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(54) TOILET SYSTEM

TOILETTENSYSTEM

SYSTÈME DE TOILETTES

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Description

Field of the invention

[0001] The present invention relates to a toilet system according to the preamble of the independent claim.

Background of the invention

[0002] Special requirements are needed for toilets in order to assist disabled, elderly and infirm persons. The toilet aid must inter alia have a stable construction, be easy to use and also to install.

[0003] Many different examples of toilet aids are known from the prior art, and in the following we list some of them.

[0004] US-2,774,975 relates to a toilet armrest that will assist physically handicapped persons. The arm portions may either rest at the bowl or at the floor.

[0005] US-4,715,069 relates to a toilet aid that comprises a rear fixing bracket for mounting on a WC pan using the normal seat attachment bolt holes of the WC pan.

[0006] US-3,969,778 relates to a toilet aid designed for use with a WC to assist disabled, elderly and infirm persons using the WC. The aid is constructed for attachment to the WC pan using the normal seat-attachment bolt holes provided in the pan. An arm structure has side support arms which extend forwardly on either side of a user when seated on the toilet seat.

[0007] DE-199,13,356 relates to a bidet and also to a water closet in particular for disabled persons. The bidet is movably arranged in the WC-room such that it may be moved along a vertical line and also being rotatable in a horizontal plane.

[0008] Document US-4,951,328 discloses a toilet system with the features of the preamble of claim 1.

[0009] These known toilet aids are often a separate part from the toilet, delivered from a separate supplier, and then mounted on a standard toilet. This is sometimes considered a drawback in that they sometimes might be difficult to mount and use.

[0010] Furthermore, the toilet room adapted for e.g. disabled persons must have such a size that a wheelchair can be placed at either side of the toilet to permit the person to move to the toilet from the side most suitable for him/her.

[0011] The inventors have identified a number of drawbacks of the presently known toilet aids and the object of the present invention is therefore to achieve a more user-friendly and structurally stable toilet and in particular a toilet for use in rooms having a limited available floor area.

Summary of the invention

[0012] The above-mentioned object is achieved by the present invention according to the independent claim.

[0013] Preferred embodiments are set forth in the dependent claims.

[0014] Thus, a great advantage of the present invention is that the user support member, in the support position, makes it easier, compared to known toilet aids, for the user to move from a wheel chair to the toilet in that the arm forces of the user may be used more optimally, and he/she may then easily slide over the user support member to the toilet seat. Another advantage is naturally that the user may rotate the toilet seat in order to position it in an optimal postion.

[0015] The toilet system according to the present invention may be used as a water closet toilet system having necessary tube connections installed required for water supply for the flushing function, as well as tube connections for receiving waste water.

[0016] However, the toilet system is not limited for use as a water closet toilet system, it is naturally also possible, within the scope of the claims, to apply the toilet system according to the invention in other toilet techniques, inter alia, toilet systems using cooling techniques, earth closets, etc.

Short description of the appended drawings

[0017]

Figure 1 is a perspective view schematically illustrating the present invention.

Figures 2a and 2b are top views schematically illustrating the present invention.

Figure 3 shows a schematic illustration of the user support member according to a preferred embodiment of the present invention.

Figure 4 is a cross-sectional view of a detail of the toilet system according to the present invention.

Figures 5 and 6, shows a schematic illustration of the user support member according to alternative embodiments.

Figures 7 and 8 show perspective views of the toilet system according to the present invention, where the user support member being in the support and tilted positions, respectively.

Figure 9 shows a side view of the toilet system according to the present invention.

Figure 10 shows a view from above of the toilet system according to the present invention.

Figures 11 and 12 show perspective views of two embodiments of the toilet system according to the present invention.

Figure 13 shows a side view and a top view of another embodiment of the present invention in different positions.

Detailed description of preferred embodiments of the invention

[0018] With references to the appended drawings the

present invention will now be described in detail.

[0019] Referring initially to figure 1 the toilet system comprising a toilet seat horizontally arranged at a toilet pedestal, the toilet pedestal comprising a lower section, an intermediate section and an upper section where the toilet seat is arranged. The toilet seat is rotatable around a vertical axis X in relation to the toilet pedestal. The toilet system further comprises a user support member arranged to be in a support position where the user support member essentially being in the same plane as the toilet seat, wherein the user support member is attached to the toilet seat such that they are commonly rotatable in relation to the upper section of the toilet pedestal, indicated by the double arrow.

[0020] Figures 2a and 2b schematically illustrates the use of the present invention. In figure 2a the user would like to enter the toilet seat from the left, indicated by the arrow. If a user instead would like to enter the toilet seat from the right he/she just rotates the toilet set 90 degrees to the position indicated in figure 2b, positions the wheel chair besides the toilet and by use of the support member moves himself/herself to the toilet seat.

[0021] According to a preferred embodiment the user support member is movable between two positions, the support position and a tilted position where the user support arrangement is in a tilted plane in relation to the plane of the toilet seat. This is illustrated in figures 7 and 8, whereas in figure 7 the user support member is in the support position, and in figure 8 in the tilted position.

[0022] According to an embodiment the user support member is essentially in the form of a circular ring, which is illustrated e.g. in figure 3. The user support member has an inner diameter being larger than the largest extension of the toilet seat in the horizontal plan. The user support member is preferably made from stainless steel and has an essentially circular cross-section having a diameter in the range of 35-40 mm.

[0023] The user support member is preferably provided with two fastening members attached to a circular fastening ring adapted to be horizontally arranged around the upper section. The fastening members are arranged at respective sides of the toilet pedestal defining a movement axis Y for said user support member. The Y-axis is preferably along the diameter of the fastening ring, but may also be in other positions, e.g. more to the front of the fastening ring.

[0024] Preferably, the centre of the circular user support member is offset the centre of the fastening ring.

[0025] The reason is that the when the user support member is in the tilted position the user of the toilet may be able to lean against the back part (above in figure 3) of the user support member, and by having the centre of the circles offset the back part of the user support member is higher up, i.e. in a better position to be leaned against, when in the tilted position. A part of, or the entire, member may be provided with a soft, dampening support, which is illustrated e.g. in figures 7 and 8.

[0026] In figure 3, A represents the smallest distance between the fastening ring and the user support member. A is in the range of 20-70 mm, preferably 50 mm.

Distance B is the largest distance between the fastening ring and the user support member. B is in the range of 130-170 mm, preferably 150 mm.

The diameter of the fastening ring is approximately 300-500 mm, preferably 400 mm. The inner diameter of the user support member is approximately 550-650 mm, preferably 600 mm.

[0027] The user support member is provided with fixating means (not shown in the figures) adapted to lock the user support member in a desired angled position in relation to the toilet pedestal. In the tilted position the angle between the toilet seat and the user support member preferably is in the range of 30-60 degrees, preferably around 45 degrees.

The fixating means may be a fixating knob arranged at each of the fastening members. According to one embodiment the fastening members is an inner rod welded to the fastening ring and an outer tube welded to the user support member, whereas the rod is arranged within the tube. The fixating knob may e.g. extend through the tube and cooperate with holes in the rod, e.g. made at regular angles, in order to fixate the user support member in a desired position.

[0028] Thus, the toilet seat and the user support member is commonly rotatable in relation to the upper section of the toilet pedestal. To achieve a required stability and user friendliness of the toilet system there must be a certain minimal friction between the seat and the pedestal such that the toilet seat remains in a set position and not too easily rotates. On the other hand, it must not require too much effort to rotate the seat.

[0029] Figure 4 illustrates a detail of the toilet system, being a cross-sectional view of the toilet seat and the upper section of the pedestal. The horizontal surfaces facing each other is preferably covered by a layer, e.g. any kind of plastic material, providing the required friction between the surfaces. The surfaces are preferably provided with mating recesses and extensions (not shown) in order to keep the toilet seat in a proper position in relation to the upper section.

[0030] Generally the user support member is provided with at least one fastening member attached to the circular fastening ring horizontally arranged around said upper section.

[0031] According to a preferred embodiment all sections have essentially circular horizontal cross-sectional shapes. This is e.g. illustrated in figures 7-10.

[0032] The toilet seat has an essentially circular outer shape in the horizontal plane approximately coinciding with the outer shape of the upper section of the toilet pedestal.

It is also possible that the toilet seat has another outer shape in the horizontal plane, e.g. an elongated, oval or elliptical shape. In that case the side facing the upper section is provided with a circular track or recess mating with the upper surface of the upper section enabling ro-

tation of the toilet seat.

[0033] Figures 11 and 12 shows perspective view of alternative embodiments of the toilet system according to the invention.

In the embodiment shown in figure 11 the lower section of the toilet system has an elongate cross-section such that a tube connection from the floor close to a wall of the toilet room may be used and at the same time having the toilet seat available at a longer distance from the wall which is necessary in order to easily enter the toilet seat from a wheel chair. This is achieved by a proper slope of the tubing within the lower section.

[0034] Figure 12 shows a lower section that is arranged such that the toilet system may be mounted on a wall.

[0035] As discussed above the user support member may be in a tilted position where the user may use the support member as a support for the back, e.g. to lean against. In addition to that the user support member has two main purposes, one is to be a firm support for the user when entering the toilet seat, and the other is to be a handle used when rotating the toilet seat.

[0036] Figures 5 and 6 schematically illustrates two alternative embodiments of the user support member.

In figure 5 the user support member comprises two support handles adapted to be arranged, e.g. at opposite sides of said toilet seat. Naturally more than two support handles may be used. In figure 6 the user support member comprises three support handles arranged around said toilet seat. These support handles have the shape of rounded loops.

[0037] Figure 13 shows a side view (to the left) and a top view (to the right) of another embodiment of the present invention in different positions. According to this embodiment the user support member is essentially U-shaped such that it is open to the front which is favourable, e.g. with regard to hygienic aspects. The U-shaped user support member may be tilted in order to function as a back rest - see illustrations in the mid. Furthermore, the user support member may also be tilted such that the front parts being on a higher level which in some situation may be advantageous.

[0038] The toilet system may be made from a variety of materials. Preferably the upper and intermediate sections are made from porcelain and the lower section is made from stainless steel, or aluminium, as illustrated e. g. in figure 9 where the lower section has the form of a cylinder. As an alternative the whole toilet pedestal is made from porcelain. The toilet seat is preferably made from plastic but other materials, e.g. wood, may also be used. The user support member is preferably made from stainless steel, aluminium, or another metal or alloy.

[0039] The present invention is not limited to the above-described preferred embodiments. Various alternatives, modifications and equivalents may be used. Therefore, the above embodiments should not be taken as limiting the scope of the invention, which is defined by the appending claims.

Claims

1. Toilet system comprising a toilet seat horizontally arranged at a toilet pedestal, the toilet pedestal comprising a lower section, an intermediate section and an upper section where the toilet seat is arranged, whereby
   the toilet seat is rotatable around a vertical axis in relation to the toilet pedestal and the toilet system further comprises a user support member arranged to be in a support position where the user support member essentially being in the same plane as the toilet seat, wherein the user support member is attached to the toilet seat such that they are commonly rotatable in relation to the upper section of the toilet pedestal, **characterized in that** the user support member is provided with at least one fastening member attached to a circular fastening ring horizontally arranged around said upper section.

2. Toilet system according to claim 1, wherein the user support member is movable between two positions, said support position and a tilted position where the user support arrangement is in a tilted plane in relation to the plane of the toilet seat.

3. Toilet system according to claim 1 or 2, wherein the user support member is essentially in the form of a circular ring.

4. Toilet system according to claim 1 or 2, wherein the user support member has an essentially U-shaped form.

5. Toilet system according to claim 3, wherein the user support member has an inner diameter being larger than the largest extension of the toilet seat in the horizontal plan.

6. Toilet system according to claim 1, wherein the user support member has an essentially circular cross-section.

7. Toilet system according to any preceding claim, wherein the user support member is provided with two fastening members attached to said circular fastening ring horizontally arranged around said upper section, said fastening members are arranged at respective sides of said toilet pedestal defining a movement axis for said user support member.

8. Toilet system according to claim 2, wherein the user support member is provided with fixating means adapted to lock the user support member in a desired angled position in relation to the toilet pedestal.

9. Toilet system according to claim 1, wherein all sections have essentially circular horizontal cross-sec-

tional shapes.

10. Toilet system according to claim 1, wherein said toilet seat has an essentially circular outer shape in the horizontal plane.

11. Toilet system according to claim 1, wherein said lower section is arranged such that the toilet system is to be mounted on a floor.

12. Toilet system according to claim 1, wherein said lower section is arranged such that the toilet system is to be mounted on a wall.

13. Toilet system according to claim 1, wherein said user support member comprises two support handles arranged at opposite sides of said toilet seat.

14. Toilet system according to claim 1, wherein said user support member comprises at least three support handles arranged around said toilet seat.

Patentansprüche

1. Toilettensystem, umfassend einen Toilettensitz, der horizontal auf einer Toilettenschüssel angeordnet ist, wobei die Toilettenschüssel einen unteren Teilabschnitt, einen zwischenliegenden Teilabschnitt und einen oberen Teilabschnitt umfasst, wo der Toilettensitz angeordnet ist, wobei der Toilettensitz bezüglich der Toilettenschüssel um eine vertikale Achse drehbar ist und das Toilettensystem ferner ein Benutzerstützglied umfasst, das in einer Stützposition angeordnet sein soll, in der sich das Benutzerstützglied im Wesentlichen in derselben Ebene wie der Toilettensitz befindet, wobei das Benutzerstützglied derart am Toilettensitz angebracht ist, dass sie bezüglich des oberen Teilabschnitts der Toilettenschüssel gemeinsam drehbar sind, **dadurch gekennzeichnet, dass** das Benutzerstützglied mit zumindest einem Befestigungsglied versehen ist, das an einem kreisförmigen Befestigungsring angeordnet ist, welcher horizontal um den oberen Teilabschnitt herum angeordnet ist.

2. Toilettensystem nach Anspruch 1, wobei das Benutzerstützglied zwischen zwei Positionen beweglich ist, der Stützposition und einer gekippten Position, in der sich die Benutzerstützanordnung bezüglich der Ebene des Toilettensitzes in einer geneigten Ebene befindet.

3. Toilettensystem nach Anspruch 1 oder 2, wobei das Benutzerstützglied im Wesentlichen in der Form eines Kreisrings ist.

4. Toilettensystem nach Anspruch 1 oder 2, wobei das Benutzerstützglied eine im Wesentlichen U-förmige Form aufweist.

5. Toilettensystem nach Anspruch 3, wobei das Benutzerstützglied einen Innendurchmesser aufweist, der größer als die größte Erstreckung des Toilettensitzes in der horizontalen Ebene ist.

6. Toilettensystem nach Anspruch 1, wobei das Benutzerstützglied einen im Wesentlichen kreisförmigen Querschnitt aufweist.

7. Toilettensystem nach einem der vorhergehenden Ansprüche, wobei das Benutzerstützglied mit zwei Befestigungsgliedern versehen ist, die an dem kreisförmigen Befestigungsring angebracht sind, welcher horizontal um den oberen Teilabschnitt herum angeordnet ist, wobei die Befestigungsglieder auf jeweiligen Seiten der Toilettenschüssel angeordnet sind und eine Bewegungsachse für das Benutzerstützglied definieren.

8. Toilettensystem nach Anspruch 2, wobei das Benutzerstützglied mit Fixiermitteln versehen ist, die zum Sperren des Benutzerstützglieds in einer gewünschten Winkelposition bezüglich der Toilettenschüssel geeignet sind.

9. Toilettensystem nach Anspruch 1, wobei alle Teilabschnitte im Wesentlichen kreisförmige horizontale Querschnittsformen aufweisen.

10. Toilettensystem nach Anspruch 1, wobei der Toilettensitz eine im Wesentlichen kreisförmige Außenform in der horizontalen Ebene aufweist.

11. Toilettensystem nach Anspruch 1, wobei der untere Teilabschnitt derart angeordnet ist, dass das Toilettensystem auf einem Boden montierbar ist.

12. Toilettensystem nach Anspruch 1, wobei der untere Teilabschnitt derart angeordnet ist, dass das Toilettensystem an einer Wand montierbar ist.

13. Toilettensystem nach Anspruch 1, wobei das Benutzerstützglied zwei Haltegriffe umfasst, die auf gegenüberliegenden Seiten des Toilettensitzes angeordnet sind.

14. Toilettensystem nach Anspruch 1, wobei das Benutzerstützglied zumindest drei Haltegriffe umfasst, die um den Toilettensitz herum angeordnet sind.

Revendications

1. Système de toilettes comprenant une lunette agencée horizontalement sur une cuvette de toilettes, la

cuvette de toilettes comprenant une section inférieure, une section intermédiaire et une section supérieure où la lunette est agencée, moyennant quoi :

la lunette peut tourner autour d'un axe vertical par rapport à la cuvette de toilettes et le système toilettes comprend en outre un élément de support d'utilisateur agencé pour être dans une position de support dans laquelle l'élément de support d'utilisateur est essentiellement dans le même plan que la lunette, dans lequel l'élément de support d'utilisateur est fixé à la lunette de sorte qu'ils peuvent communément tourner par rapport à la section supérieure de la cuvette de toilettes, **caractérisé en ce que** l'élément de support d'utilisateur est prévu avec au moins un élément de fixation fixé à un anneau de fixation circulaire, agencé horizontalement autour de ladite section supérieure.

2. Système de toilettes selon la revendication 1, dans lequel l'élément de support d'utilisateur est mobile entre deux positions, ladite position de support et une position inclinée dans laquelle l'agencement de support d'utilisateur est dans un plan incliné par rapport au plan de la lunette.

3. Système de toilettes selon la revendication 1 ou 2, dans lequel l'élément de support d'utilisateur se présente essentiellement sous la forme d'un anneau circulaire.

4. Système de toilettes selon la revendication 1 ou 2, dans lequel l'élément de support d'utilisateur a une forme essentiellement en U.

5. Système de toilettes selon la revendication 3, dans lequel l'élément de support d'utilisateur A un diamètre interne supérieur à la plus grande extension de la lunette dans le plan horizontal.

6. Système de toilettes selon la revendication 1, dans lequel l'élément de support d'utilisateur a une section transversale essentiellement circulaire.

7. Système de toilettes selon l'une quelconque des revendications précédentes, dans lequel l'élément de support d'utilisateur est prévu avec deux éléments de fixation fixés sur ledit anneau de fixation circulaire agencé horizontalement autour de ladite section supérieure, lesdits éléments de fixation sont agencés sur les côtés respectifs de ladite cuvette de toilettes définissant un axe de déplacement pour ledit élément de support d'utilisateur.

8. Système de toilettes selon la revendication 2, dans lequel l'élément de support d'utilisateur est prévu avec des moyens de fixation adaptés pour bloquer l'élément de support d'utilisateur dans une position orientée de manière souhaitée par rapport à la cuvette de toilettes.

9. Système de toilettes selon la revendication 1, dans lequel toutes les sections ont des formes transversales horizontales essentiellement circulaires.

10. Système de toilettes selon la revendication 1, dans lequel ladite lunette a une forme externe essentiellement circulaire dans le plan horizontal.

11. Système de toilettes selon la revendication 1, dans lequel ladite section inférieure est agencée de sorte que le système de toilettes doit être monté sur un sol.

12. Système de toilettes selon la revendication 1, dans lequel ladite section inférieure est agencée de sorte que le système de toilettes doit être monté sur un mur.

13. Système de toilettes selon la revendication 1, dans lequel ledit élément de support d'utilisateur comprend deux poignées de support agencées sur les côtés opposés de ladite lunette.

14. Système de toilettes selon la revendication 1, dans lequel ledit élément de support d'utilisateur comprend au moins trois poignées de support agencées autour de ladite lunette.

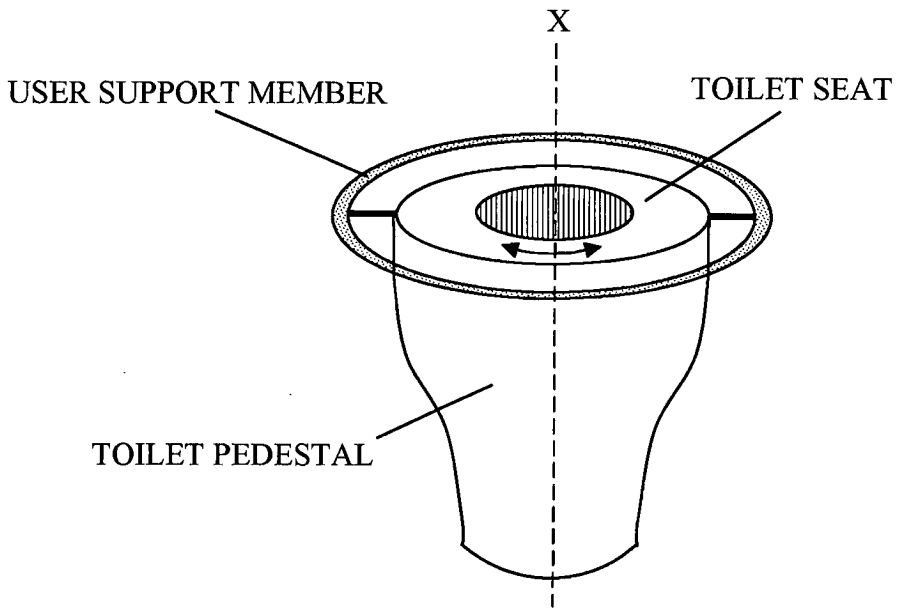


FIG. 1

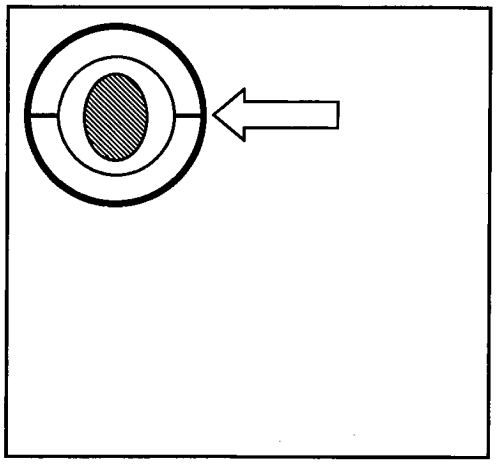


FIG. 2a

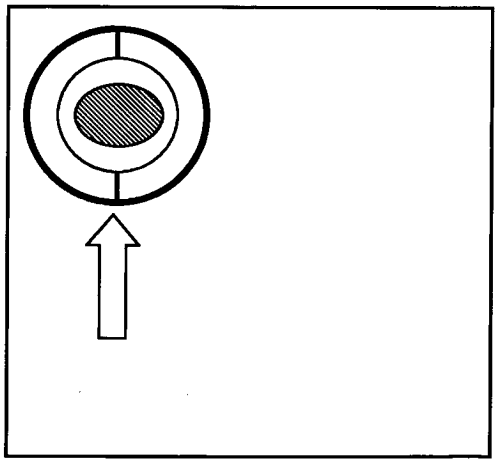


FIG. 2b

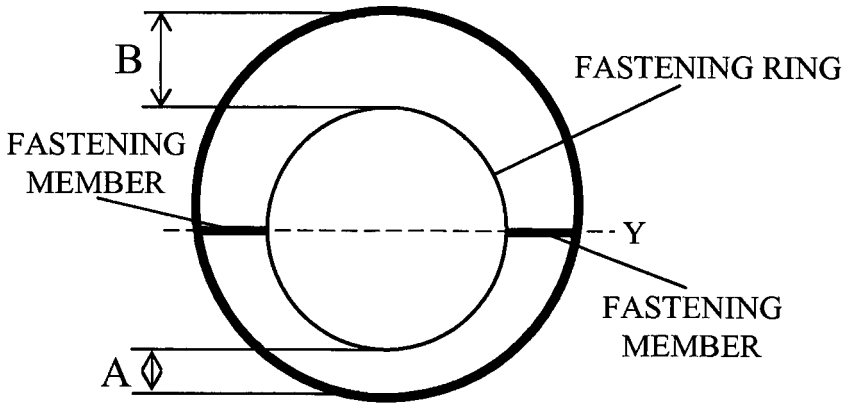


FIG. 3

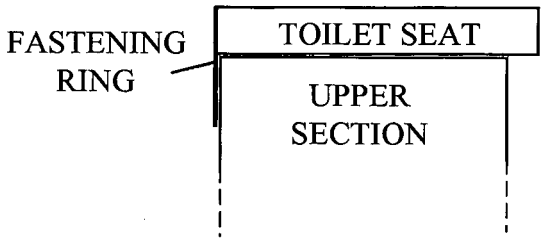


FIG. 4

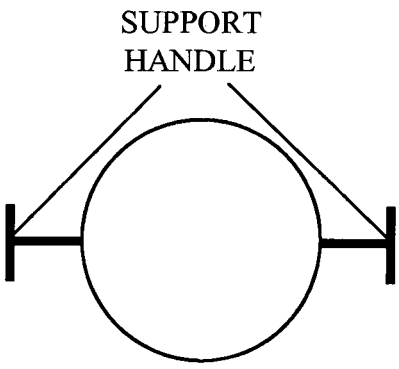


FIG. 5

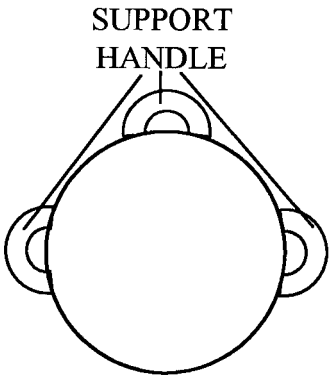


FIG. 6

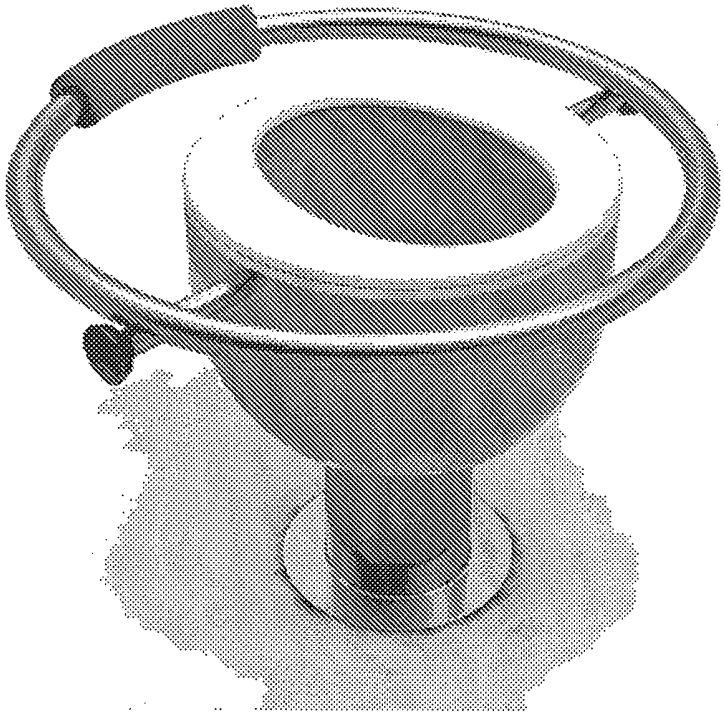


FIG. 7

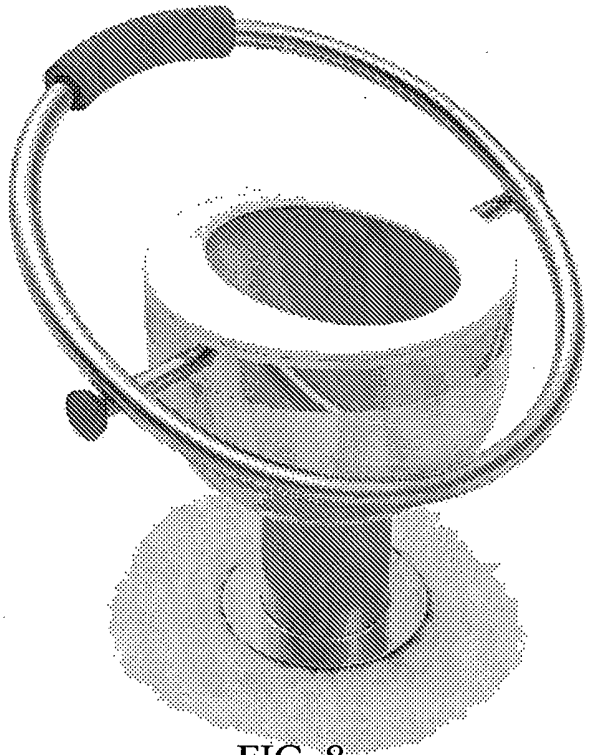


FIG. 8

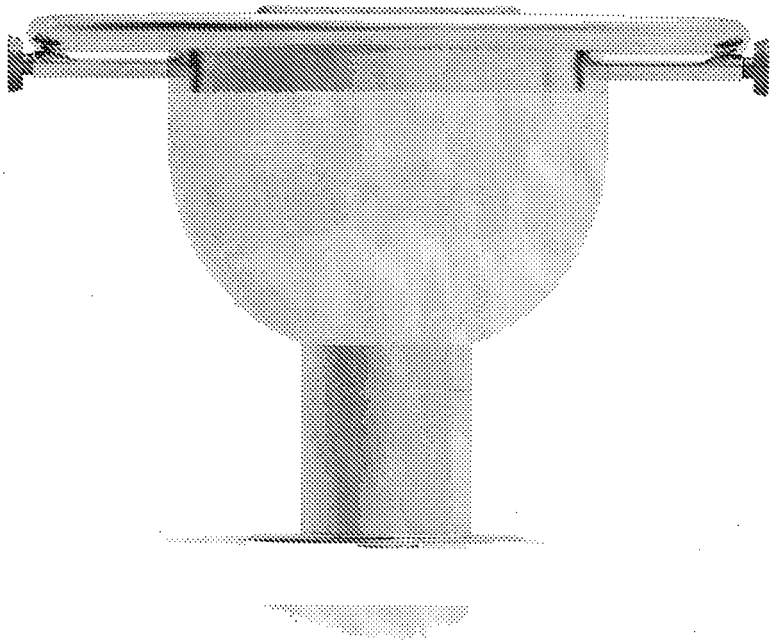


FIG. 9

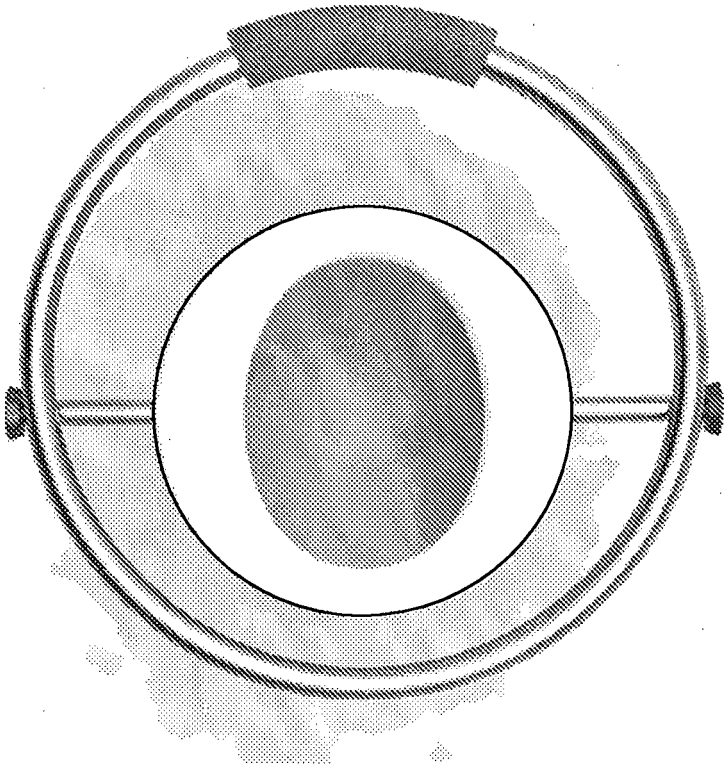


FIG. 10

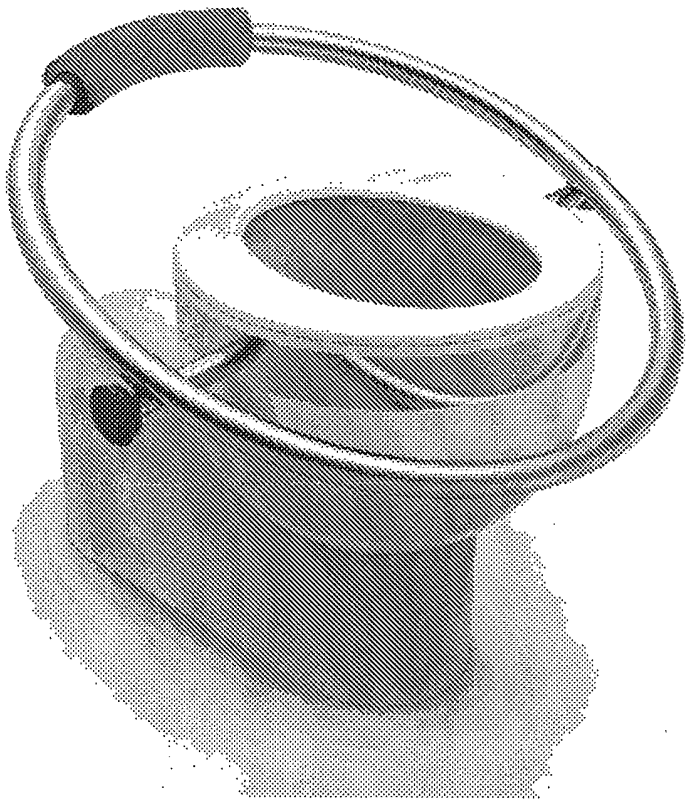


FIG. 11

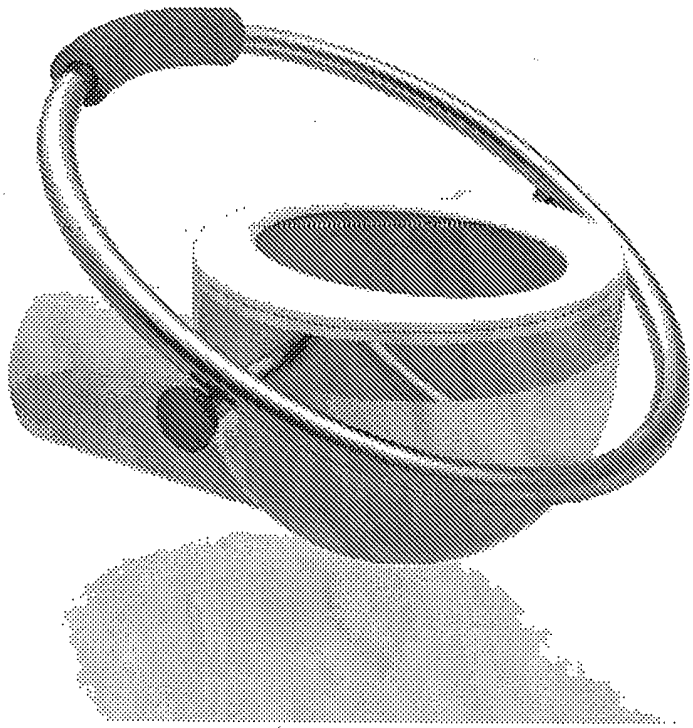


FIG. 12

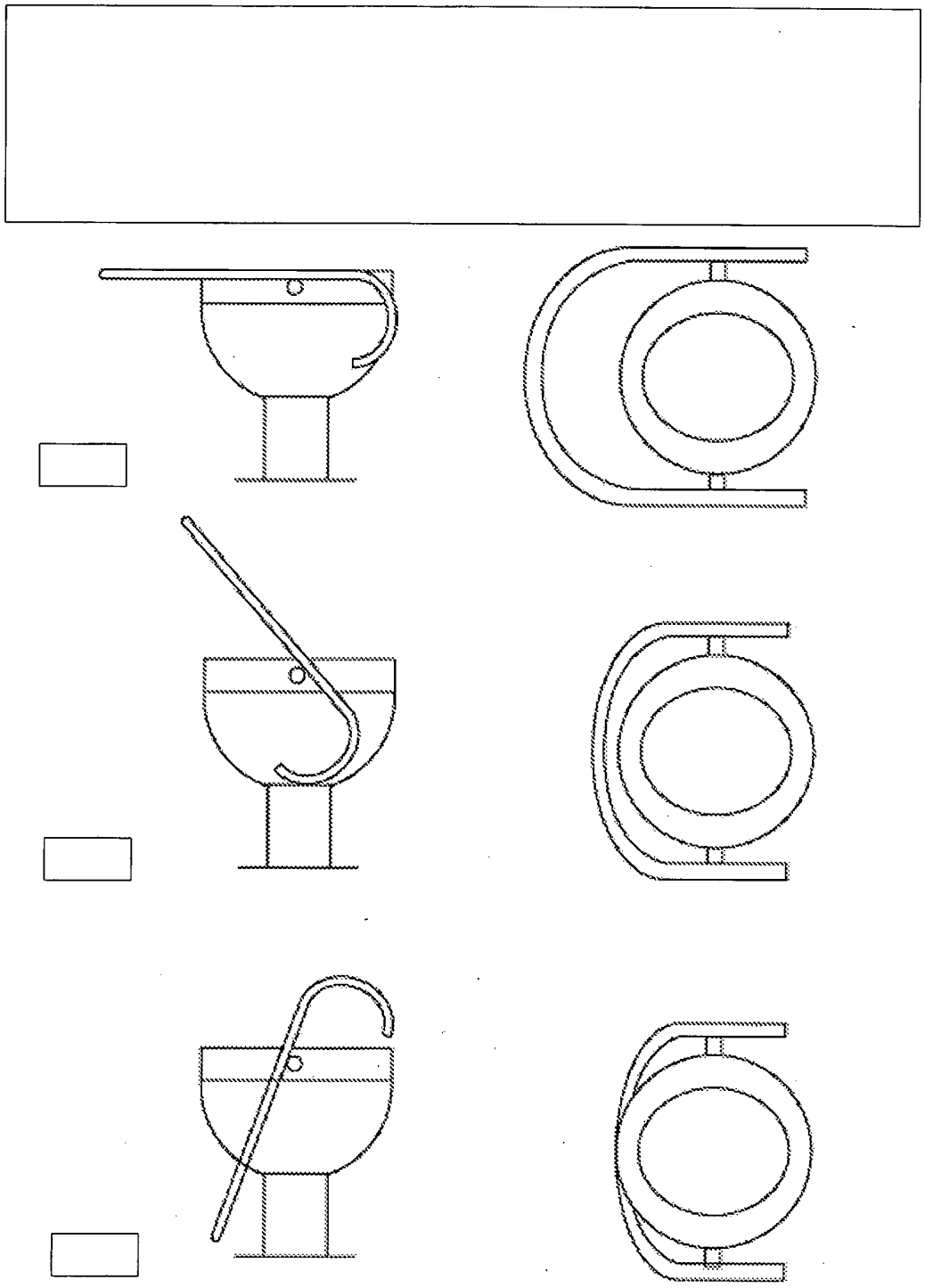


FIG. 13

REFERENCES CITED IN THE DESCRIPTION

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