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(54) **Method for controlling operation of a steam iron**

(57) A method is for controlling operation of a steam iron that includes a steam generating unit for generating and ejecting steam, a controller (33) for controlling operation of the steam generating unit, and a switch (34) for activating the steam generating unit to eject steam. The method includes: a) upon the switch (34) being turned on, starting, by the controller (33), timing a first time period, and enabling, by the controller (33), the steam generating unit to eject a first amount of steam per unit time until the first time period has elapsed; and b) after the first time period has elapsed, enabling, by the controller (33), the steam generating unit to eject a second amount of steam per unit time, which is less than the first amount of steam per unit time when the switch (34) is turned on.

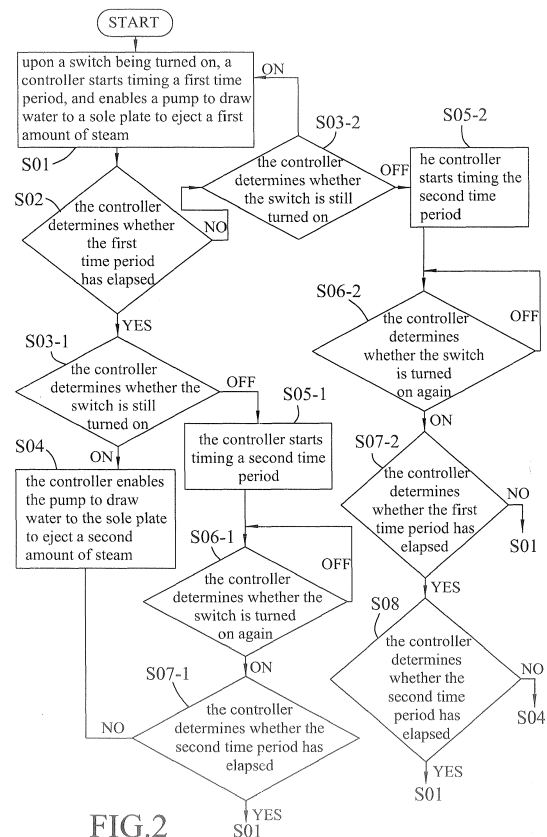


FIG.2

Description

[0001] This application claims priority to Chinese Application No. 201410242222.4, filed on June 3, 2014.

[0002] This invention relates to a method for controlling operation of a steam iron, more particularly to a method for controlling amount of steam ejected by the steamiron.

[0003] A steam iron is usually controlled by a steam switch that enables and disables the steam iron to eject steam. However, the steam iron continuously ejects steam as long as the steam switch is turned on, and the steam ejected from the steam iron may condense into water on a sole plate of the steam iron. Moreover, the amount of steam ejected by the steam iron is usually constant, which may make the cloth to be ironed too damp, and thus lengthen time for drying the cloth.

[0004] Therefore, the object of the present invention is to provide a method for controlling amount of steam ejected by a steam iron. The steam iron includes a steam generating unit for generating and ejecting steam, a controller for controlling operation of the steam generating unit, and a switch for activating the steam generating unit to eject steam.

[0005] According to this invention, the method for controlling operation of a steam iron includes the following steps: a) upon the switch being turned on, starting, by the controller, timing a first time period, and enabling, by the controller, the steam generating unit to eject a first amount of steam per unit time until the first time period has elapsed; and b) after the first time period has elapsed, enabling, by the controller, the steam generating unit to eject a second amount of steam per unit time, which is less than the first amount of steam per unit time, when the switch is turned on.

[0006] Other features and advantages of the present invention will become apparent in the following detailed description of the embodiment of the invention, with reference to the accompanying drawings, in which:

FIG. 1 is a schematic view of a steam iron to be controlled by a method for controlling operation of a steam iron according to an embodiment of the present invention; and

FIG. 2 is a flow chart of the embodiment of the method.

[0007] Referring to FIGS. 1 and 2, an embodiment of the method for controlling operation of a steam iron according to the present invention is illustrated. The steam iron 3 includes a steam generating unit, a controller 33 and a switch 34. The steam generating unit includes a sole plate 31 and a pump 32. The sole plate 31 is for heating water into steam and ejects the steam. The pump 32 is for drawing water to the sole plate 31. The controller 33 is for controlling operation of the steam generating unit. The switch 34 is for activating the steam generating unit to eject steam. Note that the configuration of the steam iron 3 shown in FIG. 1 is only provided for the

purpose of illustration, and the present invention is applicable to other types of steam irons.

[0008] In step S01, upon the switch 34 being turned on, the controller 33 starts timing a first time period, and enables the pump 32 to draw water to the sole plate 31 to eject a first amount of steam per unit time until the first time period has elapsed. The first time period may vary from 5 to 7 seconds in different embodiments, and preferably, is 6 seconds. The first amount of steam per unit time may be varied from 80g to 150g per minute in different embodiments, and preferably, is 90g per minute.

[0009] In step S02, the controller 33 determines whether the first time period has elapsed. The flow goes to step S03-1 when it is determined that the first time period has elapsed, and goes to step S03-2 when otherwise.

[0010] In step S03-1, the controller 33 determines whether the switch 34 is still turned on when the first time period has elapsed. The flow goes to step S04 when it is determined that the switch 34 is still turned on, and goes to step S05-1 when otherwise. Subsequently, in step S04, the controller 33 enables the pump 32 to draw water to the sole plate 31 to eject a second amount of steam per unit time when the switch 34 is turned on. The second amount of steam per unit time may vary from 30g to 50g per minute in different embodiments, and preferably, is 40g per minute.

[0011] When the controller 33 determines that the switch 34 is turned off in step S03-1, the controller 33 starts timing a second time period in step S05-1. The second time period is longer than the first time period and may vary from 11 seconds to 13 seconds in different embodiments, and preferably, is 12 seconds. After step S05-1, in step S06-1, the controller 33 determines whether the switch 34 is turned on again. The flow goes to step S07-1 when it is determined that the switch 34 is turned on, and step S06-1 is repeated when otherwise.

[0012] In step S07-1, the controller 33 determines whether the second time period has elapsed when the switch 34 is turned on again. When the second time period has not elapsed, the flow goes to step S04. That is to say, the controller 33 enables the pump 32 to draw water to the soleplate 31 to eject the second amount of steam unit time when the switch 34 is turned on again within the second time period. Otherwise, when the controller 33 determines that the second time period has elapsed in step S07-1, the flow goes back to step S01 and the controller 33 re-starts timing the first time period.

[0013] When the controller 33 determines that the first time period has not elapsed in step S02, the flow goes to step S03-2. In step S03-2, the controller 33 determines whether the switch 34 is still turned on within the first time period. The flow goes back to step S01 when it is determined that the switch 34 is turned on, and goes to step S05-2 when otherwise. For example, assuming that the first time period is 6 seconds, the switch 34 is turned off when 2 seconds has elapsed, and is turned on again when 5 seconds has elapsed. The controller 33 enables the pump 32 to draw water to the sole plate 31 to output

the first amount of steam per unit time for 1 second after the switch 34 is turned on again at the fifth second. Additionally, the controller 33 disables the steam generating unit to eject steam when the switch 34 is turned off.

[0014] In step S05-2, the controller 33 starts timing the second time period when the switch 34 is turned off within the first time period. Subsequent to step S05-2, in step S06-2, the controller 33 determines whether the switch 34 is turned on again. The flow goes to step S07-2 when the switch 34 is turned on again, and step S06-2 is repeated when otherwise. In step S07-2, the controller 33 determines whether the first time period has elapsed when the switch 34 is turned on again. When the first time period has not elapsed, the flow goes back to step S01. Otherwise, the flow goes to step S08 when the first time period has elapsed.

[0015] In step S08, the controller 33 determines whether the second time period has elapsed. When the second time period has not elapsed, the flow goes back to step S04. That is to say, the controller 33 enables the pump 32 to draw water to the sole plate 31 to eject the second amount of steam per unit time when the first time period has elapsed and the switch 34 is turned on again within the second time period. For example, assuming that the first time period is 6 seconds and the second time period is 12 seconds, the switch 34 is turned off when 3 seconds have elapsed, and is turned on again when 6 seconds have elapsed, which starts timing the second time period. As a result, the controller 33 enables the pump 32 to draw water to the sole plate 31 to eject the second amount of steam per unit time.

[0016] When it is determined in step S08 that the second time period has elapsed, the flow goes back to step S01, i.e., the controller 33 enables the steam generating unit to eject the first amount of steam per unit time when the switch 34 is turned on again after the second time period has elapsed.

[0017] To sum up, the method for controlling operation of the steam iron 3 enables the steam iron 3 to first eject a relatively large amount of steam, i.e., the first amount of steam per unit time, to soften the cloth to be ironed. Then, the steam iron 3 ejects the second amount of steam per unit time that is less than the first amount of steam per unit time so as to prevent the cloth from being too damp when the switch 34 is still turned on after the first time period has elapsed. By virtue of the abovementioned design, steam ejected by the sole plate 31 in the first time period can evaporate properly while the sole plate 31 irons the cloth.

Claims

1. A method for controlling operation of a steam iron, the steam iron including a steam generating unit for generating and ejecting steam, a controller (33) for controlling operation of the steam generating unit, and a switch (34) for activating the steam generating

unit to eject steam, the method **characterized by** the following steps:

a) upon the switch (34) being turned on, starting, by the controller (33), timing a first time period, and enabling, by the controller (33), the steam generating unit to eject a first amount of steam per unit time until the first time period has elapsed; and

b) after the first time period has elapsed, enabling, by the controller (33), the steam generating unit to eject a second amount of steam per unit time when the switch (34) is turned on, the second amount of steam per unit time being less than the first amount of steam per unit time.

2. The method as claimed in claim 1, **characterized in that**, in step a), when the switch (34) is turned off within the first time period, the controller (33) enables the steam generating unit to eject the first amount of steam per unit time when the switch (34) is turned on again within the first time period.

3. The method as claimed in claim 2, further **characterized in that**, in step a), when the switch (34) is turned off within the first time period, the controller (33) starts timing a second time period that is longer than the first time period, and enables the steam generating unit to eject the second amount of steam per unit time when the first time period has elapsed and the switch is turned on again within the second time period.

4. The method as claimed in claim 3, further **characterized in that** the controller (33) enables the steam generating unit to eject the first amount of steam per unit time when the switch (34) is turned on again after the second time period has elapsed.

5. The method as claimed in claim 4, further **characterized by**, after step a), the steps of:

when the switch (34) is turned off after the first time period has elapsed, starting, by the controller (33), timing a second time period that is longer than the first time period; and

enabling, by the controller (33), the steam generating unit to eject the second amount of steam per unit time when the switch (34) is turned on again within the second time period.

6. The method as claimed in claim 5, further **characterized in that**, when the switch (34) is turned on again after the second time period has elapsed, the controller (33) repeats step a) and re-starts timing the first time period.

7. The method as claimed in claim 6, **characterized in**

that the first amount of steam per unit time ranges from 80g to 150g per minute, and the second amount of steam per unit time ranges from 30g to 50g per minute.

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8. The method as claimed in claim 7, further **characterized in that** the first amount of steam per unit time is 90g per minute, and the second amount of steam per unit time is 40g per minute.

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9. The method as claimed in claim 8, further **characterized in that** the first time period ranges from 5 seconds to 7 seconds.

10. The method as claimed in claim 9, further **characterized in that** the first time period is 6 seconds.

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11. The method as claimed in claim 6, further **characterized in that** the second time period ranges from 11 seconds to 13 seconds.

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12. The method as claimed in claim 11, further **characterized in that** the second time period is 12 seconds.

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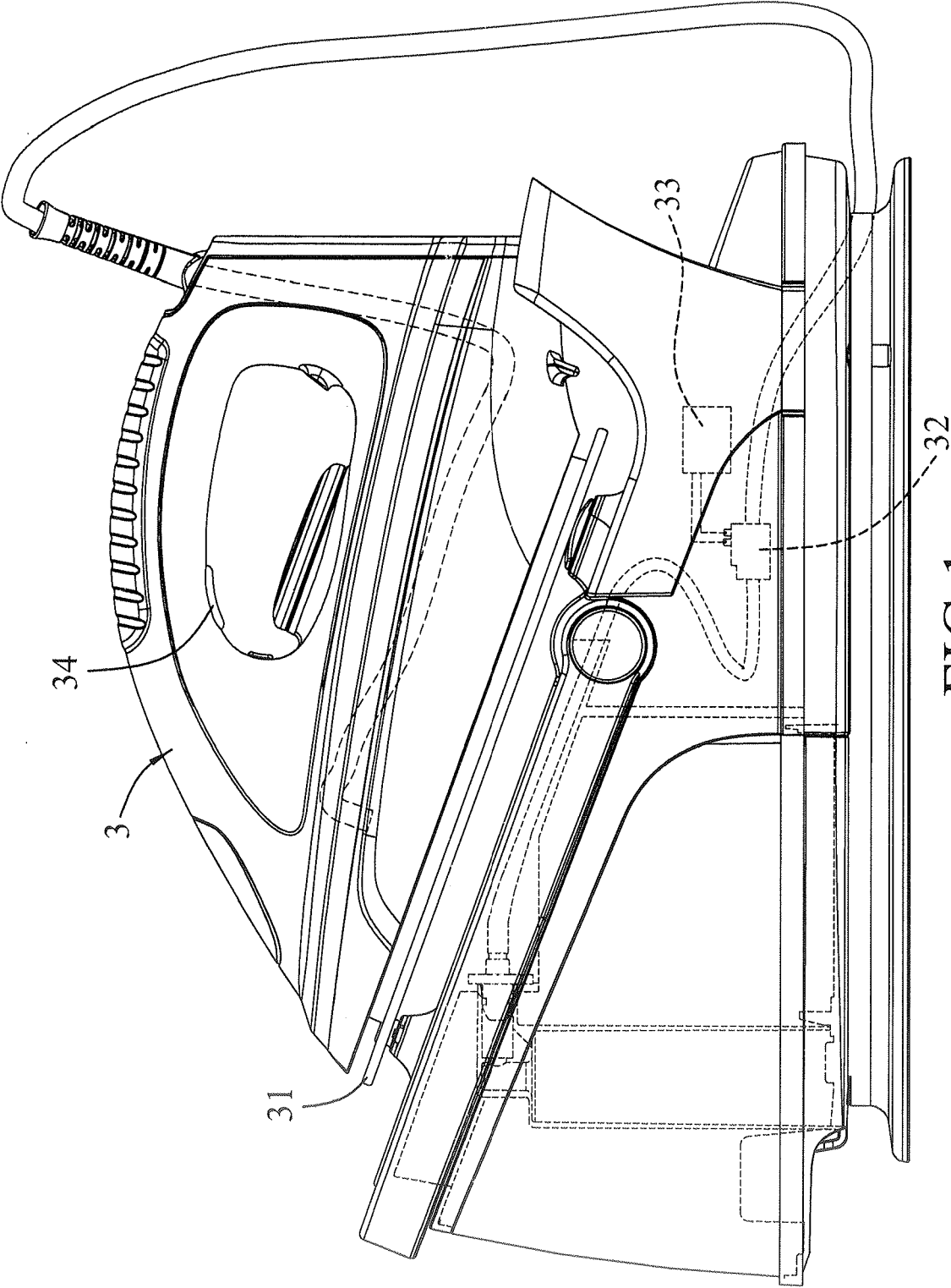
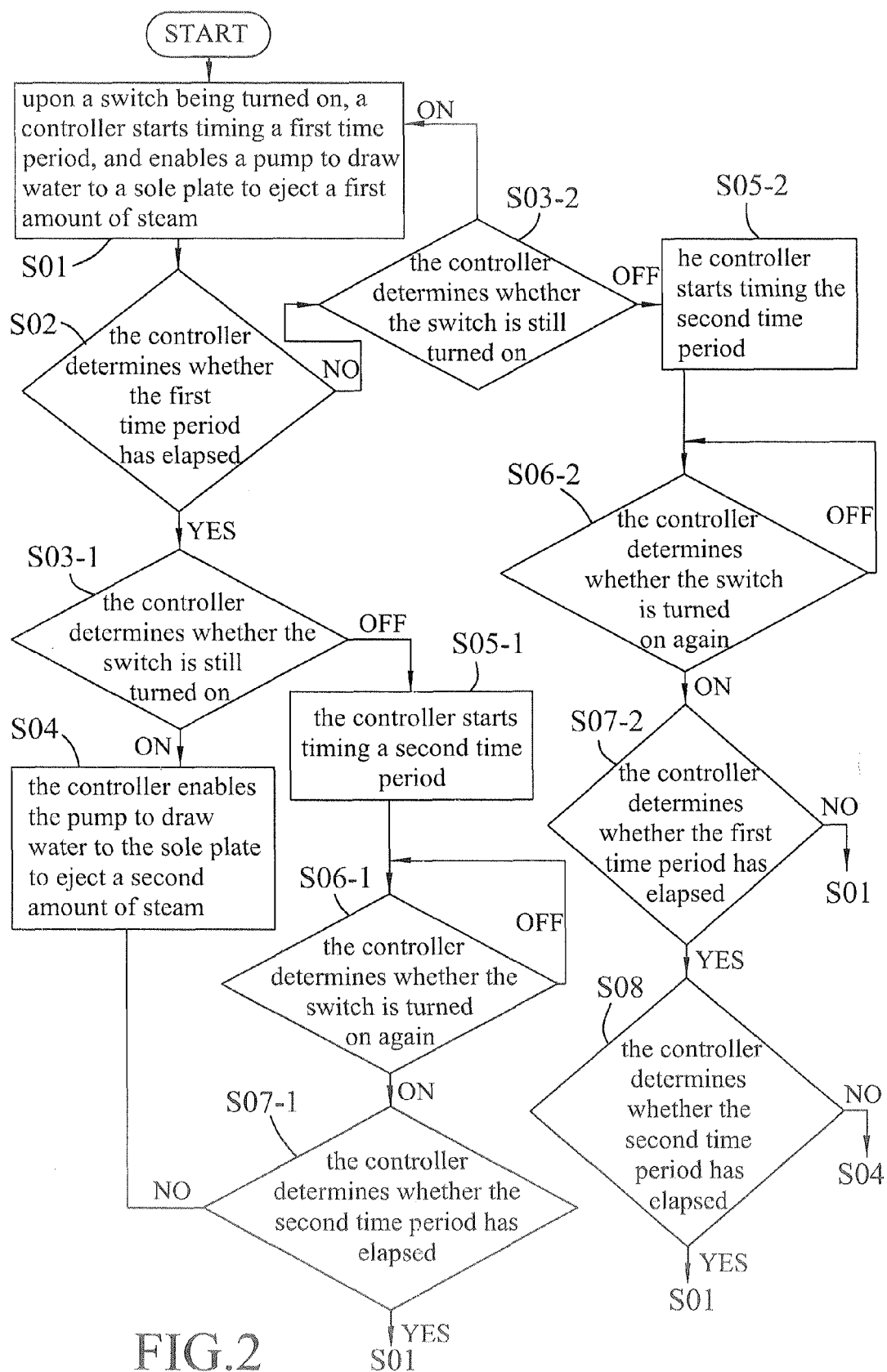


FIG.1





EUROPEAN SEARCH REPORT

 Application Number
 EP 14 19 7640

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			D06F
Place of search			Examiner
Munich			Jezierski, Krzysztof
Date of completion of the search			
26 January 2015			
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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			
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 14 19 7640

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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