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(54) **METHOD AND APPARATUS FOR CONTROLLING RESET OF MOVABLE COMPONENT, AND STORAGE MEDIUM AND PROCESSOR**

(57) The present disclosure provides a method and apparatus for controlling the reset of a moveable component, and a storage medium. The method includes: receiving a reset signal, herein the reset signal is configured to instruct the moveable component to move to a reset position; controlling the moveable component to move a first preset distance along a first moving direction; controlling the moveable component to move a second preset distance along a second moving direction, herein the first moving direction is opposite to the second moving direction; and controlling the moveable component to move to the reset position.

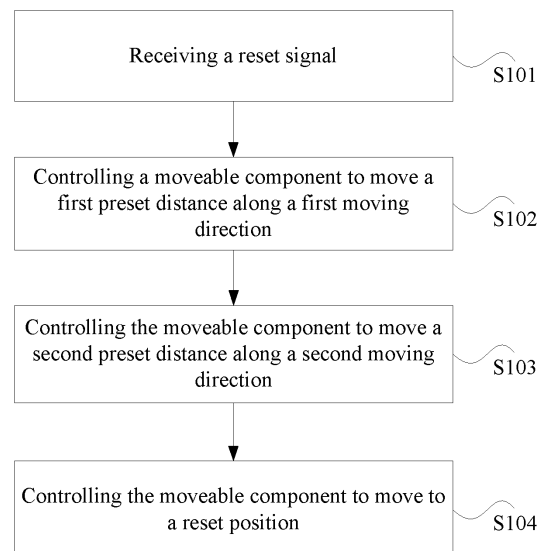


Fig. 1

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Description

Technical Field

[0001] The present disclosure relates to the field of controlling, and in particular to a method and apparatus for controlling the reset of a moveable component, a storage medium and a processor.

Background

[0002] During shutdown and reset processes of an electronic equipment such as an air conditioner, a case of hand clamping is easily caused by a moveable component in the electronic equipment, for example, the case of hand clamping may be caused while an air sweeping grid of the air conditioner is reset. In allusion to the above technical problem, in a related art, it is judged whether the case of user hand clamping exists by using a mode that a photoelectric sensor is used to detect whether there is an obstacle usually, or through judging whether the reset process of the moveable component is blocked, or a case of deceleration and even stop due to the blocking. However, the above technical scheme usually requires designing a complicated structure and installing a corresponding sensor, a program design is also more complicated, errors are easily produced, and the disclosure cost is high.

[0003] In allusion to a technical problem in the related art that the cost of a method for preventing the hand clamping is high, at present, an effective solution scheme is not proposed yet.

Summary

[0004] The embodiments of the present disclosure provide a method and apparatus for controlling the reset of a moveable component, and a storage medium and a processor, so as to at least solve a technical problem in a related technology that the cost of a method for preventing the hand clamping is high.

[0005] According to one aspect of the embodiment of the present disclosure, a method for controlling the reset of a moveable component is provided, the method includes: receiving a reset signal, herein, the reset signal is configured to instruct the moveable component to move to a reset position; controlling the moveable component to move a first preset distance along a first moving direction; controlling the moveable component to move a second preset distance along a second moving direction, herein the first moving direction is opposite to the second moving direction; and controlling the moveable component to move to the reset position.

[0006] Optionally, the first moving direction is a preset reset direction, the operation of controlling the moveable component to move to the reset position includes: controlling the moveable component to move to the reset position along the first moving direction.

[0007] Optionally, the operation of controlling moveable component to move the second preset distance along the second moving direction includes: detecting whether a distance between a current position of the moveable component and the reset position is greater than a third preset distance; in the case that the distance between the current position of the moveable component and the reset position is detected to be greater than the third preset distance, controlling the moveable component to move the second preset distance along the second moving direction.

[0008] Optionally, the operation of controlling the moveable component to move to the reset position includes: in the case that the distance between the current position of the moveable component and the reset position is detected not to be greater than the third preset distance, controlling the moveable component to move to the reset position along the first moving direction.

[0009] Optionally, the operation of controlling the moveable component to move the second preset distance along the second moving direction includes: controlling the moveable component to move the second preset distance along the second moving direction; and controlling the moveable component to be paused for a preset time length.

[0010] Optionally, the moveable component is a moveable component in an electronic equipment, the electronic equipment further includes a photoelectric detecting component and a calibrating component, the photoelectric detecting component is configured to output a first electrical level while being shielded, and output a second electrical level while not being shielded, the calibrating component is a bulge component and used as a reference of the reset position, after controlling the moveable component to move the first preset distance along the first moving direction, the method further includes: acquiring a current output electrical level of the photoelectric detecting component; and the operation of controlling the moveable component to move the second preset distance along the second moving direction includes: in the case that the current output electrical level is the second electrical level, controlling the moveable component to move the second preset distance along the second moving direction; and the operation of controlling the moveable component to move to the reset position includes: in the case that the current output electrical level is the first electrical level, controlling the moveable component to move to the reset position along the first moving direction.

[0011] Optionally, after receiving the reset signal, the method further includes: detecting whether the photoelectric detecting component is faulty; and in the case that the photoelectric detecting component is detected to be faulty, controlling the moveable component to move to the reset position along the first moving direction.

[0012] According to another aspect of the embodiment of the present disclosure, an apparatus for controlling the reset of a moveable component is further provided, the

apparatus includes: a receiving unit, configured to receive a reset signal, herein, the reset signal is configured to instruct the moveable component to move to a reset position; a first controlling unit, configured to control the moveable component to move a first preset distance along a first moving direction; a second controlling unit, configured to control the moveable component to move a second preset distance along a second moving direction, herein the first moving direction is opposite to the second moving direction; and a third controlling unit, configured to control the moveable component to move to the reset position.

[0013] According to another aspect of the embodiment of the present disclosure, a storage medium is further provided, the storage medium includes a program for storage, herein, while the program is in operation, a device in which the storage medium is positioned is controlled to execute the method for controlling the reset of the moveable component of the present disclosure.

[0014] According to another aspect of the embodiment of the present disclosure, a processor is further provided, the processor is configured to execute a program, herein, while the program is in operation, the method for controlling the reset of the moveable component of the present disclosure is executed.

[0015] In the embodiment of the present disclosure, through receiving the reset signal, herein the reset signal is configured to instruct the moveable component to move to the reset position; controlling the moveable component to move the first preset distance along the first moving direction; controlling the moveable component to move the second preset distance along the second moving direction, herein the first moving direction is opposite to the second moving direction; and controlling the moveable component to move to the reset position, the technical problem in the related technology that the cost of the method for preventing the hand clamping is high is solved, reverse is performed in processes of shutdown and reset, and in the case that a hand of a user is clamped, the user has time to pull out the hand, thereby the technical effect of effectively preventing the moveable component from clamping the hand may be achieved.

Brief Description of the Drawings

[0016] The drawings described here are used to provide further understanding of the present disclosure, and form a part of the present disclosure, the schematic embodiments of the present disclosure and descriptions thereof are used to explain the present disclosure, and do not form improper limitation to the present disclosure. In the drawings:

Fig. 1 is a flow diagram of an optional method for controlling reset of a moveable component according to the embodiment of the present disclosure;
Fig. 2 is a flow diagram of another optional method for controlling the reset of the moveable component

according to the embodiment of the present disclosure; and

Fig. 3 is a schematic diagram of an optional apparatus for controlling the reset of the moveable component according to the embodiment of the present disclosure.

Detailed Description of the Embodiments

[0017] In order to make those skilled in the art understand schemes of the present disclosure better, the technical schemes in the embodiments of the present disclosure are clearly and completely described below in combination with the drawings in the embodiments of the present disclosure. It is apparent that the embodiments described are only a part of the embodiments of the present disclosure, but not all of the embodiments. Based on the embodiments in the present disclosure, all other embodiments acquired by those of ordinary skill in the art without making creative work shall fall within a scope of protection of the present disclosure.

[0018] It should be noted that, terminologies such as "first" and "second" in the specification, claims and accompanying drawings of the present invention are only used to distinguish similar objects, rather than to describe a special order or a precedence order. It should be understood that data used in such a way may be interchangeable in certain cases, such that the embodiments of the present invention described here can be implemented in an order other than those illustrated or described here. In addition, the terms "comprise," "comprising," "include," "including," "has," "having" or any other variation thereof, are intended to cover a non-exclusive inclusion. For example, a process, method, system, product or device that includes a list of steps or units is not necessarily limited to only those steps or units but may include other steps or units not expressly listed or inherent to such process, method, product or device.

[0019] The present disclosure provides an embodiment of a method for controlling reset of a moveable component.

[0020] Fig. 1 is a flow diagram of an optional method for controlling the reset of the moveable component according to the embodiment of the present disclosure, as shown in Fig. 1, the method includes the following steps.

[0021] Step S101, receiving a reset signal, herein, the reset signal is configured to instruct the moveable component to move to a reset position.

[0022] The moveable component is a component which may be moved in an electronic equipment, while the electronic equipment is located in a state of start operation, the moveable component may be moved along a certain track, the track may be a circumference, a line or a curve, and the moveable component may usually reciprocated on the track. While the electronic equipment is shut down, the moveable component is required to be returned to a reset position.

[0023] For example, an air sweeping grid in an air con-

ditioner may be clockwise or counterclockwise moved along a circumferential direction in a start state, in the case that a user controls the air conditioner through a remote controller, a control panel and the like or the air conditioner requires standby and the like, the air sweeping grid is required to be returned to the reset position, herein, the reset signal may be a shutdown instruction sent by the user, a standby instruction generated by the air conditioner and the like. A moving mode of the moveable component may be various, for example, circumferential movement and line/curve reciprocation.

[0024] Step S102, controlling the moveable component to move a first preset distance along a first moving direction.

[0025] In the case of receiving the reset signal, the moveable component is controlled to move a distance first according to a direction. Optionally, the first moving direction may be preset, or may be determined according to some conditions, specifically, it may be detecting a current position of the moveable component, and according to a relative position relation between the current position of the moveable component and the reset position, the first moving direction is determined. For example, after receiving the reset signal, a moving distance between the current position of the air sweeping grid and the reset position detected by the air conditioner is the shortest while rotated in a clockwise direction, so the air conditioner is controlled to be rotated according to the clockwise direction.

[0026] The first preset distance is a preset distance, the controlling to the distance may be the direct controlling to a length of a moving path, or the controlling to a moving angle, and even the controlling to moving speed and time. For example, the air sweeping grid of the air conditioner is controlled to move to a first line direction for 1 s according to a certain speed, the air sweeping grid of the air conditioner is controlled to move for 10 degrees according to the clockwise direction.

[0027] Step S103, controlling the moveable component to move a second preset distance along a second moving direction, herein the first moving direction is opposite to the second moving direction.

[0028] After controlling the moveable component to move a preset distance according to the first moving direction, the moveable component is controlled to move a preset distance (second preset distance) according to the second moving direction opposite to the first moving direction. The second preset distance may be the same or different from the first preset distance. In processes of shutdown and reset, a hand may be clamped by the moveable component, so the moveable component is reversely moved after moving a distance in a direction, a user has time to pull out the hand in the case of user hand clamping.

[0029] Optionally, in order to give more time to the case of hand clamping, in the step of controlling the moveable component to move the second preset distance along the second moving direction, after controlling the move-

able component to move the second preset distance along the second moving direction, the moveable component is controlled to be paused for a preset time length. For example, after receiving the reset signal, the air sweeping grid of the cabinet-type air conditioner is controlled to be rotated for 10 degrees along the clockwise direction, if it is judged that it is still far away from the reset position, the air sweeping grid is controlled to be reversely rotated for 10 degrees along the counterclockwise direction, paused for 1 s, and then continuously rotated to the reset position.

[0030] Step S104, controlling the moveable component to move to the reset position.

[0031] After controlling the moveable component to move the second preset distance along an opposite distance of the first moving direction, the moveable component is controlled to move to the reset position. In the step, it may be moved to the reset position along the first moving direction or the second moving direction. In an disclosure scene, while the moveable component may only be reset through one moving direction (namely, the first moving direction is a preset reset direction), the step is executed through controlling the moveable component to move to the reset position along the first moving direction.

[0032] Optionally, before controlling the moveable component to move the second preset distance along the second moving direction, it may also be judged whether the current position of the moveable component is near the reset position, if so, the moveable component is controlled not to move along the second moving direction opposite to the first moving direction, but the moveable component is controlled to continuously move to the reset position along the first moving direction after moving the first preset distance along the first moving direction. Specifically, before controlling the moveable component to move to the reset position according to the second moving direction, it is detected whether the distance between the current position of the moveable component and the reset position is greater than a third preset distance; in the case that the distance between the current position of the moveable component and the reset position is detected to be greater than the third preset distance, the moveable component is controlled to move the second preset distance along the second moving direction, and in the case that the distance between the current position of the moveable component and the reset position is detected not to be greater than the third preset distance, the moveable component is controlled to move to the reset position along the first moving direction.

[0033] The embodiment is capable of, after receiving the reset signal, through controlling the moveable component to move the first preset distance according to the first moving direction, and controlling the moveable component to move the second preset distance according to the second moving direction opposite to the first moving direction, thereby controlling the moveable component

to move to the reset position, solving the technical problem in the related technology that the cost of the method for preventing the hand clamping is high, and achieving the technical effect of effectively preventing the moveable component from clamping the hand.

[0034] In the following disclosure scenes: the moveable component is a moveable component in an electronic equipment, the electronic equipment further includes a photoelectric detecting component and a calibrating component, the photoelectric detecting component is configured to output a first electrical level while being shielded, and output a second electrical level while not being shielded, the calibrating component is a bulge component and used as a reference of the reset position, as an optional implementation embodiment, after controlling the moveable component to move the first preset distance along the first moving direction, a current output electrical level of the photoelectric detecting component is acquired; in the case that the current output electrical level is the second electrical level, controlling the moveable component to move the second preset distance along the second moving direction; and in the case that the current output electrical level is the first electrical level, controlling the moveable component to move to the reset position along the first moving direction. Because the protruded calibrating component is installed in the reset position of the electronic equipment, the photoelectric detecting component may be shielded while the moveable component is moved near the reset position, to cause the output electrical level to be changed.

[0035] Optionally, the above step is executed under a precondition that the first electrical level output by the photoelectric detecting component is shielded by a bulge as a reset reference component, but in actual situations, it may also happen that the electrical level output by the photoelectric detecting component is the first electrical level due to other conditions, for example, the photoelectric detecting component may be shielded while encountering other obstacles (for example, hands), or in the case that the moveable component itself includes a concave-convex grid, the photoelectric detecting component may cause the output electrical level to be periodically changed between the first electrical level and the second electrical level because of the periodical shielding of the grid of the moveable component, therefore, in the case that the current output electrical level is the first electrical level, the operation of controlling the moveable component to move to the reset position along the first moving direction further includes: continuously acquiring the current output electrical level in real time, in the case that the current output electrical level is changed from the first electrical level to the second electrical level, controlling the moveable component to return to Step S103, executing the operation of controlling the moveable component to move the second preset distance along the second moving direction, and executing Step S104, controlling the moveable component to move to the reset position.

[0036] Optionally, because the photoelectric detecting component is required to be used in the above optional implementation embodiment, therefore, it may be judged whether to execute Step S102 to Step S104 according to whether the photoelectric detecting component is faulty, specifically, after receiving the reset signal, it is detected whether the photoelectric detecting component is faulty, if the photoelectric detecting component is detected to be faulty, the moveable component is controlled to move to the reset position according to the first moving direction.

[0037] A specific implementation embodiment of the above embodiment is described below in combination with Fig. 2.

[0038] In the shutdown and reset processes of the cabinet-type air conditioner (electronic equipment), the case that the hand is clamped by the air sweeping grid (moveable component) may happen, therefore, in allusion to this case, the method for controlling the reset of the moveable component provided by the specific implementation embodiment may be executed to prevent the hand clamping.

[0039] The method provided by the implementation embodiment is capable of, after receiving the reset signal, firstly detecting whether a photoelectric switch (photoelectric detecting component) is faulty, herein, the air conditioner has a program for detecting whether the photoelectric switch is faulty, and this is not limited by the implementation embodiment.

[0040] If the photoelectric switch is faulty, it is directly ended, and the technical scheme provided by the implementation embodiment is not adopted to perform the shutdown and reset.

[0041] If the photoelectric switch is normal in function, an electrical level output by the photoelectric switch is detected, and the air sweeping grid is controlled to be rotated for 10 degrees to a preset shutdown and reset direction (first moving direction).

[0042] After the air sweeping grid is rotated for 10 degrees to the shutdown and reset direction, a touch switch (the touch switch is configured to detect whether the air sweeping grid is moved to the reset position) is detected to judge whether it is reset/close (namely, reaching the reset position), if it is judged that the reset is completed, the air conditioner may enter a shutdown state.

[0043] If the reset is not completed, a distance between a position of a panel (the panel is provided with the air sweeping grid) and a shutdown state position is judged through the electrical level of the photoelectric switch. If the detection electrical level of the photoelectric switch is a high electrical level (first electrical level) at this moment, it is indicated that the photoelectric detecting component is shielded, the air sweeping grid is near a calibrating photoelectric switch rib (bulge), the air sweeping grid is very close to the reset position at this moment, and the air sweeping grid is not exposed, so the hand clamping may not happen, the reset may be directly executed, and it may be continuously moved along the pre-

set shutdown and reset direction, at this moment, the output electrical level of the photoelectric switch also needs to be continuously monitored in real time, according to a size of the current output electrical level, it is divided into the following two situations:

(1) If the output electrical level continues to maintain a high electrical level, the air sweeping grid is controlled to always move to the reset direction until the reset position, and if the photoelectric switch is changed again from the high electrical level to a low electrical level, the air sweeping grid is controlled to be rotated for 10 degrees to an opposite direction (air sweeping open direction) of the reset direction, paused for 1 s, and continuously moved to the reset position until the reset position, it is judged whether the touch switch is closed, if not, it is continuously moved to the reset position, if so, it is indicated that it is in the reset position, and the whole process may be ended.

(2) Otherwise, if the photoelectric switch detects the low electrical level, it is reversely moved for 10 degrees, stopped for 1 s, and the reset action (namely shutdown action, until the air outlet panel/air sweeping grid is closed) is performed. Finally, through detecting the state of the touch switch, it is judged whether the air sweeping grid is reset. A main controller continues to detect the state of the touch switch, until it is detected that the touch switch is closed, so it is judged that the reset action is completed, and the air conditioner enters the shutdown state.

[0044] The method provided by the embodiment is capable of, in the processes of shutdown and reset, through performing the reverse rotation and stopping, if the case of hand clamping happens, giving time to pull out the hand by the user, thereby improving the safety performance of the air conditioner, and the photoelectric switch is applied to detect a current angle of the moveable component from the reset position, it may not be reversely rotated in the case that it is close to the reset position, and directly moved to the reset position along the reset direction, the reset may be directly performed in the case that the hand clamping may not happen completely, and the reverse rotation is not performed.

[0045] It is to be noted that, although the flow diagram of the drawing shows a logical sequence, in some cases, the shown or described steps may be executed in a sequence different from here.

[0046] The present disclosure further provides an embodiment of a storage medium, the storage medium of the embodiment includes a program for storage, herein, while the program is in operation, a device in which the storage medium is positioned is controlled to execute the method for controlling the reset of the moveable component of the embodiment of the present disclosure.

[0047] The present disclosure further provides an em-

bodiment of a processor, the processor of the embodiment is configured to execute a program, herein, while the program is in operation, the method for controlling the reset of the moveable component of the embodiment of the present disclosure is executed.

[0048] The present disclosure further provides an embodiment of an apparatus for controlling the reset of the moveable component. It is to be noted that the apparatus for controlling the reset of the moveable component provided by the embodiment may be configured to execute the method for controlling the reset of the moveable component provided by the present disclosure.

[0049] Fig. 3 is a schematic diagram of an optional apparatus for controlling the reset of the moveable component according to the embodiment of the present disclosure, as shown in Fig. 3, the apparatus includes a receiving unit 10, a first controlling unit 20, a second controlling unit 30 and a third controlling unit 40, herein, the receiving unit is configured to receive a reset signal, herein, the reset signal is configured to instruct the moveable component to move to a reset position; the first controlling unit is configured to control the moveable component to move a first preset distance along a first moving direction; the second controlling unit is configured to control the moveable component to move a second preset distance along a second moving direction, herein the first moving direction is opposite to the second moving direction; and the third controlling unit is configured to control the moveable component to move to the reset position.

[0050] The embodiment is capable of, through receiving the reset signal by the receiving unit, through controlling the moveable component to move the first preset distance along the first moving direction by the first controlling unit, through controlling the moveable component to move the second preset distance along the second moving direction by the second controlling unit, and through controlling the moveable component to move to the reset position by the third controlling unit, solving the technical problem in the related technology that the cost of the method for preventing the hand clamping is high, and achieving the technical effect of effectively preventing the moveable component from clamping the hand.

[0051] As an optional implementation embodiment, the first moving direction is a preset reset direction, the third controlling unit is configured to control the moveable component to move to the reset position along the first moving direction.

[0052] As an optional implementation embodiment, the second controlling unit includes: a detecting module, configured to detect whether a distance between a current position of the moveable component and the reset position is greater than a third preset distance; and a first controlling module, configured to, in the case that the distance between the current position of the moveable component and the reset position is detected to be greater than the third preset distance, control the moveable component to move the second preset distance along the second moving direction.

[0053] As an optional implementation embodiment, the third controlling unit includes: a second controlling module, configured to, in the case that the distance between the current position of the moveable component and the reset position is detected not to be greater than the third preset distance, control the moveable component to move to the reset position along the first moving direction.

[0054] As an optional implementation embodiment, the second controlling unit includes: a third controlling module, configured to control the moveable component to move the second preset distance along the second moving direction; and a fourth controlling module, configured to control the moveable component to be paused for a preset time length.

[0055] As an optional implementation embodiment, the moveable component is a moveable component in an electronic equipment, the electronic equipment further includes a photoelectric detecting component and a calibrating component, the photoelectric detecting component is configured to output a first electrical level while being shielded, and output a second electrical level while not being shielded, the calibrating component is a bulge component and used as a reference of the reset position, the apparatus further includes: an acquiring unit, configured to, after controlling the moveable component to move the first preset distance along the first moving direction, acquire a current output electrical level of the photoelectric detecting component; the second controlling unit includes: a fifth controlling module, configured to, in the case that the current output electrical level is the second electrical level, control the moveable component to move the second preset distance along the second moving direction; and the third controlling unit includes: a sixth controlling module, configured to, in the case that the current output electrical level is the first electrical level, control the moveable component to move to the reset position along the first moving direction.

[0056] As an optional implementation embodiment, the apparatus further includes: a detecting unit, configured to, after receiving the reset signal, detect whether the photoelectric detecting component is faulty; and a fourth controlling unit, configured to, in the case that the photoelectric detecting component is detected to be faulty, control the moveable component to move to the reset position along the first moving direction.

[0057] The above apparatus may include a processor and a storage, the above units may be stored in the storage as program units, and corresponding functions are achieved through executing the above program units stored in the storage by the processor.

[0058] The storage may include modes of a non-permanent memory, a random access memory (RAM) and/or a non-volatile memory and the like in a computer-readable medium, such as a read only memory (ROM) or a flash memory (flash RAM), the storage includes at least one storage chip.

[0059] The sequence of the above embodiments of the present disclosure does not represent the advantages

and disadvantages of the embodiments.

[0060] In the above embodiments of the present disclosure, the description of each embodiment has its own emphasis, a part which is not described in detail in a certain embodiment may be referred to related descriptions of other embodiments. In several embodiments provided by the present disclosure, it should be understood that the technical content disclosed may be achieved in other ways.

[0061] Herein, the apparatus embodiments described above are only schematic, for example, the division of the units may be a logical function division, and there may be other division manners in actual implementation, for example, multiple units or modules may be combined or integrated to another system, or some features may be ignored, or not executed. In addition, the displayed or discussed mutual coupling or direct coupling or communication connection may be indirect coupling or communication connection through some interfaces, units or modules, and may be in electrical or other forms.

[0062] In addition, each functional unit in each embodiment of the present disclosure may be integrated in one processing unit, or each unit may exist alone physically, or two or more than two units may be integrated in one unit. The above integrated unit may be achieved in a form of hardware, or may be achieved in a form of a software functional unit.

[0063] If the integrated unit is achieved in the form of the software functional unit and sold or is used as an independent product, it may be stored in one computer-readable storage medium. Based on such understanding, essentially the technical scheme of the present disclosure or a part of the contribution to the related art or all or part of the technical scheme may be embodied in the form of a software product, the computer software product is stored in one storage medium, which includes that several instructions are configured to enable a computer device (may be a personal computer, a server or a network device and the like) to execute all or part of the steps of the methods of each embodiment of the present disclosure. The above storage medium includes: various mediums which may store program codes, such as a U disk, the ROM, the RAM, a mobile hard disk, a magnetic disk or an optical disk and the like.

[0064] The above are only the preferable implementation embodiments of the present disclosure, it should be noted that a number of improvements and modifications may also be made by those of ordinary skill in the art without departing from principles of the present disclosure, and these improvements and modifications should also be regarded as within the scope of protection of the present disclosure.

Industrial Applicability

[0065] The schemes provided by the embodiments of the present disclosure may be applied to the controlling field, in the embodiments of the present disclosure, the

following embodiments are adopted: receiving a reset signal, herein the reset signal is configured to instruct the moveable component to move to a reset position; controlling the moveable component to move a first preset distance along a first moving direction; controlling the moveable component to move a second preset distance along a second moving direction, herein the first moving direction is opposite to the second moving direction; and controlling the moveable component to move to the reset position. The moveable component is reversely rotated in the processes of shutdown and reset, in the case that the user hand is clamped, the user has the time to pull out the hand, and the technical effect of effectively preventing the moveable component from clamping the hand may be achieved.

Claims

1. A method for controlling reset of a moveable component, comprising:

receiving a reset signal, wherein, the reset signal is used for instructing the moveable component to move to a reset position;
controlling the moveable component to move a first preset distance along a first moving direction;
controlling the moveable component to move a second preset distance along a second moving direction, wherein the first moving direction is opposite to the second moving direction; and
controlling the moveable component to move to the reset position.

2. The method as claimed in claim 1, wherein the first moving direction is a preset reset direction, that controlling the moveable component to move to the reset position comprises:
controlling the moveable component to move to the reset position along the first moving direction.

3. The method as claimed in claim 1, wherein controlling moveable component to move the second preset distance along the second moving direction comprises:

detecting whether a distance between a current position of the moveable component and the reset position is greater than a third preset distance; and
in a case that the distance between the current position of the moveable component and the reset position is detected to be greater than the third preset distance, controlling the moveable component to move the second preset distance along the second moving direction.

4. The method as claimed in claim 3, wherein controlling the moveable component to move to the reset position comprises:

in the case that the distance between the current position of the moveable component and the reset position is detected not to be greater than the third preset distance, controlling the moveable component to move to the reset position along the first moving direction.

5. The method as claimed in claim 1, wherein controlling the moveable component to move the second preset distance along the second moving direction comprises:

controlling the moveable component to move the second preset distance along the second moving direction; and
controlling the moveable component to be paused for a preset time length.

6. The method as claimed in claim 1, wherein the moveable component comprises: a moveable component in an electronic equipment, the electronic equipment further comprises a photoelectric detecting component and a calibrating component, the photoelectric detecting component is configured to output a first electrical level while being shielded, and output a second electrical level while not being shielded, the calibrating component is a bulge component and used as a reference of the reset position, after controlling the moveable component to move the first preset distance along the first moving direction, the method further comprises:

acquiring a current output electrical level of the photoelectric detecting component;
that controlling the moveable component to move the second preset distance along the second moving direction comprises: in a case that the current output electrical level is the second electrical level, controlling the moveable component to move the second preset distance along the second moving direction; and
that controlling the moveable component to move to the reset position comprises: in a case that the current output electrical level is the first electrical level, controlling the moveable component to move to the reset position along the first moving direction.

7. The method as claimed in claim 6, wherein, after receiving the reset signal, the method further comprises:

detecting whether the photoelectric detecting component is faulty; and
in the case that the photoelectric detecting com-

ponent is detected to be faulty, controlling the moveable component to move to the reset position along the first moving direction.

8. An apparatus for controlling reset of a moveable component, comprising: 5

a receiving unit, configured to receive a reset signal, wherein, the reset signal is configured to instruct the moveable component to move to a reset position; 10

a first controlling unit, configured to control the moveable component to move a first preset distance along a first moving direction;

a second controlling unit, configured to control the moveable component to move a second preset distance along a second moving direction, wherein the first moving direction is opposite to the second moving direction; and 15

a third controlling unit, configured to control the moveable component to move to the reset position. 20

9. A storage medium, the storage medium comprising a program for storage, wherein, while the program is in operation, a device in which the storage medium is positioned is controlled to execute the method for controlling the reset of the moveable component as claimed in any one of claims 1 to 7. 25

10. A processor, the processor is configured to execute a program, wherein, while the program is in operation, the method for controlling the reset of the moveable component as claimed in any one of claims 1 to 7 is executed. 30 35

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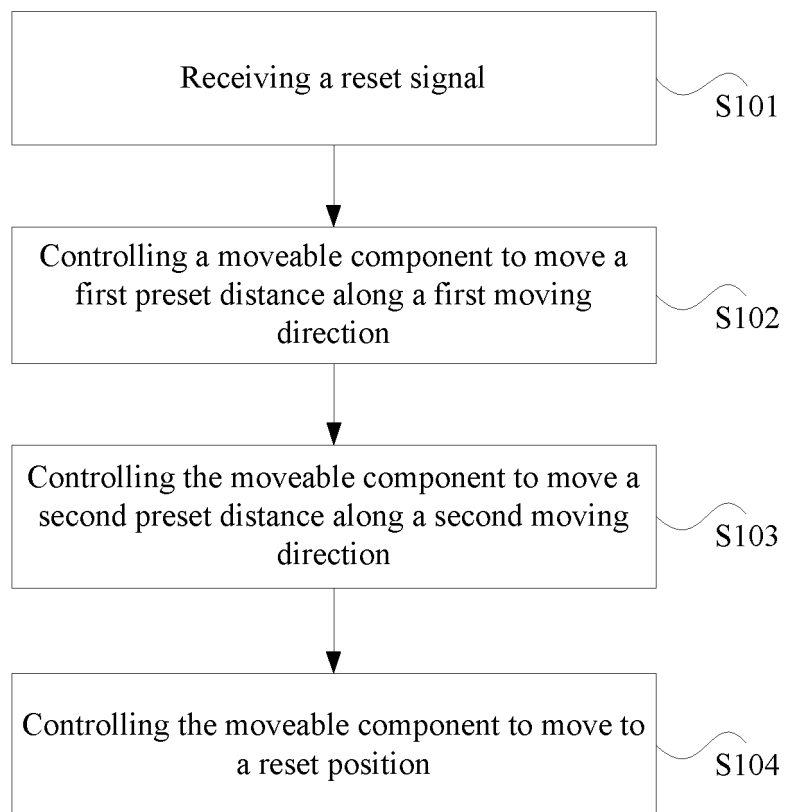


Fig. 1

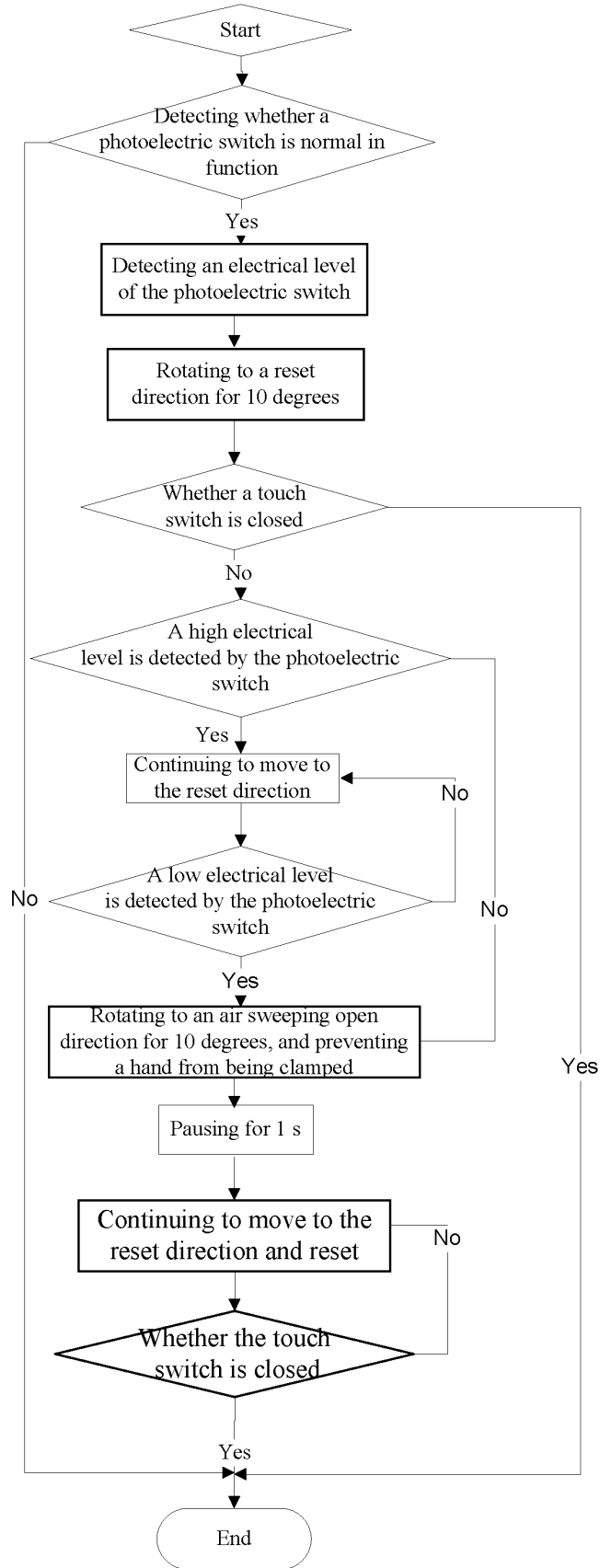


Fig. 2

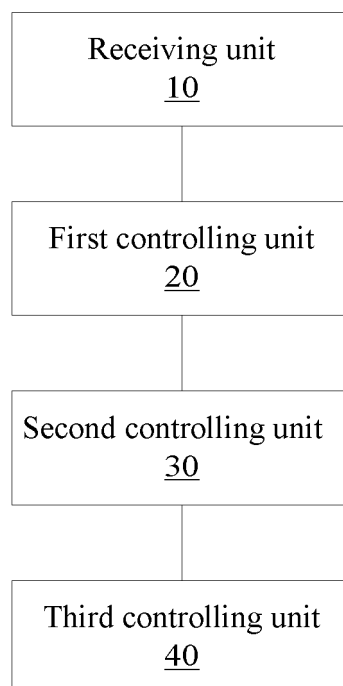


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2018/118977

A. CLASSIFICATION OF SUBJECT MATTER

F24F 11/70(2018.01)i; F24F 11/64(2018.01)i; F24F 11/32(2018.01)i; F24F 140/40(2018.01)n

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

F24F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNABS; CNTXT; VEN; USTXT; WOTXT; EPTXT; CNKI; SIPOABS; JPABS 高磊, 黄哲, 伍衍亮, 格力, 光电, 复位, 格栅, 出风面板, 导风板, 回位, 移动, 运动, 活动, 相反, 反向, 反方向, 夹手, 关机, 待机, 校准, 电平, return+, reset+, hand?, finger?, nip+, clamp+, pinch+, opposit+, revers+, grid?, board?, plate?, direction, mov+, adjust+, calibrat+, photoelectric+, clos+, standby+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 105546793 A (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 04 May 2016 (2016-05-04) description, paragraphs [0028]-[0042], and figures 1-5	1, 2, 5, 8-10
PX	CN 108917119 A (GREE ELECTRIC APPLIANCES INC. OF ZHUHAI) 30 November 2018 (2018-11-30) claims 1-10	1-10
A	CN 205747407 U (GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI) 30 November 2016 (2016-11-30) entire document	1-10
A	JP 63-38846 A (MATSUSHITA ELECTRONICS CORPORATION) 19 February 1988 (1988-02-19) entire document	1-10

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

2019.1/2

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2018/118977

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN	105546793	A	04 May 2016	CN 105546793 B	28 September 2018
CN	108917119	A	30 November 2018	None	
CN	205747407	U	30 November 2016	None	
JP	昭63-38846	A	19 February 1988	None	

Form PCT/ISA/210 (patent family annex) (January 2015)