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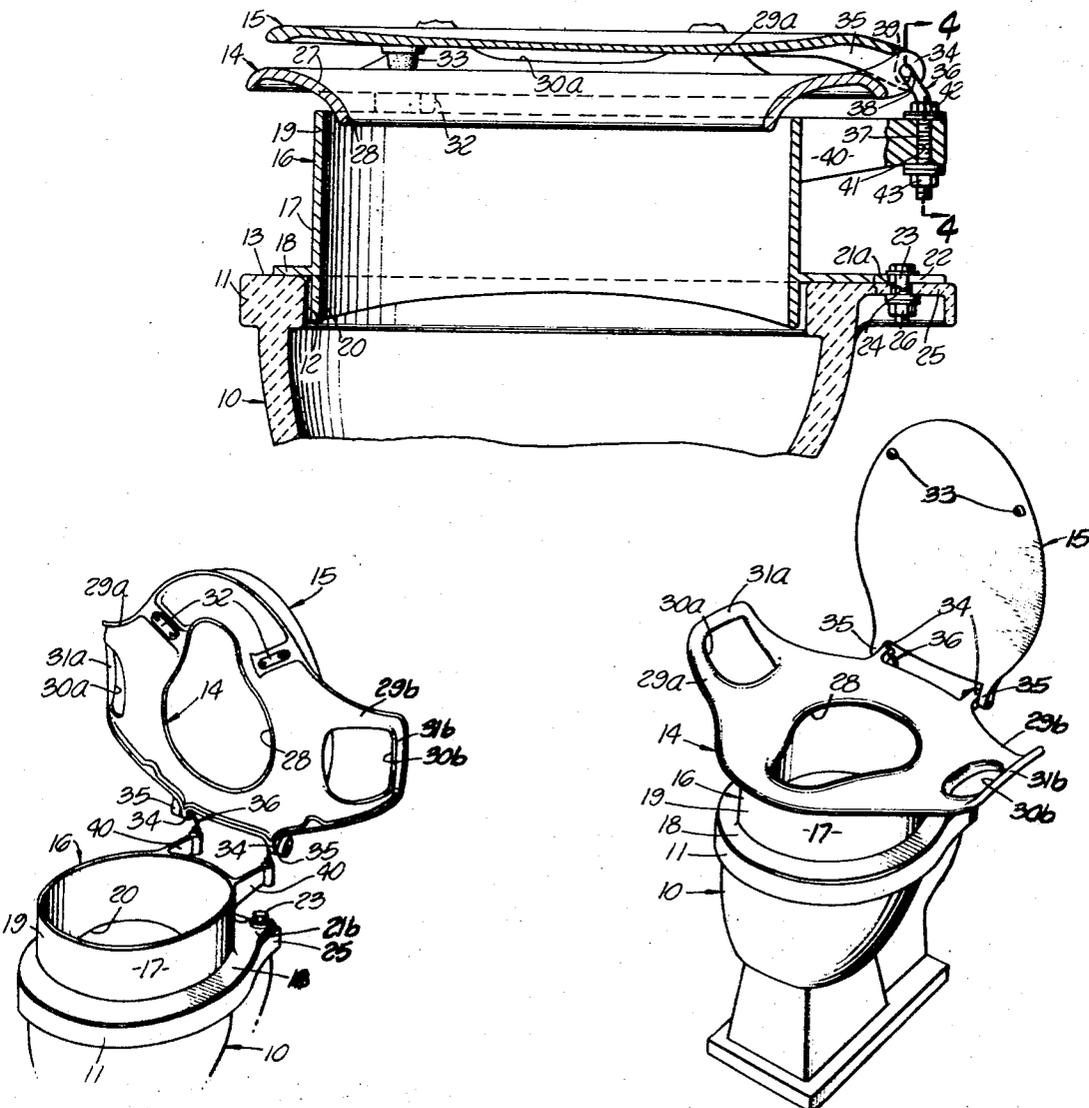
[54] **COMBINATION TOILET SEAT AND ELEVATOR THEREFOR**  
**3 Claims, 8 Drawing Figs.**

[52] U.S. Cl. .... 4/237  
 [51] Int. Cl. .... A47k 13/00  
 [50] Field of Search ..... 4/237, 239, 240, 254

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**ABSTRACT:** An occupant seat structure for mounting on a toilet bowl in operative association with an upper opening brim thereof, including an annular seat which can be mounted in one assembly for direct cooperation with the bowl brim, and in another assembly with an elevator positioned between the seat and brim, the elevator being arranged for fixed securement to the bowl, and further being provided with brackets for hinged mounting the annular seat thereon, mounting pivots for the seat being selectively reversible for adjustably changing the relative for-and-aft position of the annular seat, particularly when changing from one assembly to the other. An important feature of the annular seat resides in the provision of side hand grips between which a hinged cover or lid is movable to a closed position.





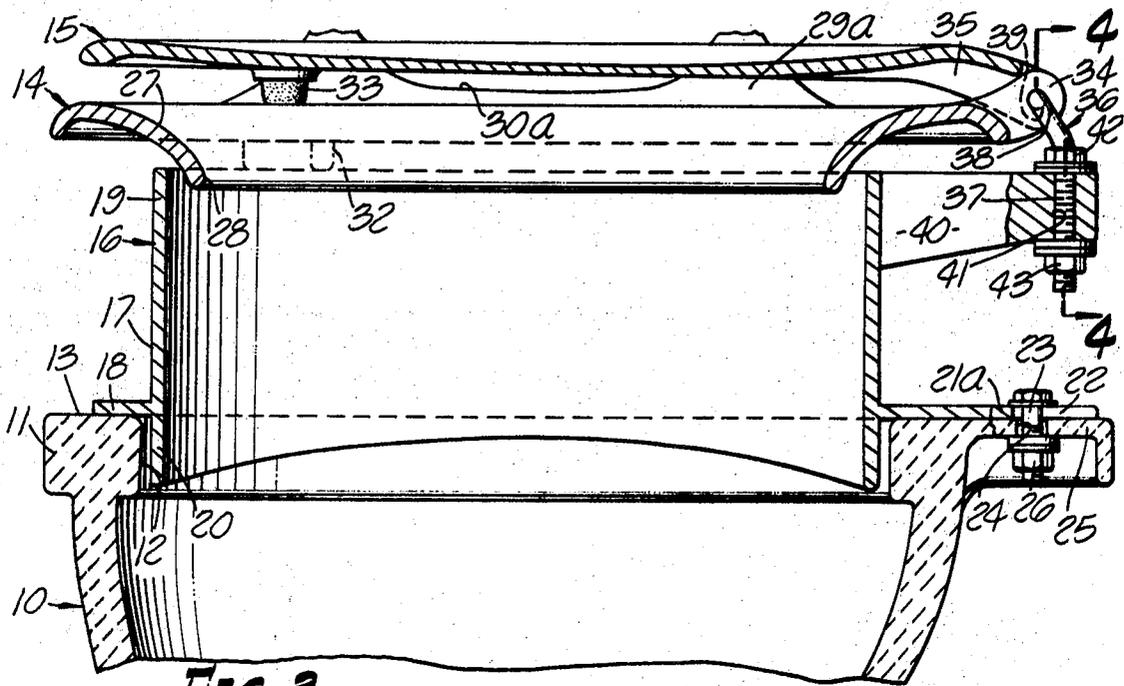


FIG. 3.

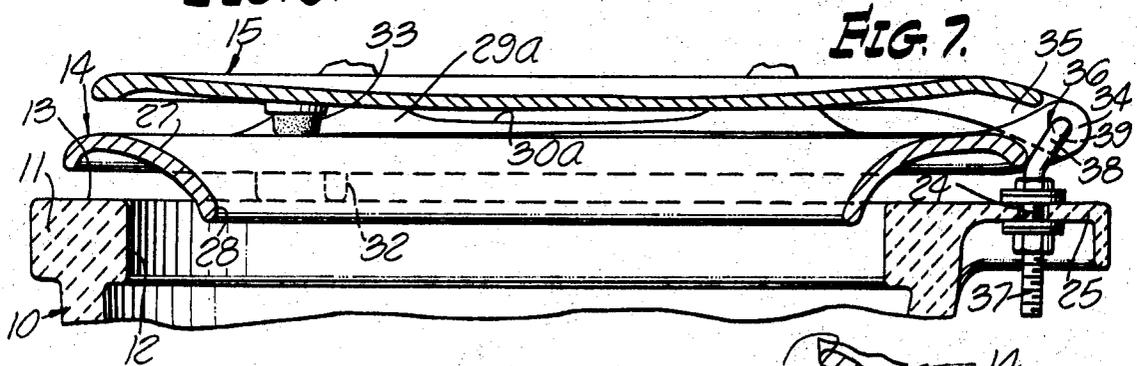


FIG. 7.

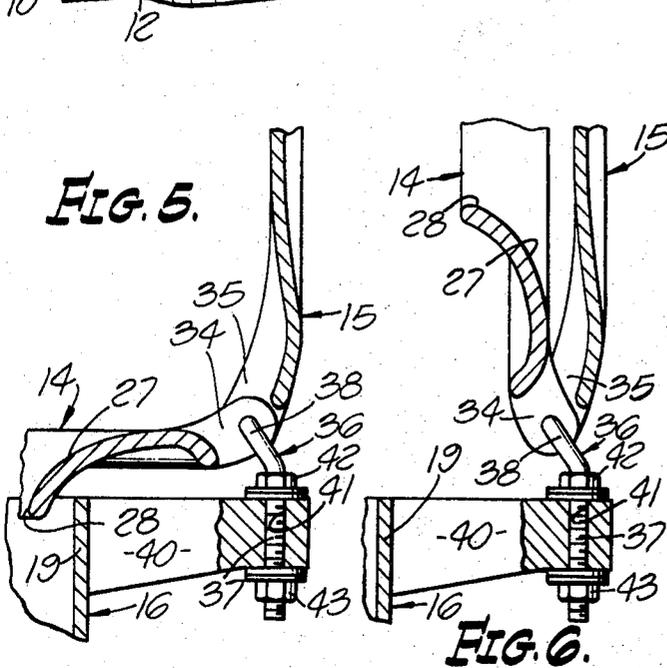


FIG. 5.

FIG. 6.

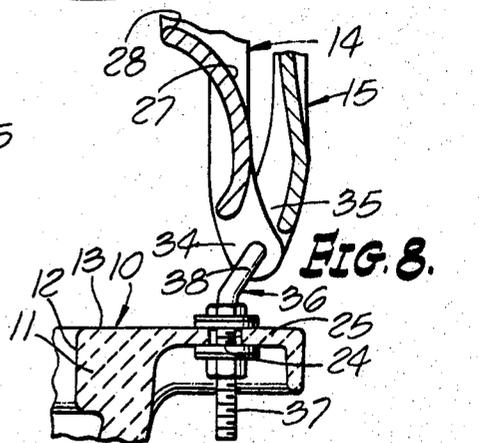


FIG. 8.

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## COMBINATION TOILET SEAT AND ELEVATOR THEREFOR

### BACKGROUND OF THE INVENTION

The present invention relates generally to waste disposal apparatus, and more particularly to an occupant seat structure for toilet bowls.

Toilet bowls as conventionally arranged are provided with a low-level hinged seat or ring which presents a very real and vital personal problem in many instances, particularly in the case of elderly people, and others who encounter inconvenience and painful distress when required to sit at the usual low-level, but find comfort and relief from pain and its attending uncomfortable circumstances, when sitting at a higher or elevated level. A problem also exists in cases where persons confined to a wheel chair are required to transfer from the chair to the seat of a low-level conventional toilet bowl arrangement. By utilizing the high level arrangement which is made possible in the present invention, change of position from the wheel chair to the seat of the toilet bowl, and vice versa, is materially aided.

Various structures have been suggested heretofore for coping with the above mentioned problem, but in the main these suggested arrangements have only partially been successful, and in most cases have involved structures of a rather complicated nature, and have involved the use of components which were not readily adaptable for use in a low-level arrangement, and which could later by the addition of readily available components be reassembled to provide a high-level or elevated seat arrangement, when such need should later arise.

It has been previously known, for example, in U.S. Letters Pat. No. 3,364,505 to provide a seat which is mounted at the top of a compensating riser or adapter in which an elevating hollow skirt is interposed between the seat and a supporting surface on the toilet bowl. The seat and riser or elevator provide a self-contained applicable and removable bowl attachment for use in lieu of the customary lid-equipped hinged lid attached occupant seat. The seat portion of the device of the patent is fixedly positioned and cannot be hingedly raised or lowered, and does not provide the usual lid or cover. That is to say that the device of the patent does not provide a complete seat or cover arrangement in the raised-level position which is compatible with the usual low-level installation. Moreover, the seat portion of the patent device lacks the side handles of the present invention which provide hand grips for the person while transferring to and from the seat or while seated thereon.

In the present invention, the seat structure embodies a novel annular seat with side hand grips which can be mounted in the usual position of the conventional seat of the conventional bowl or hopper to provide a low-level assembly, and which at a later date is susceptible of being combined with an additional elevator of the present invention to provide a raised or high-level assembly. The seat and associated lid or cover operate in a corresponding manner in either type of assembly.

### SUMMARY OF THE INVENTION

The present invention relates generally to an occupant seat structure for a toilet bowl or a hopper, and is more particularly concerned with a combination of components, certain of which can be initially associated to provide a low-level assembly, and which can later, by the addition of an elevator component, as the need arises, be converted to provide a high-level assembly.

A further object of the herein described invention is to provide an improved annular toilet seat with lateral hand grips for the aid and convenience of elderly persons and others in assuming a seated position thereon, arising and otherwise using the toilet bowl.

Another object is to provide a toilet seat of the above character which is readily adapted for attachment to an eleva-

tor structure to provide an elevated seat at a height level which will permit invalid persons such as might be confined to a wheel chair to more easily move into the seat and vice versa, and when seated to occupy a position which will not cause the discomfort and other undesirable effects effects which may attend the use of a low-level seat.

Still another object is to provide a seating structure of the character described which permits the use of a hinged lid or cover with the seat, and which makes provision for the operative association and adjustment of the seat and lid to adapt it to either a low-level assembly or a high-level assembly.

It is also an object to provide a composite seat structure which includes an improved elevator component which can be fixedly attached to a toilet bowl, and which at its upper end provides bracket means for the attachment of a hinged seat and hinged associated lid or cover.

A still further object includes the provision of a novel and unique pivot mounting means for hingedly supporting the seat with respect to an upper waste opening of a toilet bowl or a hopper, and which by simple reversal operation will serve to adjust the seat in a fore-and-aft direction with respect to the waste opening.

Further objects and advantages of the present invention will be brought out in the following part of the specification, wherein detailed description is for the purpose of fully disclosing the embodiments of the invention without placing limitations thereon.

### BRIEF DESCRIPTION OF THE DRAWINGS

Referring to the accompanying drawings, which are for illustrative purposes only:

FIG. 1 is a perspective view of a toilet bowl or hopper upon which there is mounted in combination a toilet seat and elevator therefor according to the herein described invention;

FIG. 2 is a fragmentary similar view showing the seat and associated lid in a raised position;

FIG. 3 is a large fragmentary longitudinal section taken through the composite assembly and showing the seat and lid in lowered position with respect to the top of the associated elevator means;

FIG. 4 is a detailed section of the hinge mounting for the seat and lid, taken substantially on line 4-4 of FIG. 3;

FIG. 5 is an enlarged fragmentary side view, partly in section, of the hinge means for attaching the seat and associated lid to the elevator, the seat being in lowered position and the cover in raised position;

FIG. 6 is a similar view to FIG. 5, except that the seat and associated cover are both in raised position;

FIG. 7 is an enlarged fragmentary view similar to FIG. 3, except that the elevator is omitted and the seat and cover mounted directly in association with the toilet bowl structure; and

FIG. 8 is a detail side view, partly in section, of the hinge means of FIG. 7, showing the supporting pivot in a reversed position with respect to the position as utilized in FIG. 3.

### DESCRIPTION OF THE SEVERAL EMBODIMENTS

Referring more specifically to the drawings, for illustrative purposes the invention in one form is shown as being applied to a conventional toilet bowl or hopper 10 constructed with the usual brim 11 which bounds an upper waste disposal opening 12 and presents an upper flat annular surface 13.

In the embodiment shown in FIG. 1, an annular seat 14 and associated cover or a lid 15 are hingedly supported in a high-level raised position above the brim 11 by means of an intermediate elevator as generally noted by the numeral 16.

The elevator is formed as a separate component of the assembly and comprises a tubular wall structure which provides an upstanding skirt 17 which is provided intermediate its ends with a peripheral outwardly projecting mounting flange 18 adapted to seat upon the upper surface 13 of the brim. As thus arranged, the skirt is divided into an upper extension portion

19 above the flange 18 and a lower extension portion 20 below the flange 18, and which is adapted to extend into the waste disposal opening 12 below the annular surface 13. The elevator as thus positioned provides an upper continuation of the waste opening 12 at the top of the elevator. At the rear side of the elevator, the mounting flange 18 is provided with spaced apart extensions 21a and 21b, each of these extensions being provided with an elongate end slot 22 (FIG. 3) for receiving therethrough a mounting bolt 23 positioned in an opening 24 of a bowl shelf portion 25 at the rear of the bowl, the bolt 23 being secured by an associated nut 26.

The seat 14 is shown as being of single wall construction, and may be fabricated by any suitable method of plastic or other suitable material with reinforcing ribs in a conventional manner. In general configuration the seat is annular or ring shaped and has a wall transverse configuration such as to provide a convex upper surface 27. The inner margin of the seat wall is arranged in the lowered position of the seat to overlap and extend inwardly of the upper edge of the extension portion 19 of the skirt and define a seat opening 28 having communication through the skirt with the waste disposal opening 12 of the bowl.

It is an important feature of the construction of the seat 14 that it is provided with integrally formed side extensions 29a and 29b respectively on its opposite sides. It will be observed that these extensions are outwardly and upwardly inclined and contain openings 30a and 30b so as to provide hand grips 31a and 31b respectively in elevated positions on opposite sides of the seat.

As best shown in FIG. 1, the lid 15 and seat 14 are arranged for hinged movements about a common hinge axes to raised and lowered positions relative to the upper end of the skirt 17. It is desirable to provide spaced bumpers 32 of rubber or other suitable material on the underside of the seat structure for engaging the upper edge of the skirt 17, and in a like manner provide bumpers as indicated by the numeral 33 on the lid for engagement with the upper surface 27 of the seat.

Rearwardly spaced hinge lugs 34-34 are arranged at the rear side of the seat to extend inwardly of similar hinge lugs 35-35 formed at the rear side of the lid 15. Each set of seat and lid hinge lugs are supported by pivot means having a construction as will now be described.

As best shown in FIGS. 3 and 4, the pivot means for each set of hinge lugs 34 and 35 comprises an elongate member 36 of rodlike material which is formed with a shank composed of a threaded straight portion 37 which is joined with an angularly extending portion 38 with a right angled end portion 39 forming a pivotal support for the associated hinge lugs 34 and 35. The angularly extending shank portion 38 in relation to the longitudinal axis of the end portion 39 is such that the axis of the end portion will be laterally offset with respect to the axis of the straight shank portion 37. The straight portion 37 of each member 36 is secured at the outermost end of a rearwardly extending bracket arm 40 at the upper end of the skirt 17. The straight portion of the shank is positioned in a bore passage 41 and retained by upper and lower-nuts 42 and 43 respectively, with underlying washers if desired. It will be observed that as mounted in FIG. 3, the shank portions 38 are inclined in a direction to offset the axis of the end portion 39 so as to place it inwardly of the shank portion 37.

Referring to FIG. 7, it will be readily appreciated that the seat 14 with its side hand grips will provide desirable benefits for certain persons who may be able to utilize a low-level seat arrangement as normally provided for conventional toilet bowls, and that under said circumstances it may not be necessary to provide the high-level arrangement with the elevator as shown in FIG. 3. The seat 14 and associated lid 15 are readily mountable for direct association with the brim 11 of the bowl or hopper 10. Due to the difference in the horizontal spacing of the bore passages 41 and the openings 24 in the bowl shelf portion, with respect to the rear side of the waste disposal opening 12, provision is made for appropriately changing the position of the axis of the end portion 39 of the pivot mem-

bers. For such purpose, the pivot members are interchanged and reversed so that instead of the portions 38 being inclined forwardly, they will be inclined rearwardly, as shown in FIG. 7. In this manner, the seat and lid will be adjusted in a fore-and-aft direction so as to appropriately position the seat and lid depending upon whether it is utilized in the low-level arrangement as shown in FIG. 7 or in the high-level arrangement as shown in FIG. 3.

From the foregoing description and drawings, it will be clearly evident that the delineated objects and features of the invention will be accomplished.

Various modifications may suggest themselves to those skilled in the art without departing from the spirit of my invention and hence, I do not wish to be restricted to the specific form shown or uses mentioned, except to the extent indicated in the appended claims.

I claim:

1. For use with a toilet bowl that includes an upper, opening defining brim, a rearwardly extending shelf portion at the level of the brim, and two laterally spaced vertical mounting holes through the shelf portion for receiving bolt shanks for hinged mounting a conventional toilet seat structure; an occupant seat assembly for invalids and the like, comprising in combination

an elevator unit comprising

an upstanding annular skirt, the lowermost end portion of which is conformed for positioning within the inner periphery of the bowl brim,

rearwardly extending bracket structure rigidly carried by the skirt at its upper end,

an outwardly extending peripheral support flange rigidly carried by the lower portion of the skirt above the lower end thereof and adapted to rest on the bowl brim, said flange being generally annular and including rearwardly extending rigid mounting structure in position to directly overlie said bowl shelf portion,

said mounting structure having two parallel slots extending in a fore-and-aft direction and laterally spaced to overlie said respective mounting holes and to receive mounting bolts through said holes for mounting the elevator unit on the bowl in rigidly fixed mutual relation in absence of a conventional toilet seat structure,

a seat unit comprising

an annular seat portion,

rearwardly extending seat mounting structure rigidly carried by the seat portion at the rear thereof,

and handle structures rigidly carried by the seat portion at the opposite sides thereof and inclined laterally outwardly and upwardly from the seat portion and terminating in hand grip formations in position to be gripped by a seat occupant prior to reaching fully seated position,

the seat portion and the handle structures providing a substantially continuous upwardly facing guide surface adapted to guidingly orient an occupant toward a properly seated position,

and hinge structure for pivotally interconnecting the seat unit mounting structure and the elevator unit bracket structure for swinging movement of the seat unit relative to a mounted elevator unit about a horizontal pivot axis between raised and lowered positions with respect to the upper end of the skirt,

said hinge structure and said mounting bolts cooperating to positively prevent lateral tilting of the seat assembly relative to the toilet bowl in response to unbalanced weight applied to the two handle structures by the seat occupant.

2. A toilet seat assembly as defined in claim 1, and in which said elevator unit bracket structure includes two laterally spaced vertical mounting holes having the same lateral spacing as said flange slots, and said hinge structure includes two straight bolt shanks and pivot structure mounting the shanks on said seat unit

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mounting structure for pivotal movement about said pivot axis with the shanks perpendicular to the pivot axis and mutually spaced longitudinally of the pivot axis by said lateral spacing of the bracket structure holes,

said hinge structure being adapted for mounting the seat unit on the elevator unit with the bolt shanks secured in the bracket structure holes, and being adapted, in absence of an elevator unit, for mounting the seat unit on said toilet bowl with the bolt shanks secured in said mounting holes of the bowl shelf.

3. A toilet seat structure for use by invalids and the like in combination with a toilet bowl, said seat structure comprising a unitary seat member including

a generally annular seat portion adapted to overlie a toilet bowl, and having an upwardly facing seat surface, lateral extensions at the respective sides of the seat portion, extending laterally outward from the seat portion

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and inclined curvingly upward, said extensions having upwardly facing surfaces that are essentially continuous with the seat surface and that form therewith an effectively smooth, upwardly facing, concavely curved guide surface adapted to guidingly orient an occupant toward a properly seated position,

the lateral extensions terminating in respective hand grip formations in position to be gripped by a seat occupant during and after attaining a seated position,

and structure for pivotally mounting the seat member on a toilet seat bowl for swinging movement between raised and lowered positions with respect to the bowl and for positively preventing lateral tilting movement of the seat member, when in lowered position, in response to unbalanced weight applied to the two hand grip formations by the seat occupant.