raise button 22a relating to "head," a lower button 22b relating to "head," a raise button 23a relating to "feet," a lower button 23b relating to "feet," a raise button 24a relating to "height," a lower button 24b relating to "height," etc.

[0021]

For example, when the raise button 22a relating to "head" is pressed, the angle of the back section 70a increases. For example, when the lower button 22b relating to "head" is pressed, the angle of the back section 70a decreases. For example, when the raise button 23a relating to "feet" is pressed, the angles of the upper leg section 70b and the lower leg section 70c increase. For example, when the lower button 23b relating to "feet" is pressed, the angles of the upper leg section 70b and the lower leg section 70c decrease. These angles are, for example, angles from the horizontal plane. For example, when the raise button 24a relating to "height" is pressed, the bed surface becomes higher . For example, when the lower button 24b relating to "height" is pressed, the bed surface becomes lower. For example, when the raise button 21a relating to "combination" is pressed, the "head" and the "feet" change in combination. For example, when the lower button 21b relating to "combination" is pressed, the "head" and the "feet" change in combination. These changes are performed by the operation of the movable part 70. For example, the operations recited above are performed in the period in which the first operation acceptor 20 continues to receive operations (e.g., the period in which the operation buttons continue to be pressed). A safe operation is obtained thereby.

[0022]

In the example, multiple buttons (a button 25a relating to a first memory position, a button 25b relating to a second memory position, etc.) are provided as the second operation acceptor 25. The number of multiple buttons used as the second operation acceptor 25 may be three or more.

[0023]

The first memory position is formed when the button 25a is pressed. The second memory position is formed when the

example, the movable part information is stored in the memory 48 manually or automatically.

[0054]

On the other hand, for example, the state of the user is detected by the detector 60 (in the example, the driver 72). The signal that corresponds to the state of the user detected by the detector 60 is supplied to the controller 42. Whether or not the detected state of the user is a prescribed state is determined (estimated) by the controller 42. For example, in the case where the state of the user detected by the detector 60 is a prescribed state, the controller 42 moves the movable part 70 based on the movable part information stored in the memory 48. For example, when it is determined that the state of the user is a prescribed state (e.g., sleeping, etc.), the movable part 70 moves toward a state suited to sleeping.

[0055]

For example, in the case where the state of the user is sleeping, it is dangerous for the user to fall from the bed surface if the bed surface is high. In the case where the state of the user is sleeping, the safety of the user is improved by lowering the bed surface.

[0056]

For example, there is a facility such as a hospital or the like that houses many patients (or care recipients). In such a facility, a nurse or a caregiver performing the work of lowering the bed surface to ensure the safety when sleeping would be an extremely large amount of labor.

[0057]

In the embodiment, for example, when the state of the user is sleeping, the state is determined; and the bed surface is lowered automatically. The burden of the nurse or the caregiver is reduced thereby.

[0058]

Examples of the states of the user determined in the embodiment are described below.

[0059]

The block diagram illustrated in FIG. 3 illustrates functional blocks. Multiple functions may be performed by one circuit. For example, at least a part of the function of the controller 42 may be performed by the detector 60.

[0060]

The detection of the state of the user is performed by the detector 60. For example, the determination (the estimation) of whether or not the detected state is a prescribed state is performed by the controller 42. At least a part of the determination (the estimation) of whether or not the detected state is the prescribed state may be performed by at least a part of the detector 60 and the memory 48.

[0061]

The state of the user is detected by the detector 60 (e.g., the load sensor-including actuator which is the driver 72). Then, it is determined whether or not the detection result is the designated state.

[0062]

In the case where the electric furniture 310 is an electric bed, the designated state is, for example, one of sitting up, sitting upright, getting out of bed, falling asleep, sleeping, being awake, or the like. For example, in the case where the detector 60 is multiple load sensor-including actuators, it can be determined (estimated) that the user is at least one state of sitting up, sitting upright, getting out of bed, falling asleep, sleeping, being awake, or the like from the loads applied to each of the multiple load sensors.

[0063]

For example, sitting upright or getting out of bed is discriminated based on the change (the reduction amount) of the load. For example, "sitting up" can be estimated from the difference between the load at the part of the electric bed corresponding to the upper body and the load at the part of the electric bed corresponding to the lower body, etc. Sitting upright is estimated in the case where the load at a part of the side of the electric bed is locally large. Getting out of bed is estimated in the

CLAIMS

[Claim 1]

Electric furniture, comprising:

a controlled part;

a memory;

a detector a configured to detect a state of a user; and

a controller configured to control the controlled part based on the state of the user detected by the detector, the controller including a first mode, a second mode, and a third mode, the controller being configured to control the controlled part on the basis of an instruction of the user in the first mode, the controller being configured to store a state of the controlled part in the memory in the second mode, the controller being configured to automatically control the controlled part on the basis of the state stored in the memory regardless of the instruction of the user in the third mode.

[Claim 2]

The electric furniture according to claim 1, wherein

the controlled part includes a movable part, and

the controller performs a movable part control of moving the movable part based on the state of the user detected by the detector.

[Claim 3]

The electric furniture according to claim 2, wherein

the movable part includes a height adjuster, and

the controller lowers a height of the height adjuster when the state of the user is a sleeping state.

[Claim 4]

The electric furniture according to claim 2, wherein

the movable part includes a height adjuster, and

the controller adjusts a height of the height adjuster to be a sitting-upright height when the state of the user is sitting upright.

[Claim 5]

The electric furniture according to claim 2, further comprising a floor part sensor detecting an object existing in a space between the movable part and a floor,

the controller not performing the movable part control when the floor part sensor detects the object in the space between the movable part and the

floor.

[Claim 6]

The electric furniture according to claim 2, wherein

the movable part includes a back section,

the controller tilts the back section when the state of the user is falling asleep, and

the controller changes the back section toward horizontal when the state of the user is sleeping after the falling asleep.

[Claim 7]

The electric furniture according to claim 6, wherein

an angle of the tilt of the back section is not less than 4 degrees but less than 24 degrees, and

the controller sets an angle of the back section to be less than 4 degrees when the state of the user is the sleeping after the falling asleep.

[Claim 8]

The electric furniture according to claim 2, wherein

the movable part includes a back section, and

the controller increases an angle of the back section when the state of the user is sitting up.

[Claim 9]

The electric furniture according to claim 2, further comprising:

a frame; and

a frame part sensor detecting an object existing in a space between the frame and the movable part,

the controller not performing the movable part control when the frame part sensor detects the object in the space between the frame and the movable part.

[Claim 10]

The electric furniture according to claim 2, further comprising a body sensor detecting a position of a body of the user,

the controller not performing the movable part control when the body sensor detects at least a part of the body overlapping the electric furniture.

[Claim 11]

The electric furniture according to claim 2, further comprising a control device including an operation acceptor,

the movable part moving according to a control operation accepted by

the operation acceptor,

a speed when the movable part moves based on the state of the user detected by the detector being different from a speed when the movable part moves according to the control operation accepted by the operation acceptor.

[Claim 12]

The electric furniture according to claim 2, wherein the memory storing user state information and movable part information, the user state information relating to the state of the user, the movable part information relating to a state of the movable part corresponding to the user state information,

the controller moving the movable part based on the movable part information stored in the memory.

[Claim 13]

The electric furniture according to claim 12, wherein the movable part information stored in the memory is initializable.

[Claim 14] The electric furniture according to claim 2, further comprising

a body sensor detecting a position of a body of the user,

the movable part control performed when the body sensor detects at least a part of the body overlapping the electric furniture being different from the movable part control performed in the third mode.

[Claim 15] The electric furniture according to claim 1, further comprising:

a control device capable of receiving the instruction of the user, the control device including a first button provided in a first surface and a second button provided in a second surface, the second surface being different from the first surface.

[Claim 16] The electric furniture according to claim 15,

wherein the controller is configured to change a first or third mode to the second mode if the user pushed the second button.