

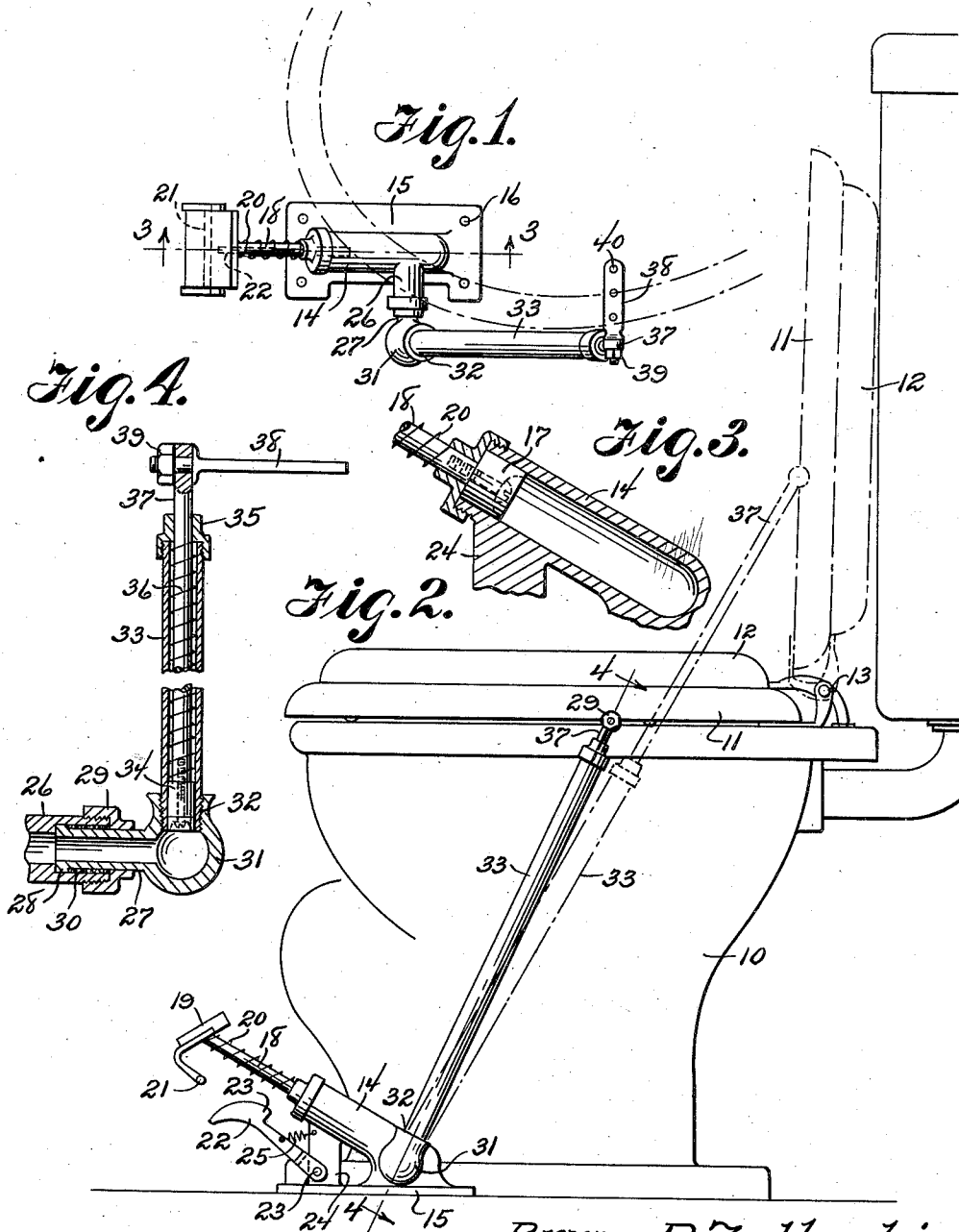
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TOILET SEAT AND COVER OPERATOR

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TOILET SEAT AND COVER OPERATOR

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4 Claims. (Cl. 4—251)

This invention relates to toilet seat and cover operators and has for an object to provide novel apparatus for lifting a toilet seat and cover without the necessity of using the hands or touching in any way.

A further object is to provide a hydraulically operated device which will gently raise the seat and cover and gently lower the same so that danger of breakage of the parts will be eliminated.

A further object is to provide in connection with a fixed hydraulic cylinder having a foot operated piston, a rotatable sleeve carrying a hydraulic cylinder, the piston of which is pivotally connected to the seat, the sleeve permitting the last named cylinder to swivel during raising and lowering the seat so that ease of operation will be greatly promoted.

A further object is to provide apparatus of this character which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a plan view of toilet seat and cover lifting apparatus constructed in accordance with the invention.

Figure 2 is a side elevation of the apparatus in applied position.

Figure 3 is a detail longitudinal sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a detail longitudinal sectional view taken on the line 4—4 of Figure 3.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a toilet having a seat 11 and a cover 12 hinged to the toilet at 13, these parts all being conventional. The operator comprising the subject matter of this invention comprises a stationary cylinder 14 extending at a forward angle from a base 15 which is fixed to the floor by screws 16 or other connectors. A piston 17 is slidably mounted in the cylinder and is provided with a piston rod 18 which is equipped at the top with a pedal 19. A spring 20 encircles the piston rod between the pedal and the cylinder and normally holds the

pedal raised and the piston at its upper limit of movement.

The pedal is provided with an arm 21 which extends below and transversely of the pedal and is adapted to be received by a hooked spring pressed pawl 22 which is pivotally mounted as shown at 23 to a standard 24 which supports the upper end of the cylinder 14 on the base 15. The arm 21 rides over the pawl and lodges back of the hook 23 thereof to hold the piston 17 at its lower limit of movement and thus hold the seat and the cover raised, as will presently be described. When the pawl 22 is rocked downwardly by the operator's foot against the tension of its spring 25, the arm 21 will be released whereupon the spring 20 returns the pedal and the piston to neutral position.

The cylinder 14 is provided with a lateral nipple 26 which rotatably receives a sleeve 27, best shown in Figure 4, the sleeve being provided with a boss 28 between which, and a cap 29, threaded on the nipple, packing material 30 is interposed to make the joint leak-tight.

The sleeve terminates in a ball connection 31 having a branch 32 into which is threaded the lower end of a cylinder 33, this cylinder being of greater length but smaller in diameter than the cylinder 14 so that when the water, oil, or other fluid pressure medium in the cylinder 14 is forced into the cylinder 33 the piston 34 in the cylinder 33 will travel a greater rectilinear distance than the piston 17 in the cylinder 14, as will be understood.

The upper end of the cylinder 33 is closed by a cap 35 and a spring 36 surrounds the piston rod 37 between the cap and the piston which spring is compressed by downward movement of the seat and the cover to cushion such downward movement and also to assist in elevating the seat and the cover when the foot pedal is depressed.

An attaching plate 38 is bolted to the upper end of the piston rod 37, as shown at 39, and is secured to the underneath face of the seat 11 by screws 40 or other connectors.

In operation the operator depresses the foot pedal 19 to force the fluid pressure medium ahead of the piston 17 and against the piston 34 which forces out the piston rod 37, the sleeve 27 swiveling in the nipple 26 sufficiently to permit the cylinder 33 to rock on a horizontal axis from the position in full lines to the position in dotted lines shown in Figure 2 whereby to lift the seat 11 and cover 12 to the dotted line position. When the foot pedal nears its lower limit of movement the arm 21 catches in rear of the hook 55

23 of the pawl 22 which latter thereupon holds the foot pedal stationary to hold the seat and the cover raised. To lower the seat and the cover it is merely necessary to step on the pawl 22 to depress it sufficiently to release the arm 21 whereupon the spring 20, gives the initial impulse to raise the foot pedal and subsequently the weight of the cover and the seat forces the piston rod 37 downwardly to push out the fluid pressure medium ahead of the piston 17 and permit lowering of the seat cover, the seat being cushioned during such lowering movement by compression of the spring 36 which latter tends to make elevation of the seat and the cover easier when the foot pedal 19 is next depressed.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

20 What is claimed is:

1. A toilet seat and cover operator comprising a fixed hydraulic cylinder, a piston therein, a pedal carried by said piston, a rotatable sleeve communicating with the cylinder, a hydraulic cylinder carried by the sleeve, a piston in the last named cylinder, means engageable with said pedal for locking said first piston in its lower position, and means for connecting the last named piston to the seat, said sleeve permitting of the last named cylinder pivoting around the axis of rotation of the sleeve during raising and lowering of the seat.

2. A toilet seat and cover operator comprising a forwardly extending stationary hydraulic cylinder, a piston therein, a pedal carried by said piston, means engageable with said pedal for locking the piston at its lower limit of move-

ment, a lateral nipple on the cylinder, a sleeve rotatably mounted in the nipple, a hydraulic cylinder carried by the sleeve, a piston in the last named cylinder, a bracket for securing the last named piston to the toilet seat, and a spring associated with the last named piston for cushioning downward movement of the seat and assisting in elevating the seat when the foot operated piston is depressed.

3. A toilet seat and cover operator comprising an upwardly and forwardly extending hydraulic cylinder, a second hydraulic cylinder pivotally mounted on the first named hydraulic cylinder, means for connecting the second named cylinder to a toilet seat, pistons in both cylinders, a foot pedal carried by the piston of the first named hydraulic cylinder, a laterally extending arm on the pedal, and a spring pawl pivotally mounted below the first named cylinder and adapted to engage said arm and yieldably hold the piston of the first named cylinder at its lower limit of movement.

4. A toilet seat and cover operator comprising a base, an upwardly and forwardly inclined cylinder fixed to said base, a piston slidable in said cylinder, a rod secured to said piston and extending outwardly of said cylinder, a pedal fixed to the outer end of said rod, a spring about said rod constantly urging said piston to an uppermost inoperative position, coacting means carried by said base and said pedal for releasably holding said piston in a lower operative position, a second cylinder, means connecting said second cylinder with said first cylinder, a second piston in said second cylinder, and means connecting said second piston to a seat.

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