the iron quickly loses energy when water is dosed into, in particular if water flow rate is relatively high. The steaming is thus quickly and significantly decreased over time because the steam chamber in the iron cannot maintain a sufficiently high temperature to allow water to evaporate quickly.

[0007] Those devices have thus limitations in the sense that they cannot provide a powerful steam generation and sounding steam discharge over a relatively long period of time.

[0008] Moreover, if water is continued to be dosed into the steam chamber, water might accumulate in the steam chamber with the risk of water leakage.

OBJECT AND SUMMARY OF THE INVENTION

[0009] It is an object of the invention to propose an improved method of controlling a garment care device that avoids or mitigates above-mentioned problems.

[0010] The invention is defined by the independent claims. The dependent claims define advantageous embodiments.

[0011] To this end, the method according to the invention is about controlling a garment care device, the garment care device comprising a steam chamber, a water pump, and a user trigger means to activate the water pump for dosing water in the steam chamber. The method comprises the steps of:

- determining, upon the user trigger means is activated, a water flow rate for the water pump, based on:

  a) the previous OFF duration during which the user trigger means was not activated for the previous time,
  b) the previous ON duration during which the user trigger means was activated for the previous time,

- activating the water pump with said water flow rate.

[0012] This solution allows maximizing the water flow rate dosed into the steam chamber, by taking into account how the steam chamber has been used in the past, such as taking into account how much thermal energy has been accumulated in the steam chamber during a previous non-steaming period, and how much thermal energy has been dissipated by the steam chamber during a previous steaming period.

[0013] As a result, this solution allows obtaining a high steam generation repeatedly, and obtaining consistent steam generation every time steam is generated.

[0014] The invention also relates to a device comprising means to implement above method.

[0015] The invention also relates to a computer program comprising code instructions for carrying out the steps of the above method.

[0016] Detailed explanations and other aspects of the invention will be given below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] Particular aspects of the invention will now be explained with reference to the embodiments described hereinafter

and considered in connection with the accompanying drawings, in which identical parts or sub-steps are designated in the same manner:

Fig.1 depicts a high level flow chart of the method according to the invention,
Fig.2 illustrates an example of the actuation/deactivation of a user trigger means along the time according to the invention,
Fig.3 depicts a more detailed flow chart of the method according to the invention,
Fig.4 depicts a flow chart of the method according to the invention according to a preferred mode,
Fig.5 depicts a garment care device according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0018] Fig.1 depicts a high level flow chart of the method according to the invention.
[0019] The method is about controlling a garment care device comprising a steam chamber, a water pump, and a user trigger means to activate the water pump for dosing water in the steam chamber.
[0020] The method comprises the steps of:

- determining (101), upon the user trigger means is activated, a water flow rate for the water pump, based on:

  a) the previous OFF duration (d_OFF) during which the user trigger means was not activated for the previous time,
  b) the previous ON duration (d_ON) during which the user trigger means was activated for the previous time,

- activating (102) the water pump with said water flow rate.

[0021] For example, the user trigger means corresponds to an electromechanical switch, a digital switch, or a touch-sensitive key arranged on the garment care device.
[0022] Fig.2 illustrates an example of the actuation/deactivation of a user trigger means along the time according to the invention.
[0023] The actuation/deactivation of the user trigger means is represented by two states:

- a first state S1 where the user trigger means is not activated by the user: this corresponds to a situation where no water is dosed in the steam chamber, resulting in no steam being generated by the steam chamber,
- a second state S2 where the user trigger means is activated by the user: this corresponds to a situation where water is dosed in the steam chamber, resulting in steam being generated by the steam chamber,

[0024] Instant t0 corresponds to the current time user actuates again the user trigger means with the goal that the device generates steam.
[0025] Compared to this current time t0, the previous OFF duration during which the user trigger means was not activated for the previous time is illustrated by the duration d OFF.
[0026] Compared to this current time t0, the previous ON duration during which the user trigger means was activated for the previous time is illustrated by the duration d_ON.
[0027] The method according to the invention aims to determine the water flow rate for the water pump starting from the current time t0.
[0028] Fig.3 depicts a more detailed flow chart of the method according to the invention. This flow chart further details what is performed in the step of determining 101 of Fig.1.
[0029] The step of determining (101) comprises a step of comparing (301) the previous OFF duration (d_OFF) to a first duration threshold (THE1).
[0030] If the previous OFF duration (d_OFF) is shorter than the first duration threshold (TH1), there is a step of comparing (302) the previous ON duration (d_ON) to a second duration threshold (TH2).
[0031] If the previous ON duration (d_ON) is shorter than the second duration threshold (TH2), there is a step of associating (304) to the water flow rate a value selected in said first range of values (R1).
[0032] If the previous ON duration (d_ON) is larger than said second duration threshold (TH2), there is a step of associating (305) to the water flow rate a value selected in a second range of values (R2).
[0033] The conditional check on the previous ON duration (d_ON) is illustrated by the decision block 303.
[0034] The values in the first range of values (R1) are larger than values in the second range of values (R2).
[0035] Fig.4 depicts a flow chart of the method according to the invention according to a preferred mode. This flow chart is based on the flow chart of Fig.3. In addition to the flow chart of Fig.3, it is planned that if the previous OFF duration (d_OFF) is larger than said first duration threshold (TH1), there is a step of associating (401) to the water flow

rate a value selected in the first range of values (R1).

[0036] The conditional check on the previous OFF duration (d_OFF) is illustrated by the decision block 402.

[0037] Preferably, if the user trigger means is continuously activated, and if the previous OFF duration (d_OFF) is larger than the first duration threshold (TH1), there is a step of associating (601) to the water flow rate a value selected in the first range of values (R1) for a first duration (D1) which is at the maximum equal to said second duration threshold (TH2). The step of associating (601) is not illustrated in the figures.

[0038] Preferably, if the user trigger means is continuously activated, and if the previous ON duration (d_ON) is shorter than said second duration threshold (TH2), associating (602) to the water flow rate a value selected in the first range of values (R1) for a second duration (D2) which is at the maximum equal to the difference between said second duration threshold (TH2) and said previous ON duration (d_ON). The step of associating (602) is not illustrated on a flow chart.

[0039] Preferably, if the user trigger means is continuously activated, and if said first duration (D1) has elapsed or said second duration (D2) has elapsed, there is a step of associating (603) to the water flow rate a value selected in a third range of values (R3). The step of associating (603) is not illustrated on a flow chart.

[0040] The values in the third range of values (R3) are smaller than values in the second range of values (R2).

[0041] Preferably, if the user trigger means is continuously activated after the method has entered in step 603, and after the water pump has been actuated with values of flow rate from said third range of values (R3) for more than a predetermined third duration (D3), there is a step of associating (604) to the water flow rate a value selected in the second range of values (R2). The step of associating (604) is not illustrated on a flow chart.

[0042] Preferably, the third range of values (R3) has null values. This means that the water pump is stopped.

[0043] This means that in the situation where the steam is requested by user for a relatively long period of time, the water flow rate is restricted to a lower level (or even stopped totally) for a pre-determined period of time. The steam chamber can thus accumulate thermal energy again faster. This phase is followed by a flow rate with moderated values to achieve continuous and consistent steam.

[0044] More details and examples on the method according to the invention will now be provided.

[0045] Below Table 1a is an example of a table linking values of water flow rate to be associated to the water pump, sorted along the time.

Table 1a

T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
R1_X6	R1_X6	R1_X6	R1_X7	R1_X8	R3_X6	R3_X6	R2_X6	R2_X6	R2_X7

[0046] R1_Xi is a value of a water flow rate in the first range of values (R1). In this example, index i equals 6, 7 or 8. For example, R1_Xi has value in the range [80 g/mn; 200 g/mn].

[0047] R2_Xi is a value of a water flow rate in the second range of values (R2). In this example, index i equals 6 or 7. For example, R2_Xi has value in the range [20 g/mn; 79 g/mn].

[0048] R3_Xi is a value of a water flow rate in the third range of values (R3). In this example, index equals 6. For example, R3_Xi has value in the range [0 g/mn; 19 g/mn].

[0049] T(i+1) - T(i) corresponds to a time duration during which a certain value is associated to the water flow rate.

[0050] For example, the difference T(i+1) - T(i) is equal to 1 second.

[0051] The first range of values (R1), the second range of values (R2), and the third range of values (R3) are thus arranged in tables containing values of water flow rate sorted along the time.

[0052] Preferably, the values of water flow rate are decreasing when the time is incrementing. For example, R1_X6 is larger than R1_X7, R2_X6 is larger than R2_X7.

[0053] Alternatively, the values of water flow rate are kept constant when the time is incrementing.

[0054] Alternatively, the values of water flow rate are increasing when the time is incrementing.

[0055] As an example, let consider that the first duration threshold TH1 = 6 seconds, and that the second duration threshold TH2 = 5 seconds.

[0056] When at time t0 the user activates the user trigger means, the previous OFF duration (d_OFF) is compared to the first duration threshold TH1.

[0057] The different following scenarios may happen:

Scenario 1a: The previous OFF duration (d_OFF) is shorter than the first duration threshold TH1, for example d_OFF = 3 seconds. The previous ON duration (d_ON) is shorter than the second duration threshold (TH2), for example d_ON = 4 seconds. The water pump is activated with a water flow rate value R1_Xi from the first range of values (R1). This corresponds to step 304. The water flow rate value R1_Xi corresponds to the value at the time starting before a given duration from the end of the first range of values (R1), said given duration corresponding to the

difference between the second duration threshold (TH2) and the previous ON duration (d_ON), i.e. (TH2 - d_ON) = 1 second before the end of the first range of values (R1), which corresponds to time interval T5 to T6. An illustration of this scenario is provided in below Table 3a.

Scenario 2a: The previous OFF duration (d_OFF) is shorter than the first duration threshold TH1, for example d_OFF = 3 seconds. The previous ON duration (d_ON) is larger than said second duration threshold (TH2), for example d_ON = 6 seconds. The water pump is activated with a water flow rate value R2_Xi from the second range of values (R2), which is associated with the initial time T8 to T9. This corresponds to step 305. An illustration of this scenario is provided in below Table 4a.

It is noted that when the water pump is activated with water flow rate values from the second range of values (R2), and if user continuously activates the user trigger means, water flow rate values will continue to be selected from the second range of values (R2). If the end of the second range of values (R2) is reached, a by-default value can be continued to be associated.

Scenario 3a: The previous OFF duration (d_OFF) is larger (or equal to) than the first duration threshold TH1, for example d_OFF = 7 seconds. The water pump is activated with a water flow rate value R1_Xi from the first range of values (R1), which is associated with the initial time T1 to T2. In this case, it corresponds to the water flow rate value R1_X6. This corresponds to step 401. An illustration of this scenario is provided in below Table 5a.

[0058] When the water pump is associated with water flow rate in the first range of values (R1) and that the user continuously activates the user trigger means, this situation is continued until the end of the first range of values (R1) is reached, so in the above example, when T6 is reached.

[0059] When the end of first range of values (R1) is reached, the water pump is associated with water flow rate in the third range of values (R3).

[0060] In above example, if the water pump is associated with water flow rate R1_X8 during time interval T5 and T6, the water flow rate is associated to value R3_X6.

[0061] Below Table 2a is a numerical example of Table 1a.

Table 2a

T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
200	200	200	180	160	20	20	80	80	40

[0062] The following Table 3a is an example of a sequence on how values are associated to the water flow rate along the time after user has initially activated the user trigger means and if the user continuously activates the user trigger means. The associated values are underlined.

Table 3a

T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
200	200	200	180	160	20	20	80	80	40

[0063] The following Table 4a is an example of a sequence on how values are associated to the water flow rate along the time after user has initially activated the user trigger means and if the user continuously activates the user trigger means. The associated values are underlined.

Table 4a

T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
200	200	200	180	160	20	20	80	80	40

[0064] The following Table 5a is an example of a sequence on how values are associated to the water flow rate along the time after user has initially activated the user trigger means and if the user continuously activates the user trigger means. The associated values are underlined.

Table 5a

T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
200	200	200	180	160	20	20	80	80	40

[0065] Preferably, the step of determining (101) is further based on the current temperature of the steam chamber.

[0066] Taking into account the current temperature of the steam chamber helps to further adapt the determination of the water flow rate for the water pump.

[0067] Below Table 1b is an example of look-up table linking the temperature of the steam chamber with values of water flow rate to be associated to the water pump, sorted along the time.

Table 1b

	T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
Temp_ (1)	R1_X1	R1_X1	R1_X1	R1_X2	R1_X3	R3_X1	R3_X 1	R2_X1	R2_X1	R2_X 3
Temp_ (2)	R1_X1	R1_X1	R1_X2	R1_X2	R1_X3	R3_X1	R3_X 1	R2_X2	R2_X2	R2_X 3
Temp_ (3)	R1_X2	R1_X3	R1_X3	R1_X4	R1_X5	R3_X1	R3_X 2	R2_X2	R2_X2	R2_X 3
Temp_ (4)	R1_X2	R1_X3	R1_X4	R1_X4	R1_X5	R3_X2	R3_X 2	R2_X3	R2_X3	R2_X 3

[0068] R1_Xi is a value of a water flow rate in the first range of values (R1). In this example, index i equals 1, 2, 3, 4 or 5. For example, R1_Xi has value in the range [80 g/mn; 200 g/mn].

[0069] R2_Xi is a value of a water flow rate in the second range of values (R2). In this example, index i equals 1, 2, or 3. For example, R2_Xi has value in the range [20 g/mn; 79 g/mn].

[0070] R3_Xi is a value of a water flow rate in the third range of values (R3). In this example, index i equals 1 or 2. For example, R3_Xi has value in the range [0 g/mn; 19 g/mn].

[0071] Temp_i is a given temperature corresponding to the current temperature of the steam chamber. Alternatively, Temp_i is a given range of temperature in which the current temperature of the steam chamber is situated. In this example, index i equals 1, 2, 3 or 4.

[0072] For example, Temp_(i+1) is smaller than Temp_(i).

[0073] T(i+1) - T(i) corresponds to a time duration during which a certain value is associated to the water flow rate, depending on the temperature (or temperature range) measured for the steam chamber.

[0074] For example, the difference T(i+1) - T(i) is equal to 1 second.

[0075] The first range of values (R1), the second range of values (R2), and the third range of values (R3) are thus arranged in look-up tables linking the temperature of the steam chamber with values of water flow rate sorted along the time.

[0076] Preferably, for a given temperature of the steam chamber, the values of water flow rate are decreasing when the time is incrementing. For example, R1_X1 is larger than R1_X2, R2_X1 is larger than R2_X2, and R3_X1 is larger than R3_X2.

[0077] Alternatively, for a given temperature of the steam chamber, the values of water flow rate are kept constant when the time is incrementing.

[0078] Alternatively, for a given temperature of the steam chamber, the values of water flow rate are increasing when the time is incrementing.

[0079] Preferably, the values of water flow rate are decreasing when the temperature of the steam chamber is decreasing.

[0080] Alternatively, the values of water flow rate are kept constant when the temperature of the steam chamber is decreasing.

[0081] As an example, let consider that the first duration threshold TH1 = 6 seconds, and that the second duration threshold TH2 = 5 seconds.

[0082] When at time t0 the user activates the user trigger means, the previous OFF duration (d_OFF) is compared to the first duration threshold TH1.

[0083] The different following scenarios may happen:

Scenario 1b: The previous OFF duration (d_OFF) is shorter than the first duration threshold TH1, for example d_OFF = 3 seconds. The previous ON duration (d_ON) is shorter than said second duration threshold (TH2), for example d_ON = 4 seconds. The water pump is activated with a water flow rate value R1_Xi from the first range of values (R1), depending on the current temperature of the steam chamber. This corresponds to step 304. The water flow rate value R1_Xi corresponds to the value at the time starting before a given duration from the end of the first range

of values (R1), said given duration corresponding to the difference between the second duration threshold (TH2) and the previous ON duration (d_ON), i.e. (TH2 - d_ON) = 1 second before the end of the first range of values (R1), which corresponds to time interval T5 to T6. An illustration of this scenario is provided in below Table 3b.

Scenario 2b: The previous OFF duration (d_OFF) is shorter than the first duration threshold TH1, for example d_OFF = 3 seconds. The previous ON duration (d_ON) is larger than said second duration threshold (TH2), for example d_ON = 6 seconds. The water pump is activated with a water flow rate value R2_Xi from the second range of values (R2), which is associated with the initial time T8 to T9, and depending on the current temperature of the steam chamber. This corresponds to step 305. An illustration of this scenario is provided in below Table 4b.

It is noted that when the water pump is activated with water flow rate values from the second range of values (R2), and if user continuously activates the user trigger means, water flow rate values will continue to be selected from the second range of values (R2). If the end of the second range of values (R2) is reached, a by-default value can be continued to be associated.

Scenario 3b: The previous OFF duration (d_OFF) is larger (or equal to) than the first duration threshold TH1, for example d_OFF = 7 seconds. The water pump is activated with a water flow rate value R1_Xi from the first range of values (R1), which is associated with the initial time T1 to T2, and depending on the current temperature of the steam chamber. For example, if at that time the temperature of the steam chamber is Temp_(3), the water flow rate value R1_X2. This corresponds to step 401. An illustration of this scenario is provided in below Table 5b.

[0084] When the water pump is associated with water flow rate in the first range of values (R1) and that the user continuously activates the user trigger means, this situation is continued until the end of the first range of values (R1) is reached, so in the above example, when T6 is reached.

[0085] When the end of first range of values (R1) is reached, the water pump is associated with water flow rate in the third range of values (R3).

[0086] In above example, if the water pump is associated with water flow rate R1_X5 during time interval T5 and T6, with a temperature of the steam chamber Temp_(3), the water flow rate is associated to value R3_X1, assuming temperature of the steam chamber at the beginning of T6 is still Temp_(3).

[0087] Below Table 2b is a numerical example of Table 1b.

Table 2b

	T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
181-250 degrees	200	200	200	180	160	20	20	80	80	40
141-180 degrees	200	200	180	180	160	20	20	60	60	40
121-140 degrees	180	160	160	140	100	20	0	60	60	40
100-120 degrees	180	160	140	140	100	0	0	40	40	40

[0088] The following Table 3b is an example of a sequence on how values are associated to the water flow rate along the time after user has initially activated the user trigger means and if the user continuously activates the user trigger means. The associated values are underlined.

Table 3b

	T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
181-250 degrees	200	200	200	180	160	20	20	80	80	40
141-180 degrees	200	200	180	180	<u>160</u>	<u>20</u>	20	60	60	40
121-140 degrees	180	160	160	140	100	20	<u>0</u>	<u>60</u>	<u>60</u>	<u>40</u>
100-120 degrees	180	160	140	140	100	0	0	40	40	40

[0089] The following Table 4b is an example of a sequence on how values are associated to the water flow rate along the time after user has initially activated the user trigger means and if the user continuously activates the user trigger means. The associated values are underlined.

Table 4b

	T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
181-250 degrees	200	200	200	180	160	20	20	80	80	40
141-180 degrees	200	200	180	180	160	20	20	60	60	40
121-140 degrees	180	160	160	140	100	20	0	60	60	40
100-120 degrees	180	160	140	140	100	0	0	40	40	40

[0090] The following Table 5b is an example of a sequence on how values are associated to the water flow rate along the time after user has initially activated the user trigger means and if the user continuously activates the user trigger means. The associated values are underlined.

Table 5b

	T1 to T2	T2 to T3	T3 to T4	T4 to T5	T5 to T6	T6 to T7	T7 to T8	T8 to T9	T9 to T10	...
181-250 degrees	200	200	200	180	160	20	20	80	80	40
141-180 degrees	200	200	180	180	160	20	20	60	60	40
121-140 degrees	180	160	160	140	100	20	0	60	60	40
100-120 degrees	180	160	140	140	100	0	0	40	40	40

[0091] Fig.5 depicts a garment care device 501 according to the invention. The garment care device (501) comprises:

- an iron (502) comprising a steam chamber (503),
- a base (504) connected via a hose (505) to the iron (502), the base (504) comprising a water tank (510) and a water pump (506),
- a user trigger means (507) to activate the water pump (506) for dosing water from the water tank (510) in the steam chamber (503),
- a temperature sensor (508) for measuring the temperature of the steam chamber (503),
- a control unit (509) comprising code instructions for carrying out the steps of the method described above.

[0092] The invention also relates to computer program comprising code instructions for carrying out the steps of the method described above.

[0093] The above embodiments as described are only illustrative, and not intended to limit the technique approaches of the present invention. Although the present invention is described in details referring to the preferable methods and embodiments, those skilled in the art will understand that the technique approaches of the present invention can be modified or equally displaced without departing from the protective scope of the claims of the present invention. In the claims, the word "comprising" does not exclude other elements or steps, and the indefinite article "a" or "an" does not exclude a plurality. Any reference signs in the claims should not be construed as limiting the scope.

Claims

1. A method of controlling a garment care device, the garment care device comprising a steam chamber, a water pump, and a user trigger means to activate the water pump for dosing water in the steam chamber, the method comprising the steps of:

   - determining (101), upon the user trigger means is activated, a water flow rate for the water pump, based on:

     a) the previous OFF duration (d_OFF) during which the user trigger means was not activated for the previous time,
     b) the previous ON duration (d_ON) during which the user trigger means was activated for the previous time,

   - activating (102) the water pump with said water flow rate.

2. Method as claimed in claim 1, wherein the step of determining (101) comprises:

   - comparing (301) the previous OFF duration (d_OFF) to a first duration threshold (THE1),
   - if the previous OFF duration (d_OFF) is shorter than said first duration threshold (TH1), comparing (302) the previous ON duration (d_ON) to a second duration threshold (TH2),
   - if the previous ON duration (d_ON) is shorter than said second duration threshold (TH2), associating (304) to the water flow rate a value selected in a first range of values (R1),
   - if the previous ON duration (d_ON) is larger than said second duration threshold (TH2), associating (305) to the water flow rate a value selected in a second range of values (R2),

   the values in the first range of values (R1) being larger than values in the second range of values (R2).

3. Method as claimed in claim 2, further comprising the step of:

   - if the previous OFF duration (d_OFF) is larger than said first duration threshold (TH1), associating (401) to the water flow rate a value selected in the first range of values (R1).

4. Method as claimed in claim 3, further comprising the step of:

   - if the user trigger means is continuously activated, and if the previous OFF duration (d_OFF) is larger than said first duration threshold (TH1), associating (601) to the water flow rate a value selected in the first range of values (R1) for a first duration (D1) which is at the maximum equal to said second duration threshold (TH2).

5. Method as claimed in claim 2, further comprising the step of:

   - if the user trigger means is continuously activated, and if the previous ON duration (d_ON) is shorter than said second duration threshold (TH2), associating (602) to the water flow rate a value selected in the first range of values (R1) for a second duration (D2) which is at the maximum equal to the difference between said second duration threshold (TH2) and said previous ON duration (d_ON).

6. Method as claimed in anyone of claims 4 or 5, further comprising the step of:

   - if the user trigger means is continuously activated, and if said first duration (D1) has elapsed or said second duration (D2) has elapsed, associating (603) to the water flow rate a value selected in a third range of values (R3), the values in the third range of values (R3) being smaller than values in the second range of values (R2).

7. Method as claimed in claim 6, further comprising the step of:

   - if the user trigger means is continuously activated, and after the water pump has been actuated with values of flow rate from said third range of values (R3) for more than a predetermined third duration (D3), associating (604) to the water flow rate a value selected in the second range of values (R2).

8. Method as claimed in claim 6 or 7, wherein the third range of values (R3) has null values.

9. Method as claimed in anyone of the preceding claims, wherein the step of determining (101) is further based on the current temperature of the steam chamber.

10. Method as claimed in claim 9, when depending on claim 6, wherein said third range of values (R3) is arranged in a look-up table linking the temperature of the steam chamber with values of water flow rate sorted along the time.

11. Method as claimed in claim 9, when depending on claim 2, wherein said first range of values (R1) and second range of values (R2) are arranged in look-up tables linking the temperature of the steam chamber with values of water flow rate sorted along the time.

12. Method as claimed in claim 10 or 11, wherein in the look-up tables, for a given temperature of the steam chamber, the values of water flow rate are decreasing when the time is incrementing.

13. Method as claimed in claim 10 or 11, wherein in look-up tables, for a given time, the values of water flow rate are decreasing when the temperature of the steam chamber is decreasing.

14. Garment care device (501) comprising:

- an iron (502) comprising a steam chamber (503),
- a base (504) connected via a hose (505) to the iron (502), the base (504) comprising a water tank (510) and a water pump (506),
- a user trigger means (507) to activate the water pump (506) for dosing water from the water tank (510) in the steam chamber (503),
- a temperature sensor (508) for measuring the temperature of the steam chamber (503),
- a control unit (509) comprising code instructions for carrying out the steps of the method as claimed in claims 1 to 13.

15. Computer program comprising code instructions for carrying out the steps of the method as claimed in anyone of claims 1 to 13.

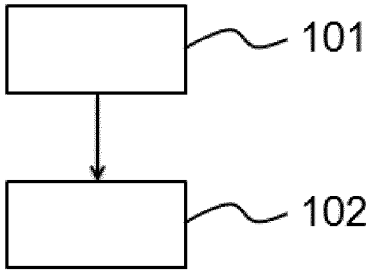

FIG.1

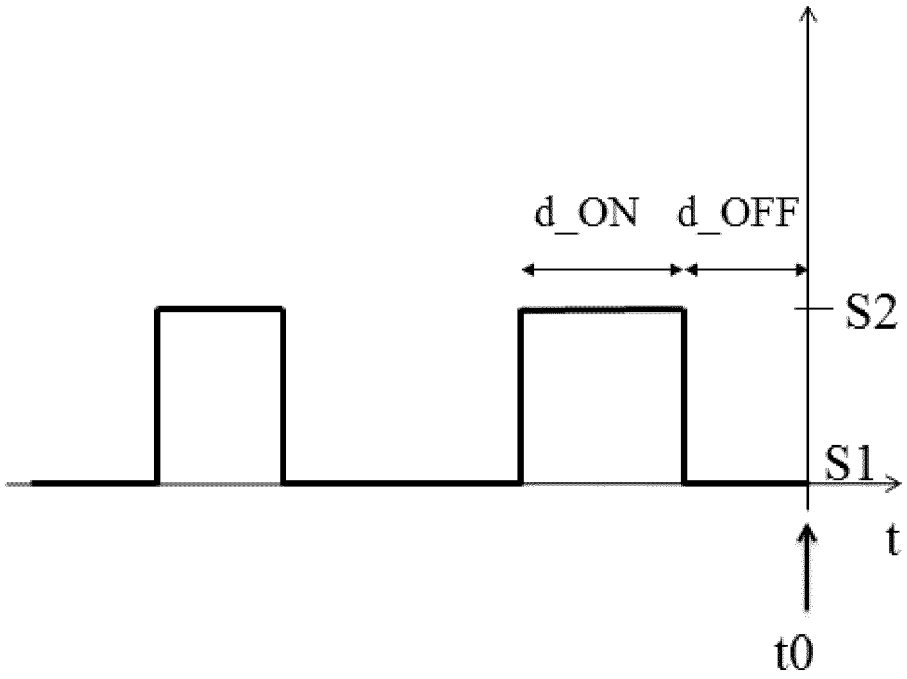

FIG.2

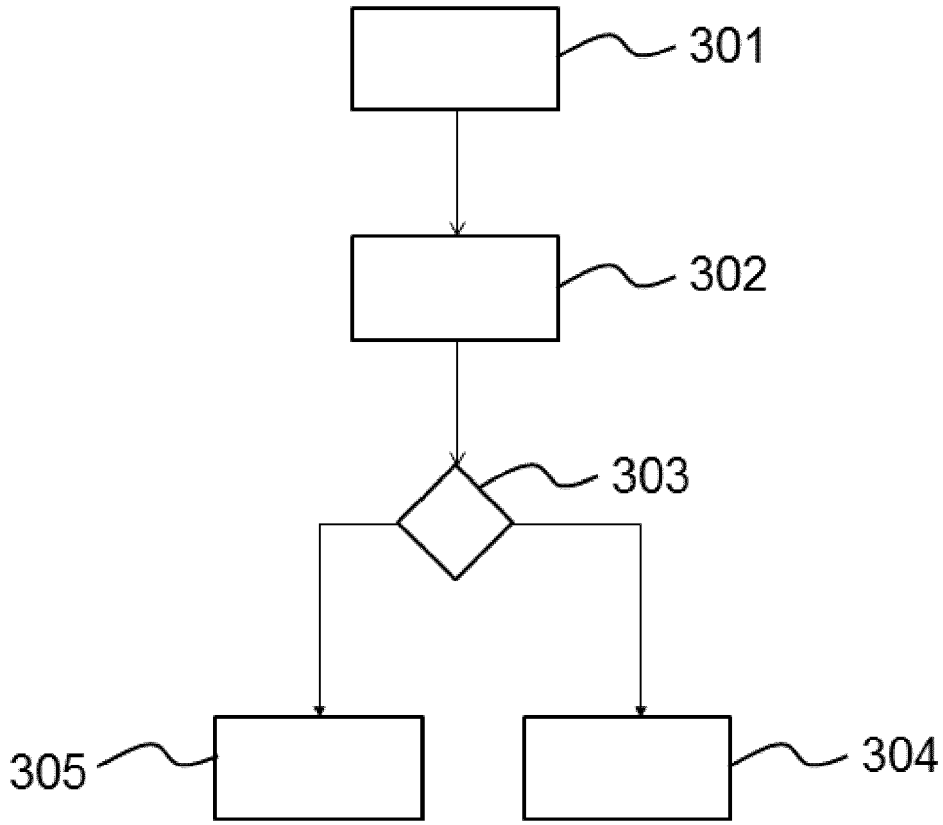

FIG.3

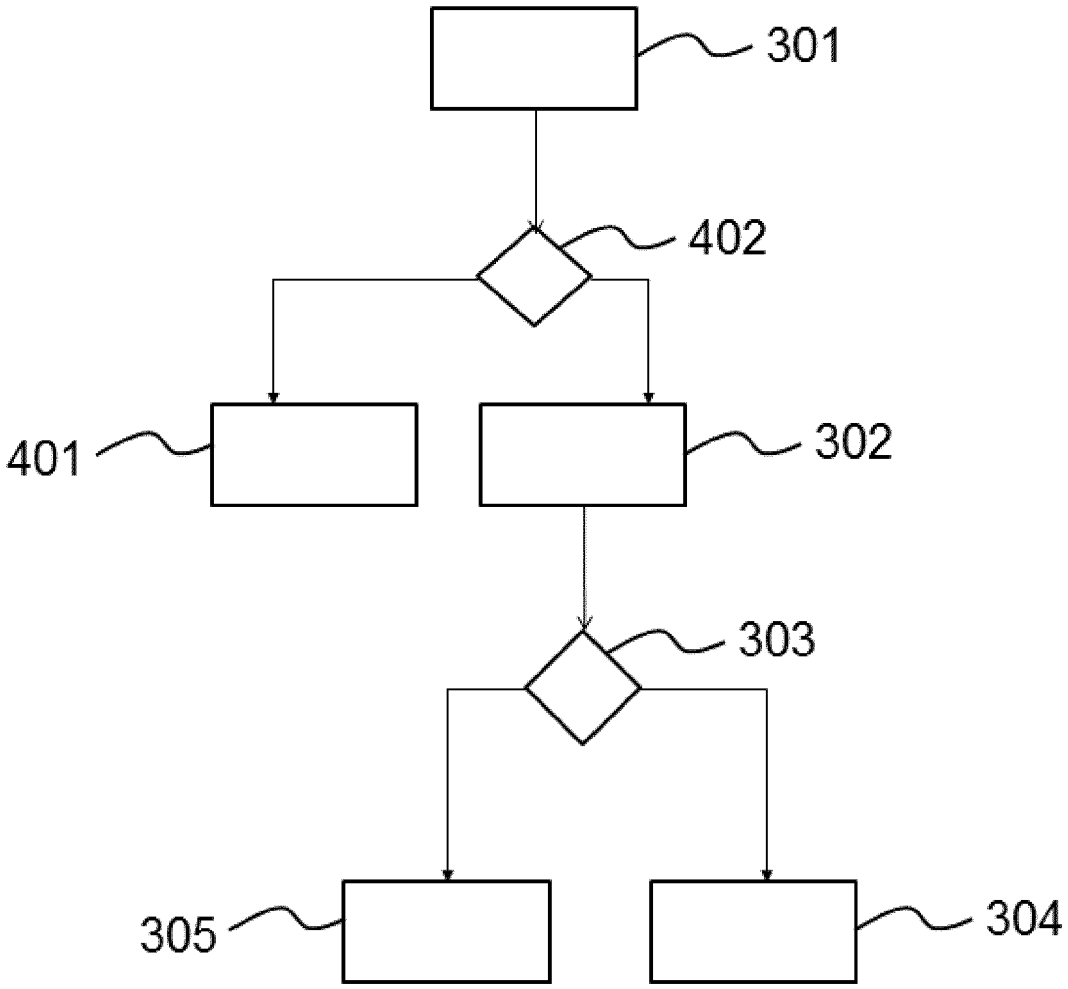

FIG.4

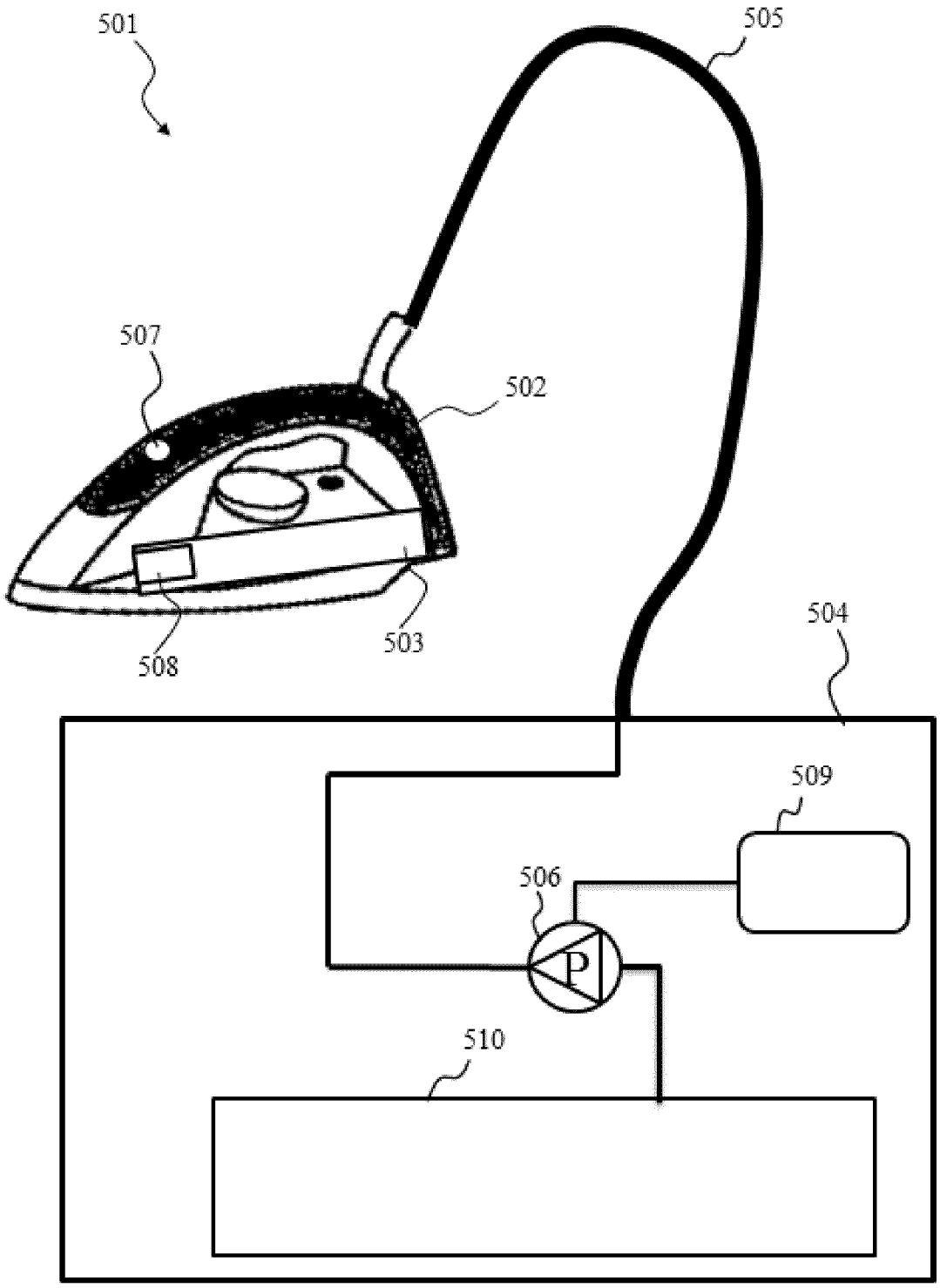

FIG.5

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EUROPEAN SEARCH REPORT

Application Number
EP 17 17 6854

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	23 November 2017	Diaz y Diaz-Caneja

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