Aug. 8, 1939 H. C. LESLIE 2,168,907

WATER-CLOSET SEAT

Filed Jan. 20, 1938

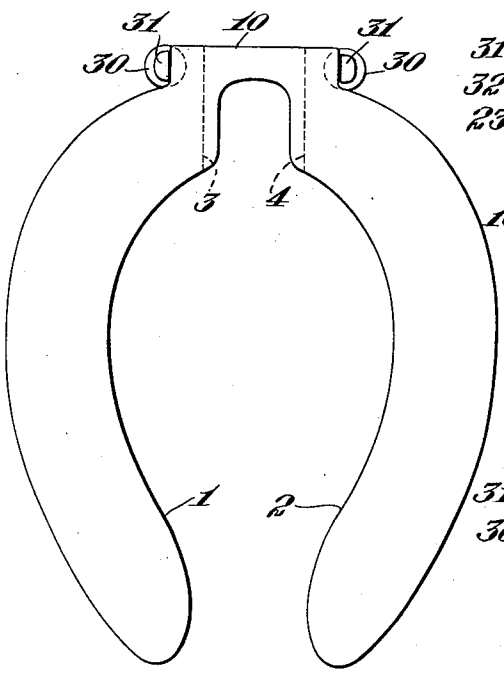


Fig. 1

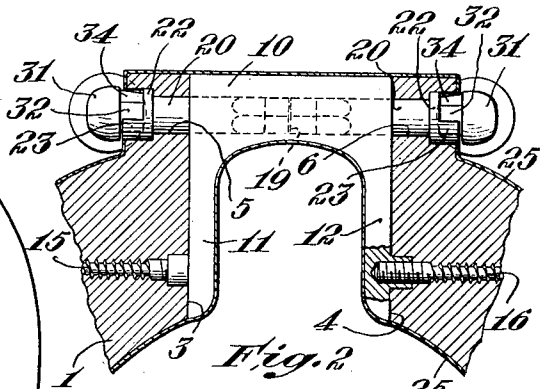


Fig. 2

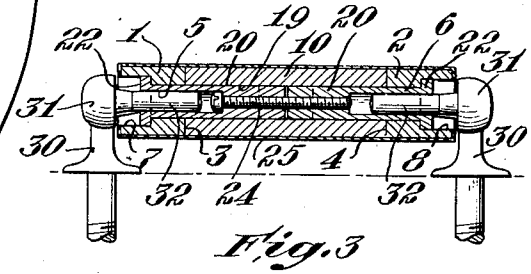


Fig. 3

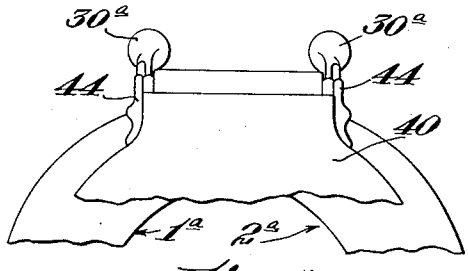


Fig. 4

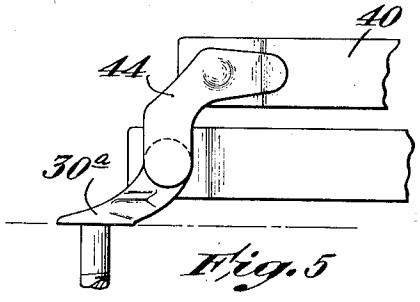


Fig. 5

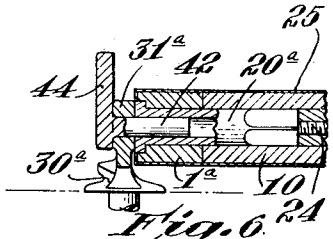


Fig. 6

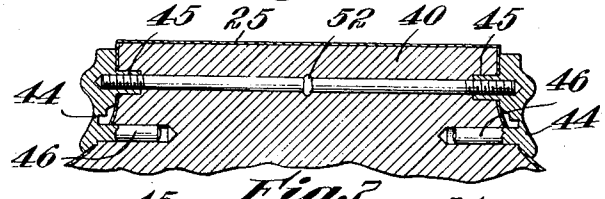


Fig. 7

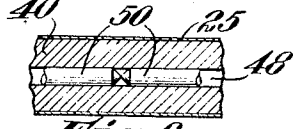


Fig. 8

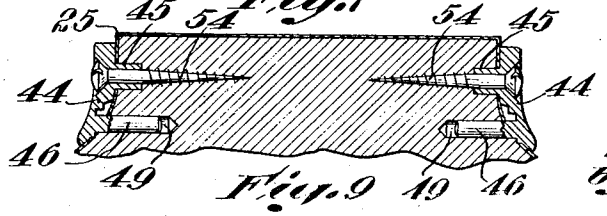


Fig. 9

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WATER-CLOSET SEAT

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Application January 20, 1938, Serial No. 185,875

6 Claims. (Cl. 4—237)

This invention relates to toilet seats and more particularly to water-closet seats of the type having an open front and recessed rear, commonly referred to in the trade as open front and back.

In the manufacture of water-closet seats of the type illustrated in United States Patent No. 1,163,111 considerable difficulty has been encountered in providing the requisite degree of strength and rigidity without resorting to the use of exposed reinforcing members which not only detract from the appearance of the seat but also provide crevices and irregularities which render the structure unsanitary after a relatively short period of use. Although numerous attempts have been made to eliminate exposed reinforcing elements, such attempts have usually involved the sacrifice of strength, rigidity and durability.

The principal objects of the present invention are to provide a sanitary water-closet seat of the aforementioned type which is of strong and durable construction and which can be manufactured more economically than the prior types of similar design; to provide a water-closet seat having an unbroken surface and a minimum area, which may be easily cleaned, and hence more readily maintained in a sanitary condition; and to provide an improved mounting for pivotally supporting the seat.

Further objects will be apparent from a consideration of the following description and the accompanying drawing, wherein:

Fig. 1 is a top plan view of a water-closet seat constructed in accordance with the present invention;

Fig. 2 is a fragmentary horizontal section through the rear of the seat shown in Fig. 1;

Fig. 3 is a vertical section through the seat supporting structure;

Fig. 4 is a fragmentary top plan view showing the seat with a cover pivotally supported thereto;

Fig. 5 is a fragmentary side elevation of the seat and cover shown in Fig. 4;

Fig. 6 is a sectional detail of a modified type of hinge connection for the seat;

Fig. 7 is a section illustrating one form of connection for the cover;

Fig. 8 is a sectional detail illustrating the manner of securing the fastening means constituting part of the connection illustrated in Fig. 7; and

Fig. 9 is a section illustrating another form of connection for the cover.

The embodiment shown in Figs. 1 to 3 comprises a pair of laterally spaced arcuate sections 1 and 2, each formed with smoothly rounded upper surfaces, the rear of the sections being formed with an extended back having inwardly facing flat ends 3 and 4, provided with transversely extending aligned bores or openings 5 and 6, the outer ends of which terminate in enlarged openings 7 and 8 (Fig. 3). The sections 1 and 2 may be of wood, metal, a moldable composition, a metal or wooden core with a molded surface, or the like construction capable of providing the requisite degree of rigidity.

The rear ends of the sections are rigidly connected by an interposed U-shaped member 10, whose legs 11 and 12 are provided with screw-threaded elements 15 and 16 (Fig. 2) which are embedded in the body portion of the sections 1 and 2, respectively. The closed end 18 of the U-shaped member is formed with an opening 19 disposed in alignment with the openings 5 and 6 so as to provide a continuous passage from one edge of the seat to the other. The central part of the opening 19 is of square cross section, whereas the remainder of the opening is preferably of the same size or diameter as the openings 5 and 6.

The member 10 is shaped to conform with the contour of the sections 1 and 2, and accordingly the outer face of the legs 11 and 12 are flat so as to fit against the adjacent ends of sections 1 and 2, and the inner faces of the legs are provided with smoothly rounded surfaces to produce, in effect, substantial continuity with the surfaces of the sections 1 and 2.

Mounted in the openings 5 and 6 are sleeves 20 which extend into the opening 19 of the U-shaped member 10. The inner ends of the sleeves are of square cross section to fit the central part of the opening 19, and their outer ends are provided with annular flanges 22 which are formed with approximately semi-circular ribs 23 (Fig. 2), the flanges and ribs snugly fitting within the enlarged openings 7 and 8, as shown in Figs. 2 and 3. One or both of the inner ends of the sleeves 20 may be screw threaded to receive the screw 24 (Fig. 3) which holds the adjacent ends of the sleeves together, thus providing an additional fastening means cooperating with the screw-threaded elements 15 and 16 to secure the sections 1 and 2 to the U-shaped member 10.

The entire assemblage is provided with a tight-fitting integument 25 which may be a continuous layer of any suitable water-resisting sheet material, such as a sheeted cellulose derivative, for example, Celluloid, it being understood that if desired a heavy coating or veneer of lacquer, rubber, molding composition, enamel or the like

may be provided. In any case the integument 25 completely encases the sections and U-shaped member 10 and is so formed and applied as to produce a smooth, continuous surface, free from crevices and irregularities. Where, as is preferred, a tight-fitting, heavy sheet of celluloid or the like is applied about the assemblage, it cooperates with the fastening elements and sleeves 29 to enhance the strength and rigidity of the entire structure.

The seat is pivotally supported by a pair of posts 30, the lower ends of which may be secured to the bowl or a part of the flushing tank. Each of the posts is formed with a head 31 integral with a laterally extending pintle 32 which fits into the bore of the adjacent sleeve 20. The inner end of each of the pintles is formed integral with a radial projection or stud 34 (Fig. 2) which is arranged to engage one end of the adjacent rib 23 when the seat is swung to upstanding position, thereby to provide a stop adapted to hold the seat in an upright position. The parts are so designed that with the exception of the body portions and heads of the posts 30, they are concealed within the sections 1, 2 and the U-shaped member 10, and as the heads 31 closely fit against the ends of the sections, all gaps and crevices are eliminated.

In order to avoid wear about the marginal portions of the extended back which surround the openings 7 and 8 and also to eliminate looseness or lateral play, the ends of the studs 34 engage the collars 22 so as to provide a slight clearance between the inner faces of heads 31 and the marginal portions about openings 7 and 8, as shown in Figs. 2 and 3.

In Figs. 4 to 9 I have shown a seat having substantially the same construction as above described, but provided with a cover 40 which is pivoted to the posts 30^a which pivotally support the seat. In this embodiment each of the heads 31^a (Fig. 6) of the post 30^a is formed with an opening through which a pintle 42 extends, the inner end of each pintle being disposed in the bore of the sleeve 20^a and its outer end being integral with a link 44. Each of the links is formed with a pair of spaced lateral projections 45 and 46 (Figs. 7 and 9), the projections 45 having either an interiorly-threaded opening, as shown in Fig. 7, or a continuous opening extending to the outer face of the link, as shown in Fig. 9.

The end portion of the cover 40 may be provided with a transverse bore 48 (Fig. 8) having enlarged outer ends to receive the projections 45, and on each edge of the cover there is provided an opening 49 to receive the projections 46. Rods 50 carried by the projections 45 extend into the bore 48, the free end of each rod preferably being pointed, as shown in Fig. 8. When the parts are assembled in the manner illustrated, the free ends of the rod 50 abut, and by passing a welding current therethrough, they may be welded together, as indicated at 52 (Fig. 7), thus permanently securing the parts in assembled relation. If desired, the rods 50 may be dispensed with, and, as above noted, the projections 45 may be bored to receive screws or the like fastening elements 54 (Fig. 9), in which case the bore 48 in the cover is also dispensed with. It will be noted that in either case the links, being permanently secured to the covers, hold the posts 30^a and associated parts in operative position for supporting the seat. Accordingly, the entire assemblage provides a unit which may be readily secured either to the bowl, the flushing tank, a part of a unit bowl and tank, or to the adjacent wall, in the same manner as the embodiment previously described.

While I have shown and described different desirable embodiments of the invention, it is to be understood that this 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 toilet seat having an open front and a recessed rear, said seat comprising a pair of laterally spaced arcuate sections, a U-shaped member interposed between adjacent rear ends of said sections to define said recessed rear, the legs of said U-shaped member having fastening elements embedded in the body portions of said sections and being rigidly secured thereto and an integument completely enveloping said sections and U-shaped member and providing a smooth continuous surface free from crevices and irregularities.

2. A toilet seat having an open front and a recessed rear, said seat comprising a pair of laterally spaced arcuate sections, the rear ends of said sections having transversely extending openings, a U-shaped member interposed between the rear ends to define said recessed rear, the legs of said U-shaped member having fastening elements embedded in the body portions of said sections and being rigidly secured thereto, a hinge having parts disposed in said openings and pivotally supporting said seat, and an integument completely enveloping said sections and U-shaped member and providing a smooth continuous surface free from crevices and irregularities.

3. A toilet seat having an open front and a recessed rear, said seat comprising a pair of laterally spaced arcuate sections, the rear ends of said sections having aligned transversely extending openings, a U-shaped member interposed between and rigidly secured to the rear ends of said sections between said openings and defining said recessed rear, the closed end of said U-shaped member having a transverse opening in alignment with the openings in said sections, a hinge having parts fitting within the openings in said sections and U-shaped member for pivotally supporting said seat, and an integument completely enveloping said sections and U-shaped member and providing a smooth continuous surface free from crevices and irregularities.

4. A toilet seat having an open front and a recessed rear, said seat comprising a pair of laterally spaced arcuate sections, a U-shaped member interposed between the rear ends of said sections to define said recessed rear, said U-shaped member having legs fitting against the rear ends of said sections, said legs having fastening elements imbedded in the body portion of said sections, and an integument completely enveloping said sections and U-shaped member and providing a smooth continuous surface free from crevices and irregularities.

5. A toilet seat having an open front and a recessed rear, said seat comprising a pair of laterally spaced arcuate sections, the rear ends of said sections having aligned transversely extending openings, a U-shaped member interposed between the rear ends of said sections to define said recessed rear, the legs of said U-shaped member fitting against the rear ends of said sections, said legs having screw threaded elements embedded in the body portions of said sections, the closed end

of said U-shaped member having a transverse opening in alignment with the openings in said sections, a hinge having parts fitting within the openings in said sections and U-shaped member for pivotally supporting said seat, and an integument completely enveloping said sections and U-shaped member and providing a smooth continuous surface free from crevices and irregularities.

6. A water-closet seat having an open front and recessed back comprising a pair of laterally spaced arcuate members having rear end portions defining an extended back section provided with aligned transversely extending openings, and means for rigidly securing said sections together, said means comprising a U-shaped member defining said recessed back and having legs fitting against and secured to the rear ends of said sections, the intermediate portion of said U-shaped member having an opening aligned with those in said rear end portions, tubular elements having parts disposed within said openings and means for securing adjacent ends of said tubular elements together.

HOWARD C. LESLIE.