

FORM 2

THE PATENT ACT 1970
(39 OF 1970)
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The patent rules, 2003

COMPLETE SPECIFICATION
(See section 10: rule 13)

1. TITLE OF INVENTION

FALL PREVENTION APPARATUS

2 APPLICANTS

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3. PREAMBLE TO THE DESCRIPTION

COMPLETE

Following specification particularly describes the invention and the manner in which it is to be performed.

4. DESCRIPTION.

Technical field of invention:

The present invention in general relates to safety equipment. More specifically this invention relates to safety by preventing accidental human fall particularly while changing clothe especially in bathrooms however, the said invention is equally applicable in similar situations occurring elsewhere.

Prior art:

Every year number of cases are reported of accidental fall of people in bathrooms due to wet, slippery floor which is further aggravated due to body imbalance while wearing the under garments.

Even in developed countries like USA, every year more than 18,000 people die from accidents and injuries that that take place in house making homes second most common location behind road accidents causing such fatalities. Of which falling in bathroom has been noticed as the leading cause of deaths of all.

According to “center for disease control and prevention” in USA, every year 2,35,000 people over age of 15 visit emergency room because of injuries suffered in bathroom and almost 14% are hospitalized. More interesting fact which came out of this survey was that only 2% injuries occur while getting in tub or shower but 98% occur while getting out.

The common solution provided for avoiding these accidents is the installation of grab bars in bathrooms. But grab bars can only provide support for user to come out of bath tub or maintain body balance for time being in case of slipping. The bars cannot provide much help to users such as Old, physically handicapped, people with vertigo or patients. Even with the above devices in place an occasional slip and fall accident results causing severe injury while entering, transgressing or exiting a bath tub or shower stall

An attempt has been made by various inventors for providing a solution for this problem.

Chinese patent application CN 202774369 U provides for bathroom anti-skidding slippers provided with arrangement of sucker at the bottom of each slipper, a large number of through holes are formed in the bottom of each slipper, and accordingly water in the slippers can flow out through the through holes. The bathroom anti-skidding slippers can be firmly sucked on the ground through the

suckers on the bottom of the slippers, and an anti-skidding effect is significant. While using this slipper when a person wants to walk, he/she needs to apply his strength to lift the slippers for every step making it extremely inconvenient to use.

Various previously filed patents like U.S. Pat. Nos. 2,080,601; 3,045,254; 3,133,292; 3,429,085; and British Patent number 809,206 etc recommend that both the tubs, shower stalls and fixtures be covered with a protective resilient cover or coatings. None of these prior art devices consider that the outer surfaces of the resilient material suggested is in itself very slick when becoming wet and itself lends to causing a person using the tub or shower to be more susceptible to a slip and fall accident. Granted the resilient material would probably prevent severe injury to a person falling but the trauma of the fall and any injury even so slight can cause serious mental injury to that person, especially if that person is frail and/or elderly.

After thorough studies of accidental fall in bath rooms especially of old people it was specifically observed that the typical reason for such falls is during the period when user needs to change his/her clothes after taking bath. Moreover the technique of wearing under garment is very typical as the garment is held by both the hands and one of the leg is to be put in one section of the garment means the leg has to be lifted and while carefully aligning, means moving and adjusting, to be put in the garment. Similar situation is repeated while putting the remaining leg though it may not be so very vulnerable. In such situation one has to stand on one leg without the aid of hands for natural balancing as they are already occupied. This posture is very vulnerable and leads to unbalance manifesting in a fatal fall. At times one takes the support of the wall to avoid the fall but in many situation due to slippery floor fall becomes eminent. Old, physically handicapped, people with vertigo, patients, overweight people and sometimes even healthy people find it difficult to balance. As reported such fall results in serious injuries like bone fracture especially femur, traumatic shock, unconsciousness and may be even fatal. Moreover the bathrooms are generally locked from inside and the person if unconscious may remain undetected resulting in emergency situation and making it extremely difficult to rescue the person without breaking the door leading to loss of precious time for urgent hospitalization hence prevention is better than cure. No such device, apparatus has been reported providing solution for this specific problem in previously reported literature.

Problems to be solved:

Hence there was a long felt need in the art to have such an apparatus means device when installed at places such as bathroom, toilets or elsewhere which will prevent fall while offering safe and comfortable and secured seat for the user while wearing undergarments or similar clothe or any activity where aid for body balancing is required.

These and other advantages will be more readily understood by referring to the following detailed description for Fall Prevention Apparatus disclosed hereinafter with reference to the accompanying drawings and which are generally applicable to said and other similar situation to fulfill particular application illustrated hereinafter.

Object:

1. Primary object of the present invention is to provide a safe and secured apparatus to prevent human fall while putting on undergarments or other attire/clothe or any similar activities involving balancing while shifting/changing from sitting to standing posture and/or vice the versa,
2. Still another object of the present invention is to make it comfortable, easy and safe to make use of,
3. Yet another object of the present invention is to be foldable in nature when not in use,
4. Further objective of the present invention is to provide a simple apparatus which will not occupy much floor space,
5. Yet another object of the present invention is to make it easy to install,
6. Another objective of the present invention is to make it in the form of knock-down kit and easy to assemble,
7. Still another features of the present invention is to make it light in weight, easy to manufacture and cost effective,

Further objects and features can be readily understood by any person skilled in the art by referring to the detail description and appended claims of the invention.

STATEMENT:

Following specification provides a fall prevention apparatus, hereinafter referred to apparatus, wherein a platform means seat is rotably mounted means to swivel and further make it foldable, through round rod means bar or stud at a suitable height between two parallel and strong mechanical means structural members , hitherto called structural members, which to be vertically grouted to wall or any structure and further the said seat is provided with additional vertical support means third leg rotably mounted means to swivel in the front center of the said seat so that the load directly transferred to the floor so as to make the seat means the apparatus structurally stable means sound and the said structural members to be strong enough to take up the combine load of the apparatus and user and further to the same structural members, at a suitable height, two parallel hand rests means hand supports are rotably mounted means to swivel and to render them foldable, and further on the same structural members at a suitable height two parallel safety bars means arm are rotably mounted means to swivel and to render them foldable and further the said safety bars render safety to the user by swiveling while shifting means changing from sitting to standing posture and vice the versa, and on each of the said safety bars at a suitable distance slots are provided wherein the pins and ring assembly for the adjustable length safety belt means seat belt or flexible belt or bungee rubber, hitherto called safety belt, slidably mounted and the said safety belt having a buckle and snap hook attached to its ends and having provision to adjust length of safety belt in the buckle to suit the user physique and locking arrangement for securing the user and further ring is provided to pull through the safety belt and the said ring is slidably mounted on pin and the said pin is slidably and rotably mounted in the slots provided on the said safety bars and further the said secured safety belt with said pin and said ring ,hitherto such an assembly referred to as safety belt, swings in an arc traced by the safety bars with the secured user while user changes the postures means providing safe support to and fro as well as side to side support to the user and further the said structural members are provided with multiple holes on respective side for the height adjustment of seat, hand supports, support bars as per physique and/or the need so desired by the user.

Method will now be described. Once the apparatus is assembled the structural members are rested vertically on the surface of the floor and grouted to suitable wall, or vertical immovable support means structure, by means of suitable fasteners and the seat along with its third leg is unfolded, the arm rests are

unfolded, the safety belt snap hook is unlatched from the buckle, else it be kept unlatched when not in use, the user sits on the said seat and secures himself/herself by belt lanyard from behind around the waist by adjusting the length and securing by snap latching the snap hook in the buckle. The user puts on the under garment on the dangling legs by the help of the hands and pulls it up under the seat to the waist and by using the arm rest stands on the legs, while being safely supported by the safety bars and safety belt, to adjust as well fasten the said garment by lace/cord, if so provided, to the waist, unlatch the snap hook from the buckle.

These and other features and advantages will be more readily understood by referring to the following detailed illustrations of the said Fall Prevention Apparatus disclosed hereinafter with reference to the accompanying drawings and which are generally applicable to other safety apparatus to fulfill particular application illustrated hereinafter.

BRIEF DESCRIPTION OF DRAWING:

The invention is described by way of example with reference to the following drawings:

Sheet 3/1 illustrates side view in Figure-1 and front elevation in Figure-2 while the said apparatus looks like A while user is in sitting posture and looks like B while user is in standing posture.

Sheet 3/2 illustrates side view in Figure-3 and front elevation in Figure-4 while the said apparatus is folded to the wall.

Sheet 3/3 illustrates the animated side view in Figure-5 while user is in sitting posture and the animated side view in Figure-6 while user is in standing posture.

In order that the manner in which the above-cited and other advantages and objects of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and therefore not to be considered limiting on its scope, the invention will be described with additional specificity and details through the use of the accompanying drawings.

Detailed description:

Sheet 3/1 comprises side view of the said invention in Figure-1 and front elevation in Figure-2 comprising vertical structural members 101 and 102 which are grouted to a sound wall 100 by means of fasteners 103 through the holes provided on the said structural members. Seat 125 is rotably mounted, so as to swivel such that it locks up in horizontal position and swivels vertically through right angle in folding position, at a suitable height between the structural members on a round bar and nut/bolts 126 being rigidly fastened to the said structural members. An additional member means third leg 129 is rotably attached to center of the said seat preferably in the front by a pin 128 such that when pulled out it rest on the floor for normal use and when the seat is lifted it swivels through right angle and occupies the space bellow the seat means folding position. Hand rest means hand support 120 and 121 are rotably mounted by means of fasteners/pins/rivets 123 to the respective structural members 101 and 102, so as to swivel such that it locks up in horizontal position and swivels vertically through right angle in folding position to occupy space between the structural members, at a suitable height. Safety bars 107 and 108 are rotably mounted, so as to swivel, by means of round bar and fasteners 105 to the respective structural members 101 and 102 at a suitable height. Slot 110 of suitable dimensions is provided on each member for the mounting of safety belt means safety harness 109. The adjustable length safety belt comprises pair of ring 111 and 112, pair of swiveling pin 113 and 114. The said pins 123 and 124 rotably and slidably mounted in slot 110 of the respective safety bar. Buckle 116 and snap hook 115 is attached to ends of the safety belt respectively. The said safety bars when swiveled vertically down occupy space between the structural members while in folding position.

There have thus been described certain preferred embodiments of fall prevention apparatus provided in accordance with the present invention. While preferred embodiments have been described and disclosed, it will be recognized by those with skill in the art that modifications are within the true spirit and scope of the invention. The claims are intended to cover all such modifications.

CLAIMS

We claim:-

1. Fall prevention apparatus for user safety suitable for use in bathroom, toilet or similar places, preventing slip, fall and injuries related thereto to user especially when body balance is required to be maintained accordingly like changing or adjusting clothes or undergarments etc. mainly comprising of a vertical structured members fastened parallel to wall, a foldable and adjustable seat, hand rest pivoted to structured member, safety bar and belt etc.
2. The Fall prevention apparatus as claimed in claim 1 for securing the user while changing postures means positions from sitting to standing, bending and vice the versa comprising:
 - (a) A pair of vertical structural members preferably rested on floor and mounted parallel to each other at a suitable distance and having holes for grouting to any solid vertical structure like wall and further having number of holes at right angle to the said grouting holes for fixing other embodiments;
 - (b) Other embodiment means platform means seat rotably mounted on round bar means pivot, fasteners, so as to swivel trough right angle, and further the said bar fixed to the structural members; further the seat swivels vertically through right angle but locks in horizontal position between said structural member;
 - (c) it comprises a member rotably mounted at the bottom of the said seat preferably at its frontal center means away from the said pivot and the said embodiment swivels through right angle where it rest/locks when vertical and when rotated through right angle hides below the said seat;
 - (d) it further comprises preferably a pair of hand rest means hand support pivoted to respective structural members at suitable height so that it is rigidly locks when horizontal however, it is free to move upward through right angle so as to be hidden in the respective space between structural members;
 - (e) it comprises a pair of safety bars means support rotably mounted on round bar and the said bar is rigidly fixed to structural members at a suitable height and the said safety bar swivel more than right angle on the said bar and the safety bars having slot of suitable dimensions for mounting of other embodiments, and the said pair of safety bar fit in the space between the structural members when pulled down and holds and swivels along the secured point of users body during the change of posture or position;
 - (f) it comprises a safety belt with snap hook and buckle or safety harness or bungee rubber to secure the waist having pair of guiding ring and swiveling

pins and the said swiveling pins each rotably and slidably mounted in the respective slot of the said safety bars;

3. The device as claimed in claim 1 comprises a pair of hand rest means hand support pivoted to respective structural members at suitable height so that it is rigidly locks when horizontal however, it is free to move upward through right angle so as to be hidden in the respective space between structural members;
4. The device as claimed in claim 1 comprises a pair of adjustable safety bars fixed to structural members at a suitable height and the said safety bar swivel more than right angle and having slot of suitable dimensions for mounting of other embodiments like safety belt, and the said pair of safety bar fit in the space between the structural members when pulled down and holds and swivels along the secured point of users body during the change of posture or position.
5. The device as claimed in claim 1 comprises an adjustable length safety belt with snap hook and buckle or safety harness or bungee rubber etc. to secure the waist connected to safety bars.
6. The said structural member both having similar multiple holes on the side for adjustment of heights of the embodiments as claimed in claim 1.
7. The said embodiments as claimed in claim 1 in the form of said apparatus be folded and unfolded.
8. The said apparatus as claimed in claim 1 be in the form of knocked down embodiments and hardware.

ABSTRACT

Primary objective of the present invention was conceived after noting number of cases of accidental fall in bathrooms presumably due to wet, slippery floor however after investigation it was noticed that while changing the under garment one stands on one leg and maneuvers to put in other leg when both hands are busy in holding the garment creates a vulnerable unbalance posture leading to fall many times fatal. As reported such fall results in serious injuries like bone fracture especially femur, traumatic shock, and unconsciousness and may be even fatal. In the present fall prevention apparatus invention will avert such situation and save not only precious lives but also avoid costly hospitalization. The said apparatus occupies small space, easy to install in most of the bathrooms, safer to use and cost effective further the body is secured safely and comfortably without hassle and efforts throughout when the users body posture shifts from sitting to standing and bending and vice the versa. Following invention is described in detail with the help of figure 1 and figure 2 of sheet 1 showing side view and front view of the apparatus.

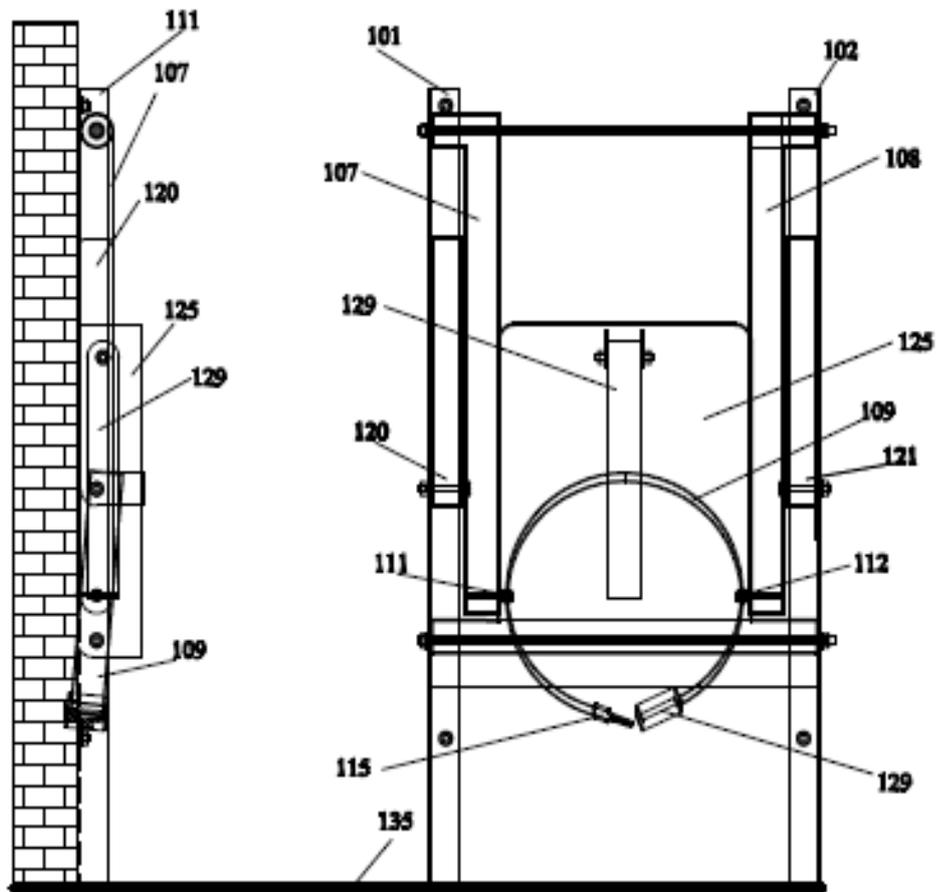


Figure 3

figure 4

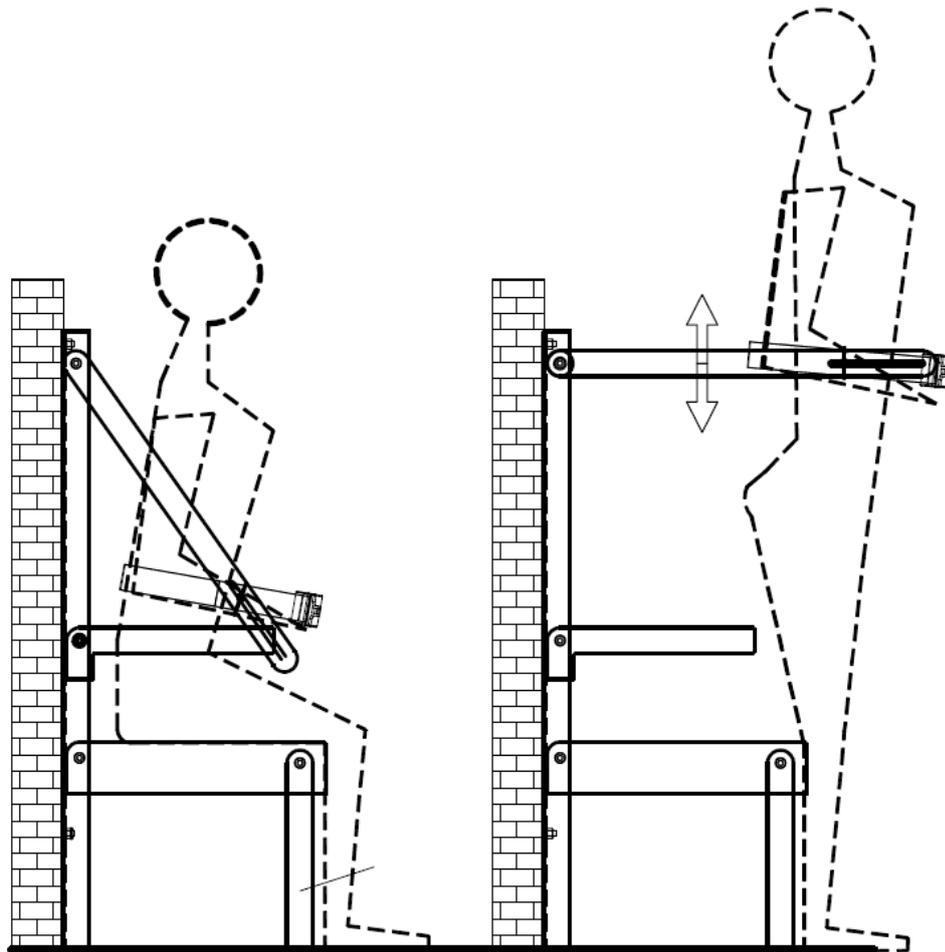


Figure 5

figure 6