Claims

[Claim 1]

A bed apparatus comprising:

a supporting unit that supports a user; and

a control unit that controls an operation of the supporting unit,

wherein a speed of the operation of the supporting unit in a case where the user manipulates the supporting unit is higher than a speed at which the control unit automatically causes the supporting unit to operate,

wherein the supporting unit is automatically operated at different speeds during a single operation of the supporting unit controlled by the control unit,

wherein, when causing the supporting unit to perform a first operation, the control unit causes the supporting unit to operate at a first speed, operate at a second speed lower than the first speed after a first time has elapsed operating at the first speed, and operate at a third speed higher than the second speed after a second time has elapsed operating at the second speed and if the supporting unit has not reached a position to end the first operation.

[Claim 2]

The bed apparatus according to claim 1, wherein, when

causing the supporting unit to perform the first operation, in a case of determining that the user has fallen asleep, the control unit causes the supporting unit to operate at the first speed.

[Claim 3]

The bed apparatus according to claim 1, wherein, when causing the supporting unit to perform a second operation, if detecting body motion, a heartbeat rate, or a respiratory rate of the user in a vicinity of time at which the user intends to sit up, the control unit causes the supporting unit to operate.

[Claim 4]

The bed apparatus according to claim 3, wherein, when causing the supporting unit to perform the second operation, in a case of determining that the user has fallen asleep again, if detecting body motion, a heartbeat rate, or a respiratory rate of the user in a vicinity of time at which the user intends to sit up, the control unit causes the supporting unit to operate.

[Claim 5]

The bed apparatus according to claim 1, wherein, when causing the supporting unit to perform a third operation, in a case where respiration of the user has become unsteady, the control unit causes the supporting unit to operate.

[Claim 6]

The bed apparatus according to claim 5, wherein, when causing the supporting unit to perform the third operation, the control unit checks a state of respiratory rate of the user after a given period of time elapses, and determines whether to cause the supporting unit to operate.

[Claim 7]

The bed apparatus according to claim 1, wherein, when the control unit causes the supporting unit to perform a fourth operation, an operation speed of the supporting unit in a case where the user is lying on the supporting unit is lower than an operation speed of the supporting unit in a case where the user is not lying on the supporting unit.

[Claim 8]

The bed apparatus according to claim 1, wherein, when the control unit causes the supporting unit to perform a fifth operation, an operation speed of the supporting unit in a case where a sufficient amount of time has not passed after the user eats is lower than an operation speed of the supporting unit in a case where the sufficient amount of time has passed after the user eats.

[Claim 9]

The bed apparatus according to claim 8, wherein, when causing the supporting unit to perform the fifth operation, in a case where the sufficient amount of time has not passed

after the user eats, the control unit causes the supporting unit to operate, then causes the supporting unit to temporarily stop, determines any abnormality in heartbeat or respiration of the user, and, if there is no abnormality in heartbeat or respiration, causes the supporting unit to operate.

[Claim 10]

The bed apparatus according to claim 1, wherein, when the control unit causes the supporting unit to perform a sixth operation, an operation speed of the supporting unit in a case where a posture of the user on the supporting unit is a first posture is higher than an operation speed of the supporting unit in a case where the posture of the user on the supporting unit is a second posture.

[Claim 11]

The bed apparatus according to claim 1, wherein, when the control unit causes the supporting unit to perform a seventh operation, an operation speed of the supporting unit in a case where an amount of change in heartbeat rate of the user exceeds a predetermined value is lower than an operation speed of the supporting unit in a case where the amount of change in heartbeat rate of the user does not exceed the predetermined value.

[Claim 12]

The bed apparatus according to claim 1, wherein, when the control unit causes the supporting unit to perform an eighth

operation, an operation speed of the supporting unit in a case where a sleeping posture of the user is lying face-down is lower than an operation speed of the supporting unit in a case where the sleeping posture of the user is not lying face-down.

[Claim 13]

The bed apparatus according to claim 1, wherein, when causing the supporting unit to perform a ninth operation, the control unit sets the supporting unit to a first angle in a case where a sleeping posture of the user is lying face-down, sets the supporting unit to a second angle larger than the first angle in a case where the sleeping posture of the user is lying sideways, and sets the supporting unit to a third angle larger than the second angle in a case where the sleeping posture of the user is lying face-up.

[Claim 14]

The bed apparatus according to claim 1, wherein, when the control unit causes the supporting unit to perform a tenth operation, an operation speed of the supporting unit in a case where a value of a current flowing through an actuator which causes the supporting unit to operate exceeds a predetermined value is lower than an operation speed of the supporting unit in a case where the value of a current flowing through the actuator does not exceed the predetermined value.

[Claim 15]

The bed apparatus according to claim 2, further comprising a user interface used for the user to issue an instruction for operation to the control unit,

wherein, in a case where an icon concerning falling asleep is selected by the user, the user interface causes the control unit to perform the first operation.

[Claim 16]

The bed apparatus according to claim 3, further comprising a user interface used for the user to issue an instruction for operation to the control unit,

wherein, in a case where an icon concerning automatic driving is selected by the user, the user interface causes the control unit to perform the second operation.

[Claim 17]

The bed apparatus according to claim 5, further comprising a user interface used for the user to issue an instruction for operation to the control unit,

wherein, in a case where an icon concerning respiration is selected by the user, the user interface causes the control unit to perform the third operation.

[Claim 18]

The bed apparatus according to claim 7, further comprising a user interface used for the user to issue an instruction for operation to the control unit,

wherein, in a case where an icon concerning a raising operation or a lowering operation is selected by the user, the user interface causes the control unit to perform the fourth operation.

[Claim 19]

The bed apparatus according to claim 8, further comprising a user interface used for the user to issue an instruction for operation to the control unit,

wherein, in a case where an icon concerning eating is selected by the user, the user interface causes the control unit to perform the fifth operation.