

INFLATABLE MATTRESS CONTROL METHOD, INFLATABLE MATTRESS, COMPUTER DEVICE, AND STORAGE MEDIUM

TECHNICAL FIELD

5 The present disclosure relates to the field of sleep support, and in particular, to an inflatable mattress control method, an inflatable mattress, a computer device, and a storage medium.

BACKGROUND

10 When a user lies on an inflatable mattress, the inflatable mattress automatically performs the following air pressure adjustment operations to allow the user to feel the adjustment process, thereby improving user experience.

(1) Preliminary pressure adjustment: First, airbags are controlled to be deflated to reduce the pressure to a preset lower limit lower than a standby air pressure value. Then, the airbags
15 are controlled to be inflated to increase the pressure to a preset upper limit higher than the standby air pressure value.

(2) Precise pressure adjustment: Finally, the airbags are controlled to be deflated to reduce the pressure to a target air pressure value. Generally, the target air pressure value is a relatively comfortable air pressure value preset by a user, or an air pressure value suitable for
20 the user recommended by the inflatable mattress according to the body shape, weight, etc. of the user, and is between the preset upper limit and the preset lower limit.

During the preliminary pressure adjustment, a conventional inflatable mattress continuously detects whether the user has left the mattress, and if detecting that the user has left the inflatable mattress, immediately stops inflation or deflation. As a result, the following
25 problems arise.

If the user leaves the inflatable mattress in the process of deflating the airbags to a pressure lower than the standby air pressure value or before the airbags are inflated to a pressure higher than the standby air pressure value, the inflatable mattress will automatically immediately stop the inflation or deflation of the airbags. In this case, the supporting air
30 pressure in the airbags is low, and immediately stopping the inflation or deflation will cause

the entire inflatable mattress to be in a soft and sagging state, which is not aesthetic. In addition, when the user lies on the inflatable mattress next time, he or she will find the inflatable mattress too soft, resulting in poor user experience.

Therefore, there is a need to improve conventional inflatable mattresses to solve the problem that the inflatable mattress tends to stay in a soft and sagging state after the user leaves the inflatable mattress.

The above information is given as background information only to aid in understanding the present disclosure, and does not determine or acknowledge whether any of the foregoing can be used as prior art with respect to the present disclosure.

SUMMARY

The present disclosure provides an inflatable mattress control method, an inflatable mattress, a computer device, and a storage medium, to solve the problem that existing inflatable mattresses tend to stay in a soft and sagging state after the user leaves the inflatable mattress.

To achieve the above objective, in accordance with a first aspect of the present disclosure, an embodiment provides an inflatable mattress control method, including:

performing preliminary pressure adjustment on an inflatable mattress, and at the same time detecting whether a user leaves the inflatable mattress; and

in response to detecting that the user leaves the inflatable mattress during the preliminary pressure adjustment, acquiring a supporting air pressure value of the inflatable mattress when the user leaves the inflatable mattress, and adjusting a supporting air pressure of the inflatable mattress according to a standby air pressure value and the supporting air pressure value.

Optionally, the preliminary pressure adjustment includes:

deflating the inflatable mattress until the supporting air pressure of the inflatable mattress drops to a preset lower limit; and

inflating the inflatable mattress until the supporting air pressure of the inflatable mattress rises to a preset upper limit,

where the standby air pressure value is greater than the preset lower limit and is less than the preset upper limit.

Optionally, adjusting the supporting air pressure of the inflatable mattress according to

the standby air pressure value and the supporting air pressure value includes:

in response to the supporting air pressure value being less than the standby air pressure value, inflating the inflatable mattress until the supporting air pressure of the inflatable mattress rises to the standby air pressure value.

- 5 Optionally, inflating the inflatable mattress until the supporting air pressure of the inflatable mattress rises to the standby air pressure value includes:

disabling a function of detecting whether the user leaves the inflatable mattress and continuously inflating the inflatable mattress; and

- 10 in response to the supporting air pressure of the inflatable mattress rising to the standby air pressure value, enabling the function of detecting whether the user leaves the inflatable mattress and stopping inflation of the inflatable mattress.

Optionally, adjusting the supporting air pressure of the inflatable mattress according to the standby air pressure value and the supporting air pressure value further includes:

- 15 in response to the supporting air pressure value being greater than or equal to the standby air pressure value:

stopping inflation and deflation of the inflatable mattress, such that the supporting air pressure of the inflatable mattress remains unchanged; or

deflating the inflatable mattress until the supporting air pressure of the inflatable mattress drops to the standby air pressure value.

- 20 Optionally, detecting whether the user leaves the inflatable mattress includes:

acquiring a physiological sign parameter; and

determining whether the user leaves the inflatable mattress according to the physiological sign parameter.

- 25 Optionally, the physiological sign parameter includes heart rate, respiratory rate, or body temperature.

In accordance with another aspect of the present disclosure, an embodiment provides an inflatable mattress, including:

- 30 an initialization and detection module configured for performing preliminary pressure adjustment on the inflatable mattress, and at the same time detecting whether a user leaves the inflatable mattress; and

an inflation and deflation control device configured for: in response to detecting that the

user leaves the inflatable mattress during the preliminary pressure adjustment, acquiring a supporting air pressure value of the inflatable mattress when the user leaves the inflatable mattress, and adjusting a supporting air pressure of the inflatable mattress according to a standby air pressure value and the supporting air pressure value.

5 In accordance with still another aspect of the present disclosure, an embodiment provides a computer device, including a memory and a processor, where the memory is configured for storing a computer program, and the computer program, when executed by the processor, causes the processor to implement the inflatable mattress control method of any one of the above embodiments.

10 In accordance with yet another aspect of the present disclosure, an embodiment provides a storage medium having computer-executable instructions stored therein, where the computer-executable instructions, when executed by a processor of a computer, cause the processor to implement the inflatable mattress control method of any one of the above embodiments.

15 Compared with the existing technology, the present disclosure has the following beneficial effects. An inflatable mattress control method, an inflatable mattress, a computer device, and a storage medium are provided. If it is detected during preliminary pressure adjustment that a user leaves an inflatable mattress, a supporting air pressure value of the inflatable mattress when the user leaves the inflatable mattress is acquired, and a supporting
20 air pressure of the inflatable mattress is adjusted according to a standby air pressure value and the supporting air pressure value. Therefore, even if the user leaves the inflatable mattress during the preliminary pressure adjustment, the supporting air pressure of the air mattress can be kept at a high level after the user leaves the inflatable mattress, to prevent the supporting air pressure of the air mattress from being too low due to the user leaving the inflatable
25 mattress during the preliminary pressure adjustment, thereby solving the problem that existing inflatable mattresses tend to stay in a soft and sagging state after the user leaves the inflatable mattress.

 The present disclosure has other features and advantages that will be apparent from or set forth in detail in the accompanying drawings and the following detailed description, which
30 together serve to explain the particular principles of the present disclosure.

BRIEF DESCRIPTION OF DRAWINGS

To describe the technical schemes of the embodiments of the present disclosure or the related art more clearly, the following briefly introduces the accompanying drawings required for describing the embodiments or the related art. Apparently, the accompanying drawings in the following description show only some embodiments of the present disclosure, and those having ordinary skills in the art may still derive other drawings from these accompanying drawings without creative efforts.

FIG. 1 is a flowchart of an inflatable mattress control method according to Embodiment One of the present disclosure;

FIG. 2 is a structural block diagram of an inflatable mattress according to Embodiment Two of the present disclosure; and

FIG. 3 is a schematic structural diagram of a computer device according to Embodiment Three of the present disclosure.

DETAILED DESCRIPTION

To elaborate on the possible application scenarios, technical principles, implementable specific schemes, achievable objectives and effects of the present disclosure, the following detailed description is provided in conjunction with the listed specific embodiments and accompanying drawings. The embodiments described herein are only used to illustrate the technical schemes of the present disclosure more clearly and thus serve merely as examples, and shall not be construed as limiting the protection scope of the present disclosure.

In the present disclosure, reference to an “embodiment” means that a specific feature, structure, or characteristic described in connection with the embodiment may be included in at least one embodiment of the present disclosure. The term “embodiment” appearing at various positions in the description does not necessarily refer to the same embodiment, nor does it specifically limit its independence from or correlation with other embodiments. In principle, in the present disclosure, as long as there is no technical contradiction or conflict, various technical features mentioned in each embodiment can be combined in any manner to form a corresponding implementable technical scheme.

Unless otherwise defined, the meanings of technical terms used herein are the same as those commonly understood by those having ordinary skills in the technical field to which the

present disclosure belongs. The use of relevant terms herein is only for describing specific embodiments and is not intended to limit the present disclosure.

In the description of the present disclosure, the term “and/or” is used to describe the logical relationship between objects, indicating that there can be three relationships. For example, A and/or B may indicate that only A exists, only B exists, and both A and B exist. In addition, the character “/” in the present disclosure generally indicates an “or” relation between the associated objects.

In the present disclosure, terms such as “first,” “second” and the like are only used to distinguish one entity or operation from another entity or operation, and do not necessarily require or imply that there is any actual quantitative, hierarchical, or sequential relationship between these entities or operations.

It is to be clarified that in the present disclosure, without further limitations, the terms “include,” “comprise” or any other variants thereof is intended to encompass a non-exclusive inclusion. These expressions do not exclude the presence of additional elements in a process, method or product that includes the stated elements, such that the process, method, or product including a series of elements not only includes those elements, but also includes other elements that are not explicitly listed, or elements that are inherent to such a process, method, or product.

Consistent with the interpretation in the *Guidelines for Examination*, in the present disclosure, expressions such as “greater than,” “less than,” and “exceeding” are understood as excluding the number itself; expressions such as “above,” “below,” and “within” are understood as including the number itself. In addition, in the description of the embodiments of the present disclosure, the term “plurality” means two or more (including two), and similar expressions related to “plurality” (such as “multiple groups,” “multiple times,” etc.) shall be interpreted in the same manner, unless explicitly and specifically defined otherwise.

In the description of the embodiments of the present disclosure, it should be understood that, spatially relative terms used herein such as “central,” “longitudinal,” “lateral,” “length,” “width,” “thickness,” “upper,” “lower,” “front,” “rear,” “left,” “right,” “vertical,” “horizontal,” “perpendicular,” “top,” “bottom,” “inner,” “outer,” “clockwise,” “counterclockwise,” “axial,” “radial,” and “peripheral” should be construed to refer to the orientation as then described or as shown in the embodiments or drawings under discussion. These relative terms are for convenience of description of specific embodiments of the present disclosure, rather than indicating or implying that the mentioned apparatus or element must

have a particular orientation or must be constructed and operated in a particular orientation, and therefore cannot be construed to limit the present disclosure.

In the description of the embodiments of present disclosure, unless specified or limited otherwise, the terms “mounted,” “connected,” “coupled,” “fixed” “set” and the like are used broadly, and may be, for example, fixed connections, detachable connections, or integral connections; may also be mechanical connections, electric connections, or communicative connections; may also be direct connections, or indirect connections via intervening structures; may also be inner communications or interaction of two elements. The specific meaning of the above terms within the present disclosure may be understood by those having ordinary skills in the art according to particular circumstances.

Embodiment One

FIG. 1 is a schematic flowchart of an inflatable mattress control method according to Embodiment One of the present disclosure. This method is applicable to scenarios that provide sleep support to a human body. The method is performed by an inflatable mattress, which may be implemented by software and/or hardware. The method may be integrated in the inflatable mattress. The method includes the following steps S10 to S40.

At S10, it is detected whether a user is on an inflatable mattress.

Generally, when no person is lying on the inflatable mattress, the inflatable mattress is in a standby state. In this case, no inflation or deflation operation is performed, and it is continuously detected whether there is a user getting on the inflatable mattress.

In this embodiment, whether there is a user getting on the inflatable mattress may be detected using a pressure sensor in a support airbag of the inflatable mattress, specifically:

when the pressure sensor in the support airbag detects that the pressure is relatively high, it is considered by default that the high pressure is due to the fact that the user lies on the support airbag. Therefore, in this case, it is determined that the user is lying on the inflatable mattress;

when the pressure sensor in the support airbag detects that the pressure is relatively low, it is considered by default that the low pressure is due to the fact that the user leaves the support airbag. Therefore, in this case, it is determined that the user is not lying on the inflatable mattress.

In some other embodiments, whether the user is lying on the inflatable mattress may be determined according to a physiological sign parameter such as heart rate, respiratory rate, or

body temperature.

Specifically, when data such as heart rate, respiratory rate, or body temperature is detected, it may be determined that the user is lying on the inflatable mattress, and when data such as heart rate, respiratory rate, or body temperature is not detected, it may be determined
5 that the user is not lying on the inflatable mattress.

At S20, if it is detected that the user is lying on the inflatable mattress, preliminary pressure adjustment is performed on the inflatable mattress, and at the same time it is detected whether the user leaves the inflatable mattress.

In this embodiment, the preliminary pressure adjustment includes the following steps
10 S201a to S202a.

At S201a, the inflatable mattress is deflated until the supporting air pressure of the inflatable mattress drops to a preset lower limit.

At S202a, the inflatable mattress is inflated until the supporting air pressure of the inflatable mattress rises to a preset upper limit.

15 In this embodiment, a plurality of support airbags are provided inside the inflatable mattress. Internal air pressure of the support airbags constitutes the supporting air pressure of the inflatable mattress. The support airbags are all in communication with an inflation and deflation control device. The supporting air pressure of the inflatable mattress can be adjusted by inflating or deflating the support airbags by the inflation and deflation control device.

20 It should be noted that the preset lower limit and the preset upper limit are preset values, which may be default values that are set by the manufacturer before delivery, or may be set by a user as required after purchasing the inflatable mattress. The preset lower limit is less than the preset upper limit. For example, the preset lower limit is 0 kPa to 1 kPa, and the preset upper limit is 6 kPa to 8 kPa.

25 In this embodiment, detecting whether the user leaves the inflatable mattress includes the following steps S201b to S202b.

At S201b, a physiological sign parameter is acquired.

At S202b, it is determined whether the user leaves the inflatable mattress according to the physiological sign parameter.

30 It should be noted that for many mattresses, whether the user leaves the inflatable mattress is detected using a pressure sensor in a support airbag, specifically:

when the pressure sensor in the support airbag detects that the pressure is relatively high, it is considered by default that the high pressure is due to the fact that the user lies on the support airbag. Therefore, in this case, it is determined that the user is lying on the inflatable mattress;

5 when the pressure sensor in the support airbag detects that the pressure is relatively low, it is considered by default that the low pressure is due to the fact that the user leaves the support airbag. Therefore, in this case, it is determined that the user has left the inflatable mattress.

10 In this embodiment, because the detection of whether the user leaves the inflatable mattress and the preliminary pressure adjustment are performed simultaneously, the supporting air pressure in the support airbags is not only affected by whether the user is lying on the inflatable mattress, but is also affected by inflation and deflation controlled by the inflation and deflation control device. Therefore, in this embodiment, whether the user leaves the inflatable mattress is determined based on a physiological sign parameter such as heart
15 rate, respiratory rate, or body temperature, not based on the change of the pressure in the support bags.

Specifically, when data such as heart rate, respiratory rate, or body temperature is detected, it may be determined that the user is lying on the inflatable mattress, and when data such as heart rate, respiratory rate, or body temperature is not detected, it may be determined
20 that the user has left the inflatable mattress.

At S30, if it is detected during the preliminary pressure adjustment that the user has not left the inflatable mattress, a complete preliminary pressure adjustment operation is executed.

When it is detected that the user has not left the inflatable mattress, indicating that the user is always on the inflatable mattress during the entire preliminary pressure adjustment
25 process, the preliminary pressure adjustment operation in S201a to S201b is executed.

Further, after the preliminary pressure adjustment operation is completed, the air pressure of the support airbag should be equal to the preset upper limit, and in this case, a precise pressure adjustment operation may be executed, i.e., the support airbags are controlled to be deflated to reduce the pressure to a target air pressure value, to provide comfortable
30 support for the user.

At S40, if it is detected that the user leaves the inflatable mattress during the preliminary pressure adjustment, the preliminary pressure adjustment operation is paused first, then a

supporting air pressure value of the inflatable mattress when the user leaves the inflatable mattress is acquired, and finally the supporting air pressure of the inflatable mattress is adjusted according to a standby air pressure value and the supporting air pressure value.

In this embodiment, the standby air pressure value is a preset value, which may be a default value that is set by the manufacturer before delivery, or may be set by a user as required after purchasing the inflatable mattress. Generally, the standby air pressure value is greater than the preset lower limit and is less than the preset upper limit. For example, the standby air pressure value may be set to 3 kPa to 4 kPa.

It should be noted that the preliminary pressure adjustment mainly includes two processes: deflation and inflation. If the user leaves the inflatable mattress during the preliminary pressure adjustment, there may exist the following possible cases for the supporting air pressure value in the support airbag when the user leaves the inflatable mattress.

(1) The support airbag is in the early stage of deflation. In this case, although the supporting air pressure value continues to decrease, it is still higher than the standby air pressure value.

(2) The support airbag is in the final stage of deflation. In this case, the supporting air pressure value not only continues to decrease, but also has been lower than the standby air pressure value.

(3) The support airbag is in the early stage of inflation. In this case, although the supporting air pressure value continues to increase, it is still lower than the standby air pressure value.

(4) The support airbag is in the final stage of inflation. In this case, the supporting air pressure value not only continues to increase, but also has been higher than the standby air pressure value.

Regardless of whether the inflatable mattress is in an inflation phase or a deflation phase, at S401, if the supporting air pressure value is less than the standby air pressure value, it indicates that the softness of the supporting airbag is high. In this case, if the supporting airbag is not inflated, the inflatable mattress will be in a soft and sagging state. Therefore, the supporting airbags of the inflatable mattress should be inflated until the supporting air pressure of the supporting airbags rises to the standby air pressure value, in which case the supporting airbags are in a fully inflated state and will not sag or become concave.

Further, in the process of inflating the support airbags of the inflatable mattress, the user may return to the inflatable mattress. In this case, if it is still detected whether the user leaves the inflatable mattress, it will be determined that the user is lying on the inflatable mattress. To prevent the returning of the user to the inflatable mattress during the inflation process from
5 interfering with the inflation process, in this embodiment, during the inflation operation performed after the user leaves the inflatable mattress in S401, the function of detecting whether the user leaves the inflatable mattress is disabled and the inflatable mattress is continuously inflated, and when the supporting air pressure of the inflatable mattress rises to the standby air pressure value, the function of detecting whether the user leaves the inflatable
10 mattress is enabled again, and the inflation of the inflatable mattress is stopped.

In other words, as long as the user leaves the inflatable mattress during the preliminary pressure adjustment and the support airbags need to be inflated, the inflatable mattress is inflated until the standby air pressure value is reached. After the inflatable mattress is inflated to the standby air pressure value, the preliminary pressure adjustment operation can be
15 executed again.

At S402, if the supporting air pressure value is greater than or equal to the standby air pressure value, it indicates that the support airbags are in a relatively highly inflated state, and even if the support airbags are no longer inflated, the inflatable mattress will not be in a soft and sagging state. Therefore, in this case, the inflation and deflation operation of the inflatable
20 mattress may be stopped, such that the supporting air pressure of the inflatable mattress remains unchanged.

Alternatively, in some other embodiments, if the supporting air pressure value is greater than or equal to the standby air pressure value, the inflatable mattress may be deflated until the supporting air pressure of the inflatable mattress drops to the standby air pressure value.
25 By such setting, as long as the user leaves the inflatable mattress, the supporting air pressure value of the inflatable mattress will return to an initial state (equal to the standby air pressure value) after the user has left the inflatable mattress for a period of time, regardless of whether the supporting air pressure value when the user leaves the inflatable mattress is greater than the standby air pressure value.

30 Based on the above, according to the inflatable mattress control method provided in this embodiment, even if the user leaves the inflatable mattress during the preliminary pressure adjustment, the supporting air pressure of the air mattress can be kept above the standby air pressure value after the user leaves the inflatable mattress, to prevent the supporting air

pressure of the air mattress from being too low due to the user leaving the inflatable mattress during the preliminary pressure adjustment, thereby solving the problem that existing inflatable mattresses tend to stay in a soft and sagging state after the user leaves the inflatable mattress.

5 Embodiment Two

This embodiment provides an inflatable mattress, which is applicable to implement the inflatable mattress control method of Embodiment One, and has the same functions and beneficial effects as the inflatable mattress control method of Embodiment One.

The inflatable mattress provided in this embodiment includes:

10 a plurality of support airbags 1;

an initialization and detection module configured for performing preliminary pressure adjustment on the inflatable mattress, and at the same time detecting whether a user leaves the inflatable mattress; and

an inflation and deflation control device 2 configured for:

15 if it is detected during the preliminary pressure adjustment that the user has not left the inflatable mattress, executing a complete preliminary pressure adjustment operation on the support airbags 1; and

if it is detected that the user leaves the inflatable mattress during the preliminary pressure adjustment, pausing the preliminary pressure adjustment operation, acquiring a supporting air pressure value of the inflatable mattress when the user leaves the inflatable mattress, and
20 adjusting a supporting air pressure of the inflatable mattress according to a standby air pressure value and the supporting air pressure value.

Further, the initialization and detection module is further configured for:

25 deflating the inflatable mattress until the supporting air pressure of the inflatable mattress drops to a preset lower limit;

inflating the inflatable mattress until the supporting air pressure of the inflatable mattress rises to a preset upper limit, where the standby air pressure value is greater than the preset lower limit and is less than the preset upper limit;

30 acquiring a physiological sign parameter; and determining whether the user leaves the inflatable mattress according to the physiological sign parameter.

Further, the initialization and detection module is further configured for:

if the supporting air pressure value is less than the standby air pressure value, inflating the inflatable mattress until the supporting air pressure of the inflatable mattress rises to the standby air pressure value. Optionally, during inflation of the inflatable mattress, the function of detecting whether the user leaves the inflatable mattress is disabled, and the inflatable
5 mattress is continuously inflated; when the supporting air pressure of the inflatable mattress rises to the standby air pressure value, the function of detecting whether the user leaves the inflatable mattress is enabled again, and the inflation of the inflatable mattress is stopped; and

if the supporting air pressure value is greater than or equal to the standby air pressure value, stopping inflation and deflation of the inflatable mattress, such that the supporting air
10 pressure of the inflatable mattress remains unchanged, or deflating the inflatable mattress until the supporting air pressure of the inflatable mattress drops to the standby air pressure value.

In this embodiment, a plurality of small airbags are provided in the inflatable mattress (where each small airbag is a support airbag 1). For example, the inflatable mattress is first divided transversely into primary regions, and then the primary regions are further divided
15 longitudinally into secondary regions (including head, shoulder, waist, buttock, and leg regions, etc.). Accordingly, the small airbags correspondingly arranged in the primary regions are a head airbag, a shoulder airbag, a waist airbag, a buttock airbag, a leg airbag, etc. After it is detected in S10 of Embodiment One that the user is on the inflatable mattress, the steps S20 to S40 of Embodiment One are executed for the small airbags in an order from head to end,
20 allowing the user to experience a sense of support and adjustment sequentially from head to toe, i.e., the head airbag, the shoulder airbag, the waist airbag, the buttock airbag, the leg airbag, etc. are adjusted in sequence. In some other embodiments, all the support airbags 1 may be simultaneously adjusted, which is not limited in the present disclosure.

In some other embodiments, the support airbags 1 may be configured as a single large
25 airbag, and when inflation and deflation control is performed, the large airbag is inflated or deflated, which is not limited in the present disclosure.

It should be noted that on the basis of Embodiment One, for features not explained in this embodiment, reference can be made to the explanations in Embodiment One, so the details will not be repeated herein. The inflatable mattress can execute the method provided in
30 any one of the embodiments of the present disclosure, and has functional modules and beneficial effects corresponding to the method executed. The related functional modules and beneficial effects will not be described in detail again in this embodiment.

Embodiment Three

FIG. 3 is a schematic structural diagram of a computer device according to an embodiment of the present disclosure. FIG. 3 illustrates a block diagram of an exemplary computer device 100 adapted to implement embodiments of the present disclosure. The computer device 100 shown in FIG. 3 is merely an example, and does not constitute any
5 limitation on functions and application ranges of the embodiments of the present disclosure.

As shown in FIG. 3, the computer device 100 is embodied in the form of a general-purpose computing device. Components of the computer device 100 include, but are not limited to, one or more processors or processing units 100a, a system memory 100b, and a bus 100c connecting different system components (including the system memory 100b and
10 the one or more processing units 100a).

The bus 100c represents one or more of several types of bus structures, including a memory bus or a memory controller, a peripheral bus, a graphics acceleration port, a processor, or a local bus using any one of a variety of bus structures. For example, these architectures include, but are not limited to, an Industry Standard Architecture (ISA) bus, a
15 Micro Channel Architecture (MAC) bus, an enhanced ISA bus, and a Video Electronics Standards Association (VESA) local bus and a Peripheral Component Interconnection (PCI) bus.

The computer device 100 typically includes a variety of computer system readable media. These media may be any available media accessible by the computer device 100 and
20 include volatile and nonvolatile media, removable and non-removable media.

The system memory 100b may include a computer system readable medium in the form of a volatile memory, such as a Random Access Memory (RAM) 100d and/or a cache memory 100e. The computer device 100 may further include other removable or non-removable, volatile or non-volatile computer system storage media. By way of example
25 only, the storage system 100f may be configured to read from and write to a non-removable, non-volatile magnetic medium (not shown in FIG. 3, commonly referred to as “hard drive”). Although not shown in FIG. 3, a magnetic disk driver for reading from and writing to a removable and non-volatile disk (such as a “floppy disk”), and an optical disk driver for reading from and writing to a removable and non-volatile optical disk (for example, a
30 Compact Disc Read-Only Memory (CD-ROM), a Digital Versatile Read-Only Memory (DVD-ROM), or other optical media) may be provided. In these cases, each driver may be coupled to the bus 100c via one or more data medium interfaces. The system memory 100b may include at least one program product. The program product has a set of (e.g., at least one)

program modules configured for executing the functions of various embodiments of the present disclosure.

A program/utility 100h having a set of (at least one) program modules 100g may be stored in, for example, the memory 100b. The program modules 100g include, but are not limited to, an operating system, one or more applications, other program modules, and program data. Each of these examples, or some combination thereof, may include an implementation of a network environment. The program modules 100g generally perform the functions and/or methods in the embodiments described herein.

The computer device 100 may also communicate with one or more peripheral devices 200 (e.g., a keyboard, a pointing device, a display 200a, etc.). Furthermore, the computer device 100 may also communicate with one or more communication devices enabling a user to interact with the computer device 100 and/or other devices (such as a network card, modem, etc.) enabling the computer device 100 to communicate with one or more other computing devices. The communication may be performed via an input/output (I/O) interface 100i. The computer device 100 may also communicate with one or more networks (e.g., a local area network (LAN), a wide area network (WAN), and/or a public network, such as the Internet) through a network adapter 100j. As shown in FIG. 3, the network adapter 100j communicates with other modules of the computer device 100 via the bus 100c. It should be understood that although not shown in FIG. 3, other hardware and/or software modules may be used in combination with the computer device 100. The hardware and/or software modules include, but are not limited to, a microcode, a device drive, a redundant processing unit, an external disk drive array, a redundant array of independent disks (RAID) system, a tape drive, a data backup storage system, etc.

The processing unit 100a is configured to run a program stored in the system memory 100b to execute various functional applications and data processing, e.g., implement the inflatable mattress control method provided in the embodiments of the present disclosure.

In other words, the program, when executed by the processing unit 100a, causes the processing unit 100a to implement the inflatable mattress control method of any one of the above embodiments.

Embodiment Four

This embodiment provides a computer-readable storage medium, having computer-executable instructions stored therein. The instructions, when executed by a

processor, cause the processor to implement the inflatable mattress control method provided in the embodiments of the present disclosure.

In other words, the computer-executable instructions, when executed by the processor, causes the processor to implement the inflatable mattress control method of Embodiment One.

5 The computer-readable medium may be a computer-readable signal medium or a computer-readable storage medium. For example, the computer-readable storage medium may include, but not limited to, an electrical, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, or device, or any combination thereof. Specific examples (non-exclusive list) of the computer-readable storage medium include: an electrical
10 connection having one or more wires, a portable computer disk, a hard disk, a Random Access Memory (RAM), a Read-Only Memory (ROM), an Erasable Programmable Read-Only Memory (EPROM), a flash memory, an optical fiber, a portable Compact Disc Read-Only Memory (CD-ROM), an optical storage device, a magnetic storage device, or any suitable combination thereof. In the present disclosure, the computer-readable storage medium may be
15 any tangible medium containing or storing a program that may be used by or in combination with an instruction execution system, apparatus, or device.

 The computer-readable signal medium may include a data signal propagated in a baseband or as part of a carrier. The data signal carries computer-readable program code. Such a propagated data signal may be in a variety of forms including, but not limited to, an
20 electromagnetic signal, an optical signal, or any suitable combination thereof. The computer-readable signal medium may also be any computer-readable medium other than a computer-readable storage medium, and may send, propagate, or transmit a program for use by or in combination with an instruction execution system, apparatus, or device.

 The program code contained on the computer-readable medium may be transmitted using
25 any suitable medium, including but not limited to, via wireless transmission, via a wire, via a fiber optic cable, via Radio Frequency (RF), etc., or any suitable combination thereof.

 Computer program code for executing the steps of the present disclosure may be compiled in one or more programming languages or a combination of programming languages, including object-oriented programming languages such as Java, Smalltalk, and
30 C++, and conventional procedural programming languages such as the "C" language or similar programming languages. The program code can be entirely executed on a user's computer, partly executed on the user's computer, executed as a separate software package, partly executed on the user's computer and partly executed on a remote computer, or entirely

executed on a remote computer or server. In cases involving a remote computer, the remote computer may be connected to the user's computer via any type of network, including a Local Area Network (LAN) or a Wide Area Network (WAN), or may be connected to an external computer (e.g., via an Internet service provided by an Internet service provider).

5 Finally, it should be noted that although the above embodiments have been described in the specification and the drawings of the present disclosure, these embodiments are not intended to limit the scope of protection of the present disclosure. All technical schemes that are obtained by making equivalent replacements or modifications to the structures or processes based on the content described in the specification and the drawings of the present
10 disclosure without departing from the essential concepts of the present disclosure, as well as the direct or indirect application of the technical schemes of the above embodiments in other related technical fields, shall fall within the scope of protection of the present disclosure.

CLAIMS

What is claimed is:

1. An inflatable mattress control method, comprising:

performing preliminary pressure adjustment on an inflatable mattress, and at the same
5 time detecting whether a user leaves the inflatable mattress; and

in response to detecting that the user leaves the inflatable mattress during the preliminary
pressure adjustment, acquiring a supporting air pressure value of the inflatable mattress when
the user leaves the inflatable mattress, and adjusting a supporting air pressure of the inflatable
mattress according to a standby air pressure value and the supporting air pressure value.

10 2. The inflatable mattress control method of claim 1, wherein the preliminary pressure
adjustment comprises:

deflating the inflatable mattress until the supporting air pressure of the inflatable mattress
drops to a preset lower limit; and

15 inflating the inflatable mattress until the supporting air pressure of the inflatable mattress
rises to a preset upper limit,

wherein the standby air pressure value is greater than the preset lower limit and is less
than the preset upper limit.

20 3. The inflatable mattress control method of claim 1, wherein adjusting the supporting air
pressure of the inflatable mattress according to the standby air pressure value and the
supporting air pressure value comprises:

in response to the supporting air pressure value being less than the standby air pressure
value, inflating the inflatable mattress until the supporting air pressure of the inflatable
mattress rises to the standby air pressure value.

25 4. The inflatable mattress control method of claim 3, wherein inflating the inflatable
mattress until the supporting air pressure of the inflatable mattress rises to the standby air
pressure value comprises:

disabling a function of detecting whether the user leaves the inflatable mattress and
continuously inflating the inflatable mattress; and

30 in response to the supporting air pressure of the inflatable mattress rising to the standby
air pressure value, enabling the function of detecting whether the user leaves the inflatable
mattress and stopping inflation of the inflatable mattress.

5. The inflatable mattress control method of claim 1, wherein adjusting the supporting air pressure of the inflatable mattress according to the standby air pressure value and the supporting air pressure value further comprises:

in response to the supporting air pressure value being greater than or equal to the standby air pressure value:

stopping inflation and deflation of the inflatable mattress, such that the supporting air pressure of the inflatable mattress remains unchanged; or

deflating the inflatable mattress until the supporting air pressure of the inflatable mattress drops to the standby air pressure value.

6. The inflatable mattress control method of claim 1, wherein detecting whether the user leaves the inflatable mattress comprises:

acquiring a physiological sign parameter; and

determining whether the user leaves the inflatable mattress according to the physiological sign parameter.

7. The inflatable mattress control method of claim 6, wherein the physiological sign parameter comprises heart rate, respiratory rate, or body temperature.

8. An inflatable mattress, comprising:

an initialization and detection module configured for performing preliminary pressure adjustment on the inflatable mattress, and at the same time detecting whether a user leaves the inflatable mattress; and

an inflation and deflation control device configured for: in response to detecting that the user leaves the inflatable mattress during the preliminary pressure adjustment, acquiring a supporting air pressure value of the inflatable mattress when the user leaves the inflatable mattress, and adjusting a supporting air pressure of the inflatable mattress according to a standby air pressure value and the supporting air pressure value.

9. A computer device, comprising a memory and a processor, wherein the memory is configured for storing a computer program which, when executed by the processor, causes the processor to perform the inflatable mattress control method of any one of claims 1 to 7.

10. A storage medium having computer-executable instructions stored therein, wherein the computer-executable instructions, when executed by a processor of a computer, cause the processor to perform the inflatable mattress control method of any one of claims 1 to 7.