

Description

UPPER BODY SUPPORT APPARATUS FOR TOILETS

Technical Field

- [1] The present invention relates to an upper body support apparatus for supporting the upper body of a user who sit on a toilet.

Background Art

- [2] Generally, when most users sit on toilets and have bowel movements, they bend their upper bodies forwards and place the arms on the legs.
- [3] However, such a posture makes the users develop bad habits, in other words, assume bad posture unconsciously in daily life. Furthermore, such a posture has a bad influence on bowel evacuation.
- [4] Furthermore, in the case where the users strain to evacuate their bowels in the above posture, there is a problem in that blood pressure is increased, thus negatively affecting the body.
- [5] Recently, the number of constipated persons has markedly increased attributable to excessive stress and attempts to lose weight. In the case of such constipated persons, due to anxiety when having bowel movements, it becomes still more difficult to have smooth bowel movements.
- [6] In particular, if there were a separate apparatus which enabled people to conduct other routine work for the several minutes for which the persons have bowel movements, it would be a great help to people with busy lives.
- [7] To achieve this purpose and overcome the above-mentioned problems, an upper body support board for toilets was proposed in Korean Utility Model Registration No. 390267 (application date: Apr. 14, 2005, registration date: July 11, 2007), which was filed by the applicant of the present invention. The conventional upper body support board includes a support board to support the arms of a user thereon, a support rod, which is coupled to the support board to support the support board, and a mounting rod, into which the support rod is inserted so as to be rotatable relative to the mounting rod within a predetermined angular range, and which is installed in a lavatory to position the support board and the support rod at a predetermined position in the lavatory.
- [8] In the case of the upper body support board disclosed by the applicant of the present invention, samples have already been developed, and the commercialization thereof has been conducted. Furthermore, there was a very positive response. Particularly, the upper body support board evoked a good response from the old and the weak. However, in the case of the conventional upper body support board, the support board

is relatively heavy, so that it is difficult for the old or the weak to lift or push the support board. Furthermore, there is a disadvantage in that, in the winter, when a user places his/her arms on the upper body support board, the user may feel a chill due to the cooled support board. Therefore, a solution to these problems is required.

Disclosure of Invention

Technical Problem

- [9] Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an object of the present invention is to provide an upper body support apparatus for toilets which enables a user to place his/her arms thereon when having a bowel movement, and is constructed such that free movement of the user in a lavatory having limited space is ensured, opening or closing of a door of the lavatory is not impeded, and the operation of washing the floor of the lavatory is not impeded, and which has a function of providing heat to maintain the body temperature of the user in the winter and a vibration function to stimulate the abdomen of the user to promote bowel evacuation.

Technical Solution

- [10] In order to accomplish the above object, the present invention provides an upper body support apparatus for toilets provided at a predetermined position adjacent to a toilet to support the upper body of a user sitting on the toilet, the upper body support apparatus including: a support board to support the arms of the user thereon, the support board being rotated upwards or downwards around the first end thereof between a wall and the front of the upper body of the user.

Advantageous Effects

- [11] In an upper body support apparatus for toilets according to the present invention, a user can place his/her arms on a support board while having the bowel movement, thus maintaining correct posture such that the upper body of the user is prevented from leaning too far forwards, thereby preventing an increase in blood pressure attributable to the bowel movement.
- [12] Furthermore, under normal conditions, the support board is inserted into and stored in a wall in the upright state. Hence, in a lavatory having limited space, free movement of the user is ensured, and the upper body support apparatus is prevented from impeding the opening or closing of a door of the lavatory. In addition, when washing the floor of the lavatory, the upper body support apparatus is prevented from impeding the washing operation. Water is prevented from being applied to the interior of the upper body support apparatus, so that metal elements thereof are prevented from rusting, and the upper body support apparatus is prevented from being covered with scale. Moreover, electronic components of the upper body support apparatus are

prevented from absorbing moisture or from directly contacting water.

Brief Description of the Drawings

- [13] FIG. 1 is a perspective view illustrating an upper body support apparatus built in a wall in a lavatory according to the present invention;
- [14] FIG. 2 is a perspective view illustrating a downward extracted state of the upper body support apparatus built in the wall in the lavatory according to the present invention;
- [15] FIG. 3 is a perspective view showing the construction of the upper body support apparatus in the downward extracted state, according to an embodiment of the present invention;
- [16] FIG. 4 is an exploded perspective view showing the construction of the upper body support apparatus in the downward extracted state according to the embodiment of the present invention;
- [17] FIG. 5 is a plan sectional view showing the construction of the upper body support apparatus in the downward extracted state according to the embodiment of the present invention;
- [18] FIG. 6 is a partial side sectional view showing the construction of a hinge unit according to the embodiment of the present invention;
- [19] FIG. 7 is a perspective view showing a control unit integrated with a main body of the upper body support apparatus according to the present invention;
- [20] FIG. 8 is a perspective view showing the upper body support apparatus mounted to the wall surface according to the present invention;
- [21] FIG. 9 is an exploded perspective view of the upper body support apparatus mounted to the wall surface according to the present invention;
- [22] FIG. 10 is a partial plan sectional view of the upper body support apparatus mounted to the wall surface according to the present invention; and
- [23] FIG. 11 is a partial side sectional view showing a vibration unit mounted to the upper body support apparatus according to the present invention.

Best Mode for Carrying Out the Invention

- [24] Hereinafter, the present invention will be described in detail with reference to the attached drawings.
- [25] FIG. 1 is a perspective view illustrating an upper body support apparatus built in a wall in a lavatory according to the present invention. FIG. 2 is a perspective view illustrating a downward extracted state of the upper body support apparatus built in the wall in the lavatory according to the present invention. FIG. 3 is a perspective view showing the construction of the upper body support apparatus in the downward extracted state, according to an embodiment of the present invention. FIG. 4 is an exploded perspective view showing the construction of the upper body support

apparatus in the downward extracted state according to the embodiment of the present invention. FIG. 5 is a plan sectional view showing the construction of the upper body support apparatus in the downward retracted state. FIG. 6 is a partial side sectional view showing the construction of a hinge unit according to the embodiment of the present invention. FIG. 7 is a perspective view showing a control unit integrated with a main body of the upper body support apparatus. FIG. 8 is a perspective view showing the upper body support apparatus mounted to the wall surface. FIG. 9 is an exploded perspective view of the upper body support apparatus mounted to the wall surface. FIG. 10 is a partial plan sectional view of the upper body support apparatus mounted to the wall surface. FIG. 11 is a partial side sectional view showing a vibration unit mounted to the upper body support apparatus.

- [26] As shown in FIGS. 1 through 4, the upper body support apparatus 10 according to the present invention is provided at a predetermined position adjacent to a toilet 1 to support the upper body of the user. The upper body support apparatus 10 includes a support board 11, which supports the arms of the user thereon, and is constructed such that the support board 11 is rotatable around a first end thereof between a wall 2 and the front of the upper body of the user.
- [27] In the present invention, a receptacle 11a, a cover of which is closed so as to be openable using a hinge, is provided in a medial portion of the upper surface of the support board 11. Transparent windows are disposed in the support board 11 on opposite sides of the receptacle 11a. Far infrared lamps 11b, which are operated using power transmitted from the outside and are controlled by a control unit 19 for providing an operating signal, are provided in the respective transparent windows. Furthermore, a cushion member 11d is adhered to the upper surface of the support board 11. A support block 13 is provided under the lower surface of the support board 11 when seen in the state in which it is rotated downwards and extracted from the wall 2. The support block 13 is brought into contact with the wall 2 when the support board 11 is extracted, thus serving to support a load applied to the support board 11. A hinge unit 15, which is coupled to the opposite sidewalls of a lower end of a main apparatus body 30 recessed in the wall 2, is provided on the opposite sides of the first end of the support board 11.
- [28] Here, the far infrared lamps 11b serve to emit light and heat outside the apparatus through the transparent windows, thus taking off the chill in the winter.
- [29] Furthermore, an ultraviolet lamp may substitute for the far infrared lamp 11b. In this case, the transparent windows are preferably made of semitransparent material to partially intercept ultraviolet rays such that the skin of the user is prevented from being injured by excessive exposure to ultraviolet rays.
- [30] In addition, a substance, which is made of rubber, silicone or sponge and is covered

with a leather cover, may be used as the cushion member 11d.

[31] The support block 13 is a support such as a bracket. The support block 13 may be integrally formed on the support board 11 into a single body, or, alternatively, it may be separately provided and fastened to the support board 11 by bonding or bolting. When the support board 11 is rotated downwards and disposed ahead of the upper body of the user, one end of the support block 13 is brought into contact with the wall 2, thus supporting the load applied to the support board 11 on the wall 2, thereby realizing the stable support function of the upper body support apparatus.

[32] As shown in FIGS. 5 and 6, the hinge unit 15 includes hinge shafts 15a, which are provided on the respective opposite sides of the first end of the support board 11, and an elastic member 15b, which is fitted over one of the hinge shafts 15a to elastically support the hinge shaft 15a using a spring.

[33] Here, the remaining one of the hinge shafts 15a is coupled to the output shaft of a motor 15c, such that the support board 11 can be automatically opened or closed in response to the manipulation of the control unit 19.

[34] The control unit 19, which has a block shape, may be disposed on the wall at a position spaced apart from the support board 11. Alternatively, the control unit 19 may be integrally provided with the main apparatus body 30, as shown in FIG. 7. The control unit 19 includes a control pad 19a and a control circuit 19b, which conducts the operation, corresponding to a command selected by manipulating key buttons of the control pad 19a, using power transmitted from the outside.

[35] The control unit 19 is connected to the far infrared lamps 11b, which are installed in the support board 11, the motor 15c, a vibration unit 20 and a light 34, which will be explained later herein, through power wires and control signal supply wires, thus supplying driving power and control signals to the components.

[36] Here, the power wires and the control signal supply wires of the control unit 19 may be connected to the motor 15c and the light 34 of the main apparatus body 30 through a separate molding pipe, or, alternatively, they may be connected to the components in a wall-embedded state.

[37] Furthermore, the control unit 19 may transmit control signals to the components through Bluetooth communication or RF (radio frequency) communication, in place of using the control signal supply wires.

[38] Meanwhile, the main apparatus body 30 has therein a receiving space 31 for receiving the support board 11, and insert holes 32, to which the hinge unit 15 of the support board 11 coupled, and which are formed at lower positions in the respective opposite sidewalls of the receiving space 31. The main apparatus body 30 further has a stopper 33, which is provided at an upper position in the receiving space 31 and prevents the support board 11, which is received in the receiving space 31, from being

undesirably rotated downwards and extracted from the receiving space 31 due to its own weight. The main apparatus body 30 further has the light 34, which is provided at an upper position on a front surface in the receiving space 31 to radiate light onto the support board 11, which is extracted downwards, and onto the area around the support board 11.

[39] Here, the main apparatus body 30 may be embedded in the wall 2, or, alternatively, it may be fastened to the wall 2 using screws, as shown in FIGS. 8 through 10.

[40] The stopper 33 may be an elastic hook corresponding to a locking protrusion, which is provided on a second end of the support board 11.

[41] The light 34 may be an angle adjustable type light, which is configured such that the light is fitted into a circular block embedded in the main apparatus body 30.

[42] In the case of a newly constructed building, an installation method in which the main apparatus body 30 is embedded in the wall 2 can be used. The installation method in which the main apparatus body 30 is fastened to the wall 2 using screws can be applied to an existing building. The installation methods can be selectively used in consideration of efficiency in connection of the power wires and the control signal supply wires.

[43] Meanwhile, as shown in FIG. 11, the present invention may further include the vibration unit 20, which is provided under the lower surface of the support board 11, when seen in the downward extracted state, at a position adjacent to the user.

[44] The vibration unit 20 may be a vibrating body, which is eccentrically rotated by the rotation of a motor.

[45] The vibration unit 20 serves to massage the abdomen of the user. That is, the user brings his/her abdomen into contact with the vibration unit 20 and pushes a control button of the control pad 19a corresponding to the vibration unit 20. Then, the vibration unit 20 massages the abdomen of the user. In particular, in the case of a constipated user, the vibration unit 20 stimulates the large intestine of the user, thus enabling easy evacuation of the bowels.

[46] Here, the vibration unit 20 may be coupled to the support board 11 in a fitting manner or a screw coupling manner. As well, the vibration unit 20 may be constructed such that the inclination angle thereof relative to the forward direction can be adjusted.

[47] In the present invention having the above-mentioned construction, the support board 11 can be extracted downwards by a manual method or an automatic method. Herein, the automatic extraction of the support board 11 will be explained.

[48] First, when the user, who sits on the toilet, manipulates an extraction button of the control pad 19a of the control unit 19, the motor 15c is operated, so that the support board 11 is rotated downwards ahead of the upper body of the user by the rotating force transmitted from the motor 15c through the corresponding hinge shaft 15a.

- [49] Thereafter, the user can place his/her arms on the support board 11 and have a bowel movement. In addition, while having the bowel movement, the user may be able to carry out other routine work such as reading or applying makeup.
- [50] In this state, if the user manipulates a button of the control pad 19a that pertains to the far infrared lamps 11b, the control circuit 19b operates the far infrared lamps 11b, thus enabling maintenance of the body temperature of the user in the winter or heat therapy. In the case where the ultraviolet lamps are used in place of the far infrared lamps, a sterilizing function can be conducted.
- [51] Furthermore, when it is desired to read a book, the light 34 may be used for illumination.
- [52] In addition, when the user brings his/her abdomen into contact with the vibration unit 20 and pushes the corresponding control button of the control pad 19a, the abdomen massage can be implemented by the vibration of the vibration unit 20. Particularly, in the case of a constipated user, the vibration unit 20 stimulates the large intestine of the user, thus guiding smooth bowel evacuation.
- [53] After stool is evacuated, when a retraction button of the control pad 19a of the control unit 19 is manipulated, the motor 15c is reversely rotated, so that the support board 11 is rotated upwards and retracted into the main apparatus body 30 by the rotating force transmitted from the motor 15c through the corresponding hinge shaft 15a.
- [54] Although the preferred embodiment of the present invention has been disclosed for illustrative purposes, the present invention is not limited to the construction and operation of the illustrated embodiment. Those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.
- [55] Therefore, such modifications, additions and substitutions must also be regarded as falling within the bounds of the present invention.

Industrial Applicability

- [56] As described above, an upper body support apparatus of the present invention enables a user to place his/her arms on a support board while having a bowel movement, thus maintaining correct posture such that the upper body of the user is prevented from leaning too far forwards, thereby preventing an increase in blood pressure attributable to the bowel movement.
- [57] Furthermore, under normal conditions, the support board is inserted into and stored in a wall in the upright state. Hence, in a lavatory having limited space, free movement of the user is ensured, and the upper body support apparatus is prevented from impeding the opening or closing of a door of the lavatory. In addition, when washing

the floor of the lavatory, the upper body support apparatus is prevented from impeding the washing operation. Water is prevented from being applied to the interior of the upper body support apparatus, so that metal elements thereof are prevented from rusting, and the upper body support apparatus is prevented from being covered with fur. Moreover, electronic components of the upper body support apparatus are prevented from absorbing moisture or from directly contacting water.

[58] As well, in the present invention, the support board can be automatically rotated downwards or upwards and is thus opened or closed by manipulating control buttons. Therefore, even the old and the weak can easily use the upper body support apparatus.

[59] Furthermore, a heat generating means or a sterilization means is provided in the support board, thus enabling maintenance of the body temperature of the user in the winter, and improving personal sanitation in a lavatory in which it is hard to continuously maintain a sanitary state.

[60] In addition, in the case where the upper body support apparatus of the present invention is used for the old and the weak, in particular, the old, having poor metabolism, the upper body support apparatus of the present invention can promote the bowel movement, thus guiding smooth bowel evacuation.

[61] Moreover, the present invention enables the user to place his/her arms thereon and, as well, enables a book or cosmetics to be placed thereon, thus making it possible to conduct other routine work as well as the bowel evacuation.

Claims

- [1] An upper body support apparatus for toilets provided at a predetermined position adjacent to a toilet in a lavatory to support an upper body of a user who sits on the toilet, the upper body support apparatus comprising:
a support board to support arms of the user thereon, the support board being rotated around a first end thereof downwards or upwards between a wall and a front of the upper body of the user.
- [2] The upper body support apparatus according to claim 1, wherein the support board comprises: a receptacle provided in a medial portion of an upper surface of the support board, the receptacle being provided with a cover, which is closed so as to be openable using a hinge; a far infrared lamp provided in each of transparent windows, provided in the support board on opposite sides of the receptacle, the far infrared lamp being operated using power transmitted from an outside and being controlled by a control unit for providing an operating signal; a cushion member adhered to the upper surface of the support board; a support block provided under a lower surface of the support board, which faces downwards when the support board is rotated downwards and extracted, so that, when the support board is extracted from the wall, the support block is brought into contact with the wall to support a load applied to the support board; and a hinge unit provided on opposite sides of the first end of the support board, the hinge unit being coupled to opposite sidewalls of a lower end of a main apparatus body recessed in the wall.
- [3] The upper body support apparatus according to claim 1, wherein the hinge unit includes hinge shafts provided on the respective opposite sides of the first end of the support board, and an elastic member fitted over each of the hinge shafts to elastically support the hinge shaft using a spring.
- [4] The upper body support apparatus according to claim 1 or 3, wherein one end of the hinge shafts is coupled to an output shaft of a motor so that the support board is automatically opened or closed depending on manipulation of the control unit.
- [5] The upper body support apparatus according to claim 1, wherein the control unit comprises: a control pad; and a control circuit to conduct an operation corresponding to a command selected by manipulating key buttons of the control pad using power transmitted from the outside.
- [6] The upper body support apparatus according to claim 5, wherein the control unit has a block shape and is provided on the wall at a position spaced apart from the support board.
- [7] The upper body support apparatus according to claim 5, wherein the control unit

is integrally provided with the main apparatus body.

- [8] The upper body support apparatus according to claim 5, wherein the control unit is connected to the far infrared lamps, provided in the support board, the motor, a vibration unit and a light through power wires and control signal supply wires, thus supplying driving power and control signals to the far infrared lamps, the motor, the vibration unit and the light.
- [9] The upper body support apparatus according to claim 1, wherein the main apparatus body has a receiving space for receiving the support board; insert holes formed at lower positions in the respective opposite sidewalls of the receiving space, so that the hinge unit of the support board is inserted into the insert holes; a stopper provided at an upper position in the receiving space to prevent the support board, which is received in the receiving space, from being rotated downwards and extracted from the receiving space by a weight of the support board; and a light provided at an upper position on a front surface in the receiving space to radiate light onto the extracted support board and onto an area around the support board.
- [10] The upper body support apparatus according to claim 9, wherein the main apparatus body is embedded in the wall.
- [11] The upper body support apparatus according to claim 9, wherein the main apparatus body is fastened to the wall by a screw coupling method.
- [12] The upper body support apparatus according to claim 11, further comprising: a vibration unit provided under the lower surface of the support board at a position adjacent to the user.