Dec. 11, 1951 F. J. SCHMITZ 2,578,153

TOILET SEAT LOCKING HINGE

Filed Aug. 29, 1946

Fig. 1.

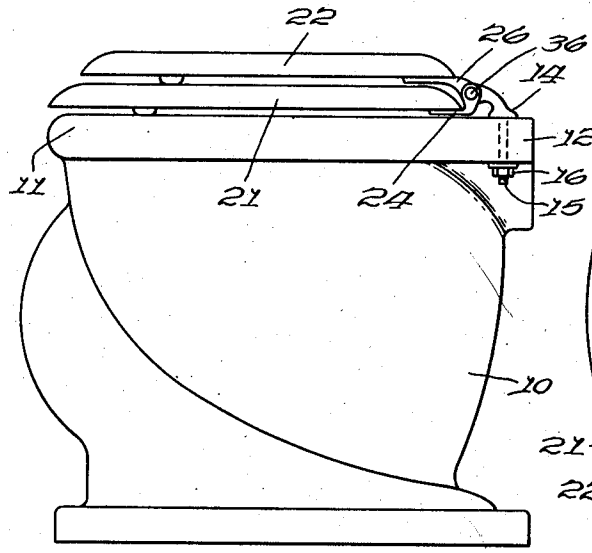


Fig. 2.

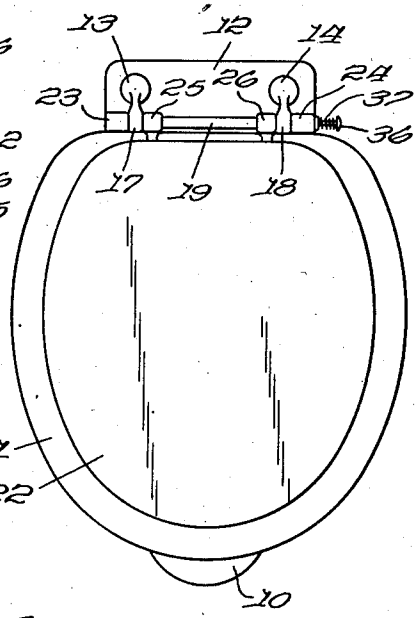


Fig. 3.

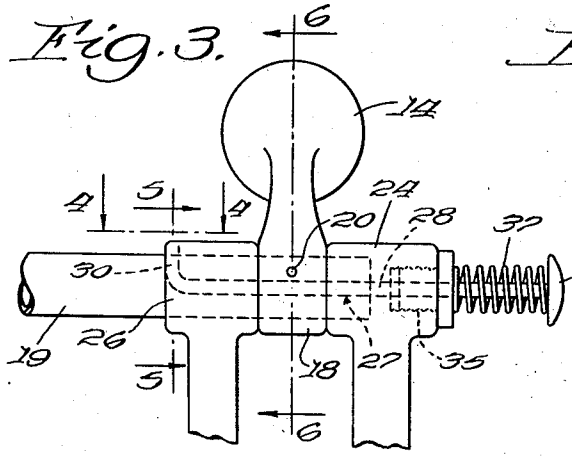


Fig. 4.

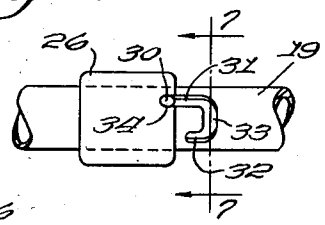


Fig. 5.

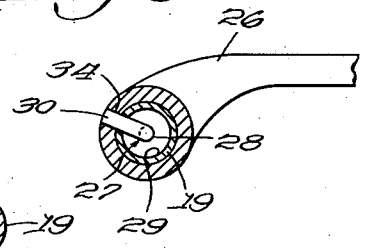
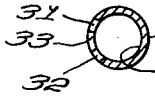


Fig. 7.



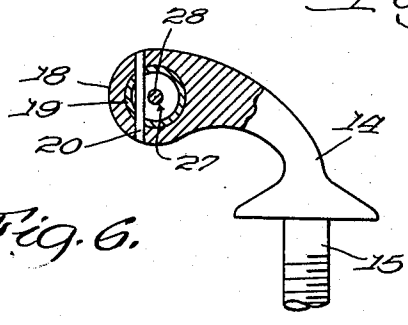


Fig. 6.

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Patented Dec. 11, 1951

2,578,153

UNITED STATES PATENT OFFICE

2,578,153

TOILET SEAT LOCKING HINGE

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Application August 29, 1946, Serial No. 693,673

2 Claims. (Cl. 4—236)

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This invention relates to a new and improved toilet seat and has for one of its principal objects the provision of means for normally maintaining the seat in a closed position.

An important object of this invention is to provide a lock for toilet seats to prevent undesired tampering therewith.

Another important object of this invention is to equip a toilet bowl seat with a hinge having a manually releasable lock.

A further object of this invention is the provision of a toilet seat hinge with a spring retained locking means to hold the seat in closed position and the locking means being releasable by push-button means to permit the seat to be opened.

A still further object of the invention is to provide a device associated with the hinge of a toilet seat to optionally lock the seat in releasable closed position or to eliminate altogether the function of the lock.

The toilet seat lock of this invention was designed to prevent small children from clogging toilet bowls with their toys or balls and also to prevent them from playing in the bowls. Children invariably put their playthings in toilet bowls with the result that it is necessary to call a plumber to get them out and the expense is exorbitant. Further, children seem to enjoy playing in the bowls, and although parents make extreme efforts to keep the bowls very clean they still do not want their children playing in the toilet bowls. It is, therefore, an important object of this invention to provide a device associated with the hinge of a toilet seat to normally keep the seat locked against the prying hands of small children and to provide for easy unlocking of the seat and also to provide means for eliminating the lock altogether when visitors are in the house.

Other and further important objects of this invention will become apparent from the disclosures in the following specification and accompanying drawings, in which:

Figure 1 is a side elevational view of a toilet bowl with the seat and hinge of this invention mounted thereon.

Figure 2 is a top plan view of the device as shown in Figure 1.

Figure 3 is an enlarged detail of the novel hinge of this invention.

Figure 4 is an enlarged detail of a portion of the hinge structure as viewed on line 4—4 of Figure 3.

Figure 5 is a sectional view taken on the line 5—5 of Figure 3.

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Figure 6 is a sectional view taken on the line 6—6 of Figure 3.

Figure 7 is a sectional view taken on the line 7—7 of Figure 4.

As shown in the drawings:

The reference numeral 10 indicates generally a toilet bowl made of a china material or the like and having a flat upper surface 11 and a flange 12 for the purpose of attaching a seat thereto. A pair of spaced brackets 13 and 14 are fixedly attached to the bowl flange 12 by means of the threaded shanks 15 and nuts 16. The upwardly extending portions of the brackets 13 and 14 are provided with aligned sockets 17 and 18, respectively. A hinge shaft 19 is supported in the aligned sockets 17 and 18 spaced above the flat upper surface 11 of the bowl 10. A pin 20 shown in Figure 6 is press fitted through aligned apertures in the socket 18 and the shaft 19 to fix the shaft against rotation or axial movement with respect to the brackets 13 and 14 or to the bowl 10. The purpose of the pin 20 is merely to hold the hinge shaft fixed, and it is obvious that it could be associated with the bracket 13 and socket 17 or may take a different form such as a key or a squaring of the shaft and a similar squaring of the socket or sockets.

The toilet seat assembly consists of a lower seat 21 and an upper seat or cover 22, both of which are hingedly attached to the hinge shaft 19. The lower seat 21 has hinge cap members 23 and 24 which fit over the ends of the hinge shaft 19 and journally and hingedly carry the lower seat 21. The upper seat 22 is mounted on the hinge shaft 19 by hinge members 25 and 26 which are journaled on the shaft 19 intermediate the spaced supporting brackets 13 and 14. The toilet seat construction is relatively standard as the upper and lower seats swing open about the hinge shaft 19.

The toilet bowl, seat and hinge construction differs from the standard in that it is capable of being locked in closed position. As previously stated the purpose of the lock is to prevent children from putting objects in or to play in the unsanitary toilet bowl. An L-shaped locking member 27 is axially slidable in the hinge shaft 19. The long side 28 of the L-shaped locking member 27 is carried in a central bore 29 in the hinge shaft 19, and the short side 30 is movable in a radial notch 31 joining the bore 29. As best shown in Figure 4, the radial notch 31 is the longer of two such notches. The other radial notch 32 is shorter in length and does not extend to and beyond the hinge member 26 as does the

longer notch 31. The two radial notches 31 and 32 are joined by a segment notch 33 as shown in Figure 7. When the L-shaped locking member 27 is in its innermost position, its shorter side 30 is in the segment notch 33, and by rotating the long side 29 of the locking member, the short side 30 may be placed in alignment with either of the radial notches 31 and 32.

When the upper seat or cover 22 is in bowl closing position a notch 34 in the hinge member 26 is in alignment with the longer radial notch 31 in the hinge shaft 19. Thus, when the L-shaped locking member 27 is in its outermost position, the short side 30 engages both notches 31 and 34, and inasmuch as the shaft 19 is fixed against rotation, the pin or locking member holds the hinge member 26 from functioning and the seat or cover 22 is locked in closed position.

The long side 28 of the L-shaped locking member 27 passes out through an opening in the hinge cap member 24 of the lower seat 21. A bushing 35 threadedly engages the opening in this hinge cap member and centers and guides the locking member 27 in its axial shifting movement. The end of the long side 28 is provided with a push button 36. A coil spring 37 surrounds the locking member between the hinge cap member 24 and the push button 36 and normally maintains the locking member in its outermost or seat locking position. When the upper seat 22 is held against raising movement, it of course holds the lower seat 21 in closed position.

When adult members of the household desire to use the toilet, it is merely necessary to push inwardly on the push button 36 against the action of the spring 37. The push button 36 is in a conveniently reached position on the right-hand side of the bowl, and it is quite simple to raise the seat when the button 36 is held inwardly. After use of the toilet is completed, the seat is lowered and it automatically locks itself in closed position as the spring pulls the short side of the locking member into the aligned notches 31 and 34.

There are occasions when persons unfamiliar with the seat operation will be using the toilet and at such time it may be desired to eliminate the functioning of the lock. This is accomplished by pushing inwardly on the push button 36 till the short side 30 of the locking member is in the same place as the segment notch 33 and then rotating the button 36 so that the short side 30 comes into alignment with the short radial notch 32. Releasing the manual pressure on the push button 36 at this time merely lets the locking member 27 move partially outwardly, and the outwardly extending short side 30 of the locking member does not engage any part of the hinge member 26, thus leaving the toilet seats to be operated free of any influence of the locking device. When it is desired to again resume locking of the seat, the push button is again pushed inwardly and rotated into alignment with the long radial notch 31 which permits the short side 30 of the locking member to reengage the notch 34 in the hinge member 26.

Numerous details of construction may be varied without departing from the principles of this invention, and I therefore do not propose limiting the patent granted hereon otherwise than as necessitated by the appended claims.

What is claimed is:

1. In a toilet seat locking hinge comprising spaced brackets mounted on a bowl, a hinge shaft carried by said brackets and spaced above said bowl, hinge members journaled for swinging rotation on said hinge shaft and carrying a seat assembly for the bowl, one of said hinge members and the hinge shaft having notches aligned when the seat assembly is in a closed position with respect to the bowl, a locking member engaging the aligned notches and holding the seat assembly in closed position, said locking member including an extension running centrally of said hinge shaft and having one end extending radially outwardly through the aligned notches in the hinge member and hinge shaft, a push button mounted on the other end of the extension, and a coil spring surrounding said extension and positioned between the end of the hinge shaft and said push button and tending to normally hold said locking member in the notch engaging position, said locking member and extension being capable of axial movement in the hinge shaft by a manual force being exerted on the push button to overcome the force of the spring whereby the locking member disengages the notch in the hinge member and permits raising of the seat assembly, said hinge shaft having a second notch spaced radially from the first notch, and said second notch being shorter than the first notch and whereby the locking member upon being moved axially of the hinge shaft and then rotated may engage the shorter second notch which prevents contact of the locking member with the notch of the hinge member, whereby the effectiveness of the locking member as a seat assembly lock is eliminated.

2. In a toilet seat locking hinge comprising spaced brackets mounted on a toilet bowl, a hinge shaft carried by said brackets and spaced above said bowl, means interposed between the brackets and the hinge shaft to prevent rotation of the shaft, hinge cap members journaled over the ends of the hinge shaft and carrying a toilet seat, hinge members journaled on said hinge shaft intermediate said supporting brackets and having a seat cover attached thereto, one of said hinge members carrying the seat cover having a notch in the side thereof, said hinge shaft having a central bore and a pair of radial notches of uneven length joined at one end by a segment notch, the longest of said radial notches being in alignment with the hinge member notch when the seat and cover are closed on the toilet bowl, and an L-shaped locking member having its long side slidable in the central bore of the hinge shaft and the short side slidable in one of the radial notches, whereby when the L-shaped locking member is in one position its short side engages one of the radial notches in the shaft and the notch in the cover hinge member, thus locking the cover against relative movement with respect to the toilet bowl, and when the locking member is shifted axially its short side disengages the notch in the cover hinge member permitting opening of the seat and cover, and upon a rotational movement of the L-shaped locking member the short side thereof passes through the segment notch and engages the other and shorter of the radial notches which prevents engagement of the hinge member notch by the locking member, one of said hinge cap members having a central aperture in alignment with the central bore of the hinge shaft, and the long side of said L-shaped locking member extending through the hinge cap aperture to effect axial and rotational movement thereof, a push button on and fixed to the end of the long side of said L-shaped locking member and a spring positioned between the

hinge cap member and the push button to normally hold the locking member in seat locking position, said push button adapted to effect rotation of the locking member when the locking member is shifted axially by the push button.

FREDERICK J. SCHMITZ.

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