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HINGE FOR TOILET SEATS AND COVERS

Filed March 3, 1930

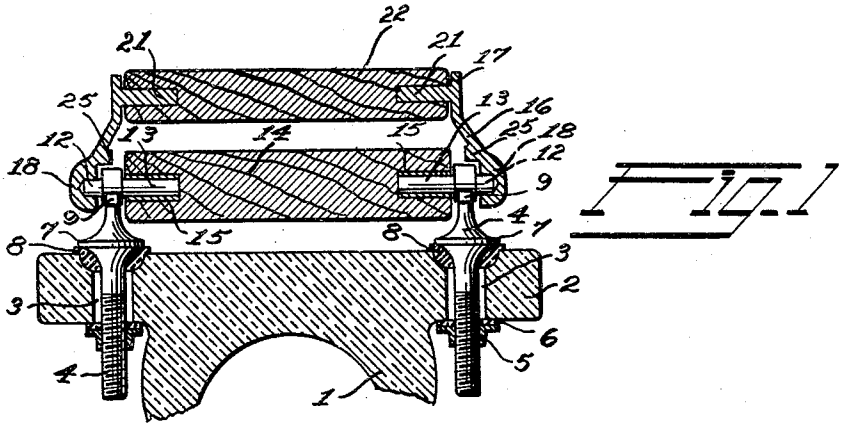


Fig. 1

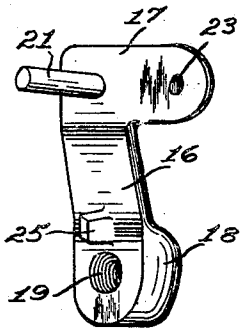


Fig. 3

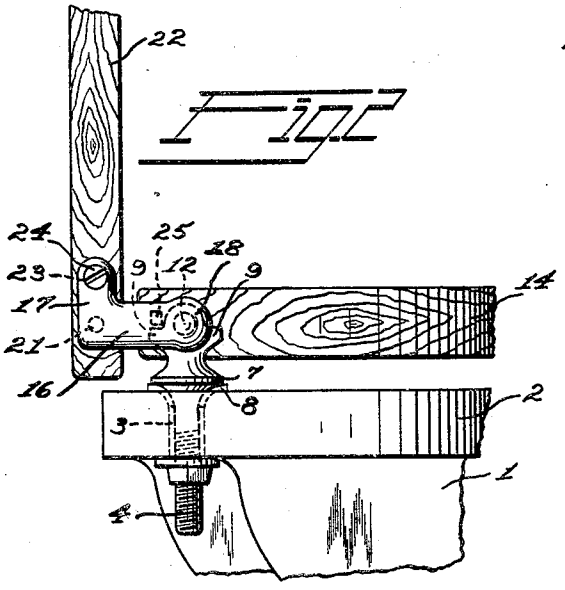


Fig. 2

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UNITED STATES PATENT OFFICE

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HINGE FOR TOILET SEATS AND COVERS

Application filed March 3, 1930. Serial No. 432,856.

This invention relates to a hinge construction for the seat and cover of a toilet, and more particularly to a seat and cover hinge for use with the modern sanitary toilets which have a porcelain bowl with openings therein for the removable attachment of a seat and cover.

One object of my invention is to provide a hinge construction for a toilet seat and cover in which the complete assembled hinge is more simple and more serviceable than in constructions generally in use; and in which the hinge may be readily attached to the seat and to the cover; the attachment of the assembled unit to the porcelain bowl may be accomplished by an unskilled workman without danger of breaking the parts.

Another object of this invention is to provide a hinge construction for a toilet seat and cover which does not require excessive drilling in either the seat or the cover, thereby avoiding the weakening of the cover or the seat.

Another object of this invention is to provide a hinge construction for the seat and cover of a toilet which is held rigidly and firmly in position when once assembled, and in which the parts cannot work loose unless one of the members is broken.

Another object of this invention is to provide a hinge construction of the above described character in which the hinge elements are normally under compression and in which there is practically no shearing stress due to the load on the elements, whereby the parts thereof are extremely durable in use and will not be easily broken.

Another object of this invention is to provide a hinge construction of the above described character in which the posts which are secured to the porcelain bowl are interchangeable and may therefore be positioned on either side thereof. By this construction I am able to provide a design which is simple in construction, easy to assemble, and in which replacement of parts is greatly facilitated since plumbing supply houses need carry only one form of post in stock.

Another object of this invention is to provide a hinge construction of the above described character in which the posts which are adapted to be secured to the toilet bowl cannot become lost or removed after the hinge construction has been once assembled, since the posts are firmly united with the entire structure when the assembly is made.

Another object of this invention is to provide a hinge construction for toilet seats and covers, in which the seat and cover are both journalled on metal bearings and therefore there is no wear on the wood of the seat or cover.

Another object of my invention is to provide a hinge construction for a toilet seat and cover in which the cover and seat both move about a common axis of rotation, whereby the parts may be made extremely strong and rigid, and in which the bearing elements are concealed and are not subject to excessive corrosion.

Another object of my invention is to provide a hinge construction for toilet seats and covers in which an automatic stop is provided for holding the cover in raised position, said stop being so arranged that it is automatically positioned for use on both sides of the cover.

These and various other objects of my invention will be apparent from the following description and the appended claims when taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a sectional view taken through the rear of a toilet construction, showing the cover and seat in closed position.

Figure 2 is a broken side elevation of a toilet with my improved hinge construction thereon, with the cover shown in raised position.

Figure 3 is a perspective view of the hinge member for the cover.

Referring to the drawings, the usual porcelain toilet bowl 1 is provided with an outstanding flange 2 at the upper portion thereof, said flange 2 having openings 3 therein for the detachable reception of posts 4. Posts 4 extend through the openings 3 and have their lower ends threaded for the reception of locking nuts 5 positioned beneath rubber or other

suitable gaskets 6 for securing the posts to the bowl 1.

Each post 4 has an enlarged section 7 of greater diameter than the hole 3, with a rubber or other suitable gasket 8 interposed between said portion 7 and the flange 2 of the bowl. Above the enlarged section 7, each post 4 is provided with oppositely extending stop lugs 9 whereby when the posts are assembled on the bowl 1 one of said lugs extends forwardly thereof and one extends rearwardly.

Just above the stop lugs 9, each post 4 is provided with oppositely extending pintles 12 and 13. These pintles 12 and 13 extend at right angles to the lugs 9, the pintle 13 being longer than the pintle 12, and said pintles being preferably of the same diameter. The pintles 13 provide a journal bearing for the seat 14 of the toilet bowl, said seat having openings drilled therein adjacent the rear thereof and on opposite longitudinal sides, with metal sleeves 15 secured in said openings, as for example, by being forced or driven into the openings in the seat. These metal sleeves 15 are adapted to receive the pintle 13 of the posts 4 to provide a bearing for said seat, it being noted that the engaging surfaces are both metal, since the seat 14 carrying the sleeve 15 rotates about the pintle 13.

One of the hinge members for mounting the cover is shown in detail in Figure 3. Each of said hinge members includes a strap 16 and a strap 17 at right angles to one another, the strap 16 being bent outwardly as seen in Figure 1, and having a knob 18 on the lower end thereof. Said knob 18 has an opening 19 in the inner face thereof for cooperative engagement over the pintle 12 of the post 4. Adjacent the juncture of the strap 17 and strap 16, the hinge member is provided with an inwardly projecting pin 21 adapted to be received in a correspondingly shaped opening in the cover 22. The strap 17 of the hinge member has a counter-sunk or similar opening 23 therein spaced from the pin 21 and adapted to receive a wood screw 24 for firmly uniting the hinge member to the cover 22.

Each hinge strap has a short inwardly projecting lug 25 thereon which is positioned in the plane of the oppositely extending lugs 9 of the post 4 when the parts are assembled. As seen more clearly in Figure 2, the lug 25 of the hinge strap member is adapted to engage one of the lugs 9 when the cover is in raised position. Since the post 4 has two lugs thereon projecting in opposite directions, it will be clear that the posts are interchangeable for either side of the toilet seat and one of said lugs 9 will always be in position to engage the lug 25 on the adjacent hinge member.

It is believed that the assembly of the above described hinge construction to the seat and cover will be obvious. After the metal sleeves 15 have been firmly driven into the drilled openings in the longitudinal sides of the seat 14, the posts 4 are positioned with the pintles 13 within the metal sleeves 15. One of the hinge straps is then secured to the cover by engaging the pin 21 in the opening provided therefor and the wood screw 24 is secured in position. After one of the hinge straps is thus secured to the cover, the opening 19 thereof is slipped over the pintle 12 of the post 4 and the opposite hinge strap is then brought into position with its pin 21 engaging the corresponding hole in the cover, and the opening 19 in its lug 18 engaged over the pintle 12 of the other post. The second wood screw 24 may then be screwed in position and the entire assembly is completed.

By this construction it will be seen that the hinge members as well as the posts are all secured to the cover and the seat and the parts may not become dislodged or lost. The cover 22 rotates about the pintles 12 of the posts 4, the engaging surfaces being metal to metal, and the seat 14 rotates about the pintle 13, the engaging surfaces again being metal to metal, whereby wear on the parts is negligible.

It will be noted that the above described hinge assembly may be easily assembled without excessive drilling in the cover or the seat. Severe strains are frequently put upon the cover or seat of a toilet and the members are frequently broken in use, and it is necessary that they be made as strong as possible and be associated so that disassembly is not easily brought about. It is also desirable that there be as few holes in said members as possible, and that said holes be as small as is practical. In my construction it will be seen that there are relatively small holes in both the cover and the seat, and that the holes do not extend completely across either the cover or the seat. Furthermore, it will be noted that the strap hinge supporting the cover will be subjected only to a compression when in use, since the strap portion 16 thereof extends substantially vertically and will therefore not be subjected to bending strains when a weight is applied to the cover in lowered position.

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 I claim and desire to secure by United States Letters Patent is:—

1. In combination with the seat and cover

of a toilet bowl, a pair of posts adapted to be secured to the toilet bowl having horizontal pintles extending into recesses on the side edges of said seat and free to rotate in said recesses to pivotally support said seat, said posts having outwardly extending pintles on the same axis as said first pintles, two hinge members shaped to provide a concealed journaled bearing for the outwardly extending pintles, and means rigidly connecting said hinge members to the edges of said cover to pivot said cover on said pintles whereby said posts and hinge members are securely connected to the cover and seat.

2. A hinge for a toilet seat and its cover comprising a post provided with means to secure it to the toilet bowl, integral pintles having a common axis extending in opposite directions from an end of said post, a stop on said post in the form of a lug projecting laterally from the post in a direction transverse to the axis of said pintles, and a hinge element provided with a recess extending partially therethrough to receive one of said pintles and having a stop in the form of a lug projecting from said element in position to cooperate with the stop on said post to limit the movement of the hinge element about the axis of the pintle engaging the recess therein.

3. In combination with the seat and cover of a toilet bowl, a hinge post connected to the toilet bowl having a horizontal pintle projecting on opposite sides thereof about which said cover and seat are separately journaled, one of the projecting portions of said pintle engaging in an opening in said seat for journaling the same, a sleeve in said seat opening, and a hinge strap rigidly secured to said cover and provided with a socket receiving the other projecting portion of said pintle and concealing said pintle.

4. A hinge member for the cover of a toilet bowl having two angularly arranged straps, a projection and a fastener receiving opening on one of said straps for rigidly securing the hinge member to an edge of the cover, and a boss on the other strap having an opening extending partially therethrough for receiving the pintle of a hinge post, and a stop lug on said other strap projecting away therefrom above said opening.

5. A hinge for a toilet seat and its cover comprising a post provided with means to secure it to the toilet bowl, integral pintles having a common axis extending in opposite directions from an end of said post, a stop on said post in the form of a lug projecting laterally from the post in a direction transverse to the axis of said pintles, and a hinge element of angular form provided with an enlargement in one of its arms having a recess extending partially therethrough to receive one of said pintles and having a stop in the form of a lug projecting from said element positioned to cooperate with the stop on said post to limit the movement of the hinge element about the axis of the pintle engaging the recess therein, the other arm of said angular hinge element being arranged to extend along the edge of the cover and being provided with means to rigidly secure it to said edge including a rigid projection arranged to enter a recess in said edge.

In testimony whereof I affix my signature.

JOHN PUDLEINER.

CERTIFICATE OF CORRECTION.

Patent No. 1,804,114.

Granted May 5, 1931.

It is hereby certified that the name of the patentee in the above numbered patent was erroneously written and printed as "John Pudleiner", whereas said name should have been written and printed as John Pudliner; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 30th day of June, A. D. 1931.

(Seal)

M. J. Moore,
Acting Commissioner of Patents.