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(19) **United States**(12) **Patent Application Publication****Kim et al.**(10) **Pub. No.: US 2010/0031429 A1**(43) **Pub. Date: Feb. 11, 2010**(54) **TOILET BOWL SYSTEM USABLE FOR SITTING FACING FRONT****Publication Classification**(76) Inventors: **Chang-Duk Kim**, Seoul (KR);  
**Young-Ki Hong**, Seoul (KR)(51) **Int. Cl.**  
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(52) **U.S. Cl.** ..... **4/300**Correspondence Address:  
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**Lynnwood, WA 98037 (US)**(57) **ABSTRACT**

In a toilet bowl which includes a bowl body, a sitting member and a water reservoir, a new toilet bowl system usable for sitting facing front is disclosed, which comprises a bowl body having a longitudinal vertical opening, a backrest or chest support member which is provided apart from an upper side of the bowl body and the sitting member, a support handle which is installed at a side surface of the backrest or chest support member, a water reservoir which is not contacted with an upper side of the bowl body and the sitting member and stores water for flushing urine and feces, a water reservoir support member for supporting the water reservoir, and a chest support member support member which is engaged at the water reservoir and supports a backrest or chest support member support. A wheelchair user can more easily use in a forward facing posture while saving a space in a toilet room.

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(2), (4) Date: **Aug. 20, 2009**(30) **Foreign Application Priority Data**

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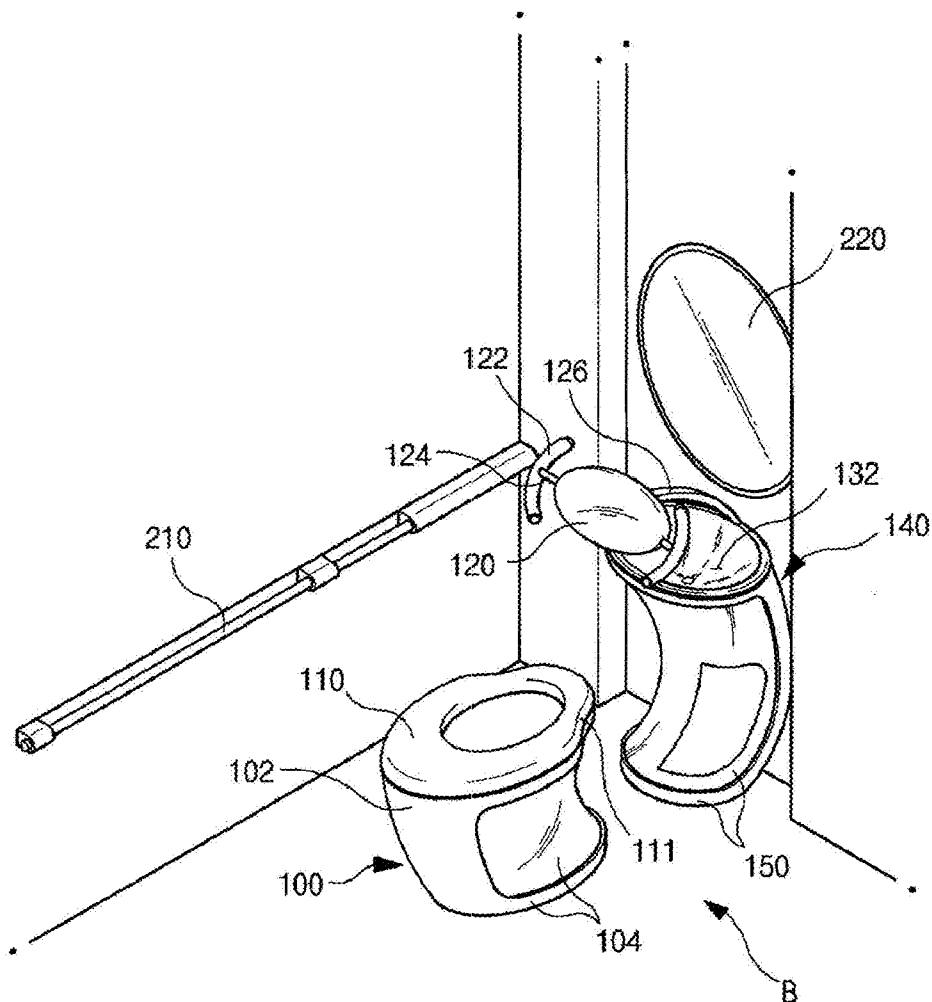


Fig. 1

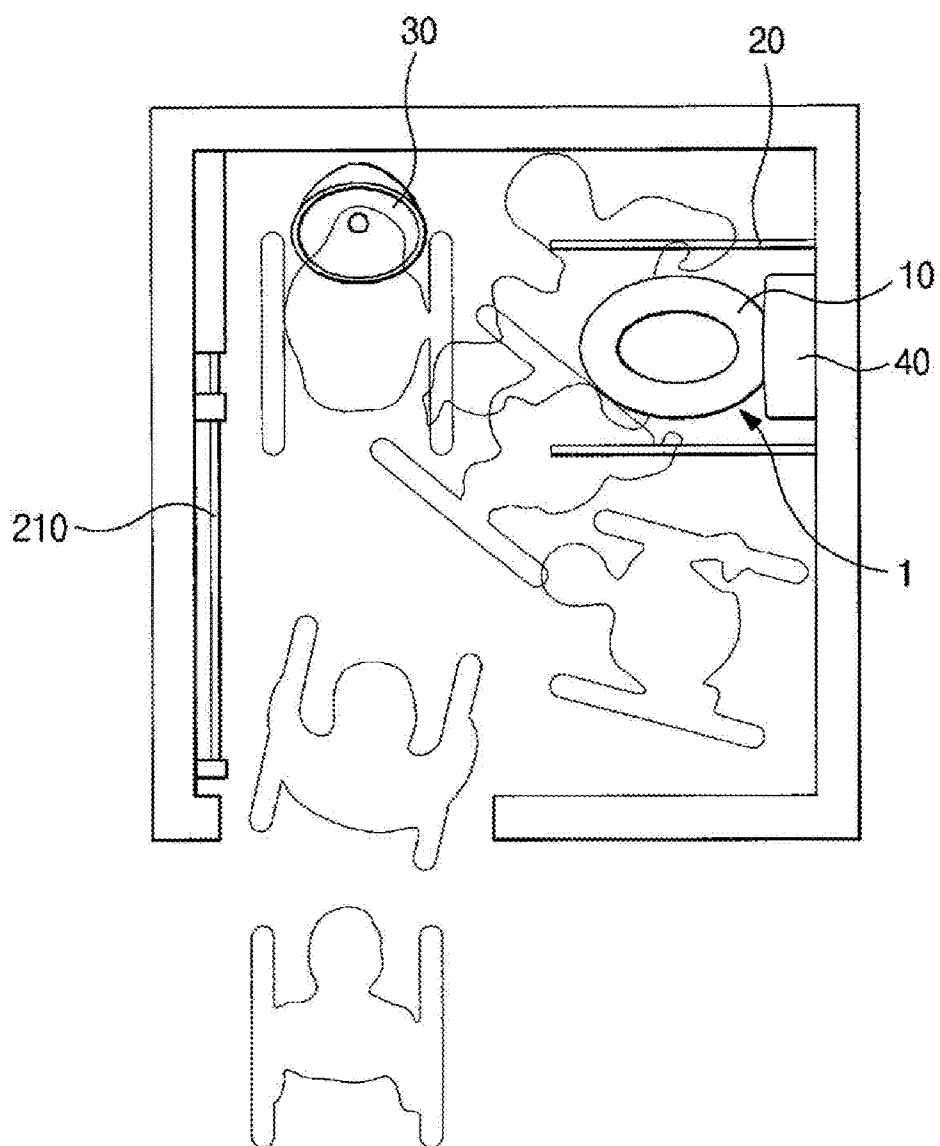


Fig. 2

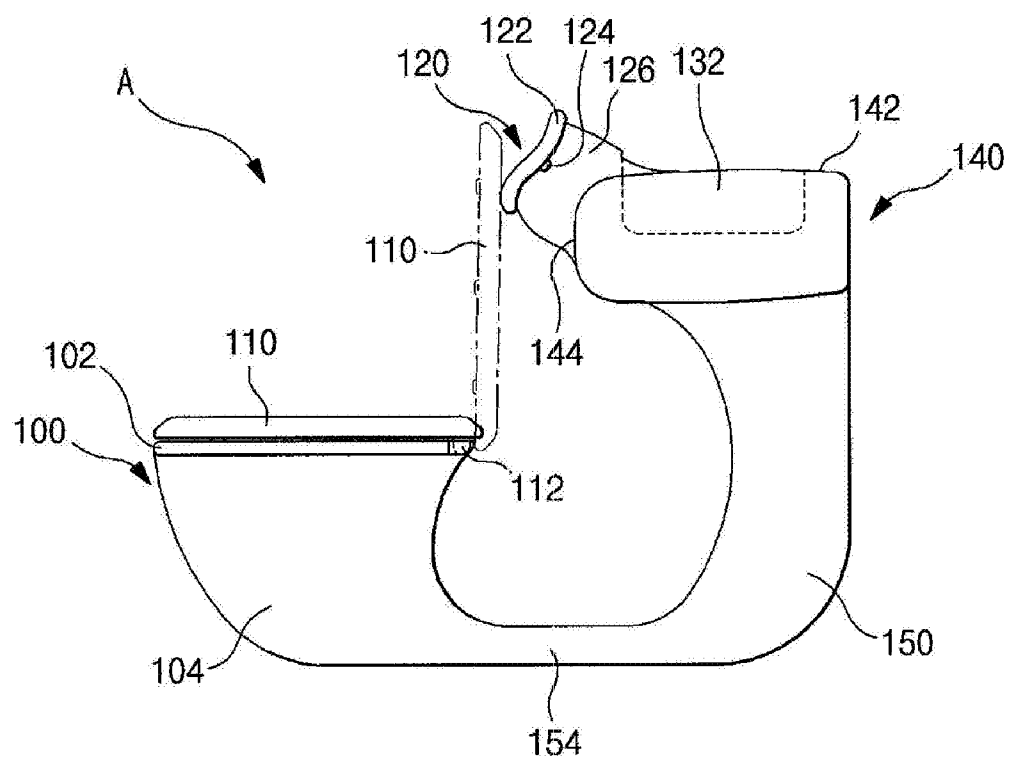


Fig. 3

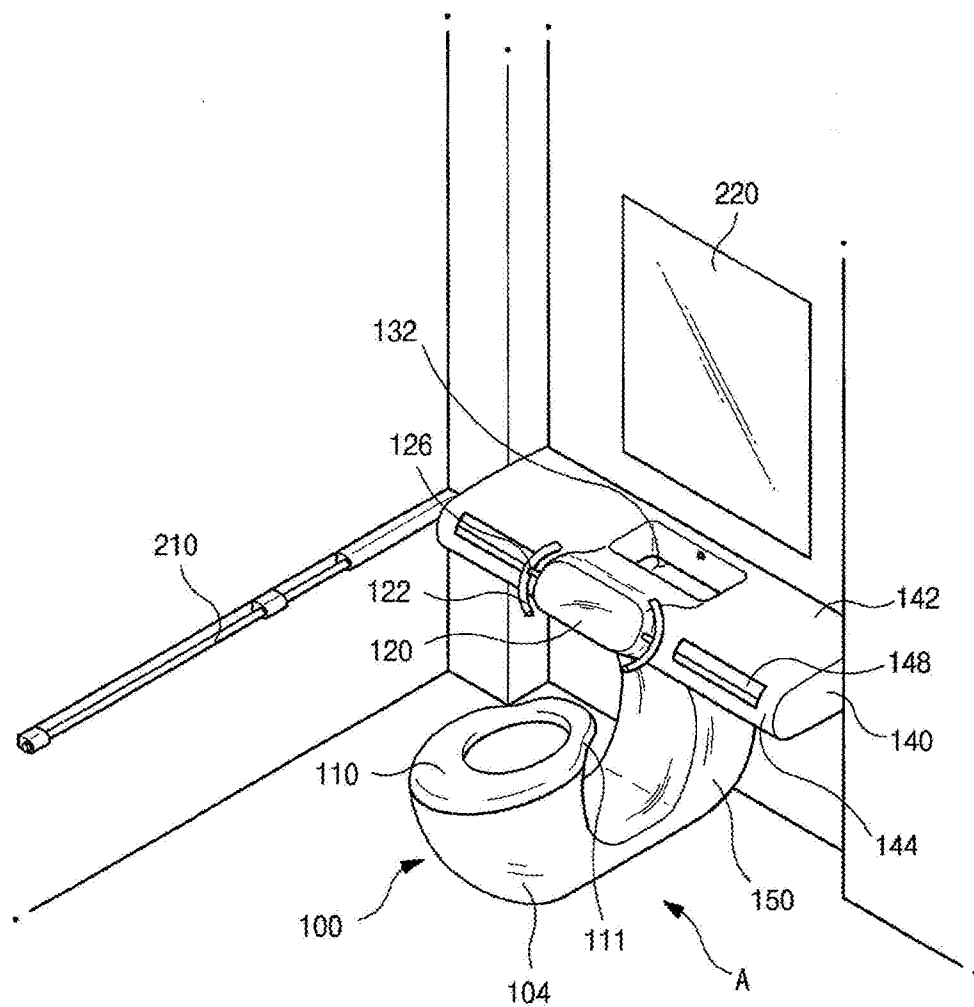


Fig. 4

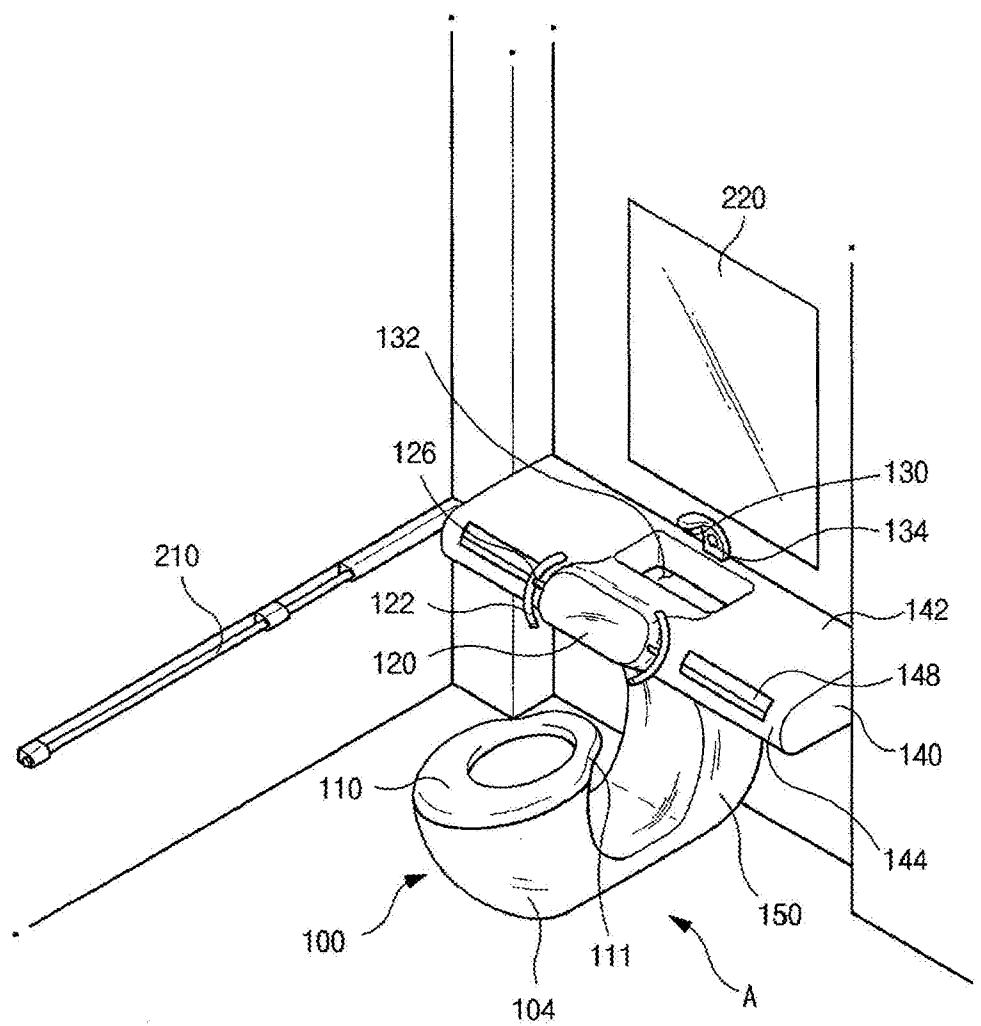




Fig. 6

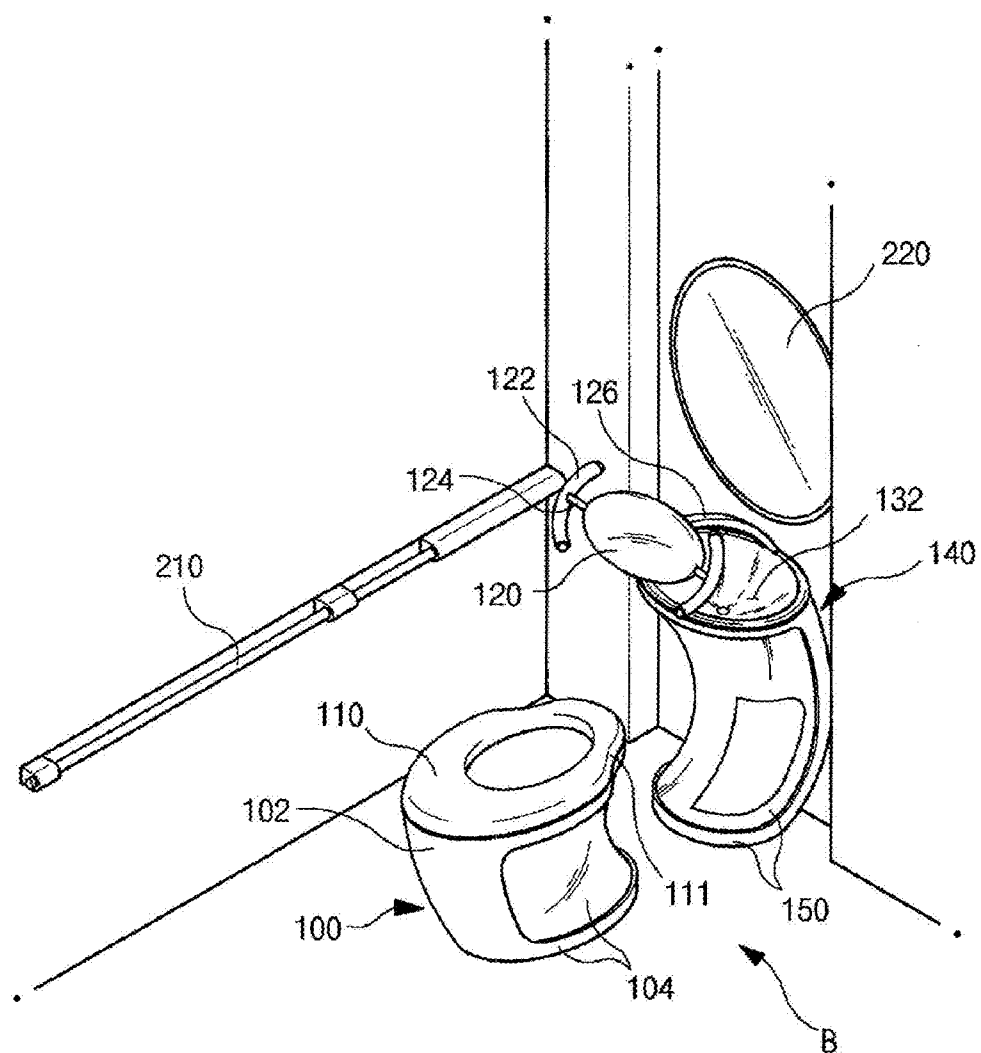
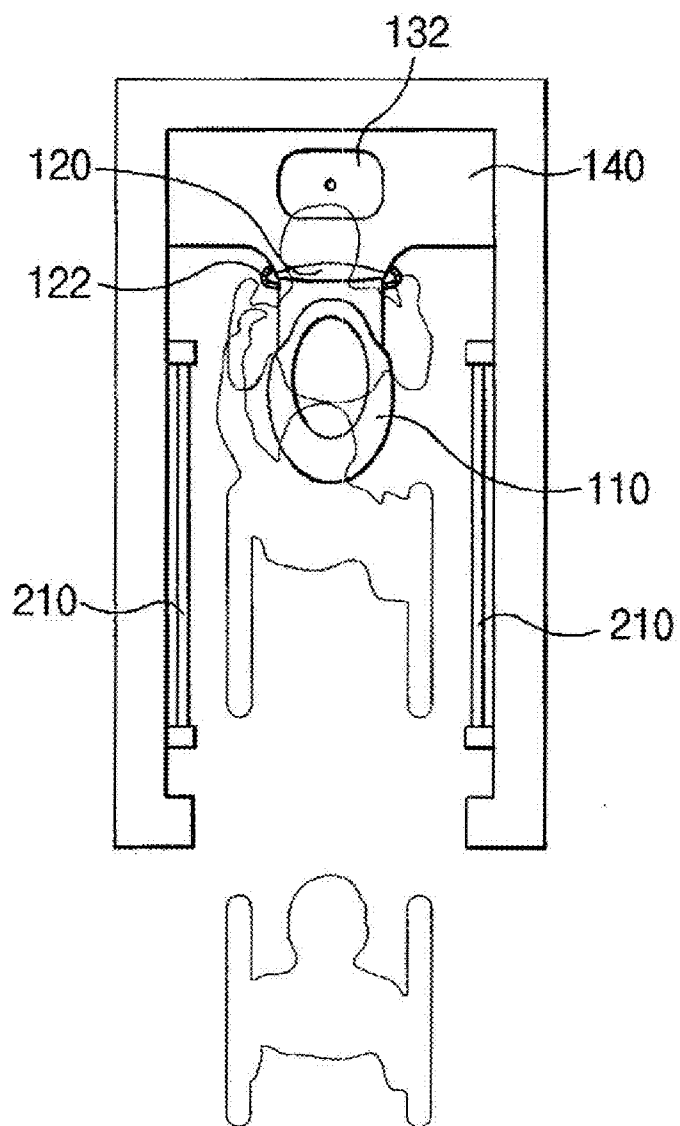


Fig. 7





## TOILET BOWL SYSTEM USABLE FOR SITTING FACING FRONT

### TECHNICAL FIELD

[0001] The present invention relates to a toilet bowl system usable for sitting facing front.

### BACKGROUND ART

[0002] A conventional toilet bowl is generally designed so that a user sits after turning around in front of a bowl. The above sitting type consists of a rear side-facing toilet bowl.

[0003] FIG. 1 is a plane view illustrating a toilet which uses a conventional rear side-facing toilet bowl.

[0004] As shown in FIG. 1, when an old and feeble person or a disabled person, who needs a wheel chair, uses a toilet, a wheel chair is moved into a toilet and turns around in front of a bowl, so that the user sits on the bowl. In this case, it is not easy for the above person to use the conventional toilet system. Namely, the user needs to turn around the wheel chair in the toilet. When sitting on a sitting member 10, the user needs to hold a support handle 20. So, unnecessary procedures are needed, and many inconveniences occur.

[0005] A conventional toilet system needs a lot of space so that a wheel chair smoothly turns around in the toilet in order for a user to sit on the sitting member 10.

[0006] As shown in FIG. 1, since a washstand 30 is spaced apart, it is needed to move toward the washstand on the wheelchair for washing hands after peeing or bowel movement.

[0007] In case of a special bowl system designed for a disabled person, it is equipped with various special features, so that the price is high, and an ordinary person has a few problems for using the same.

### DISCLOSURE OF INVENTION

[0008] Accordingly, it is an object of the present invention to provide a toilet bowl system usable for sitting facing front which overcomes the problems encountered in the conventional art.

[0009] It is another object of the present invention to provide a toilet bowl system usable for sitting facing front in which a wheelchair user can more easily use as compared to a conventional rear side-facing toilet bowl.

[0010] It is further another object of the present invention to provide a toilet bowl system usable for sitting facing front which can save an inner space of a toilet by providing a front side-facing toilet bowl system even when a wheelchair user uses.

[0011] It is still further another object of the present invention to provide a toilet bowl system usable for sitting facing front in which a wheelchair user can directly use a washstand, sitting on the wheelchair, without movement after peeing or bowel movement.

[0012] It is still further another object of the present invention to provide a toilet bowl system usable for sitting facing front in which a wheelchair user as well as an ordinary person can use a toilet in the same manner as a conventional rear side-facing toilet bowl.

[0013] It is still further another object of the present invention to provide a toilet bowl system usable for sitting facing front which is very economical since a wheelchair user as well as an ordinary user can easily use.

[0014] To achieve the above objects, in a toilet bowl which includes a bowl body, a sitting member, a backrest and a water reservoir, there is provided a toilet bowl system usable for sitting facing forward which comprises a bowl body which has a vertically elongated opening; a backrest or chest support member support part which is spaded part, not contacting with an upper side of the bowl body and the sitting member; a support handle which is installed at a side of the backrest or chest support member; a water reservoir which is spaced part, not contacting with an upper side of the bowl body and the sitting member and stores a process water which is used for flushing after peeing and bowel movement; a water reservoir support part which supports the water reservoir; and a chest support member support part which is engaged at the water reservoir part and supports the backrest or chest support member.

[0015] A lower side of the bowl body and the water reservoir support part are integrated with each other.

[0016] A lower side of the bowl body and the water reservoir support part are separated from each other and are connected via a connection pipe when a toilet bowl is installed.

[0017] An accommodating part is formed at an upper side of the water reservoir for storing and discharging water which is used for washing face and hands, and a water supply part is provided for supplying water to the accommodating part.

[0018] The chest support member support part is engaged at part of the front side or the front side and upper side of the water reservoir, and the water supply part is provided at an upper side of the water reservoir part of a rear side of the accommodating part which is opposite to the direction of the bowl body. The chest support member support part is made of a ceramic material, and the water supply part operates along with an automatic detection sensor which is installed at the support member of the water supply part.

[0019] The chest support member support part is engaged at a portion which is opposite to the direction of the bowl body in the upper edge portions of the water reservoir, and the water supply part is provided at the chest support member support part positioned at an upper side of the accommodating part. The chest support member support part is made of a metallic material, and the water supply part operates along with an automatic detection sensor which is installed at the chest support member support part.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The present invention will become better understood with reference to the accompanying drawings which are given only by way of illustration and thus are not limitative of the present invention, wherein;

[0021] FIG. 1 is a plane view illustrating a conventional rear side-facing toilet bowl;

[0022] FIG. 2 is a side view illustrating a front side-facing toilet bowl according to an embodiment of the present invention;

[0023] FIG. 3 is a perspective view illustrating a front side-facing toilet bowl according to an embodiment of the present invention;

[0024] FIG. 4 is a perspective view illustrating a front side-facing toilet bowl according to another embodiment of the present invention;

[0025] FIG. 5 is a side view illustrating a front side-facing toilet bowl according to further another embodiment of the present invention;

[0026] FIG. 6 is a perspective view illustrating a front side-facing toilet bowl according to further another embodiment of the present invention; and

[0027] FIG. 7 is a plane view illustrating a toilet equipped with a front side-facing toilet bowl according to the present invention.

#### BEST MODE FOR CARRYING OUT THE INVENTION

[0028] The preferred embodiments of the present invention will be described with reference to the accompanying drawings.

[0029] FIG. 2 is a side view illustrating a front side-facing toilet bowl according to an embodiment of the present invention, FIG. 3 is a perspective view illustrating a front side-facing toilet bowl according to an embodiment of the present invention, and FIG. 4 is a perspective view illustrating a front side-facing toilet bowl according to another embodiment of the present invention.

[0030] FIG. 5 is a side view illustrating a front side-facing toilet bowl according to further another embodiment of the present invention, and FIG. 6 is a perspective view illustrating a front side-facing toilet bowl according to further another embodiment of the present invention.

[0031] As shown in FIGS. 2 through 6, a front side-facing toilet bowl according to an embodiment of the present invention comprises a bowl body 100, a sitting member 110, a backrest 120, and a water reservoir 140. The bowl body 100 has an elliptical and longitudinal opening formed at an upper side 102 of the same. A lower side 104 of the bowl body contacts with a floor of a toilet. The opening of the bowl body 100 is vertically longitudinally formed, so that a wheelchair user or an ordinary person can easily pass through over the bowl body 100 and can sit on the sitting member. As shown in FIG. 5, urine or feces are discharged to a waste water reservoir via a waste water pipe 156.

[0032] The sitting member 112, which supports hips when a user sits thereon, is hinged at a hinge part 112 provided near an edge portion formed in the direction of the water reservoir 140 of the upper side 102 of the bowl body. The sitting member 110 can be lifted up. When the bowl is not used, a sitting member cover may be covered on the sitting member 110.

[0033] A backrest or chest support member 120 is spaced apart, not contacting with the upper side 102 of the bowl body and the sitting member 110. The size of the backrest or chest support member 120 is determined so that a user's chest is substantially supported. Since the backrest or chest support member 120 is spaced apart from the sitting member 110 and the upper side 102 of the bowl body, respectively, a user is not needed to widen his legs when sitting on the sitting member. In addition, a user can sit from the side of the bowl body 100.

[0034] A support handle 122 is installed at both sides of the backrest or chest support member 120 by a connection part 124. As shown in FIG. 7, a wheelchair user sits on the sitting member 110, holding the support handle 122 in front of the bowl body 100. In another example, the wheelchair user may sit on the sitting member 110, holding the support handle 122 from the sides of the bowl. As shown in FIGS. 3, 4, 6 and 7, a support guide 210 is installed at an inner wall of a toilet. So, the user can more easily sit on the sitting member, holding the support handle 122 as well as the support guide 210.

[0035] A chest support member support part 126 is provided for supporting the backrest or chest support member

120. When a user pushes the backrest or chest support member 120 with a chest or a back or when a user pushes the support handle 122 with hands, the chest support member support part 126 stably supports the same. The chest support member support part 126 is engaged with the water reservoir 140 which temporarily stores water for flushing pee or feces.

[0036] The water reservoir 140 is spaced apart like the backrest or chest support member 120, not contacting with the upper side 102 of the bowl body and the sitting member 110, and is supported by a water reservoir support part 150 provided below the water reservoir 140. As shown in FIG. 2, the water reservoir 140 may have the same shape as that of the washstand or may have a bent circular column as shown in FIG. 5 or may be formed in various shapes. As shown in FIG. 5, the water reservoir support part 150 may be integral with part of the lower side of the water reservoir 140 or may be designed to separately support the water reservoir 140.

[0037] As shown in FIG. 3, the water reservoir 140 may have a tissue storing part 148 so that a user gets tissue out of the same. As not shown in the drawings, a process water operation part such as a button or a water flushing lever, which operates to flush pee or feces, may be provided at a front or side surface of the water reservoir 140 or a side or upper side of the backrest or chest support member 120 or an upper side of the chest support member support part 126.

[0038] As shown in FIGS. 3, 4 and 6, the sitting member 110 may be equipped with mounting grooves 111 at the outer surfaces in the direction of the water reservoir so that user's thighs are supported by the same.

[0039] As shown in FIG. 2, in the toilet bowl system A usable for sitting facing front according to another embodiment of the present invention, the lower side 104 of the bowl body 100 and the water reservoir support part 150 may be integrally formed. The engaging part 154 may be provided lower on the floor of the toilet, so that a user can more easily sit on the sitting member 110 from the sides of the bowl.

[0040] As not shown in the drawings, a water supply pipe or a waste water pipe may be provided in the engaging part 154 so that a process water of the water reservoir 140 flows through the same.

[0041] As shown in FIG. 5, in the toilet bowl system B usable for sitting facing front according to further another embodiment of the present invention, the lower side 104 of the bowl body and the water reservoir support part 150 are installed separately from each other and are connected via the connection pipe 151 on the floor of the toilet for thereby allowing the process water of the water reservoir 140 to be supplied to the bowl body 100. Here, the waste water process pipe 156 may be installed on the floor of the toilet.

[0042] As shown in FIGS. 2 through 6, according to further another embodiment of the present invention, the toilet bowl system usable for sitting facing front comprises an accommodating part 132 formed at an upper side 142 of the water reservoir 140 for storing and discharging water which is used for washing face or hands. A water supply part 130 is provided for supplying water to the accommodating part 132. The water supply by the water supply part 130 is performed along with a manual or automatic detection sensor. Here, the accommodating part 132 may be various shapes based on the upper shape of the water reservoir 140. As shown in FIG. 2, it may be formed in a rectangular shape. As shown in FIG. 5, it may be formed in a circular bowl shape. As not shown in the drawings, a wash water discharge port may be formed on the floor of the center of the accommodating part 132. As shown

in FIG. 4, the water supply part 130 may be engaged at the water reservoir 140. It may be installed on the front wall of the toilet which contacts with the water reservoir 140. An automatic drier may be installed at the front side of the water reservoir 140 so that a user dries hands.

[0043] In the toilet bowl system usable for sitting facing front according to further another embodiment of the present invention, as shown in FIG. 2, the chest support member support part 126 may be engaged at part of the front side 144 or the upper side of the water reservoir 140. As shown in FIG. 4, the water supply part 130 may be installed at a rear side of the accommodating part 132 which corresponds to a portion opposite to the direction of the bowl body at the upper side of the water reservoir 140 in a shape of a water tap.

[0044] In the toilet bowl system usable for sitting facing front according to further another embodiment of the present invention, the chest reset support member 126 is made of a ceramic material or a metallic material. Hand wash water may be supplied with the help of an automatic detection sensor 134 installed near the water supply part 130 on the support member of the water supply part 130. Here, the automatic detection sensor 134 may be installed at a certain portion where it is possible to detect the presence of hands before the water supply part 130. The automatic detection sensor may be designed to detect a temperature or a hand operation near the water supply part 130.

[0045] In the toilet bowl system usable for sitting facing front according to further another embodiment of the present invention, as shown in FIG. 5, the chest support member support part 126 may be engaged at an edge portion which is opposite to the direction of the bowl body at the edge of the upper side 142 of the water reservoir 140. The water supply part 130 may be provided on the chest support member support part 126 positioned at the upper side of the accommodating part 132 or may be provided in a water tap shape at an edge portion of the upper side 142 of the water reservoir at a rear side of the accommodating part 132 which is opposite to the direction of the bowl body.

[0046] In the toilet bowl system usable for sitting facing front according to further another embodiment of the present invention, the chest support member support part 126 may be made of a metallic material. As shown in FIG. 6, in the water supply part 130, water supply may be implemented with the help of an automatic detection sensor 134 installed near the water supply part 130. Here, the automatic detection sensor 134 may be installed at a certain portion where detects the presence of the hands in front of the water supply part 130.

[0047] FIG. 7 is a plane view illustrating a toilet equipped with a front side-facing toilet bowl according to the present invention.

[0048] As shown in FIGS. 3, 4, 6 and 7, the toilet may be equipped with one among the toilet bowl system usable for sitting facing front according to the embodiments A, B and C of the present invention. The toilet comprises a support guide 210 installed at left and right sides of the bowl or both wall surfaces of the toilet, and a mirror which is installed on the rear wall surface of the accommodating part 132 which is opposite to the direction of the bowl body. As shown in FIG. 7, in a toilet which is equipped with a front side-facing toilet bowl, a wheelchair user sits on the sitting member 110, holding the support handle 122 of the bowl. In this case, the support guide 210 installed on both walls of the toilet may be used. As shown in FIG. 7, the toilet, which is equipped with a

front side-facing bowl, is able to save an inner space of the toilet when a wheelchair user uses the same.

#### INDUSTRIAL APPLICABILITY

[0049] As described above, the present invention provides a front side-facing toilet bowl system which provides a wheelchair with a lot of convenience when in use.

[0050] In addition, the present invention provides a toilet bowl system which is able to save a space of a toilet by providing a front side-facing toilet bowl even when a user uses a wheelchair.

[0051] The present invention provides a toilet bowl system that a wheelchair user can directly wash hands and face in place after a wheelchair user finishes peeing and bowel movement.

[0052] The present invention provides a toilet bowl that a wheelchair as well as an ordinary person can easily use like a conventional rear side-facing bowl. A wheelchair user as well as an ordinary person can use a toilet bowl like a conventional rear side-facing toilet bowl, so that an economic efficiency is enhanced.

[0053] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described examples are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the meets and bounds of the claims, or equivalences of such meets and bounds are therefore intended to be embraced by the appended claims.

1.-11. (canceled)

12. A closetool usable for sitting facing front that includes a seat, the closetool comprising:

- a closetool body that includes an opening;
- a member for both backrest and chestrest that does not come in contact with and is spatially separated from an upper portion of the closetool body and the seat; and
- a reservoir that does not come in contact with and is spatially separated from an upper portion of the closetool body and the seat, and stores water used for urine and excrement.

13. The closetool usable for sitting facing front according to claim 12, further comprising:

- supporting handles that are provided on both sides of the member for both backrest and chestrest.

14. The closetool usable for sitting facing front according to claim 12, further comprising:

- a reservoir supporter that supports the reservoir.

15. The closetool usable for sitting facing front according to claim 14,

- wherein a lower portion of the closetool body and the reservoir supporter are integrally connected to each other.

16. The closetool usable for sitting facing front according to claim 14,

- wherein a lower portion of the closetool body and the reservoir supporter are separated from each other, and are connected to each other by a connection pipe during the installation of the closetool.

17. The closetool usable for sitting facing front according to claim 12, further comprising:

- a chestrest supporter that is fixed to the reservoir and supports the member for both backrest and chestrest.

**18.** The closetool usable for sitting facing front according to claim 17,

wherein the chestrest supporter is made of a ceramic material, and is fixed to a front portion of the reservoir or a part of the front upper portions of the reservoir.

**19.** The closetool usable for sitting facing front according to claim 17,

wherein the chestrest supporter is made of metal, and is fixed to a portion of the reservoir, which is opposite to the closetool body, of upper edge portions of the reservoir.

**20.** The closetool usable for sitting facing front according to claim 17, further comprising:

a receiving part that receives and discharges water used for washing and is formed at the upper portion of the reservoir; and

a water supply part that supplies water used for washing to the receiving part.

**21.** The closetool usable for sitting facing front according to claim 20,

wherein the water supply part is provided at an upper end of the receiving part of the reservoir or at the upper portion of the reservoir, which is positioned on the rear side of the receiving part, that is, opposite to the closetool body, and is operated by an automatic sensor.

**22.** The closetool usable for sitting facing front according to claim 20,

wherein the water supply part is provided on chestrest supporter provided at an upper portion of the receiving part or at the upper edge portion of the reservoir, which is positioned on the rear side of the receiving part, that is, opposite to the closetool body, and is operated by an automatic sensor.

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