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(54) **Bath tub rail**

Badewannengeländer

Rail de baignoire

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Description

FIELD OF THE INVENTION

[0001] The invention relates to a bath tub rail assembly for use on a bath tub sidewall, and more particularly to a bath tub rail assembly which includes a hand grip adjustable in both height and angular orientation relative to the bath tub, according to the preamble of claim 1.

BACKGROUND OF THE INVENTION

[0002] It is well known in the healthcare field that bath tubs represent a safety hazard to people, particularly those in a weakened or infirm condition. Serious injury can result when a person slips and falls while entering or exiting a bath tub. Bath tub rails secured to the sidewall of a bath tub are frequently used by elderly, injured or infirm persons, to assist with getting into and out of a bath tub. Bath tub rails may also be used by others to assist in placing themselves in a sitting position in a tub and to assist in getting out of the tub after the bath. Therefore, the bath tub rails must be substantially self-supporting and must have sufficient strength and stability to support a person's full weight from various angles. Most bath tub rail products sold in the market have a clamping device at the bottom of a base body and hand grips mounted on an upper portion of the base body such that the device is clamped onto the top of a sidewall of a bath tub by the clamping device. The hand grips are usually integrated with the base body and therefore the height position and angular orientation thereof are fixed and cannot be adjusted when the bath tub rails are installed in place. Therefore, the fixed height position and angular orientation of the hand grips may not meet the needs of every user. Some prior art bath tub rails may be adjustable in angular orientation but the structure for executing the adjustment is relatively complicated.

[0003] Therefore, there is a need for a bath tub rail assembly which is adjustable in both height position and angular orientation in order to meet the needs of specific users.

[0004] CA 2,148,521 A1, presents the closest prior art and describes a support pole that can be used with a bath tub. DE 203 06 743 U1 and US 7,203,978 BI both describe handles for bath tubs. EP 1 600 087 describes a support device for a bath.

SUMMARY OF THE INVENTION

[0005] According to the present invention, there is provided a bath tub rail assembly as claimed in claim 1.

[0006] In accordance with one embodiment of the present invention, the bath tub rail assembly comprises a hand grip including a grip ring standing substantially upright, and the adjustable connector includes a pair of connected inner and outer tubes slidable to each other and affixed to the grip ring and the first clamping member, respectively, the outer tube defining a plurality of holes at least in two columns and the inner tube including an lock pin to be selectively engaged within one of the holes in either column of the outer tube, thereby allowing secure positioning of the grip ring of the hand grip in both a selected height and a selected angular orientation relative to bath tub sidewall.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Further features and advantages of the present invention will become apparent from the following detailed description, taken in combination with the appended drawings, in which:

Fig. 1 is an exploded isometric view from one side of a bath tub rail assembly according to one embodiment of the invention;

Fig. 2 is an isometric view from the other side of the bath tub rail assembly as in an assembled condition;

Fig. 3 is a front elevational view of the bath tub rail assembly of the embodiment of Fig. 1, showing a hand grip of the assembly adjusted in a lowest position and in an angular orientation traverse to the bath tub sidewall;

Fig. 4 is a front elevational view of the bath tub rail assembly according to another embodiment of the present invention, showing the hand grip of the assembly adjusted in a second low position and in an angular orientation substantially parallel to the bath tub sidewall; and

Fig. 5 is a cross-sectional view taken along line 5-5 in Fig. 3 showing the interior configuration of the clamping device of the bath tub rail assembly.

[0008] It should be noted that throughout the appended drawings, like features are identified by like reference numerals.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0009] The details of the embodiments of the present invention are disclosed herein. It should be understood, however, that the disclosed embodiments are merely exemplary of the invention, which may be embodied in various forms. Therefore, the details disclosed herein are not to be interpreted as limiting but merely as the basis for teaching one skilled in the art how to make and/or use the invention.

[0010] Referring to Figs. 1-3 and 5, a bath tub rail assembly according to one embodiment of the present invention is generally indicated by numeral 10 which includes a hand grip device 12 and a clamping device 14.

[0011] The clamping device 14 generally includes a

first clamping member 16 and a second clamping member 18 which are adjustable relative to each other for clamping opposite sides of a bath tub sidewall which is indicated by numeral 19 in Fig. 3. The first clamping member 16, for example, includes a joining body such as a metal bar 20. As illustrated in Fig. 5, the metal bar 20 may include a top wall 22 and opposite sidewalls 24, 26 to define a substantially rectangular or square hollow cross-sectional configuration having an open channel 28 extending between opposite open ends and along the entire length of the metal bar 20. Referring again to Figs. 1-3, a plate member 30 may be attached to the metal bar 20. The plate member 30 includes, for example, a top section 32 extending substantially in a horizontal direction to be positioned on the top of the bath tub sidewall 19. The plate member 30 further includes a clamping section 34 extending downwardly from one side edge of the top section 32 in a substantially vertical direction for abutting one side of the bath tub sidewall 19, and a connecting section 36 (may be shaped in a triangular shape) substantially parallel to the clamping section 34 and joined with a low end of the clamping section 34 in a U-shaped configuration (not indicated). The top section 32, clamping section 34 and connecting section 36 may be made by individual plates being welded together to form the plate member 30, or may be made integrally of a single metal plate in a bending and pressing process. The plate member 30 is attached to the joining body (metal bar 20) by, for example, welding one end of the metal bar 20 to an upper part of the connecting section 36 and welding the opposite sidewalls 24, 26 of the metal bar 20 (see Fig. 5) at the low edges thereof, to a top surface of the top section 32, thereby forming a rigid configuration of the first clamping member 16. An opening 38 is provided at a top portion of the connecting section 36 of the plate member 30, aligning with the channel 28 of the metal bar 20.

[0012] The second clamping member 18 includes, for example, a joining body such as a metal bar 40 in an L-shape including a substantially horizontal arm 42 and a downwardly extending arm 44. The metal bar 40 has a hollow configuration similar to that of metal bar 20 but in a smaller size (see Fig. 5), including opposite sidewalls 48, 50 connected together by a middle wall 46, thereby defining a rectangular or square hollow cross-sectional configuration having an open channel (not indicated), to be slideably received in the channel 28 of the metal bar 20. A clamping plate 52 which may be made of a metal plate, is attached to the downwardly extending arm 44 of the metal bar 40, for example by welding, for abutting the other side of the bath tub sidewall 19. Reinforcement brackets 54 may be welded to the clamping plate 52 and the downwardly extending arm 44 to strengthen the attachment of the clamping plate 52 to the joining body (the metal bar 40).

[0013] A set of a bolt 56, a washer 58 and a nut 60 are provided for adjusting a space between the clamping section 34 of the first clamping member 16 and the clamping plate 52 of the second clamping member 18. The nut 60 is attached, for example by welding, to an open end of the substantially horizontal arm 42 of the metal bar 40 for operatively receiving the bolt 56 which extends through the washer 58, the opening 38 in the connecting section 36 of the plate member 30, then through the channel 28 of the metal bar 20 (see Fig. 5) and through the nut 60, and may further extend into the inside of the hollow configuration (the open channel not indicated) of the substantially horizontal arm 42 of the metal bar 40.

[0014] Optionally, resilient pads, such as rubber pads 62, 64 and 66 may be attached to a surface of the respective clamping section 34, top section 32 of the plate member 30 and clamping plate 52, which abut or contact the bath tub sidewall 19.

[0015] A connecting tube which may be a cylindrical metal tube 67 is attached, for example by welding, to the metal bar 20 of the first clamping member 16 and extends upwardly therefrom. The cylindrical metal tube 67 may have an enlarged low end portion 68 which has a diameter greater than the width of the metal bar 20. A portion of the cylindrical wall at respectively diametrically opposite sides of the enlarged low end portion 68, is cut away to allow the metal bar 20 to extend through the enlarged low end portion 68, in a direction traverse to that of the cylindrical metal tube 67. Welding is applied between the cut edges of the enlarged low end portion 68 of the cylindrical metal tube 67 and the metal bar 20 to strengthen the attachment of the cylindrical metal tube 67 to the first clamping member 16.

[0016] Referring to Figs. 1-3, the hand grip device 12 of the bath tub rail assembly 10 generally includes a hand grip, for example, a metal grip ring 70 standing in a substantially upright position. The grip ring 70 may be optionally configured in an elliptical shape to define at least a substantially horizontal section 72 to be comfortably gripped by a user's hand. Another connecting tube, for example a cylindrical metal tube 74 is attached at its upper end by, for example, welding to a low section of the upright standing grip ring 70. The cylindrical metal tube 67 connected to the clamping device 14 through the first clamping member 16 and the cylindrical metal tube 74 connected to the grip ring 70, are slidably connected to form an adjustable connector between the hand grip device 12 and the clamping device 14 to allow a position of the grip ring 70 to be adjusted in both height and angular orientation relative to the bath tub side wall to which the bath tub rail assembly 10 is attached.

[0017] As an example of the telescoping configuration of the adjustable connector, the cylindrical tube 74 may be an outer tube and have an inner diameter greater than an outer diameter of the cylindrical tube 67 (an inner tube) such that the cylindrical tube 67 may be slidably inserted through an open low end into the cylindrical tube 74. A lock device, for example, a spring biased lock pin device 76 may be attached within the cylindrical tube 67 (the inner tube) from the top end thereof. At least one lock pin 78 under a spring force, projects radially outwardly from

a small hole (not indicated) defined in the cylindrical tube 67. According to the embodiment illustrated in Figs. 1 and 2, a pair of lock pins 78 project in diametrically opposite directions from the cylindrical tube 67. The lock pin 78 can be pressed into the cylindrical wall of the cylindrical tube 67 by the cylindrical wall of the cylindrical tube 74 (the outer tube) when the cylindrical tube 67 (the inner tube) slides into and/or rotates within the cylindrical tube 74 (the outer tube). The spring biased lock pin device 76 is well known in the art and will not be further described herein.

[0018] A plurality of positioning holes 80 may be defined in the cylindrical wall of the outer tube (cylindrical tube 74), which are distributed in different heights relative to the angular orientation of the low end of the tube and in different angular positions relative to the angular orientation of the grip ring 70. For example, the positioning holes 80 may be defined in at least two columns (not indicated), and the two columns of the holes 80 may be spaced apart substantially by a quarter of the circumference of the cylindrical tube 74. Therefore, when at least one lock pin 78 engages a positioning hole 80 selected from either one of the columns, the grip ring 70 can be oriented in one of two angular positions substantially perpendicular to each other. For example, one angular orientation of the grip ring 70 can be in a direction substantially transverse to the bath tub sidewall 19 as illustrated in Fig. 3 and the other angular orientation of the grip ring 70 can be substantially in the same direction as the bath tub sidewall 19, as illustrated in Fig. 4. When a different positioning hole 80 in the same column is selected to be engaged with the at least one lock pin 78, the grip ring 70 can be locked in a different height position while maintaining the same angular orientation. It should be understood that the grip pin 70 can be adjusted in either height or angular orientation and can also be adjusted in both height and angular orientation. Positioning holes 80 may be defined in four columns circumferentially equally spaced apart in accordance with the two diametrically oppositely positioned lock pins 78, such that the two lock pins 78 will be engaged with two holes defined in the respective diametrically oppositely defined columns in order to increase the locking strength of the telescoping connection of the cylindrical tubes 67 and 74.

[0019] The number of positioning holes in each column may be determined according to how many height levels of the grip ring 70 are desired. If more than two angular positions of the grip ring 70 are desired, this may be achieved either by adding more columns of the positioning holes 80 or add more lock pins 78 in different angular positions in the cylindrical tube 67. In the latter case, selecting one of differently angularly positioned lock pins 78 to engage with a same positioning hole 80 or a different positioning hole 80 but in the same column, will change the orientation of the grip ring 70. A combination of selective lock pins and selective columns of positioning holes may provide more selective angular positions of the hand grip.

[0020] Fig. 4 illustrates another embodiment of the present invention in which a bath tub rail assembly 10' is substantially similar to the bath tub rail assembly 10 illustrated in Figs. 1-3. Therefore, like components are indicated by similar numerals and will not be redundantly described herein. Only the difference between the two embodiments is described below.

[0021] In contrast to the bath tub rail assembly 10 illustrated particularly in Fig. 3, in which the plate member 30 is attached to the metal bar 20 both at a upper part of the connecting section 36 (to an end of the metal bar 20), and at a top surface of the top section 32 (to the sidewalls of the metal bar 20) to form a relatively strong and rigid configuration of the first clamping member 16, the plate member 30 of the bath tub rail assembly 10' in Fig. 4 is attached only at the upper part of the connecting section 36 to the end of the metal bar 20. The top section 32 of the plate member 30 in the bath tub rail assembly 10', however, is not attached to the metal bar 20 and therefore, becomes a free end portion of the plate member 30. Thus, the U-shaped configuration between the clamping section 34 and the connecting section 36 acts as a spring to provide a resilient force therebetween when the bolt 56 is tightened to compress the first and second clamping members 16 and 18 against the opposite sides of the bath tub sidewall 19.

[0022] The U-shaped configuration of the first clamping member 16 with a free end (in the assembly 10' in Fig. 4), is less strong and rigid than the first clamping member 16 of the bath tub rail assembly 10 of Fig. 3 which has both ends attached to the metal bar 20. Nevertheless, the resiliency provided by the U-shaped configuration of the plate member 30 in the bath tub rail assembly 10' provides a more stable self-locking condition for the clamping device 14. It should be noted that the material of the plate member 30 and the proper dimensions thereof should be selected to provide an appropriate resiliency between the clamping section 34 and the connecting section 36 in order to avoid the clamping device 14 becoming too soft to achieve a secure attachment onto the bath tub sidewall 19.

[0023] The above description is meant to be exemplary only, and one skilled in the art will recognize that changes may be made to the embodiments described without departure from the scope of the invention disclosed. For example, the materials used for the bath tub rail assembly may be metal materials such as steel tubes, plates but may also be of other materials having similar mechanical properties suitable for this application. The hand grip may be configured other than a grip ring, such as a hand grip bar, etc. The joining bodies of the clamping device may be configured differently from the metal bars described in the above embodiments.

Claims

1. A bath tub rail assembly (10; 10') for use on a bath

tub sidewall (19), comprising:

a hand grip (12);
a clamping device (14);
an adjustable connector for connecting the hand grip (12) to the clamping device (14) so as to allow a position of the hand grip (12) to be adjusted in both height and angular orientation relative to the bath tub sidewall (19); and
a lock device (76) for locking the hand grip (12) in both a selected height position and a selected angular orientation;
wherein the adjustable connector comprises a telescoping configuration including a first tube (74) affixed to one of the hand grip (12) and the clamping device (14), and a second tube (67) affixed to the other of the hand grip (12) and the clamping device (14), wherein the first and second tubes (74, 67) are cylindrical, the first tube (74) having an inner diameter greater than an outer diameter of the second tube (67);

characterised in that:

the clamping device has first and second clamping members (16, 18) adjustable relative to each other for clamping opposite sides of the bath tub sidewall (19) in order to secure the bath tub rail assembly (10; 10') onto the bath tub sidewall (19); and
the bath tub rail assembly defines a plurality of holes (80) through a tube wall, of the first tube (74), wherein the second tube (67) includes a lock member (78) to be selectively engaged within the respective holes (80) of the first tube (74), wherein the holes (80) are defined at least in two columns, the two columns of the holes (80) being spaced apart substantially by a quarter of a circumference of the first tube (74).

2. The bath tub rail assembly as defined in claim 1 wherein the hand grip (12) comprises a section thereof (72) extending in a substantially horizontal direction.

3. The bath tub rail assembly as defined in claim 1 or 2 wherein the hand grip (12) comprises a grip ring (70) .

4. The bath tub rail assembly as defined in claim 1, 2 or 3 wherein the hand grip (12) comprises a substantially horizontal section (72) selectively extending in one of a first angular orientation substantially parallel to the bath tub sidewall (19) and a second angular orientation substantially perpendicular to the bath tub sidewall (19).

5. The bath tub rail assembly as defined in any preceding claim wherein the first and second clamping members (16, 18) comprise respective first and second joining bodies (20, 40) with first and second downwardly extending plates (30, 52) attached to the respective first and second joining bodies (20, 40), one of the first and second joining bodies (20, 40) being connected to the adjustable connector, and the first and second joining bodies (20, 40) being adjustably connected together to adjust a distance between the first and second plates (30, 52).

6. The bath tub rail assembly as defined in claim 5 wherein the first clamping member comprises a configuration resiliently connecting the first plate (30) to the first joining body (20) to allow a resilient force to be applied between the first plate (30) and the first joining body (20).

7. A bath tub rail assembly as defined in claim 3 wherein the adjustable connector and the lock device in combination comprise a pair of connected inner and outer tubes (67, 74) slidable to each other and affixed to the grip ring (70) and the first clamping member, respectively, the outer tube (74) defining a plurality of holes (80) at least in two columns and the inner tube (67) including an lock pin (78) to be selectively engaged within one of the holes (80) in either column of the outer tube (74), thereby allowing secure positioning of the grip ring of the hand grip (12) in both a selected height and a selected angular orientation relative to bath tub sidewall (19).

8. The bath tub rail assembly as defined in claim 7 wherein the first clamping member (16) comprises a first joining body (20) affixed to one of the outer and inner tubes (67) and a plate member (30) attached to the first joining body (20), the plate member (30) including a top section (32) adapted to be positioned on a top of the bath tub sidewall (19), a clamping section (34) extending downwardly from one side edge of the top section (32) for abutting one side of the bath tub sidewall (19), and a connecting section (36) joined with a low end of the clamping section (34) in a U-shaped configuration and extending substantially upright, the connecting section (36) being affixed at a upper part to the first joining body (20); wherein the second clamping member (18) includes a second joining body (40) and a clamping plate (52) attached to the second joining body (40) for abutting the other side of the bath tub sidewall (19), the second joining body (40) being adjustably connected to the first joining body (20) of the first clamping member (16) to adjust a distance between the clamping plate (52) of the second clamping member (18) and the clamping section (34) of the first clamping member (16).

9. The bath tub rail assembly as defined in claim 8

wherein the top section (32) of the plate member (30) is affixed to the first joining body (20) of the first clamping member (16).

10. The bath tub rail assembly as defined in claim 8 or 9 wherein the first and second joining bodies (20, 40) comprise a hollow configuration to allow the second joining body (40) to be inserted into the first joining body (20) and to allow a connecting bolt (56) to extend through the first joining body (20) into the second joining body (40), causing a sliding movement between the first and second joining bodies (20, 40), thereby creating a clamping force to the bath tub sidewall (19).

Patentansprüche

1. Badewannengeländeranordnung (10; 10') zur Verwendung an einer Badewannenseitenwand (19) mit einem Handgriff (12),
einer Klemmvorrichtung (14),
einem verstellbaren Verbinder zum Verbinden des Handgriffs (12) mit der Klemmvorrichtung (14), damit eine Position des Handgriffs (12) sowohl höhenmäßig als auch in der winkelförmigen Ausrichtung zu der Badewannenseitenwand (19) verstellt werden kann, und
einer Schlossvorrichtung (76) zum Verriegeln des Handgriffs (12) sowohl in einer gewählten Höhenposition als auch in einer gewählten winkelförmigen Ausrichtung,
wobei der verstellbare Verbinder eine teleskopartige Konfiguration mit einer ersten Röhre (74), die am Handgriff (12) oder an der Klemmvorrichtung (14) befestigt ist, und einer zweiten Röhre (67), die an der Klemmvorrichtung (14) oder am Handgriff (12) befestigt ist, umfasst, wobei die erste und die zweite Röhre (74, 67) zylindrisch sind und ein Innendurchmesser der ersten Röhre (74) größer als ein Außendurchmesser der zweiten Röhre (67) ist,
dadurch gekennzeichnet, dass
die Klemmvorrichtung ein erstes und ein zweites Klemmelement (16, 18) hat, die zum Klemmen gegenüberliegender Seiten der Badewannenseitenwand (19), um die Badewannengeländeranordnung (10; 10') an der Badewannenseitenwand (19) zu befestigen, zueinander verstellbar sind, und
die Badewannengeländeranordnung mehrere Löcher (80) durch eine Röhrenwand der ersten Röhre (74) definiert, wobei die zweite Röhre (67) ein Schlosselement (78) aufweist, das gezielt in den jeweiligen Löchern (80) der ersten Röhre (74) in Eingriff zu nehmen ist, wobei die Löcher (80) mindestens in zwei Spalten definiert sind, wobei die beiden Spalten der Löcher (80) im Wesentlichen um ein Viertel eines Umfangs der ersten Röhre (74) beabstandet sind.

2. Badewannengeländeranordnung nach Anspruch 1, wobei der Handgriff (12) einen Abschnitt (72) davon umfasst, der sich in einer im Wesentlichen horizontalen Richtung erstreckt.

3. Badewannengeländeranordnung nach Anspruch 1 oder 2, wobei der Handgriff (12) einen Griffring (70) umfasst.

4. Badewannengeländeranordnung nach Anspruch 1, 2 oder 3, wobei der Handgriff (12) einen im wesentlichen horizontalen Abschnitt (72) umfasst, der sich gezielt in einer ersten winkelförmigen Ausrichtung, die im Wesentlichen parallel zur Badewannenseitenwand (19) verläuft, oder in einer zweiten winkelförmigen Ausrichtung, die im Wesentlichen senkrecht zur Badewannenseitenwand (19) verläuft, erstreckt.

5. Badewannengeländeranordnung nach einem der vorhergehenden Ansprüche, wobei das erste und das zweite Klemmelement (16, 18) jeweils einen ersten und einen zweiten Verbindungskörper (20, 40) umfassen, an denen jeweils eine erste und eine zweite sich nach unten erstreckende Platte (30, 52) angebracht sind, wobei der erste oder der zweite verbindungskörper (20, 40) mit dem verstellbaren Verbinder verbunden ist und der erste und der zweite Verbindungskörper (20, 40) verstellbar miteinander verbunden sind, um einen Abstand zwischen der ersten und der zweiten Platte (30, 52) zu verstellen.

6. Badewannengeländeranordnung nach Anspruch 5, wobei das erste Klemmelement eine Konfiguration umfasst, die die erste Platte (30) federnd mit dem ersten Verbindungskörper (20) verbindet, damit eine federnde Kraft zwischen der ersten Platte (30) und dem ersten Verbindungskörper (20) aufgebracht werden kann.

7. Badewannengeländeranordnung nach Anspruch 3, wobei der verstellbare Verbinder und die Schlossvorrichtung kombiniert ein Paar verbundener innerer und äußerer Röhren (67, 74) umfassen, die zueinander verschiebbar sind und jeweils am Griffring (70) und am ersten Klemmelement befestigt sind, wobei die äußere Röhre (74) mehrere Löcher (80) mindestens in zwei Spalten definiert und die innere Röhre (67) einen Schlossstift (78) aufweist, der gezielt in einem der Löcher (80) in einer der Spalten der äußeren Röhre (74) in Eingriff zu nehmen ist, wodurch eine sichere Positionierung des Griffrings des Handgriffs (12) sowohl in einer gewählten Höhe als auch in einer gewählten winkelförmigen Ausrichtung bezüglich der Badewannenseitenwand (19) gestattet ist.

8. Badewannengeländeranordnung nach Anspruch 7, wobei das erste Klemmelement (16) einen ersten

verbindungskörper (20), der an der äußeren oder der inneren Röhre (67) befestigt ist, und ein Plattenelement (30) umfasst, das am ersten verbindungskörper (20) angebracht ist und einen oberen Abschnitt (32), der geeignet ist, auf eine Oberseite der Badewannenseitenwand (19) positioniert zu werden, einen Klemmabschnitt (34), der sich von einem Seitenrand des oberen Abschnitts (32) nach unten erstreckt, um an einer Seite der Badewannenseitenwand (19) abzustoßen, und einen Verbindungsabschnitt (36) aufweist, der mit einem unteren Ende des Klemmabschnitts (34) in einer U-förmigen Konfiguration verbunden ist und sich im Wesentlichen aufrecht erstreckt, wobei der Verbindungsabschnitt (36) an einem oberen Teil des ersten verbindungskörpers (20) befestigt ist, wobei das zweite Klemmelement (18) einen zweiten Verbindungskörper (40) und eine Klemmplatte (52) aufweist, die am zweiten Verbindungskörper (40) angebracht ist, um an der anderen Seite der Badewannenseitenwand (19) anzustoßen, wobei der zweite verbindungskörper (40) verstellbar mit dem ersten Verbindungskörper (20) des ersten Klemmelements (16) verbunden ist, um einen Abstand zwischen der Klemmplatte (52) des zweiten Klemmelements (18) und dem Klemmabschnitt (34) des ersten Klemmelements (16) zu verstellen.

9. Badewannengeländeranordnung nach Anspruch 8, wobei der obere Abschnitt (32) des Plattenelements (30) am ersten Verbindungskörper (20) des ersten Klemmelements (16) befestigt ist.

10. Badewannengeländeranordnung nach Anspruch 8 oder 9, wobei der erste und der zweite Verbindungskörper (20, 40) eine hohle Konfiguration umfassen, damit der zweite Verbindungskörper (40) in den ersten Verbindungskörper (20) eingeführt werden kann und sich ein Verbindungsbolzen (56) durch den ersten Verbindungskörper (20) in den zweiten Verbindungskörper (40) erstrecken kann, wodurch eine Gleitbewegung zwischen dem ersten und dem zweiten Verbindungskörper (20, 40) veranlasst wird, wodurch die Badewannenseitenwand (19) mit einer Klemmkraft beaufschlagt wird.

Revendications

1. Ensemble de rail de baignoire (10 ; 10') destiné à être utilisé sur une paroi latérale de baignoire (19), comprenant :

une poignée (12) ;
un dispositif de serrage (14) ;
un raccord ajustable pour raccorder la poignée (12) au dispositif de serrage (14) de manière à permettre d'ajuster une position de la poignée (12) à la fois en hauteur et en orientation angulaire par rapport à la paroi latérale de baignoire (19) ; et
un dispositif de blocage (76) pour bloquer la poignée (12) à la fois dans une position en hauteur sélectionnée et selon une orientation angulaire sélectionnée ;
le raccord ajustable comprenant une configuration télescopique comportant un premier tube (74) attaché soit à la poignée (12) soit au dispositif de serrage (14), et un deuxième tube (67) attaché à l'autre, soit la poignée (12) soit le dispositif de serrage (14), les premier et deuxième tubes (74, 67) étant cylindriques, le premier tube (74) ayant un diamètre intérieur supérieur à un diamètre extérieur du deuxième tube (67) ;

caractérisé en ce que :

le dispositif de serrage possède des premier et deuxième éléments de serrage (16, 18) ajustables l'un par rapport à l'autre pour serrer des côtés opposés de la paroi latérale de baignoire (19) afin de fixer l'ensemble de rail de baignoire (10 ; 10') sur la paroi latérale de baignoire (19) ; et
l'ensemble de rail de baignoire définit une pluralité de trous (80) à travers une paroi de tube du premier tube (74), le deuxième tube (67) comportant un élément de blocage (78) destiné à être engagé de manière sélective à l'intérieur des trous respectifs (80) du premier tube (74), les trous (80) étant définis au moins sur deux colonnes, les deux colonnes des trous (80) étant espacées l'une de l'autre sensiblement d'un quart d'une circonférence du premier tube (74).

2. Ensemble de rail de baignoire selon la revendication 1, dans lequel la poignée (12) comprend une section (72) s'étendant dans une direction sensiblement horizontale.

3. Ensemble de rail de baignoire selon la revendication 1 ou 2, dans lequel la poignée (12) comprend un anneau de préhension (70).

4. Ensemble de rail de baignoire selon la revendication 1, 2 ou 3, dans lequel la poignée (12) comprend une section sensiblement horizontale (72) s'étendant de manière sélective selon une première orientation angulaire sensiblement parallèle à la paroi latérale de baignoire (19) ou une deuxième orientation angulaire sensiblement perpendiculaire à la paroi latérale de baignoire (19).

5. Ensemble de rail de baignoire selon l'une quelconque des revendications précédentes, dans lequel les premier et deuxième éléments de serrage (16, 18)

comprennent des premier et deuxième corps de liaison respectifs (20, 40) munis de première et deuxième plaques s'étendant vers le bas (30, 52) fixées aux premier et deuxième corps de liaison respectifs (20, 40), l'un des premier et deuxième corps de liaison (20, 40) étant raccordé au raccord ajustable, et les premier et deuxième corps de liaison (20, 40) étant raccordés l'un à l'autre de manière ajustable pour ajuster une distance entre les première et deuxième plaques (30, 52).

6. Ensemble de rail de baignoire selon la revendication 5, dans lequel le premier élément de serrage comprend une configuration raccordant de manière élastique la première plaque (30) au premier corps de liaison (20) pour permettre l'application d'une force élastique entre la première plaque (30) et le premier corps de liaison (20).

7. Ensemble de rail de baignoire selon la revendication 3, dans lequel le raccord ajustable et le dispositif de blocage en association l'un avec l'autre comprennent une paire de tubes intérieur et extérieur raccordés (67, 74) susceptibles de coulisser l'un par rapport à l'autre et attachés à l'anneau de préhension (70) et au premier élément de serrage, respectivement, le tube extérieur (74) définissant une pluralité de trous (80) au moins sur deux colonnes et le tube intérieur (67) comportant une tige de blocage (78) destinée à être engagée de manière sélective à l'intérieur de l'un des trous (80) dans n'importe quelle colonne du tube extérieur (74), ce qui permet un positionnement fixe de l'anneau de préhension de la poignée (12) à la fois à une hauteur sélectionnée et selon une orientation angulaire sélectionnée par rapport à la paroi latérale de baignoire (19).

8. Ensemble de rail de baignoire selon la revendication 7, dans lequel le premier élément de serrage (16) comprend un premier corps de liaison (20) attaché à l'un des tubes extérieur et intérieur (67) et un élément de plaque (30) fixé au premier corps de liaison (20), l'élément de plaque (30) comportant une section supérieure (32) conçue pour être positionnée sur une partie supérieure de la paroi latérale de baignoire (19), une section de serrage (34) s'étendant vers le bas à partir d'un bord latéral de la section supérieure (32) pour buter contre un côté de la paroi latérale de baignoire (19), et une section de raccordement (36) reliée à une extrémité inférieure de la section de serrage (34) suivant une configuration en forme de U et s'étendant sensiblement verticalement, la section de raccordement (36) étant attachée au niveau d'une partie supérieure au premier corps de liaison (20) ; le deuxième élément de serrage (18) comportant un deuxième corps de liaison (40) et une plaque de serrage (52) fixée au deuxième corps de liaison (40) pour buter contre l'autre côté de la paroi latérale de baignoire (19), le deuxième corps de liaison (40) étant raccordé de manière ajustable au premier corps de liaison (20) du premier élément de serrage (16) pour ajuster une distance entre la plaque de serrage (52) du deuxième élément de serrage (18) et la section de serrage (34) du premier élément de serrage (16).

9. Ensemble de rail de baignoire selon la revendication 8, dans lequel la section supérieure (32) de l'élément de plaque (30) est attachée au premier corps de liaison (20) du premier élément de serrage (16).

10. Ensemble de rail de baignoire selon la revendication 8 ou 9, dans lequel les premier et deuxième corps de liaison (20, 40) comprennent une configuration creuse pour permettre l'insertion du deuxième corps de liaison (40) à l'intérieur du premier corps de liaison (20) et pour permettre à un boulon de raccordement (56) de s'étendre à travers le premier corps de liaison (20) et dans le deuxième corps de liaison (40), ce qui provoque un mouvement de coulissement entre les premier et deuxième corps de liaison (20, 40), en créant ainsi une force de serrage sur la paroi latérale de baignoire (19).

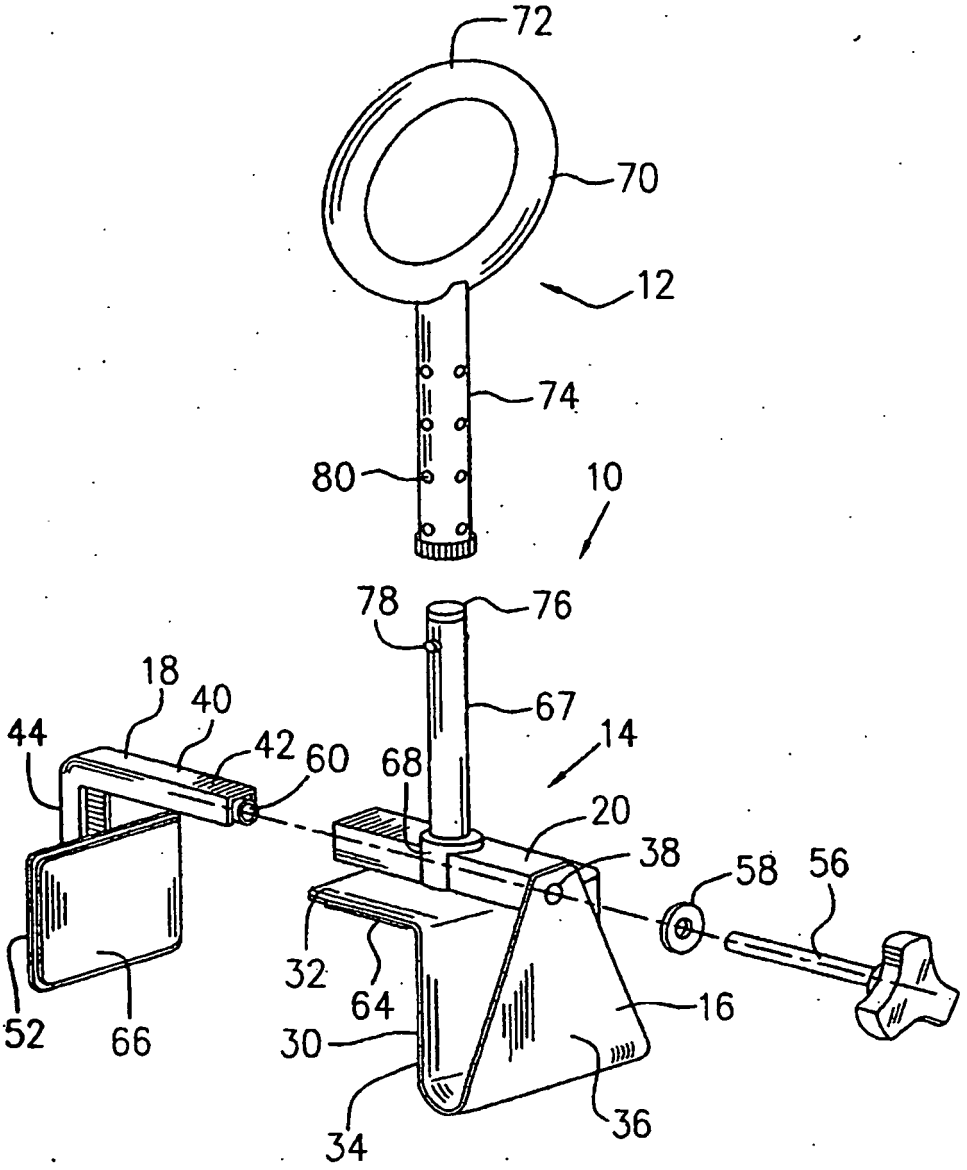
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FIG. 1

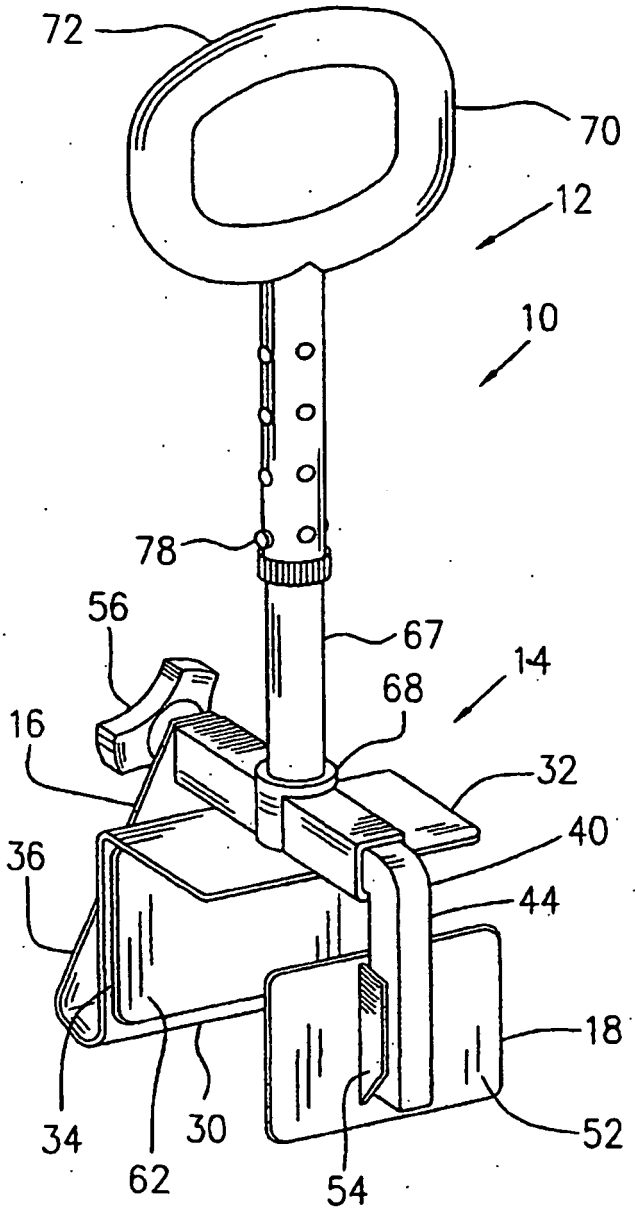

FIG. 2

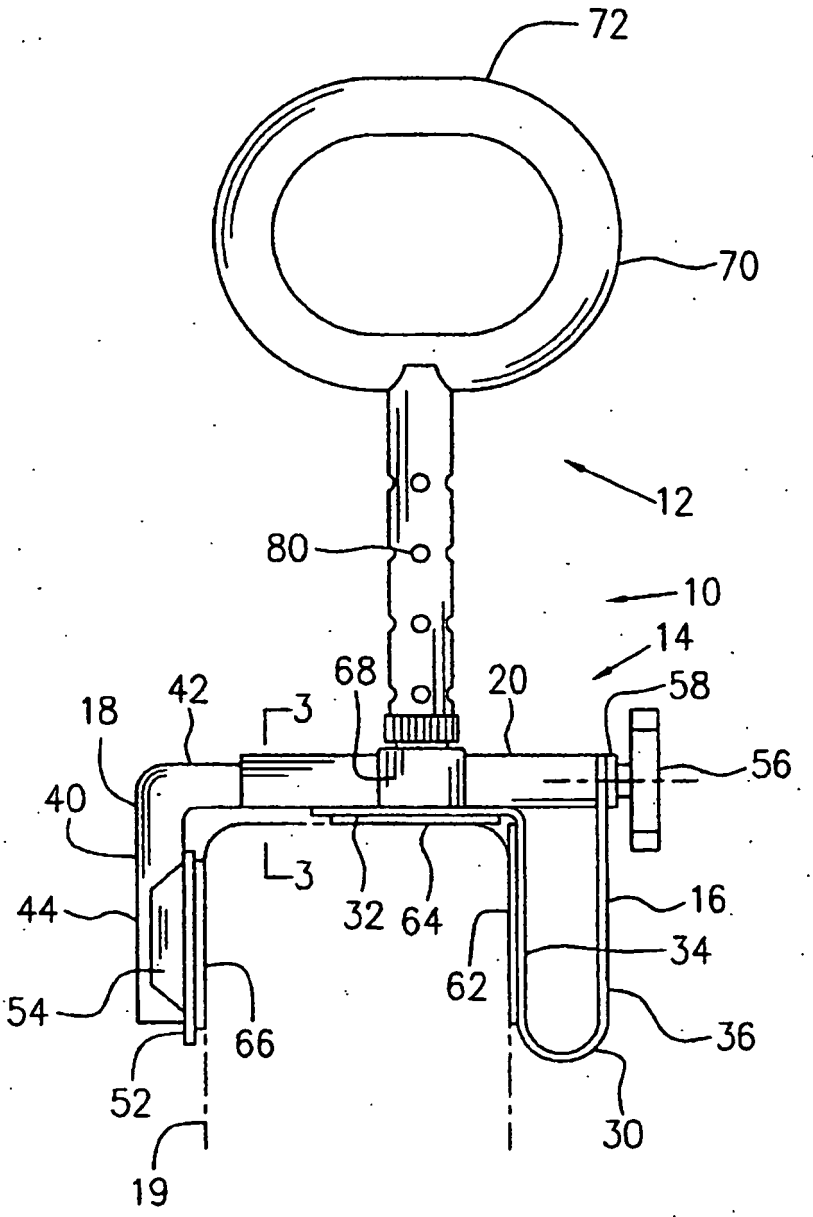
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FIG. 3

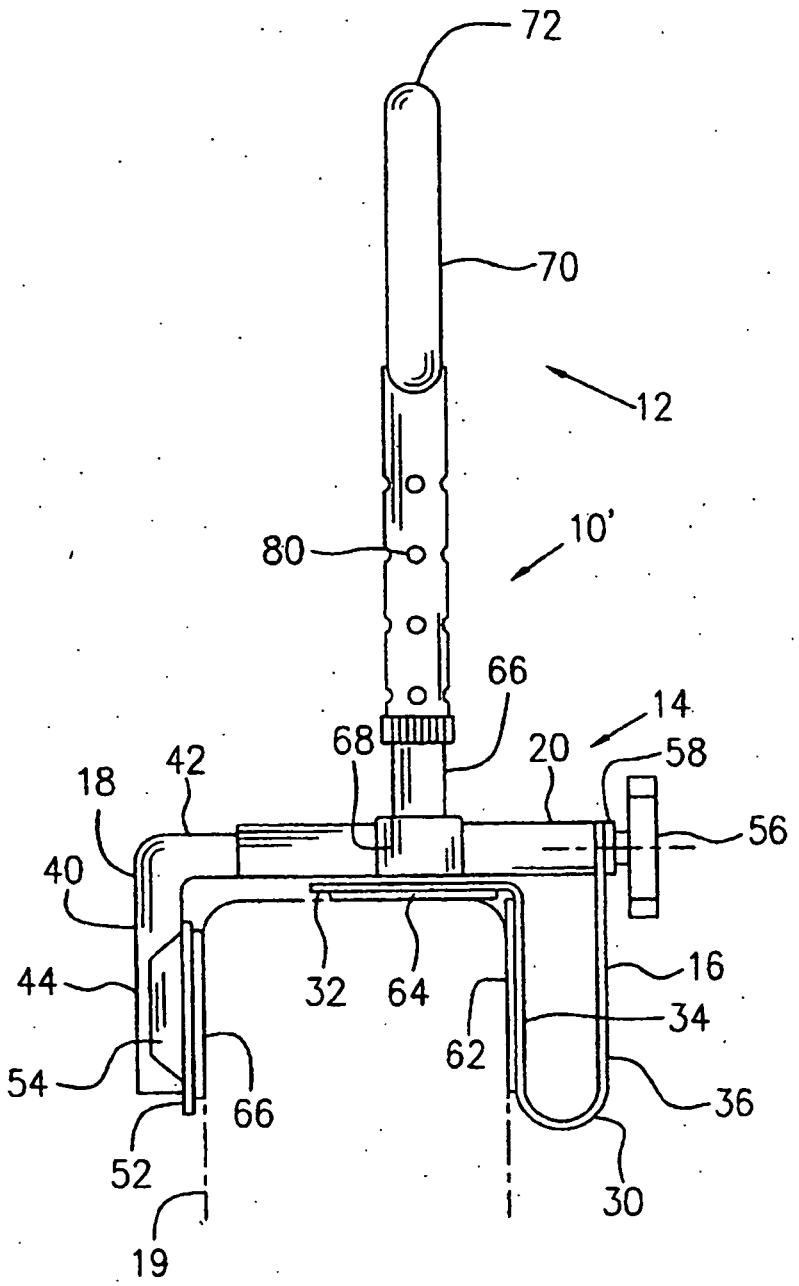
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FIG. 4

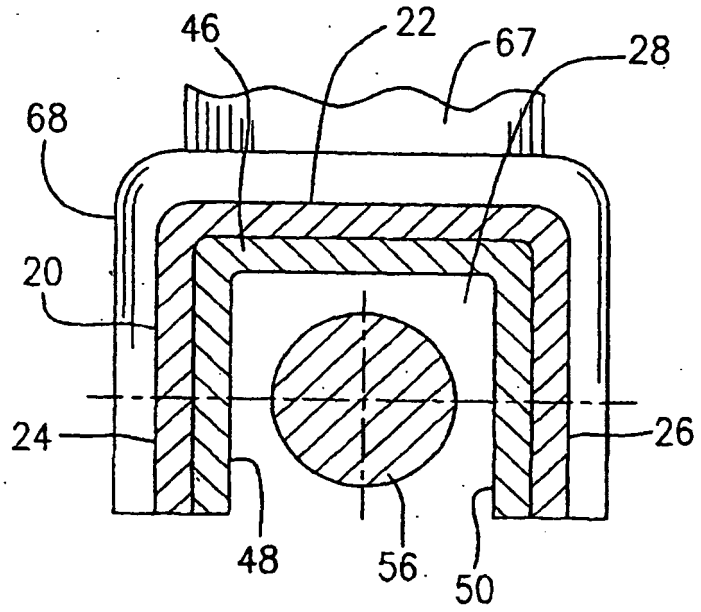

FIG. 5

REFERENCES CITED IN THE DESCRIPTION

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