United States Patent

[11] 3,604,019

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[21] Appl. No. **877,239**
[22] Filed **Nov. 17, 1969**
[45] Patented **Sept. 14, 1971**

[54] **BATHTUB SAFETY APPLIANCE**
15 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** ..... **4/185 H**
[51] **Int. Cl.** **A47k 3/12**
[50] **Field of Search** 4/185

[56] **References Cited**

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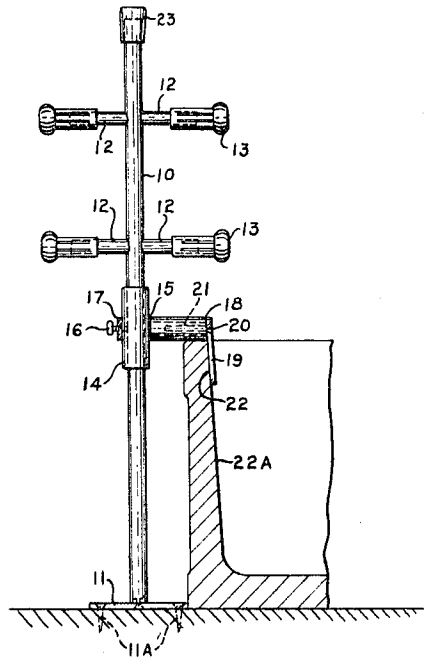
ABSTRACT: A safety device for assisting persons into and out of a bathtub. The safety device is equipped with means that facilitate easy attachment to the tub and the floor while providing supporting means for the user.



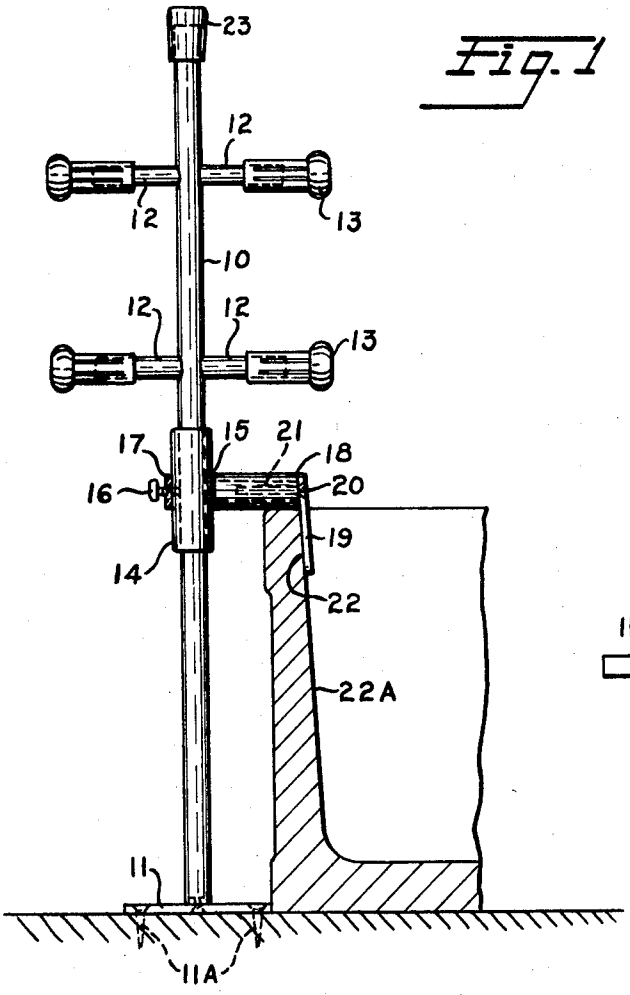


Fig. 1

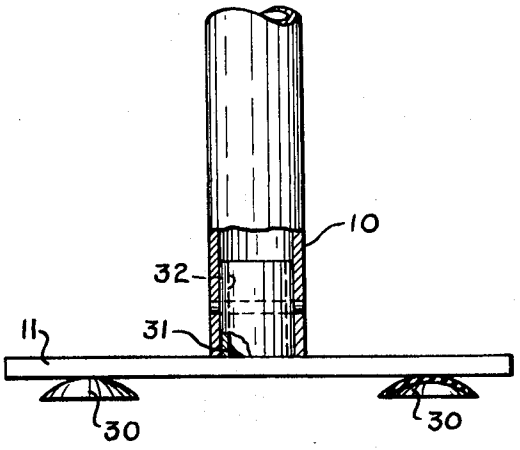


Fig. 3

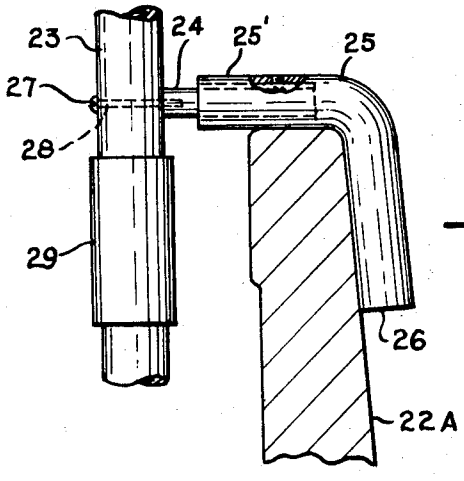


Fig. 2

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BATHTUB SAFETY APPLIANCE

The invention relates to and comprises a bathtub safety device for use while entering and leaving a conventional bathtub. In particular, it relates to a device that is equipped with means that facilitate attachment of the inventive apparatus and device to an existing and installed tub structure with a minimum of expense and difficulty.

In the prior art many supporting devices, safety grips, towel bars, folding seat arrangements and other bathroom fixtures have been utilized without solving the existing problems that many people encounter. Many elderly persons, particularly those with physical disability or impairment, have a great need for the use of supporting devices or aids to assist them in getting into and out of an ordinary bathtub.

These needs have not been met by the prior art devices available on the market for a number of reasons. In the prior art U.S. Pat. to Dunn No. 2,243,794 certain support structure is disclosed. In one embodiment of this invention the support structure actually fastens across the interior of the bathtub, causing a loss of use of a part of the tub, which is not desirable. In another embodiment as shown in FIG. 2 of this patent, a wall adjacent to the back of the tub is used to mount the supporting device. This is impractical in many settings for a number of reasons. In the first instance, it requires considerable skill to install. Secondly, in many situations the wall without the installation of additional supporting structure is really not strong enough to support a person, when the full weight is applied to the supporting device. Thirdly, the device as mounted in FIG. 2 is in an area where many persons would be unable to grasp the supporting structure and therefore would not be positioned properly for widespread use.

In another prior art device, U.S. Pat. No. 2,045,815 to Wiesjahn, discloses a combined bathtub safety grip and towel rack. In this device the combined grip and towel rack is fastened entirely to the sidewall of the tub by means of saddle brackets that straddle the sidewall of the tub and are fastened thereto by bolt members that can by means of screw threads put pressure on the sidewall of the tub. This mounting arrangement is not adequate as it does not transmit any of the user's weight to the floor.

In this invention applicant's device, which has advantages over all the prior art bathtub safety structures known to the invention, combines two complementary features. In this invention means are utilized to fasten the bathtub safety structure directly to the sidewall of the tub and to the floor adjacent to the tub. Each fastening means is used to facilitate a proper distribution of weight and resistance to turning moment to obtain advantages not shown in the prior art.

It is therefore one object of this invention to provide a simple, relatively inexpensive bathtub safety appliance that is superior to those in the prior art and/or on the market at the present time.

It is a further object to provide a simple inexpensive bathtub safety appliance that is easy to install.

It is one additional object of this invention to provide a bathtub safety appliance that can be attached to both the floor and one sidewall of the tub with a minimum of difficulty and expense.

It is also one additional object of the present invention to provide a relatively simple and inexpensive device that can be used by elderly and/or handicapped persons to assist themselves into and out of a tub in a safe manner.

It is another object of the instant invention to provide a bathtub safety device that is substantially secured both to the tub wall and the floor in order to utilize maximum support means and to prevent and suitably resist all turning moments so as to create a feeling of security in the user.

It is a further object of the invention to provide an improved bathtub support device that can be used by children and adults alike.

FIG. 1 of the drawings illustrates an assembly of one embodiment of the inventor's bathtub safety appliance. In this figure a rod or tube **10**, that may preferably be made of steel tubing or solid steel rod, is designed to be secured to the tub and to the floor in a substantially vertical plane adjacent the sidewall of tub to be entered. A baseplate **11** is suitably secured to the base or bottom of rod **10** and one or more handle members **12** may be suitably affixed to or rigidly placed through rod **10** at or near its upper end. The opposite ends of each handle member **12** may be covered with a rubber or plastic cover **13** that is used to cover the opposite ends of each handle member. These covers **13** facilitate a secure grip by the user and are preferably used in one embodiment of the invention to prevent falls. A cylindrical sleeve or collar **14** is provided and fits about the midsection portion of the vertically disposed rod **10**, the said sleeve having a substantially horizontal extension **15**. The sleeve member **14** is designed to slide vertically along the rod **10** so that extension **15** will be located directly on top of or adjacent to the top of the sidewall of the tub. A screw or other projecting means **16** may be directed through the wall of the sleeve **14**, for example, by a threaded member **17** located adjacent to or in the wall of the sleeve **14**, in order to secure the sleeve and extension in the desired position on rod **10**. A fastening member **18** having a substantially vertical depending member **19** may be secured to extension **15** to rigidly affix rod member **10** to the sidewall of the tub. Depending member **19** may be inclined at an angle to allow it to fit the sidewall of the tub. In one preferred embodiment of this invention fastening element **18** may be comprised of a cylindrical or square tube that slides on and telescopes over extension **15**. A bolt **20** may be threaded or placed through an aperture **21** in the end of fastening member **18** so as to firmly affix the fastening member to extension **15** by means of a conventional bolt **20**. The lateral opening in extension member **15** may be threaded to accept the threads on bolt **20**. Other equivalent means of fastening may be used. In the assembly of the inventive safety device as shown in FIG. 1, the cylindrical sleeve or collar **14** may be adjusted for height so that the lower edge of extension **15** rests directly on top of or near the top of the sidewall of the tub to which the device is to be fastened and a screw **16** (which may be an Allen screw) may be directed through the wall of the sleeve through a threaded aperture **17**, so as to make a contact with or to go through the wall of the tube or rod **10**. The fastening member **18** is then positioned about the extension **15** and the machine bolt **20** placed through aperture **21** and threaded into a horizontally disposed aperture extending horizontally through extension member **15**. As the bolt **20** is progressed through the screw threads of the threaded aperture extending horizontally into extension **15** the inside wall **22** of the substantially vertically positioned member **19** comes into contact with from interior sidewall of the tub **22A**. The wall **22** may be coated if desired with rubber, plastic or other abrasive or adhesive materials cushioned to prevent tub damage that will give an especially strong and secure bond to the tub wall as the screw or bolt **20** is brought to its final secured position. The upper end of rod **10** may be covered with a soft plastic or rubber tip **23** to protect the user from falling on or coming into contact with the upper end of rod **10**. The baseplate **11** illustrated in FIG. 1 may be equipped with a number of apertures **11A** through which screws or bolts may be placed in order to secure the base member or element **11** to the floor. Baseplate **11** may be welded or securely connected to vertical rod **10** by any conventional means.

FIG. 2 of the drawings illustrates a modified sleeve and extension for securing the midsection of the vertical rod or support member to the sidewall of the tub. The modified sleeve illustrated in FIG. 2 comprises a tubular sleeve member **23** having a horizontal extension **24** which may, in one preferred embodiment, be comprised of tubing of a smaller diameter than that making up the sleeve member **23**. The fastening member **25** may be made of a larger piece of tubing so as to telescope over the horizontal extension **24**. The horizontal fastening member **25** may be extended at essentially a right angle, or slightly greater than a right angle, to form a tub-engaging ele-

ment 26. Element 26 may be flattened or take any desired shape so that it may make firm contact with the interior wall of the tub. As previously disclosed, element 26 may be coated with any adhesive material, or plastic, rubber, or other material that will give firm contact and also protect the tub from damage. A screw or bolt 27 may be placed through aperture 28 in one exterior wall of fastening element 25 so that the screw or bolt can be threaded into a threaded aperture in horizontal extension 24. The lower portion of the sleeve may be covered with a rubber or plastic cushion 29 in order to protect the outside wall of the tub.

FIG. 3 illustrates an alternate means for attaching base member 11 to the floor. It should be understood that screws, bolts or other elements may be used to attach base member 11 to the floor or in conjunction with a clip or flange to fasten base member 11 in FIG. 1 to the floor. In FIG. 3 either one or a plurality of suction cups 30 may be used on either end of the base member 11 to secure baseplate or member 11 to the floor. As illustrated in the drawings the suction cups 30 may be off center with the larger area away from the tub or in the alternative these suction cups may be centered beneath support member 10.

As illustrated in FIG. 3 an alternate means may be used to fasten baseplate 11 to vertical support rod 10. For example, in this embodiment, a piece of tubing or other similar material may be welded as at 31 to the base 11 to a section of tubing 32 and be allowed to telescope with a larger single piece of tubing 10. In such a case the larger tubing 10 will telescope around the inside tubing that is welded to the base. A screw or other fastening means may be used to fasten the adjacent walls of vertical rod 10 to the welded projection on base member 11.

Another alternative structure that comes within the broad scope of this invention includes a vertical support member 10 as illustrated in FIG. 1 made with a unitary sleeve and horizontal extension member that is not free to slide at any time along the midsection of rod 10. In such a case the horizontal extension 15 as illustrated in FIG. 1 may be made a desired height from the floor, knowing the exact height the wall of the tub is in such a case. Such a structural arrangement is not as advantageous as with a movable sleeve as shown in FIG. 1 but should be considered to come within the broad scope of the inventive concept disclosed by the inventor.

In such a case the horizontal extension element and a depending fastening member may be secured to rod 10 by a bolt or screw 27 as illustrated in FIG. 2.

Many alternatives to the specific embodiments disclosed herein by the inventor will appear to those skilled in the art. The scope of the invention should be defined only by the claims appended hereto and all mechanical equivalents thereto.

1. A bathtub safety appliance attachable to a floor mounted bathtub having a substantially vertical pair of sidewalls and comprising, in combination, a single vertical support member having a top end, a midsection portion and a base end equipped with a pair of handles protruding substantially horizontally from diametrically opposite sides of said vertical member designed to transmit weight through the vertical support member to the floor, securing means attached to the base end of the vertical member to rigidly affix the base end of said vertical member to the floor, means associated with said vertical member securing the midsection portion of the vertical member to the sidewall of the tub.

2. The safety appliance of claim 1 wherein the means to secure the midsection portion of the vertical member to the tub wall comprises a sleeve member that can be moved coaxially along the vertical member.

3. The apparatus of claim 1 wherein the means to affix the vertical support member to the floor comprises a horizontal base member, with means for attachment to the floor.

4. The apparatus of claim 3 wherein the means for attaching the base member to the floor are screws.

5. The apparatus of claim 3 wherein the means for attaching and fastening the horizontal base member to the floor comprises at least one suction cup.

6. The apparatus of claim 2 wherein the sleeve is equipped with a tub-wall-engaging member that is used to secure the midsection of the vertical member to the wall of the tub.

7. The apparatus of claim 1 wherein the portions of the support apparatus that contact the surface of the tub are covered with a soft, protective material.

8. The apparatus of claim 6 wherein the sleeve member has a horizontal extension and the tub-wall-engaging member to secure the vertical member to the tub wall.

9. The apparatus of claim 1 wherein the handle members and the upper end of the support rod are covered with soft, protective material.

10. A bathtub safety appliance attachable to a floor-mounted bathtub having a substantially vertical pair of sidewalls and comprising, in combination, a single vertical support member, means to rigidly affix the vertical support member to the floor adjacent to tub, adjustable means to rigidly clamp the midsection portion of said vertical support member to the sidewall of the said tub, said adjustable means including a clamp extending over the sidewall of said tub, a pair of handles located in the region of the upper extremity of the said vertical support member wherein the handles project from two diametrically opposite sides of the support member to form a T-shaped structure with the support member.

11. The safety appliance of claim 10 wherein the clamping means comprises an adjustable member that can be moved along the vertical member and adjusted to the height of the tub wall side and permanently positioned at the height of the tub wall to apply pressure against the wall of the tub to secure the vertical member in position.

12. The bathtub safety appliance of claim 11 wherein the clamping means comprises a member extending generally horizontally from the vertical support rod over the top of the sidewall of the tub, and a cooperating generally L-shaped clamp suitable engageable with the said extending member and means to affix the extending member and the L-shaped clamping member together to form a rigid member.

13. The safety appliance of claim 10 wherein the vertical support member comprises a pair of telescoping rods equipped with threaded clamping means to grip the inside and outside surfaces of a sidewall of the tub to secure the vertical member to the wall side of the tub by adjusting the threaded clamping member until the wall side of the tub is firmly clamped.

14. The safety appliance of claim 10 wherein the clamping means comprises a generally L-shaped member, one let of the "L" fitting over the top of the sidewall of the tub and the depending member of the "L" fits along the inner surface of said sidewall of the tub and forms a smooth wall-engaging member.

15. The bathtub safety appliance of claim 14 wherein the vertical member is rigidly affixed to the floor by means of a horizontally extending plate attached to the floor with screws, and an adhesive is provided on the tub-wall-engaging surfaces of the clamping means.