March 14, 1967 G. MILLER 3,308,483

TOILET SEAT CONSTRUCTION

Filed Jan. 31, 1964

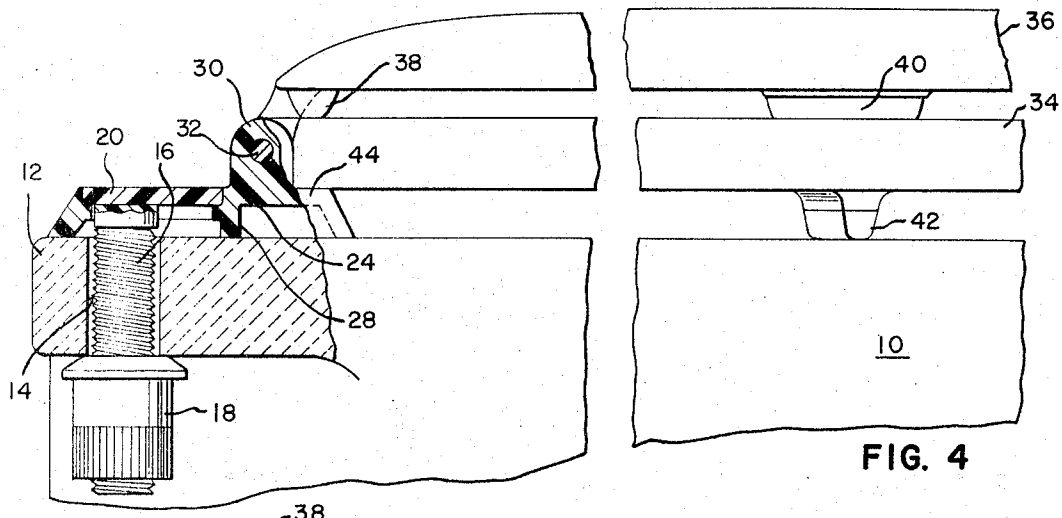


FIG. 4

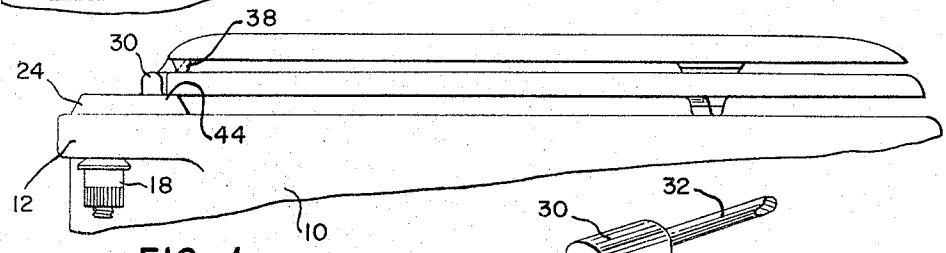


FIG. 1

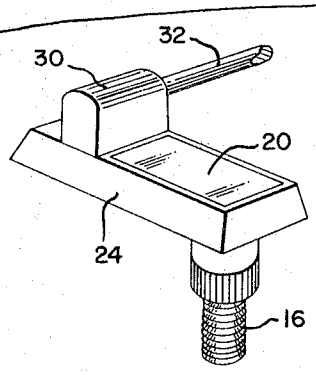


FIG. 2

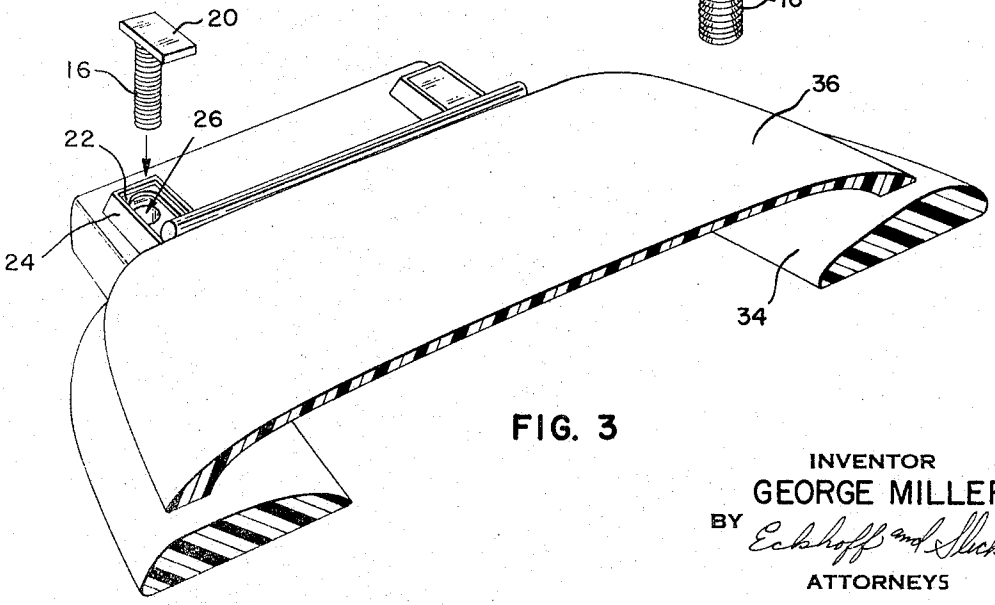


FIG. 3

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United States Patent Office 3,308,483
Patented Mar. 14, 1967

3,308,483

TOILET SEAT CONSTRUCTION

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Filed Jan. 31, 1964, Ser. No. 341,572
2 Claims. (Cl. 4—236)

This invention relates in general to a toilet seat hinge and anchor construction of a configuration especially adapted to be molded of a more or less rigid plastic.

Because of its relatively low cost and the ease with which it may be molded, plastic is commonly used in the manufacture of toilet seat hinges. Generally, such hinges are patterned after the older metal hinges and often fail to perform satisfactorily because of the limited strength and rigidity of plastics. These older metallic hinges conventionally were of such a structure that the toilet seat and the cover, as well as any load applied thereto, were supported at the rear largely by the hinges and associated brackets and leaves. The metal assembly were adequately rigid, but where plastic is substituted, the hinges or associated structure may fail or twist out of shape.

It is therefore an object of this invention to provide a hinge and anchor structure for toilet seats and covers which permits any load transmitted through the cover or seat to be supported by the back of the commode at points immediately beneath the seat and in such a fashion as to avoid twisting the anchoring members or other portions of the hinge assembly.

It is a further object of this invention to provide a hinge and anchor assembly which does not require that hinge leaves or screws holding hinge leaves to the toilet seat strike the commode rim, while, at the same time, providing support for the toilet seat at points immediately beneath the rear of the seat.

In the drawings:

FIGURE 1 is a fragmentary perspective view of a toilet seat and cover attached to the toilet by the hinge and anchor structure of this invention;

FIGURE 2 is an enlarged fragmentary view of one of the anchoring members and load-supporting bumpers of this invention;

FIGURE 3 is a fragmentary exploded view in perspective showing the method of assembling an anchoring bolt; and

FIGURE 4 is an enlarged fragmentary side elevation, partially in section, showing the hinge and anchor structure of this invention.

Generally, this invention comprises a hinge and anchor structure together with a toilet seat and cover structure especially designed for use therewith, the hinge and anchor assembly having forwardly extending horizontal support as an integral part thereof which rests immediately beneath and contacts the toilet seat when the latter is down but which does not pivot with the toilet seat when it is raised.

Referring now to the drawings wherein like characters refer to like parts throughout, there is shown in FIGURES 1 and 4 a portion of a commode **10** having the conventional rearwardly extending flanges **12** with vertical holes **14** of a sufficient size to accommodate bolts **16**. Nuts **18**, as seen especially in FIGURES 1 and 4, may be of plastic, as well as the bolts **16**. Each bolt **16** has a rectangular head **20** which may be elongated on one side, as shown. The head **20** fits snugly into the recess **22** in the molded plastic body portion **24**. The body portion has a hole **26** to accommodate bolt **16**. As shown in FIGURE 4, the molded, more or less hollow body member **24** may be strengthened by rib **28**. Each of the seat **34** and the cover

36 pivot about the hinge pin **32** held at the ends by cup members **30**.

In a preferred embodiment, the cover **36** has bumpers **38** positioned immediately under the portion of the cover nearest the hinge so that any load on the cover will be transmitted directly to the seat **34**. The front of the cover is supported by bumpers **40**. The seat has front bumpers **42** and is in the area adjacent the hinge rests directly on the flat, horizontal, forwardly extending supporting section **44** integral with body portion **24**.

It will be noted that when the seat **34** is lowered, it is supported by the portion **44** and therefore any load on the seat is transmitted directly to the surface of element **44** which is immediately adjacent the hinge rather than applying a twisting or downward moment to portions of the hinge structure. Furthermore, because of the fact that the supporting element **44** is not attached to the seat **34** and does not swing upwardly with it, as in the case of most bumpers or hinges which normally would be used to support the seat, there is no possibility of the top rim of the commode being marred.

As shown in the drawings, the preferred structure is a plastic cover and seat which have integral molded cylindrical elements having holes therethrough for hinge pin **32**. No separate hinge leaf attached to the seat or cover by means of screws is required. It is also possible to use the conventional separately attachable hinge leaves and still secure the advantages of this invention, insofar as such advantages flow from the placement of support members **44**.

Obviously, many modifications and variations may be made without departing from the spirit and scope of this invention, and therefore only such limitation should be imposed as are indicated in the appended claims.

I claim:

1. In a toilet seat hinge structure suitable for attachment to a toilet bowl, the improvements comprising:

(a) means for securing said hinge structure to a toilet bowl, said means including bolts and nuts for attaching said hinge structure to said bowl;

(b) a pair of planar supports integral with the said hinge structure, said planar supports also being integral with the said means for securing said hinge structure to said toilet bowl, said supports being fixed in a horizontal plane when said hinge structure is attached to the toilet bowl, said supports extending beneath the edge of said toilet seat at the back hereof and having a portion in supporting contact with the bottom surface of said seat with said seat is horizontal.

2. In a toilet seat hinge structure suitable for attachment to a toilet bowl, the improvements comprising:

(a) a toilet seat having a planar bottom surface;

(b) a hinge pin pivotally carrying said toilet seat;

(c) means at each end of said hinge pin and rearwardly thereof for securing said hinge structure to a toilet bowl, said means including bolts and nuts for attaching said hinge structure to said bowl;

(d) a support at each end of said hinge pin and forwardly thereof, each of said supports being integral with a respective said rearwardly extending means, and having a planar supporting surface fixed in a horizontal plane when said hinge structure is secured to a toilet bowl, said supports extending beneath said toilet seat and having their supporting surface in supporting contact with said planar bottom surface of said seat when said seat is in horizontal operative position; and,

(e) a toilet seat and cover integral with the said hinge structure, said seat having bumpers on the underside thereof adjacent the front of said seat for supporting the front of said seat on the rim of said toilet bowl, said bumpers being of about the same height as the said support integral with said hinge structure, said cover having bumpers on the underside thereof positioned above and substantially in a vertical line with said bumpers on the underside of the said seat when the said cover is horizontal, said cover also having bumpers on the underside thereof substantially above and in a vertical line with the portion of said support extending to beneath the edge of said seat whereby a load applied to the said cover is transmitted substantially vertically through the said bumpers and supports to the upper rim of said toilet bowl.

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