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CLOSET SEAT OPERATOR

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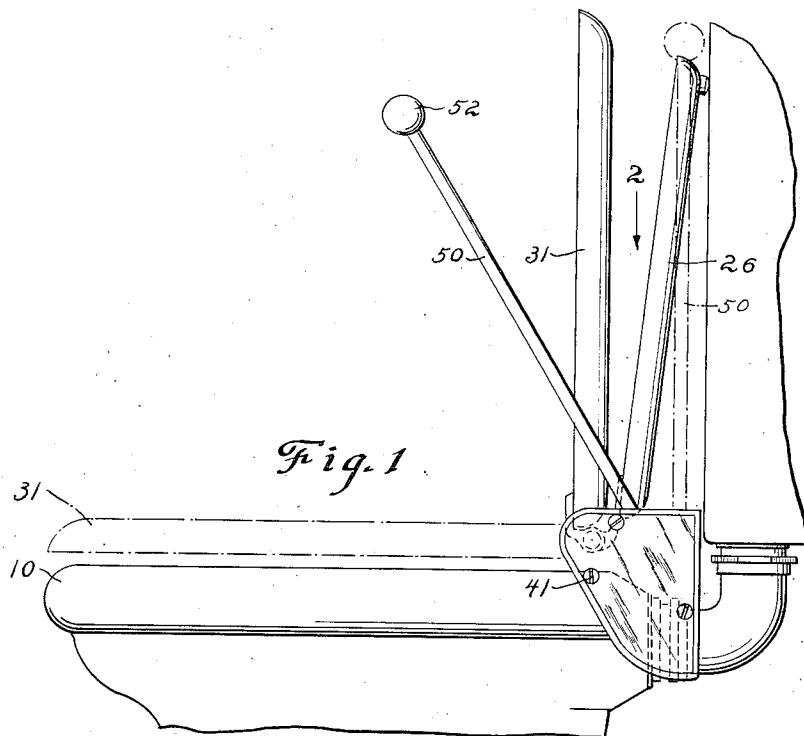
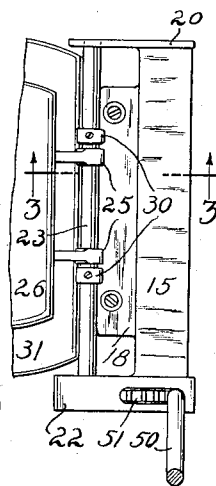
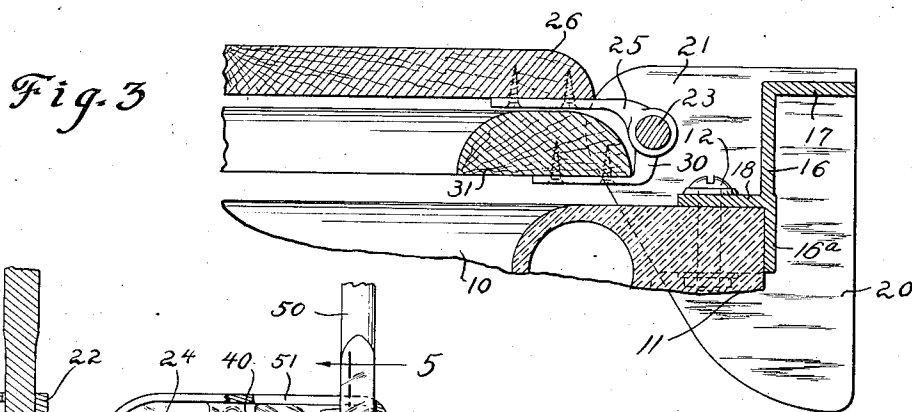
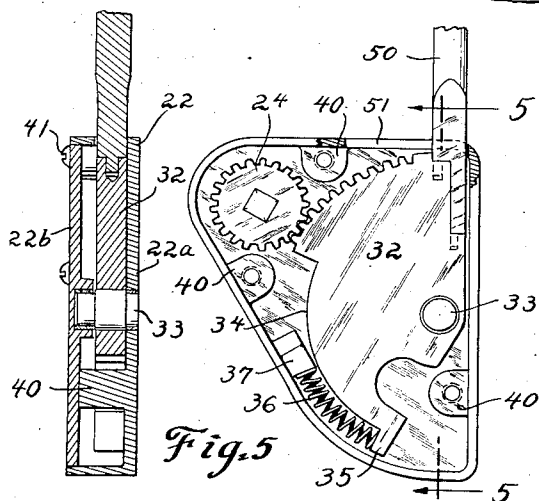


Fig. 4

Fig. 5

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CLOSET SEAT OPERATOR

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5 Claims. (Cl. 4-251)

The present invention relates to closure operators and more specifically to devices for operating the seats of toilets or water closets and has among its objects a means of operating such closures by means of a handle or lever spaced therefrom.

Another object is an operating device of the kind indicated which may be actuated with a minimum of effort throughout its movement and thereby becomes less subject to damaging the closure through banging against the limiting means at either end of its movement.

Still another object is means of the kind indicated which may be applied to standard closets with a minimum of modification.

Other objects will readily occur to those skilled in the art upon reference to the following description and the accompanying drawing in which

Fig. 1 is a side elevation of the device as applied to a closet seat.

Fig. 2 is a plan view of the operating means.

Fig. 3 is an enlarged section on line 3-3 of Fig. 2.

Fig. 4 is a view of the gearing casing with the cover removed, and

Fig. 5 is a section on line 5-5 of Fig. 4.

Referring to the drawing the upper portion of a water closet bowl is shown at 10 and this, as is usual, is provided with a rearwardly extending flange portion or lug 11 having openings there-through for the passage of bolts 12, the openings serving in the conventional form for securing the seat hinges.

Fixed to the portion 11 by means of the bolts or screws 12 is a bracket, indicated as a whole by the numeral 15, which bracket is preferably L-shaped in section with the long arm or plate portion 16 extending vertically and the short plate portion 17 horizontally arranged at the top and extending rearwardly. This L-shaped member 16-17 is preferably somewhat longer than the bowl portion 10 and at a point intermediate of the width of part 16 is provided a forwardly extending plate portion 18 having openings for bolts 12. This portion 18, together with the lower part 16a of the L-shaped member at right angles thereto forms a rigid seat for the bracket upon the flange 11.

At one end of the member 16-17 and preferably formed integrally therewith is a plate 20 having a portion 21 extending a short distance forward and at the other end of the member is a gear box 22 having an equal forward extension, while rotatably mounted in these forward exten-

sions is a shaft 23 of sufficient length to project into the gear box 22 and carry fixed thereto the gear 24. This shaft is preferably in position to form a pintle for the hinge members 25 which are loose thereon and which carry the lid or cover 26 of the closet.

Also carried on shaft 23 but fixed thereto are two hinge members 30 serving to support and actuate the seat 31 when the shaft is rotated.

The gear box 22 encloses, as stated, the gear 24 but also contains a gear segment 32 rotatably mounted therein and meshing with gear 24 as shown in Fig. 4. This segment 32 is conveniently mounted upon a short shaft 33 having its two ends with bearings in the box wall 22a and the cover 22b although other mounting means may be provided.

Further, the segment 32 is cut away at one side as at 34 to provide an abutment 35 and a space for a counterbalancing spring 36, the latter acting between abutment 35 and a lug 37 fixed to a gear box wall.

Suitable lugs 40 suitably drilled and tapped may be provided in the gear box for reception of screws 41 serving to retain in place the cover 22b.

As shown in the drawing, the segment 32 is rotatable by means of a handle or lever 50 extending into the gear box 22 through a slot 51 and fixed in any suitable manner to the segment. This handle 50 may be bent or inclined as indicated in Fig. 2 and provided with a knob 52 or other handle.

Now having described the invention and the preferred embodiment thereof, it is to be understood that said invention is to be limited, not to the specific details herein set forth, but only by the scope of the claims which follow.

What I claim is:

1. In combination with a container having a projecting flange portion and a closure member, an operating device for said closure member comprising a bracket adapted to be secured to said flange portion, a rotatable shaft carried by said bracket, means for fixing the closure member to said shaft, means for rotating said shaft to thereby move said closure member and spring means for counterbalancing at least in part the weight of said closure, said rotating means and said counterbalancing means both being carried by said bracket.

2. For use with a container open at its top and having a horizontally extending outer flange portion, a closure and operating means therefor comprising a closure member adapted to overlie said container, a horizontally arranged shaft,

means for fixing an edge of said closure to said shaft, a bracket in which said shaft is rotatably mounted and which is adapted to be fixed to said flange portion, and means carried solely by said bracket for rotating said shaft.

3. Seat operating means for water closets comprising a bracket adapted to be fixed to a closet bowl, a seat carrying shaft extending laterally of said bowl and rotatably mounted in said bracket, a housing carried by said bracket and into which said shaft extends, a gear fixed to said shaft within said housing, a gear segment rotatably mounted within said housing and meshing with said gear, spring means coacting with said segment to counterbalance at least partially the weight of said closure and operating means extending from said housing and fixed to said segment.

4. Seat operating means for water closets comprising a bracket adapted to be fixed to a closet bowl, a seat carrying shaft extending laterally

of said bowl and rotatably mounted in said bracket, a housing carried by said bracket and into which said shaft extends, a gear fixed to said shaft within said housing, a gear segment rotatably mounted within said housing and meshing with said gear, operating means extending from said housing and fixed to said segment, and means within said housing for counterbalancing the weight of said seat.

5. In an operating device for water closet seats, a bracket member adapted to be fixed to a closet bowl, and supporting the seat and operating means, said bracket comprising a vertically positioned plate member having a forwardly extending plate portion intermediate its height and a rearwardly extending plate portion near its upper edge, a transverse plate at one end of said first plate and a housing at the other end thereof.

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