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TOILET SEAT LIFTER

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Fig 2

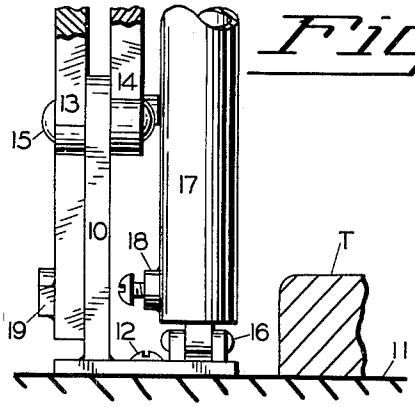


Fig 1

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TOILET SEAT LIFTER

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This invention relates to a toilet seat lifter and more particularly to one operated by a foot pedal. By the employment of foot pedals, the necessity of bending over to either lift or lower the seat is eliminated.

The primary object of this invention is the provision of a device which eliminates the necessity of touching the seat with the hands, since many times, even in the home, the seat is contaminated by human fecal particles and urine from previous careless users. In public restrooms this problem is especially prevalent and creates an extremely unsanitary condition and, in fact, many people are discouraged from the use of such facilities because of this ever-present problem. The instant invention overcomes this problem by eliminating the necessity of handling the seat with the user's hand.

An additional object of the invention is the provision of a device of this character which will be sturdy and durable in construction, reliable and efficient in operation, and simple and inexpensive to manufacture and install.

Other objects reside in the combinations of elements, arrangements of parts, and features of construction.

Referring specifically to the drawing:

FIGURE 1 is a side elevation of a conventional toilet bowl and seat with this device attached thereto, and shown in various stages of its operation by broken line positions.

FIGURE 2 is a rear sectional view taken substantially along line 2—2 of FIG. 1, as viewed in the direction of the arrows.

Similar reference characters refer to similar parts throughout the several views of the drawings.

The device of this invention consists of a base 10 secured to the bathroom floor 11 immediately adjacent the toilet bowl by suitable means, such as lag screws 12. To base 10 are attached operating arms, i.e., the seat raising foot pedal arm 13 and the seat lowering foot pedal arm 14. These two arms are pivotally mounted on the base 10 by a common pivot pin 15. Also attached pivotally, by pivot pin 16, is an air piston 17 with an air bleeder valve 18 associated therewith. The seat raising foot pedal arm 13 has on its one end a foot pedal 19, and, on its opposite end a connecting arm 20, pivotally mounted thereon, by a removable pivot pin 21, used to connect the arm 13 to the toilet seat 22. The connecting arm 20 is bent to a 90° angle at its upper extremity 20B to enable the bent portion of the arm 20 to be mounted or affixed to the underside of the seat 22, as best shown in FIG. 1. The attaching member 23 comprises a loose fitting clamp fitted over the bent portion of the connecting arm 20. Although not shown in the drawing, the end 20A of arm 20 employs a securing pin to prevent the arm 20 from falling out of the attaching member 23 and, in addition, makes it possible to afford strength to the operating mechanism by preventing excess side movement of the operating arms, therefore preventing bending of said arms.

The seat lowering foot pedal arm 14 is likewise provided with a foot pedal 24, on one end, and on its uppermost end a second connecting arm 25, between arm 14 and the first connecting arm 20. These are joined together by another readily removable pin 26, with the arms 14 and 25 joined by a pivot pin 27. The reason for the aforementioned removable pins will be explained later.

The specific operation of this device is as follows: the position of the seat raising arm 13 is shown, in broken lines in FIG. 1 at 13A, with the first connecting arm, illustrated in broken line, indicated at 20A and the toilet seat, likewise in broken line, at 22A. When it is desired to raise the seat 22, the user merely steps on and depresses foot pedal 19 as shown by arrow 28. This in turn causes the seat 22 to be raised, as shown by arrow 29, until the seat rests against the water-tank 30. This action is retarded by the air piston 17, which is connected, by its plunger 31, to the operating mechanism by the pin 26. The speed of this movement is controlled by the bleeder valve 18 on the air piston 17 by operating in the conventional manner.

When it is desirable to lower the seat, the lowering foot pedal 24 is depressed, as shown by the arrow 32, causing the seat to move toward its lowered position, as illustrated by the arrow 33. When the intermediate position of the seat, shown in broken line as 22B, is reached, gravity will lower the seat the rest of the way and the air piston 17 prevents the seat from "slamming" on rim 34 of the toilet bowl as it likewise prevents "slamming" of the seat against the water-tank 30 when the seat is raised.

The reason that the arm or rod 20 is attached to this device by removable pins 21, 26 and the securing pin, not shown, which attaches said arm to the attaching member 23, is so that this device may be mounted on either side of the bowl 34 by merely removing the arm 20 and reversing it so that the 90° L is pointing in the opposite direction.

It is now apparent that an invention is devised to raise and lower a toilet seat without the necessity of touching said seat with the hands, and at the same time prevents the seat from "slamming," either against the bowl or water-tank.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinafter shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative, and not in a limiting sense.

I claim:

1. A device for raising and lowering a toilet seat comprising, in combination, a base adapted to be positioned adjacent the base of a toilet bowl, an upright carried by said base, a seat raising lever pivoted at an intermediate point to said upright, a foot pedal at one end of said seat raising lever, an arm pivotally connected at one of its ends to the other end of said seat raising lever, means at the other end of said arm adapted to be pivotally connected to the seat of the toilet, a seat lowering bell crank lever pivoted to said upright, a common pivot serving as the pivoted mounting of both said seat raising and said seat lowering levers, a foot pedal at one end of said bell crank lever, and a link pivotally connected at one end to the other end of said bell crank lever and at the other end pivoted to an intermediate point of said arm.

2. A device for raising and lowering a toilet seat comprising, in combination, a base adapted to be positioned adjacent the base of a toilet bowl, an upright carried by said base, a seat raising lever pivoted at an intermediate point to said upright, a foot pedal at one end of said seat raising lever, an arm pivotally connected at one of its ends to the other end of said seat raising lever, means at the other end of said arm adapted to be pivotally connected to the seat of the toilet, a seat lowering bell crank lever pivoted to said upright, a common pivot serving as the pivoted mounting of both said seat raising and said seat lowering levers, a foot pedal at one end of said bell crank lever, and a link pivotally connected at one end to the other end of said bell crank lever and at the other end pivoted to an intermediate point of said arm, and means adapted to retard the speed of movement of the toilet seat when raised and lowered by said seat raising and seat lowering levers.

3. A device for raising and lowering a toilet seat comprising, in combination, a base adapted to be positioned

adjacent the base of a toilet bowl, an upright carried by said base, a seat raising lever pivoted at an intermediate point to said upright, a foot pedal at one end of said seat raising lever, an arm pivotally connected at one of its ends to the other end of said seat raising lever, means at the other end of said arm adapted to be pivotally connected to the seat of the toilet, a seat lowering bell crank lever pivoted to said upright, a common pivot serving as the pivoted mounting of both said seat raising and said seat lowering levers, a foot pedal at one end of said bell crank lever, a link pivotally connected at one end to the other end of said bell crank lever and at the other end pivoted to an intermediate point of said arm, means adapted to retard the speed of movement of the toilet seat when raised and lowered by said seat raising and seat lowering levers, said last-mentioned means comprising a hydraulic cylinder pivoted to said base, and a piston rod extending from said cylinder pivoted at the end to an intermediate point of said arm.

4. A device for raising and lowering a toilet seat comprising, in combination, a base adapted to be positioned adjacent the base of a toilet bowl, an upright carried by said base, a seat raising lever pivoted at an intermediate point to said upright, a foot pedal at one end of said seat raising lever, an arm pivotally connected at one of its ends to the other end of said seat raising lever, means at the other end of said arm adapted to be pivotally connected to the seat of the toilet, a seat lowering bell crank lever pivoted to said upright, a common pivot serving as the pivoted mounting of both said seat raising and said lowering levers, a foot pedal at one end of said bell crank lever, a link pivotally connected at one end to the other end of said bell crank lever and at the other end pivoted to an intermediate point of said arm, means adapted to retard the speed of movement of the toilet seat when raised and lowered by said seat raising and seat lowering levers, said last-mentioned means comprising a hydraulic cylinder pivoted to said base, a piston rod extending from said cylinder pivoted at the end to an intermediate point of said arm, and an adjusting valve carried by said cylinder.

5. A device for raising and lowering a toilet seat comprising, in combination, a base adapted to be positioned adjacent the base of a toilet bowl, an upright carried by said base, a seat raising lever pivoted at an intermediate point to said upright, a foot pedal at one end of said seat raising lever, an arm pivotally connected at one of its ends to the other end of said seat raising lever, means at the other end of said arm adapted to be pivotally connected to the seat of the toilet, a seat lowering bell crank lever pivoted to said upright, a common pivot serving as the pivoted mounting of both said seat raising and said seat lowering levers, a foot pedal at one end of said bell crank lever, a link pivotally connected at one end to the other end of said bell crank lever and at the other end pivoted to an intermediate point of said arm, means adapted to retard the speed of movement of the toilet seat when raised and lowered by said seat raising and seat lowering levers, said last-mentioned means comprising a hydraulic cylinder pivoted to said base, a piston rod extending from said cylinder pivoted at the end to an intermediate point of said arm, and an adjusting valve carried by said cylinder, all of the pivoted connections comprising removable pins whereby the device may be interchangeably mounted on either side of a toilet bowl.

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