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(54) **A system for wall-mounted sanitary fixtures**

System für wandmontierte sanitäre Einrichtungen

Système pour appareils sanitaires à montage mural

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(73) Proprietor: **PRESSALIT A/S**
8680 Ry (DK)

(72) Inventors:
• **Rehnquist, Klaus**
8660 Skanderborg (DK)

• **Thøgersen, Flemming Jørgen**
8541 Skødstrup (DK)

(74) Representative: **Tellefsen, Jens J. et al**
Patrade A/S
Ceresbyen 75
8000 Aarhus C (DK)

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Description

Field of the invention

[0001] The invention relates to the technical field of sanitary fixtures, particularly to systems for wall-mounted sanitary fixtures.

Background of the invention

[0002] A typical wall-mounted sanitary fixture such as a toilet is mounted to a carrier such as a frame structure installed on the inside or the outside of a bathroom's wall. Consequently, the toilet is held in place at a certain height without the risk of falling off from the wall, even in case of a drywall. However, the disadvantage of such a system is that the sanitary fixture has a fixed position in the room and thereby may hinder the access to nearby furniture, prevent people with a large body mass to gain comfortable access to the sanitary fixture or personnel such as nurses to easily help a person in need of assistance to gain comfortable access to the sanitary fixture. Hence, there is a need in the technical field of wall-mounted sanitary fixtures of overcoming such a drawback of the state-of-the-art solutions.

[0003] DE 298 17 744 U1 discloses a wheel chair accessible cabin including a toilet capable of moving horizontally along one wall.

Aspects of the invention

[0004] The first aspect of the invention is to provide an improvement to the state-of-the-art. The second aspect of the invention is to solve the aforementioned drawback of the prior art by enabling the sanitary fixture to move sideways along the mounting wall.

Description of the invention

[0005] The aforementioned aspects of the invention are achieved by a system for wall-mounted sanitary fixtures (e.g., toilets, bidets, sinks, etc.), the system comprising a sanitary fixture and a carrier (e.g., a frame made of steel), the sanitary fixture being adapted to be fastened to the carrier (e.g., by means of holes fitting matching threaded rods at the carrier), a top side and/or a bottom side of the carrier being adapted to be displaced along an upper element and/or a lower element, respectively, said elements (e.g., wooden or metal beams of a frame structure, but may also be the ceiling and/or the floor of the room where the sanitary fixture shall be installed) being arranged substantially horizontally (e.g., on a vertical plane) on the inside or the outside of a wall (e.g., parallel to an outer layer of the wall), wherein the system further comprises at least one displacing means at one or both elements (e.g., underneath, above or on the sides of each element) for displacing the carrier along the upper element and/or the lower element and at least one guid-

ing means at one or both elements for engaging with the displacing means.

[0006] By engaging the displacing means with the guiding means, the sanitary fixture along with the carrier is enabled to move sideways outside and along the wall, thus providing additional space on one side of the sanitary fixture. This is advantageous when there is a need for moving a wall-mounted sanitary fixture from its rest position (i.e., the position where there is no sideways shift of the sanitary fixture) such as: (i) when the room is small and the sanitary fixture hinders the access to nearby furniture; (ii) when a person with a large body mass needs more space for his body around the sanitary fixture; and (iii) when a nurse shall help a patient to gain access to a sanitary fixture, thereby needing additional space on one of its sides.

[0007] In an embodiment of the invention, the displacing means is a rolling means or a sliding means (e.g., a strip of material of a suitable thickness which is adapted to be attached to the back side of the top side of the carrier and which is adapted to slide in a channel formed in the upper element). In another embodiment of the invention, the rolling means is a roller (e.g., one or more rollers mounted underneath the bottom side and/or above the top side of the carrier; one roller mounted on each side of the bottom side and/or the top side of the carrier, for example, by means of a bracket; etc.) and the guiding means is a rail. Advantageously, the rolling means may also be a ball, a wheel or a wheel-set. Advantageously, the guiding means may also be a guide or a channel formed in one or both elements. For example, by conveying the roller's movement in the rail along the length of the elements, the carrier, which is placed in-between the elements and to which the roller is attached to, is enabled to move with respect to the elements. Accordingly, the sanitary fixture, which is fastened to the carrier, is also enabled to move sideways.

[0008] Advantageously, the guiding means and/or the elements may comprise at least one stopper on each side. Consequently, the carrier does not run out of the guiding means and/or the elements when moving sideways. Also, the range of the sideways shift of the sanitary fixture can be customized.

In an embodiment of the invention, the sanitary fixture is connected to an inlet (e.g., the water supply) and an outlet (e.g., the sewer) at an opening of the wall via an inlet tube and an outlet tube, respectively, wherein said tubes are flexible and/or extendable. Advantageously, one or both tubes may be made of a material containing an elastic material such as rubber and/or may be a corrugated tube. Advantageously, the tubes may also be made of the required length corresponding to the maximum sideways shift of the sanitary fixture and be folded when the sanitary fixture is in a rest position. By providing flexible and/or extendable tubes, the latter do not break when the sanitary fixture moves sideways, thereby avoiding fluid in the tubes from dripping or flooding on the floor.

[0009] In an embodiment of the invention, a cover plate

is arranged between the carrier and the sanitary fixture, the cover plate being adapted to move sideways along with the sanitary fixture (e.g., the cover plate may be attached to the sanitary fixture), wherein the cover plate has a size such that the opening remains covered both in a rest position as well as in the maximum sideways position of the sanitary fixture. When moving the sanitary fixture sideways, the opening providing access to the inlet and the outlet becomes visible; this is aesthetically undesirable. By placing a cover plate of a suitable size between the carrier and the sanitary fixture and, for example, attaching it to the sanitary fixture, the cover plate is enabled to move along with the sanitary fixture while always keeping the opening covered. Note that a suitable size for the cover plate is a size such that the opening remains covered both in a rest position as well as in the maximum sideways (right or left) shift of the sanitary fixture.

[0010] Hereafter, the invention will be described in connection with drawings illustrating nonlimiting examples of a system for wall-mounted sanitary fixtures.

Brief description of the drawings

[0011]

FIG.1: A partly mounted system for a wall-mounted toilet.

FIG.2: A fully mounted system for a wall-mounted toilet.

Notations

[0012]

W: Width.
 1: System.
 2: Sanitary fixture.
 3: Carrier.
 4: Top side of the carrier.
 5: Upper element.
 6: Bottom side of the carrier.
 7: Lower element.
 8: Wall.
 9: Displacing means.
 10: Guiding means.
 11: Inlet.
 12: Inlet tube.
 13: Cover plate.
 14: Tank.
 15: Control panel.
 16: Frame structure.
 17: Bracket.
 18: Rod.
 19: Panel.

Preferred embodiments of the invention

[0013] FIG.1 shows a system 1 where the sanitary fixture is a wall-mounted toilet 2. A carrier 3, which is made of steel and contains a tank 14 and a control panel 15, is mounted at a top side 4 to an upper element 5 and at a bottom side 6 to a lower element 7; the elements 5, 7 are arranged horizontally on the outside of a wall 8 and within a frame structure 16 made of steel. The lower element 7 is formed as a rail 10 to engage with the two rollers 9 mounted at the bottom side 6 of the carrier 3 by means of a bracket 17. The upper element 5 is formed as a guide 10 to engage with the top side 4 of the carrier 3. The tank 14 is connected to the water supply 11 via a corrugated tube 12. The outlet (i.e., the sewer) and the outlet tube are not visible. Thanks to the rollers 9, the rail 10 and the guide 10, the toilet 2 (ref. FIG.2), which is to be fastened to the carrier 3 by means of two rods 18, can move sideways together with the carrier 3 for the whole width W of the rail/guide 10.

[0014] FIG.2 shows the toilet 2 when finally mounted and moved to its right-hand-side. The carrier 3 is hidden by means of a panel 19 attached to the front of the frame structure 16. A cover plate 13 is arranged between the carrier 3 and the toilet 2 and is mounted so as to move sideways together with the toilet 2. The cover plate 13 has a size such that the opening (not visible in FIG.2) used to connect the toilet 2 to the inlet 11 and the outlet remains covered both in a rest position as well as in the maximum sideways position of the toilet 2.

Claims

1. A system (1) for wall-mounted sanitary fixtures (2), the system (1) comprising a toilet (2), an upper element (5) and a lower element (7), and a carrier (3), the toilet (2) being adapted to be fastened to the carrier (3), a top side (4) and a bottom side (6) of the carrier (3) being adapted to be displaced along said upper element (5) and said lower element (7), respectively, said elements (5, 7) being arranged substantially horizontally on the inside or the outside of a wall (8), said lower element 7 is formed as a rail and being arranged on a floor surface, wherein the system (1) further comprises upper and lower displacing means (9) at the upper and lower elements (5, 7) for displacing the carrier (3) along the upper element (5) and the lower element (7) and guiding means (10) at the upper and lower elements (5, 7) for engaging with the displacing means (9) wherein the lower element (7) is formed as a rail (10) arranged on a floor surface and the lower displacing means (9) are in the shape of two rollers mounted at the bottom side (6) of the carrier (3) by means of a bracket (17), wherein the lower element (7) formed as a rail (10) engages said two rollers.

2. The system (1) according to claim 1, wherein the upper displacing means (9) is a rolling means or a sliding means.
3. The system (1) according to any of the preceding claims, wherein the toilet (2) is connected to an inlet (11) and an outlet at an opening of the wall (8) via an inlet tube (12) and an outlet tube, respectively, wherein said tubes (12) are flexible and/or extendable.
4. The system (1) according to any of the preceding claims, wherein a cover plate (13) is arranged between the carrier (3) and the toilet (2), the cover plate (13) being adapted to move sideways along with the toilet (2), wherein the cover plate (13) has a size such that the opening remains covered both in a rest position as well as in the maximum sideways position of the toilet (2).

Patentansprüche

1. System (1) für wandmontierte sanitäre Einrichtungen (2), wobei das System (1) eine Toilette (2), ein oberes Element (5) und ein unteres Element (7) und einen Träger (3) umfasst, wobei die Toilette (2) dafür ausgelegt ist, dass sie an dem Träger (3) befestigt wird, wobei eine Oberseite (4) und eine Unterseite (6) des Trägers (3) dafür ausgelegt sind, dass sie entlang des oberen Elements (5) beziehungsweise des unteren Elements (7) verschoben werden, wobei die Elemente (5, 7) im Wesentlichen horizontal an der Innenseite oder Außenseite einer Wand (8) angeordnet sind, wobei das untere Element 7 als eine Schiene ausgebildet ist und auf einer Bodenfläche angeordnet ist, wobei das System (1) ferner obere und untere Verschiebeeinrichtungen (9) an dem oberen und dem unteren Element (5, 7) zum Verschieben des Trägers (3) entlang des oberen Elements (5) und des unteren Elements (7) und Führungseinrichtungen (10) an dem oberen und dem unteren Element (5, 7) zum Eingreifen in die Verschiebeeinrichtungen (9) umfasst, wobei das untere Element (7) als eine Schiene (10) ausgebildet ist, die auf einer Bodenfläche angeordnet ist, und die unteren Verschiebeeinrichtungen (9) in der Form von zwei Rollen vorliegen, die an der Unterseite (6) des Trägers (3) mittels eines Halters (17) montiert sind, wobei das untere Element (7), das als eine Schiene (10) ausgebildet ist, die zwei Rollen in Eingriff nimmt.
2. System (1) nach Anspruch 1, wobei die obere Verschiebeeinrichtung (9) eine Rolleinrichtung oder eine Gleiteinrichtung ist.
3. System (1) nach einem der vorstehenden Ansprü-

che, wobei die Toilette (2) mit einem Einlass (11) und einem Auslass an einer Öffnung der Wand (8) mittels eines Einlassrohrs (12) beziehungsweise eines Auslassrohrs verbunden ist, wobei die Rohre (12) biegsam und/oder ausziehbar sind.

4. System (1) nach einem der vorstehenden Ansprüche, wobei eine Abdeckplatte (13) zwischen dem Träger (3) und der Toilette (2) angeordnet ist, wobei die Abdeckplatte (13) dazu ausgelegt ist, sich seitwärts zusammen mit der Toilette (2) zu bewegen, wobei die Abdeckplatte (13) eine solche Größe aufweist, dass die Öffnung sowohl in einer Ruheposition als auch in der maximalen seitwärtigen Position der Toilette (2) abgedeckt bleibt.

Revendications

1. Système (1) pour des appareils sanitaires montés au mur (2), le système (1) comprenant des toilettes (2), un élément supérieur (5) et un élément inférieur (7), et un support (3), les toilettes (2) étant conçues pour être fixées au support (3), un côté supérieur (4) et un côté inférieur (6) du support (3) étant conçus pour être déplacés le long dudit élément supérieur (5) et dudit élément inférieur (7), respectivement, lesdits éléments (5, 7) étant agencés sensiblement horizontalement sur l'intérieur ou l'extérieur d'un mur (8), ledit élément inférieur (7) se présente sous forme de rail et étant agencé sur une surface de sol, dans lequel le système (1) comprend en outre des moyens de déplacement supérieur et inférieurs (9) au niveau des éléments supérieur et inférieur (5, 7) pour déplacer le support (3) le long de l'élément supérieur (5) et de l'élément inférieur (7) et un moyen de guidage (10) au niveau des éléments supérieur et inférieur (5, 7) pour venir en prise avec les moyens de déplacement (9), dans lequel l'élément inférieur (7) se présente sous forme de rail (10) agencé sur une surface de sol et les moyens de déplacement inférieurs (9) sont sous forme de deux galets montés sur le côté inférieur (6) du support (3) au moyen d'une fixation (17), dans lequel l'élément inférieur (7) sous forme de rail (10) vient en prise avec lesdits deux galets.
2. Système (1) selon la revendication 1, dans lequel le moyen de déplacement supérieur (9) est un moyen roulant ou un moyen coulissant.
3. Système (1) selon l'une quelconque des revendications précédentes, dans lequel les toilettes (2) sont raccordées à une entrée (11) et une sortie au niveau d'une ouverture du mur (8) par l'intermédiaire d'un tuyau d'entrée (12) et d'un tuyau de sortie, respectivement, dans lequel lesdits tuyaux (12) sont flexibles et/ou extensibles.

4. Système (1) selon l'une quelconque des revendications précédentes, dans lequel un couvercle (13) est agencé entre le support (3) et les toilettes (2), le couvercle (13) étant conçu pour se déplacer latéralement conjointement avec les toilettes (2), dans lequel le couvercle (13) a une dimension telle que l'ouverture reste couverte à la fois en position de repos ainsi que dans la position latérale maximale des toilettes (2).

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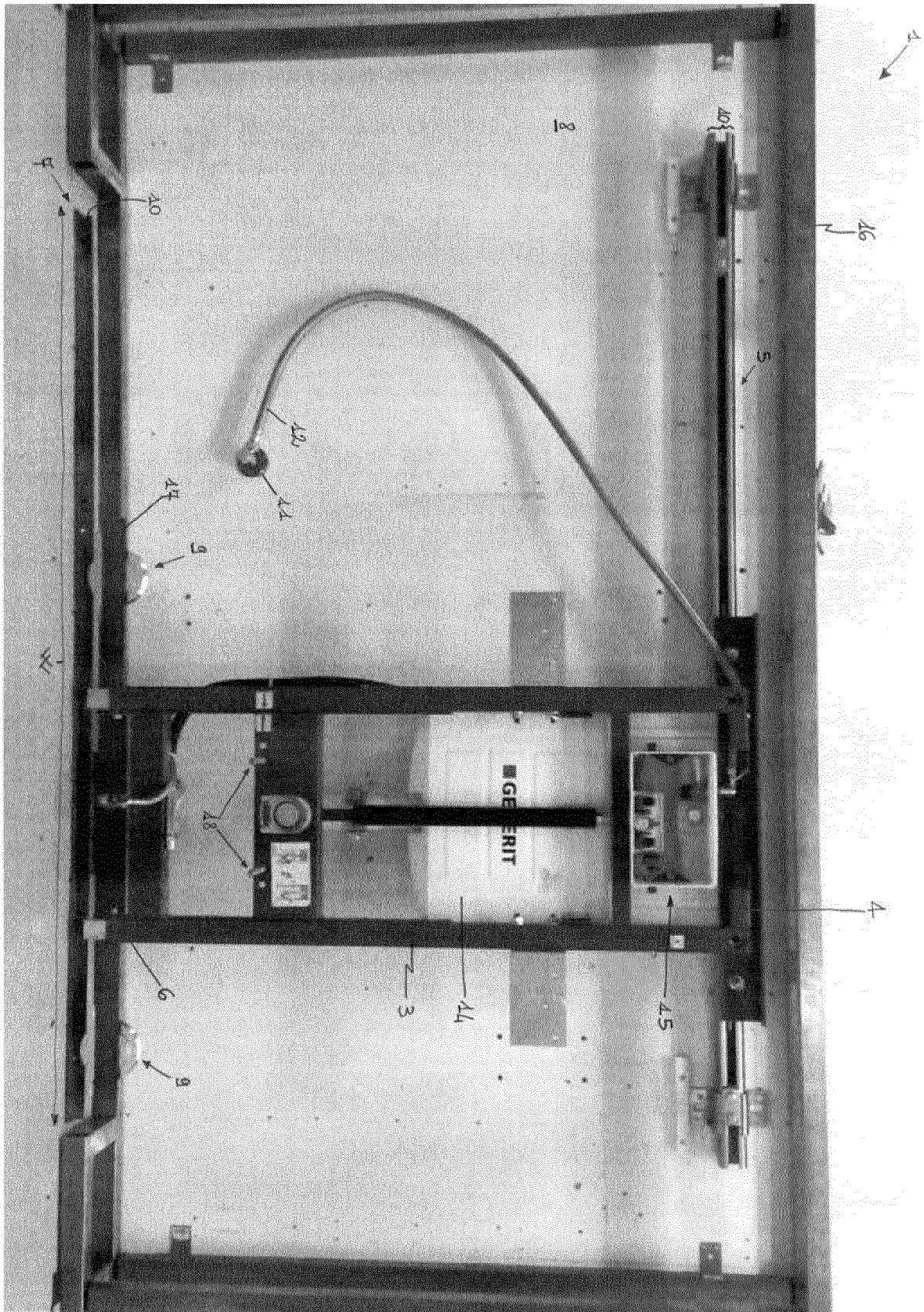


FIG.1

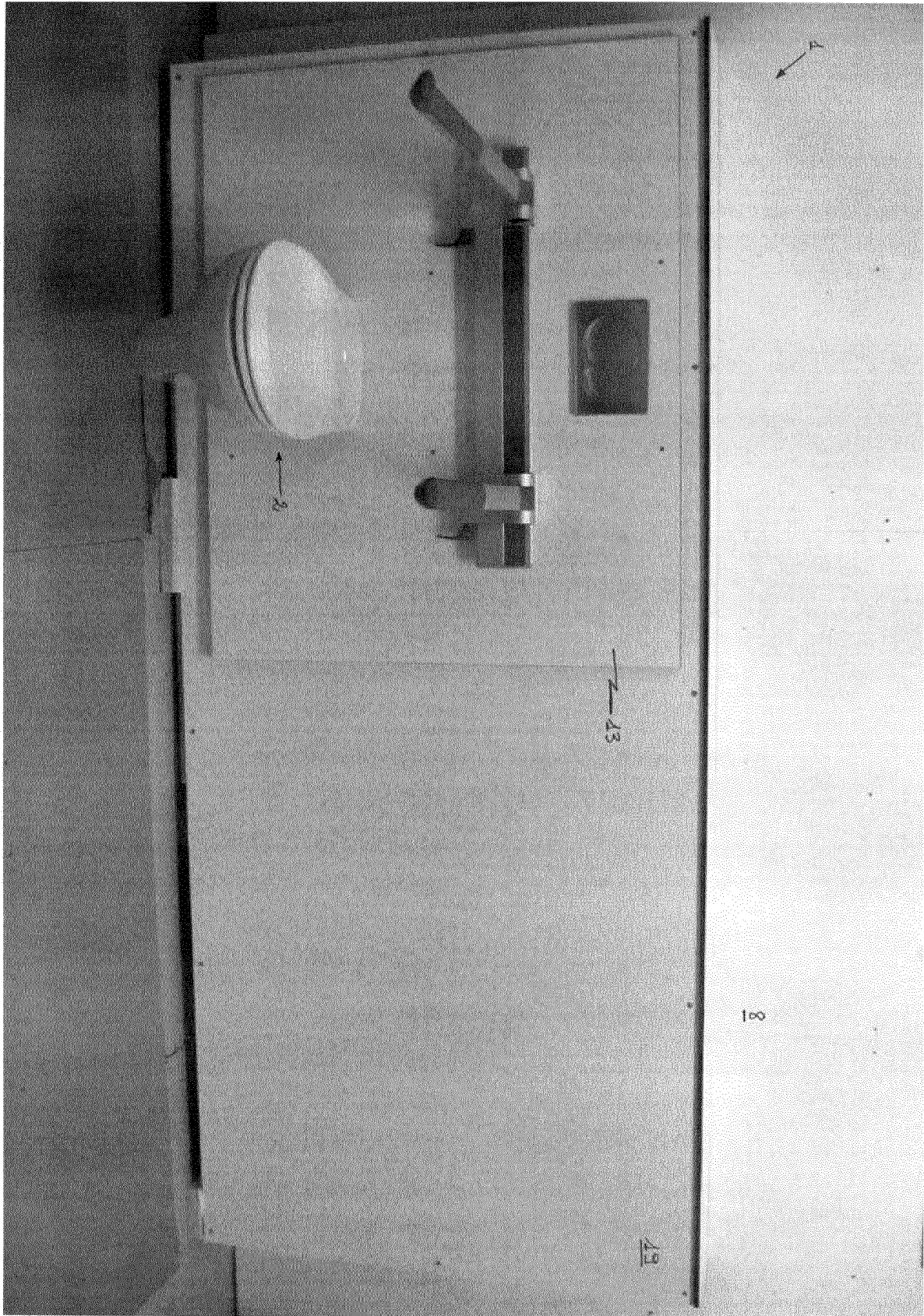


FIG.2

REFERENCES CITED IN THE DESCRIPTION

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