May 19, 1942. H. C. LESLIE 2,283,893

WATER CLOSET SEAT

Original Filed Sept. 9, 1938

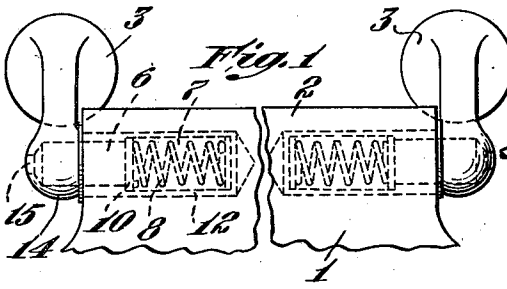


Fig. 1

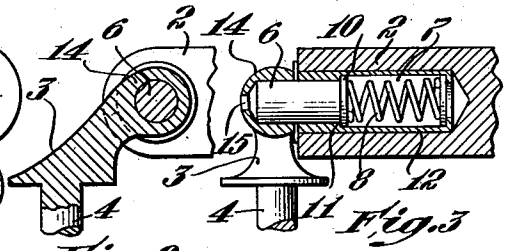


Fig. 2 Fig. 3

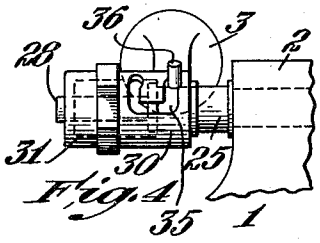


Fig. 4

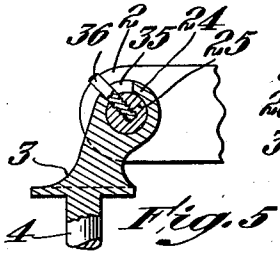


Fig. 5

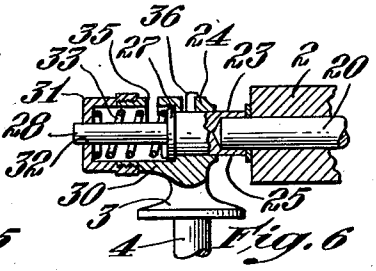


Fig. 6

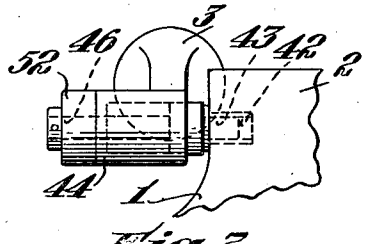


Fig. 7

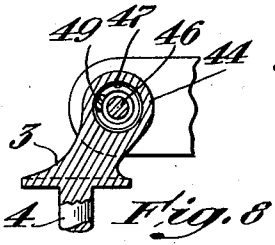


Fig. 8

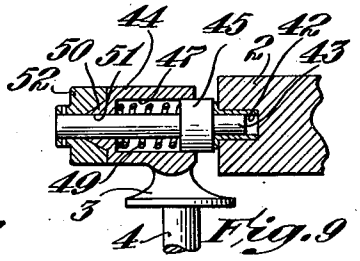


Fig. 9

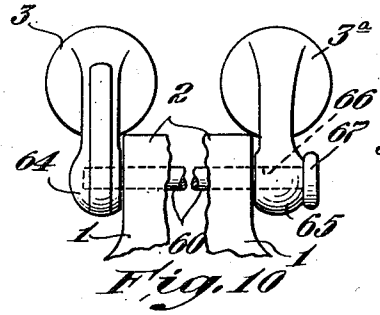


Fig. 10

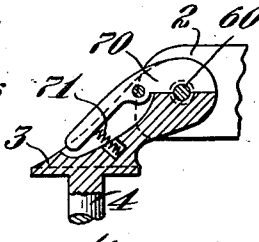


Fig. 11

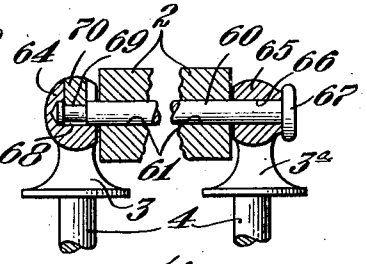


Fig. 12

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UNITED STATES PATENT OFFICE

2,283,893

WATER CLOSET SEAT

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Original application September 9, 1938, Serial No. 229,077, now Patent No. 2,240,220, dated April 29, 1941. Divided and this application October 16, 1940, Serial No. 361,412

7 Claims. (Cl. 4—240)

This invention relates to an improvement in water closet seats, with or without covers, which are detachable from the bowl, tank, wall or other supporting structure, the present application being a division of my copending application Serial No. 229,077, filed September 9, 1938, now United States Patent No. 2,240,220 granted April 29, 1941.

Heretofore it has been the general practice to mount water closet seats in such manner that they can only be removed after considerable effort, even by a plumber or other mechanic. Usually such removal involves the dismembering and sometimes the destruction of the mountings on which the seat is pivotally supported.

The primary object of this invention is to provide a readily detachable water closet seat and more specifically to provide mountings constructed so as to facilitate the removal of a seat, with or without a cover, so that it can be quickly removed and replaced when desired.

Another object is to provide mountings which may be applied not only to bowls, tanks or other supports of conventional design or construction, but also to various types of seats, with or without covers.

Further objects relate to various features of construction and will be apparent from a consideration of the following description and the accompanying drawing, wherein

Fig. 1 is a plan view, with parts broken away, of the hinge portion of a water closet seat illustrating one embodiment of this invention;

Fig. 2 is a side elevation of one of the posts and associated parts to which the seat is attached;

Fig. 3 is a view in longitudinal section of the post and associated parts;

Figs. 4 to 6 are views similar to Figs. 1 to 3, respectively, showing another embodiment of the invention; and

Figs. 7 to 9 and 10 to 12 are views similar to Figs. 1 to 3, respectively, showing further embodiments of the invention.

In accordance with the present invention a water closet seat, with or without a cover, is detachably mounted on the bowl, tank, wall or other suitable support by means of mountings comprising relatively separable interengageable bearing and trunnion members which, as herein illustrated, may include a collapsible, retractable or removable trunnion in association with a relatively fixed bearing member so as to permit a quick and easy removal and replacement of the seat and/or cover carrying the trunnion members; and, if desired, there may be provided a suitable check for the seat and/or cover.

A readily detachable toilet seat constructed in accordance with the present invention is of great advantage for sanitary reasons, since thereby the seat can be replaced whenever necessary. In hospitals, sanitaria and other institutions where health and sanitation are of particular consideration the use of such readily detachable seats is of great value. Moreover, in hotels, inns, trains and boats, for example, where the suites or other accommodations include private toilets or baths, this invention permits the easy provision of a freshly sanitized toilet seat each time the occupants of the suite or other accommodations change. The water closet seat may be and preferably is enclosed in a suitable wrapper after having been cleaned and sterilized, to indicate its sanitary condition, as illustrated in United States Patent No. 2,200,394, granted May 14, 1940.

A further advantage of a detachable seat embodying this invention is that it can without difficulty be substituted for the usual type of water closet seat, since in the conventional constructions the seat is supported upon posts carried by a pottery bowl, tank, wall or the like and is preferably pivoted upon a bar carried at each end by the posts. Moreover, in a seat embodying mounting constructed in accordance with the present invention, the seat posts may be readily removed without injury, simply by holding the attaching nut underneath and turning the top of the post.

In each of the embodiments herein shown a seat 1, formed with an extended back 2, is pivotally supported by posts 3 so as to be removable by reason of a longitudinal movement of one or more elements of the assembly. The lower ends of the posts are formed with studs 4 which anchor the posts and associated parts to the pottery base, hopper, tank or wall, and the upper ends of the posts are provided with means effective to permit a seat trunnion, bar or pivotal supporting members to be disengaged from the posts and/or seat.

In Figs. 1 to 3 I have shown a collapsible seat trunnion carried by the extended back seat less cover, and in this embodiment the supporting means comprise a rod 6 mounted in a recess 7 of the extension 2 of the seat 1. The rod 6 normally projects from the side of the extension by the action of a spring 8. This longitudinal movement of the rod is limited in any suitable manner, as by providing a flange 10 on the inner

end of the rod 6 which bears against a shoulder 11 on the lining 12 of the recess 7. The projecting end of the rod is received in a bearing formed in the head 14 of a post 3 which is secured to the pottery hopper, base, tank or wall (not shown) by the stud 4. The rod is retracted by inserting a nail, pin or other tool through an aperture 15 in the head and thereby forcing the rod 6 into the recess 7 against the action of the spring 8, thus permitting separation of the seat from the mounting.

The embodiment illustrated in Figs. 4 to 6 shows a retractable bearing with a bolt hold-out associated with an extended back seat less cover. The seat bar 20 (Fig. 6), carried by the extension 2 of the seat 1, is received within a bearing 23 longitudinally movable in the head 24 of the post 3. The bearing 23 is integral with the inner end of a rod 25 which is rotatable in an opening 26 formed in the head 24 of post 3. The outer end of the rod is formed with a flange 27 and projecting outwardly therefrom is a pin 28. A recessed extension 30, integral with the head 24 of post 3, encloses the flange 27. At the outer end of the extension 30 is a cap 31 threaded to the extension and providing a continuation of the recess in the extension. The pin 28 extends through the recess ad projects through an aperture 32 in the cap. A spring 33, positioned in the recess and cap, bears against the flange 27 and normally holds the bearing in the bar-receiving position shown in Fig. 6. The head 24 is formed with a U-shaped slot 35 through which projects an operating lever or pin 36 carried by the rod. The bearing 23 is retracted from its normal rod-receiving position by moving the pin 36 along the slot 35 from the position at one end, as shown in Figs. 4 and 6, to the other end of the slot, thus freeing the bar and permitting removal of the bar and seat.

Figs. 7 to 9 illustrate a retractable trunnion with a cam bolt hold-out associated with an extended back seat less cover, this embodiment of the invention being similar to the embodiment shown in Figs. 4 to 6 in that the seat is supported by a retractable element. In the side of the extension 2 of the seat 1 is formed a lined recess 42 adapted to receive a supporting pin 43 carried by the head 44 of the post 3. The pin 43 projects from the inner face of a rod 45 and a pin 46 projects from the outer face of the rod. The pins 43 and 46 and the rod 45 may be integral, as shown, or may be separate units suitably connected. The rod 45 is mounted in a recess 47 formed in the head 44 of the post. A spring 49, surrounding the pin 46, bears against the end wall of the recess and the outer face of the rod 45 and acts to hold the pin 43 extended so as to engage and support the seat, as shown in Fig. 9. On the outer face of the head 44 is provided an offset tapered cam 50, and a passage 51 is formed in the center of the cam through which the pin 46 projects. A cap 52 is secured to the outer end of the pin 46, the cap having an inwardly tapered recess shaped complementary to cam 50. In order to retract the pin 43 the cap 52 is rotated and by reason of the offset on the cam 50, the pin is withdrawn axially from the recess 42, thus releasing the seat and allowing its removal.

The embodiment shown in Figs. 10 to 12 illustrates a removable trunnion rod with a snap catch, associated with an extended back seat less cover. In this embodiment the seat bar 60 extends through a passage 61 formed in the extension 2 of the seat 1 and is supported at each side of the extension by the posts 3, 3a. The head 65 of post 3a is provided with a passage 66 through which the bar 60 extends, with its head 67 positioned against the outer face of the post. The other end of the bar projects into a recess 68 formed in the head 64 of post 3 and is releasably secured therein in any suitable way, as by forming adjacent to the end of bar 60 a circumferential recess 69 which receives a latch 70. The latch 70 is mounted in a recess formed in the head 64 and is suitably pivoted to post 3 so that its upper end projects into the recess 68 through a slot formed in the head 64, and by means of a spring 71 the latch is yieldably held in engagement with the bar 60. By depressing the lower end of the latch 70 the parts are released and the bar may be withdrawn to permit the seat to be removed.

It will be noted that in each embodiment the posts are secured to the pottery base, hopper, tank or wall in the usual way and that the embodiments differ in the manner in which they provide removability and replaceability for the seats. It will further be noted that in the embodiments shown in Figs. 1 to 9 only one post need be equipped with the specific form of mounting described, the engagement of the seat bar with the other post being such as to permit tilting of the seat and bar to such an extent that the bar can be withdrawn longitudinally from engagement therewith.

While I have shown and described several desirable embodiments of the invention, it is to be understood that the present disclosure is for the purpose of illustration and that various changes in shape, proportion, and arrangement of parts, as well as the substitution of equivalent elements for those herein shown and described, may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

I claim:

1. A water closet comprising a seat formed at its rear end portion with a transversely extending recess, a fixed shaft mounted in said recess with one end projecting outwardly from said seat, a post having a head formed with a recess in axial alignment with said shaft, a spring-pressed rod slidably mounted in the recess in said head, the inner end of said rod being formed with an opening providing a bearing member which receives the projecting end of the shaft thereby to provide a pivotal support for said seat, and bolt-action means connected with said rod for moving it axially to disengage the shaft and bearing member so as to permit removal of said seat.

2. A water closet comprisng a seat formed at its rear end portion with a transversely extending recess providing a bearing member, a post having a head formed with a recess axially aligned with said bearing member, a spring-pressed rod slidably mounted in the recess in said head, the inner end of said rod normally projecting into said bearing member so as pivotally to support said seat, and cam-operated means connected with said rod for moving it axially to disengage its projecting end from said bearing member, thereby to permit removal of said seat.

3. A water closet seat construction comprising seat and post members formed with aligned openings, a shaft-like element slidably mounted in the opening in one of said members and having an end portion projecting into the opening

in the other of said members so as pivotally to connect the seat and post members, spring-pressed means carried by the post member for releasably holding the shaft-like element in operative position, and an actuating member carried by the post member for effecting the release of said spring-pressed means, thereby permitting separation of said seat and post members.

4. A water closet seat construction comprising seat and post members formed with aligned openings, a shaft-like element slidably mounted in the opening of one of said members and having an end portion projecting into the opening in the other of said members so as pivotally to connect the seat and post members, a coiled spring carried by the post member for releasably holding said shaft-like element in operative position, and an actuating member carried by said post member and effective to cause retraction of said coiled spring thereby to release said shaft-like element from operative position and permit separation of said seat and post members.

5. A water closet seat construction comprising seat and post members formed with aligned openings, a bearing mounted in the opening in one of said members and a shaft-like member mounted in the opening in the other of said members and extending into said bearing so as pivotally to connect the seat and post members, said shaft-like element and bearing being relatively movable axially so as to permit said seat and post members to be disconnected, resilient means disposed in the opening in the post member for normally holding the shaft-like element and bearing in operative position, and actuating means carried by said post member for effecting relative axial movement of the shaft-like element and bearing, thereby to release the parts and permit separation of the seat and post members.

6. A water closet seat construction comprising a post formed at its upper end with an opening, a bearing member slidably mounted in said opening, a seat having a shaft-like element projecting laterally from its end portion into said bearing member so as pivotally to connect the seat and post, resilient means disposed in the opening in said post for yieldingly holding said bearing member in operative position, and a retracting member associated with said bearing member for moving it axially away from said shaft-like element to release the latter from operative position, thereby to permit separation of said seat and post.

7. A water closet seat construction comprising a post formed at its upper end with an opening, a shaft-like element slidably mounted for axial movement in said opening, a seat having at its rear end portion an opening in alignment with that in said post and defining a bearing for the reception of the end of said shaft-like element, resilient means carried by said post and normally holding said shaft-like element with its end extending into the opening in said seat, thereby pivotally to connect the parts, and a retracting member associated with said shaft-like element for withdrawing the latter from the opening in said seat against the action of said resilient means, thereby to permit separation of the seat and post.

HOWARD C. LESLIE.