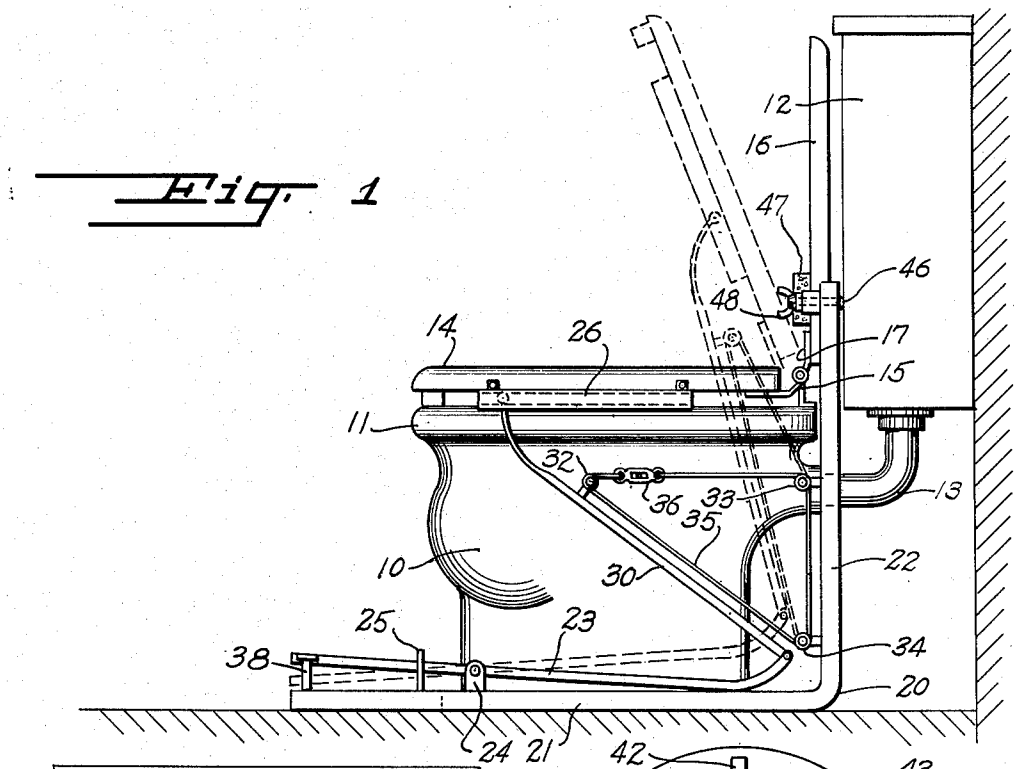
Dec. 8, 1953 J. JUNG 2,661,484

FOOT OPERATED TOILET SEAT LIFTER

Filed Jan. 23, 1953

Fig. 1



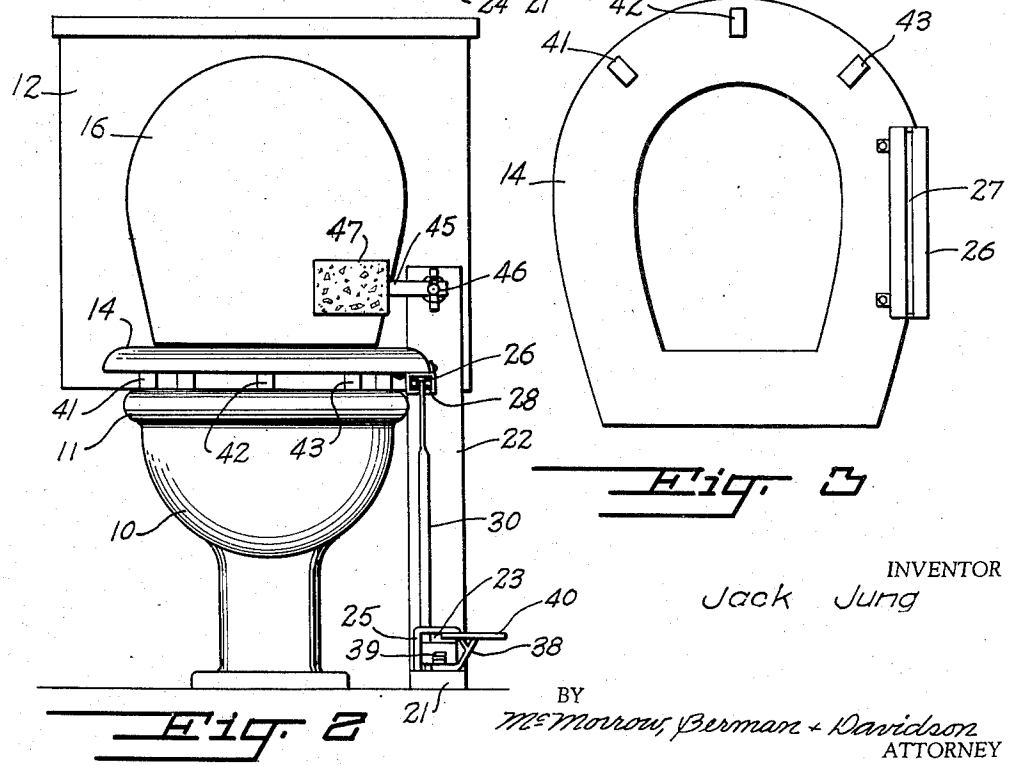


Fig. 2

Fig. 3

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FOOT OPERATED TOILET SEAT LIFTER

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3 Claims. (Cl. 4—251)

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This invention relates to foot operated devices for lifting hinged objects, such as toilet seats, and more particularly to an attachment for a toilet bowl and seat combination to enable a person to raise the toilet seat by foot pressure on the attachment.

It is among the objects of the invention to provide an improved foot operated device for lifting hinged objects, such as toilet seats, which is effective, when subjected to foot pressure, to lift the associated seat and hold the seat in raised position; which includes latch means which holds the associated seat in raised position and which is manually releasable to permit the seat to descend by gravity to its position on the top of the associated bowl; which includes a friction damping means to prevent the associated seat from violently striking the toilet bowl or tank associated with the seat; which provides resilient cushioning means for the seat; and which is simple and durable in construction, economical to manufacture, easy to install, and positive and effective in operation.

Other objects and advantages will become apparent from a consideration of the following description and the appended claims in conjunction with the accompanying drawing wherein:

Figure 1 is a side elevational view of a toilet seat assembly with a seat lifting attachment illustrative of the invention operatively applied thereto;

Figure 2 is a front elevational view of the toilet seat assembly and seat lifting attachment; and

Figure 3 is a bottom plan view of the toilet seat.

With continued reference to the drawing, the toilet assembly comprises a bowl 10 of well known shape having around its top a rim 11, the upper surface of which is substantially in a horizontal plane, a tank 12 disposed rearwardly of the bowl 10 and extending above the plane of the top surface of the bowl, a water connection 13 between the bottom of the tank and the rear of the bowl, a seat 14 disposed above the top surface of the bowl 10 and hinged at its rear end to the rear of the bowl by a hinge 15 and a seat cover 16 disposed above the seat 14 and hinged at its rear end to the rear of the bowl by a cover supporting portion 17 of the hinge 15.

As the toilet bowl, tank, seat and seat cover combination may be of a form well known to the art, a more detailed illustration and description is considered unnecessary for the purposes of the present disclosure.

The seat lifting attachment of the present invention comprises a right angular shaped support, generally indicated at 20, including an elongated base 21 adapted to be mounted on the floor adjacent one side of the bottom flange of the toilet bowl and to extend forwardly and rearwardly of the bowl, and a standard 22 extending perpendicularly upward from the end of the base 21 disposed rearwardly of the bowl and extending above the top surface of the bowl adjacent the front of the tank 12.

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An elongated lever 23 is disposed above the base 21 and extends longitudinally of the base and a bearing structure 24 extends upwardly from the base intermediate the length of the base and provides a fulcrum supporting the lever intermediate the length of the lever. A slotted guide 25 extends upwardly from the base at a location spaced from the side of the bearing means 24 remote from the standard 22 and receives the adjacent portion of the lever to restrict the movement of the ends of the lever to a substantially vertical direction.

An elongated hollow guideway 26 of rectangular cross sectional shape is mounted on the under side of the seat 14 and extends longitudinally of the seat and this guideway is provided in its bottom side with a longitudinally extending slot 27 disposed medially of the width of the bottom side of the rectangular guideway.

A slide device 28 in the form of a carriage having rollers journaled one at each side thereof is disposed in the rectangular guideway 26 and is movable longitudinally of the guideway.

An elongated link 30 is pivotally connected at one end to the end of the lever 23 nearest the standard 22 and the other end of this link 30 is pivotally connected to the slide 28.

A cable sheave 32 is mounted on the link 30 intermediate the length of the link and cable sheaves 33 and 34 are mounted on the front side of the standard 22 with the sheave 34 disposed adjacent the corresponding end of the base 21 and the sheave 33 disposed adjacent the top of the bowl 10. A cable or strand 35 extends around the sheaves 32, 33 and 34 and has its ends adjustably secured together by a turnbuckle 36 by means of which the cable can be tightened around the cable sheaves.

With this arrangement, when downward foot pressure is applied to the end of the lever 23 remote from the standard 22 the end of the lever adjacent the standard is raised, forcing the upper end of the link 30 upwardly and rearwardly from the position illustrated in full lines to the position illustrated in broken lines in Figure 1,

and raising the seat 14. A latch 38 is pivotally mounted on the base 21 near the end of the base remote from the standard 22 and, when the corresponding end of the lever 23 is forced downwardly by foot pressure, this end of the lever passes the adjacent side of the latch 38 and the latch is resiliently moved into engagement with the lever by a spring 39 disposed between the upper surface of the latch and the head of a bolt extending through the latch and secured at its end remote from its head to the base 21. The latch is provided with a foot tread or pedal 40 upon which foot pressure may be exerted to release the latch from the lever against the force of spring 39 and free the seat 14 for descent by gravity from its raised position to its position in which it rests upon the top surface of the toilet bowl 10.

Pads 41, 42 and 43 are mounted on the under side of the seat at locations spaced apart around the front of the seat and these pads extend from the under surface of the seat an extent somewhat greater than that which the guideway 26 extends from the under side of the seat, so that the pads engage to top surface of the bowl when the seat descends and prevent any objectionable shock when the descent of the seat is stopped by engagement of the seat with the top surface of the bowl.

Swinging movement of the seat in both its raising and descending directions is retarded by the frictional resistance of the cable or strand 35 moving around the associated cable sheaves, so that all movements of the seat are damped to an extent such that no objectionable shock or noise occurs when the seat is raised or lowered.

An arm 45 is pivotally connected at one end to the standard 22 near the upper end of the standard by a bolt 46 extending through registering apertures in the arm and the standard and a pad 47 of resilient material is carried by the arm 45 at a location spaced from the bolt 46.

When the seat is to be raised and lowered by the seat lifting attachment, above described, the seat cover 16 is raised to its position against the front of the tank 12 and the arm 45 is swung about its pivotal connection with the standard 22 to a position at which the pad 47 is disposed at the side of the cover 16 remote from the tank 12 and holds the cover in raised position. The wing nut 48 on the bolt 46 is then tightened to hold the pad 47 in this position and the pad not only retains the cover 16 in raised position, but also provides a resilient stop for the seat 14 when the seat is raised by the seat lifting attachment.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. In combination with a toilet assembly including a bowl, a tank disposed at the rear of the bowl and extending above the top of the bowl, and a seat and seat cover hinged to said bowl at the rear of the top of the bowl for swinging movement between the top of the bowl and the front of the tank, a seat raising attachment comprising a support including a base disposed adjacent the bottom of the bowl and a standard extending upwardly from one end of said base and disposed adjacent the front of said tank, a lever disposed above said base and extending longitudinally thereof, means extending upwardly from said base and providing a fulcrum supporting said lever intermediate the length of the latter, a guideway mounted on the under side of said seat and extending longitudinally thereof, slide means engaging and movable longitudinally of said guideway, a link pivotally connected at one end to the end of said lever adjacent said standard and connected at its other end to said slide means, a sheave on said link intermediate the length thereof, sheaves on said standard at spaced apart locations therealong, a strand extending around said sheaves and having its ends connected together to support said link on said standard and enable said link to raise said seat in response to downward foot pressure on the end of said lever remote from said standard, and a latch mounted on said base near the end of the latter remote from said standard and engaging the corresponding end of said lever when the latter is forced downwardly by foot pressure thereon to hold said seat in raised position, said latch being released from said lever by foot pressure on said latch to free said seat to descend by gravity to the top of said bowl.

2. In combination with a toilet assembly including a bowl, a tank disposed at the rear of the bowl and extending above the top of the bowl, and a seat and seat cover hinged to said bowl at the rear of the top of the bowl for swinging movement between the top of the bowl and the front of the tank, a seat raising attachment comprising a support including a base disposed adjacent the bottom of the bowl and a standard extending upwardly from one end of said base and disposed adjacent the front of said tank, a lever disposed above said base and extending longitudinally thereof, means extending upwardly from said base and providing a fulcrum supporting said lever intermediate the length of the latter, a guideway mounted on the under side of said seat and extending longitudinally thereof, slide means engaging and movable longitudinally of said guideway, a link pivotally connected at one end to the end of said lever adjacent said standard and connected at its other end to said slide means, a sheave on said link intermediate the length thereof, sheaves on said standard at spaced apart locations therealong, a strand extending around said sheaves and having its ends connected together to support said link on said standard and enable said link to raise said seat in response to downward foot pressure on the end of said lever remote from said standard, and a latch mounted on said base near the end of the latter remote from said standard and engaging the corresponding end of said lever when the latter is forced downwardly by foot pressure thereon to hold said seat in raised position, said latch being released from said lever by foot pressure on said latch to free said seat to descend by gravity to the top of said bowl, and pads of resilient material projecting from the under side of said seat at the front thereof to cushion said seat when the latter descends to the top surface of said bowl.

3. In combination with a toilet assembly including a bowl, a tank disposed at the rear of the bowl and extending above the top of the bowl, and a seat and seat cover hinged to said bowl at the rear of the top of the bowl for swinging movement between the top of the bowl and the

front of the tank, a seat raising attachment comprising a support including a base disposed adjacent the bottom of the bowl and a standard extending upwardly from one end of said base and disposed adjacent the front of said tank, a lever disposed above said base and extending longitudinally thereof, means extending upwardly from said base and providing a fulcrum supporting said lever intermediate the length of the latter, a guideway mounted on the under side of said seat and extending longitudinally thereof, slide means engaging and movable longitudinally of said guideway, a link pivotally connected at one end to the end of said lever adjacent said standard and connected at its other end to said slide means, a sheave on said link intermediate the length thereof, sheaves on said standard at spaced apart locations therealong, a strand extending around said sheaves and having its ends connected together to support said link on said standard and enable said link to raise said seat in response to downward foot pressure on the end of said lever remote from said standard, and

a latch mounted on said base near the end of the latter remote from said standard and engaging the corresponding end of said lever when the latter is forced downwardly by foot pressure thereon to hold said seat in raised position, said latch being released from said lever by foot pressure on said latch to free said seat to descend by gravity to the top of said bowl, an arm pivotally mounted on said standard adjacent the top end of the standard and swingable about its pivotal connection with said standard, and a pad of resilient material carried by said arm at a location spaced from the pivotal connection between said arm and said standard and movable to a position in which it engages said cover at the side of said cover remote from said tank when said cover is in raised position to hold said cover in raised position and also provide a cushion for said seat when the seat is raised.

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No references cited.