United States Patent [19]

Klein

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[54] **TOILET SUPPORT**

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[52] **U.S. Cl.** **4/254**; 4/134

[51] **Int. Cl.²** **E03D 11/00**

[58] **Field of Search** 4/1, 254, 134, 68, 170; 297/331, 335, 411, 417

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[57] **ABSTRACT**

A toilet support comprising an arm pivoted at one end adjacent the pivot of the toilet seat and fastened at the other end to the seat by having a portion thereof extend into an opening in the arm rather than being fastened to the underside of the seat. Novel mounting means are provided for one end of the arm.

14 Claims, 6 Drawing Figures

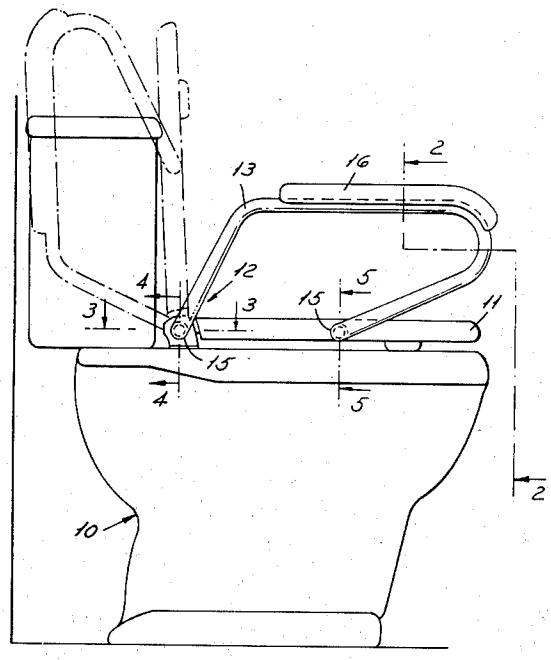
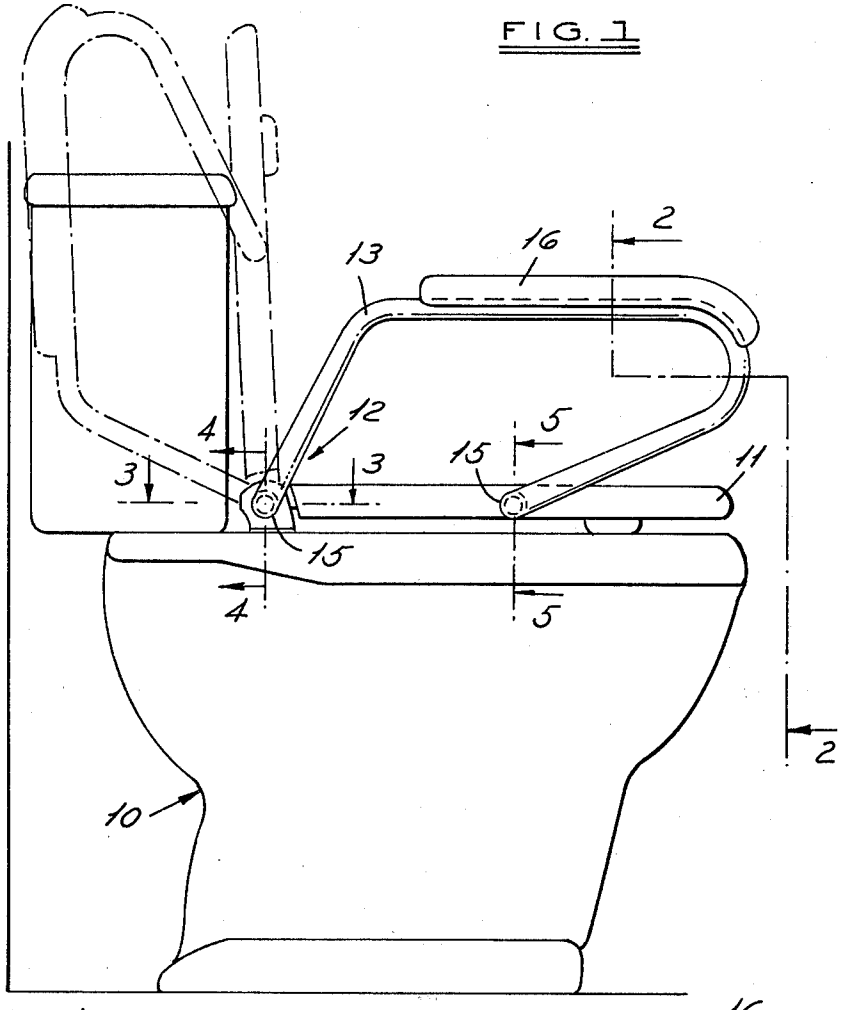


FIG. 1



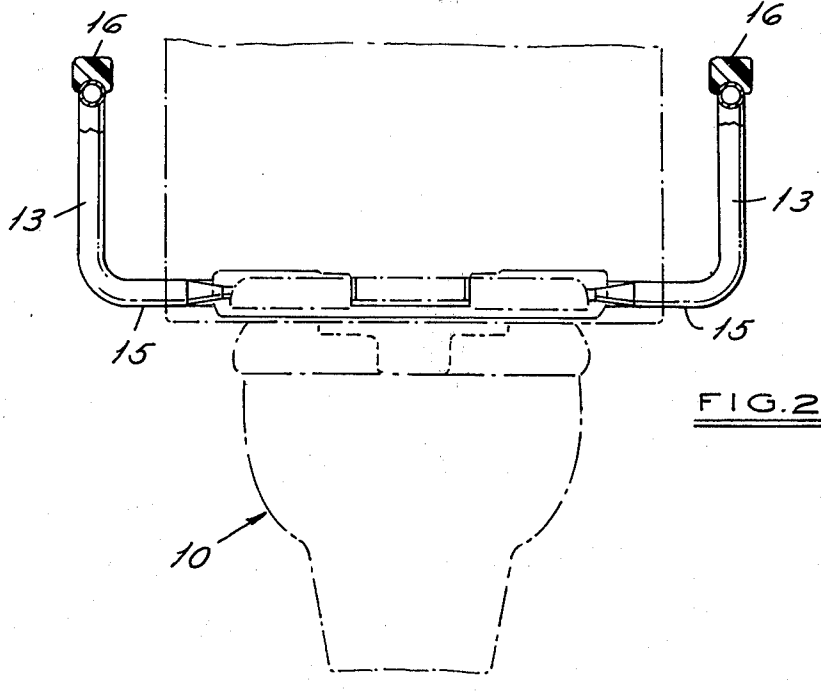


FIG. 2

FIG. 3

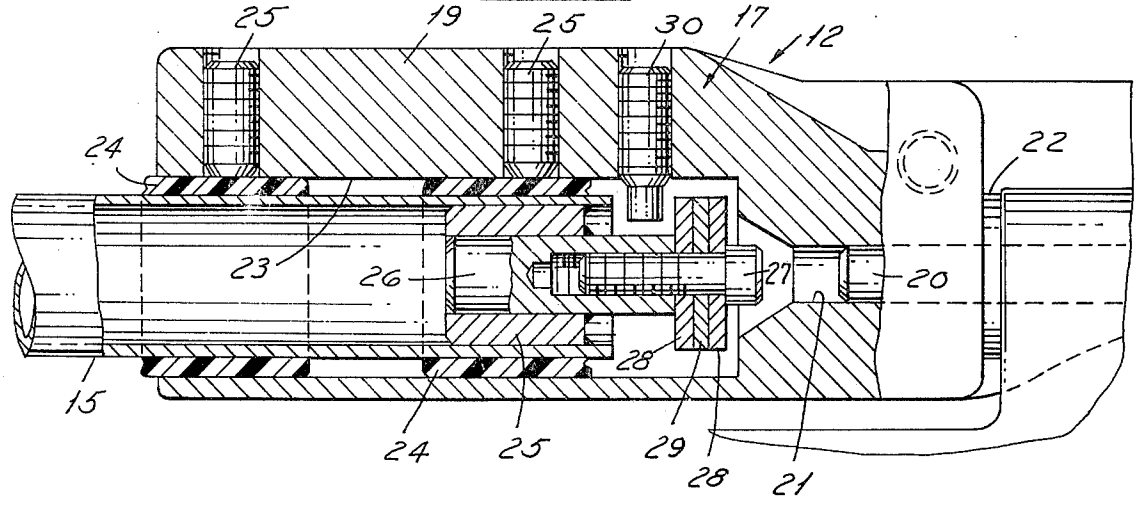


FIG. 4

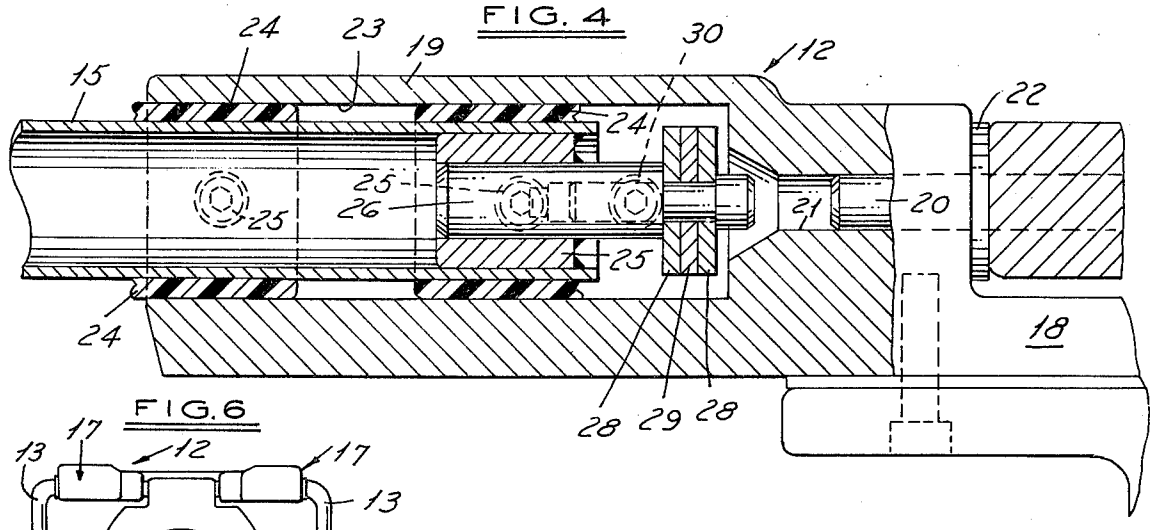


FIG. 6

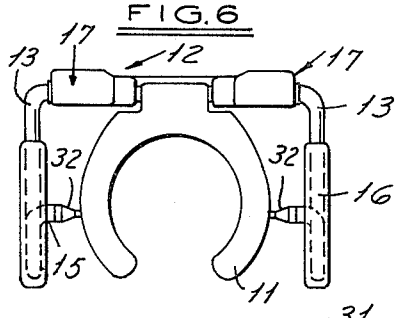
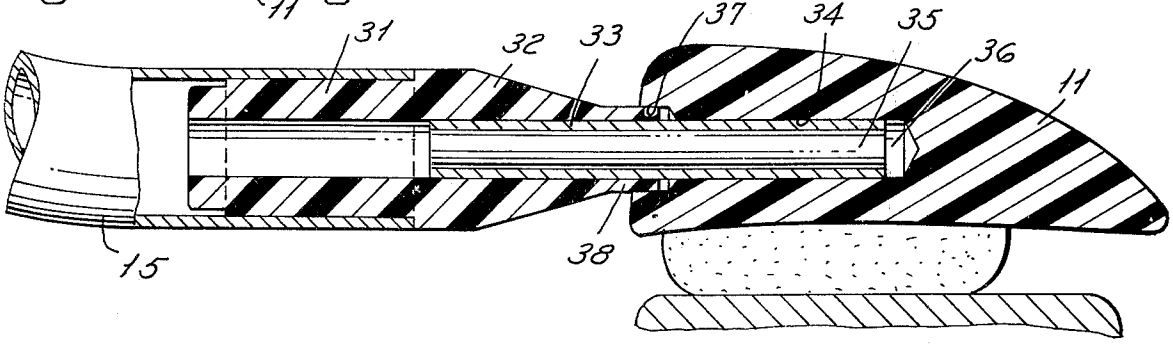


FIG. 5



TOILET SUPPORT

This invention relates to toilet supports.

BACKGROUND OF THE INVENTION

In the handling of medical patients, the aged and other persons with handicaps, it is heretofore been suggested that armrests be provided adjacent the toilets to facilitate the use thereof by such persons. One type of armrest that has been suggested includes a handgripping portion and spaced ends, one end being pivoted adjacent the pivot of the tiolet seat and the other resting upon the toilet or being fastened to the underside of the toilet seat. It has been found that where the arm is fastened to the underside of the seat, the seat tends to become weakened and since the entire force is placed upon the fastener such as the screws that hold the arm to the seat.

Accordingly, among the objects of the invention are to provide a toilet support which is stronger, easier to clean and includes novel mounting means.

SUMMARY

In accordance with the invention, the arm is pivoted at one end adjacent the pivot of the toilet seat and at the other end is fastened to the seat by having a portion thereof extend into an opening in the arm rather than being fastened to the underside of the seat. Novel mounting means are provided for one end of the arm.

DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevational view of a toilet embodying the toilet seat.

FIG. **2** is a fragmentary sectional view taken along the line **2—2** in FIG. **1,** parts being broken away.

FIG. **3** is a fragmentary sectional view on an enlarged scale taken along the line **3—3** in FIG. **1.**

FIG. **4** is a fragmentary sectional view on an enlarged scale taken along the line **4—4** in FIG. **1.**

FIG. **5** is a fragmentary sectional view on an enlarged scale taken along the line **5—5** in FIG. **1.**

FIG. **6** is a fragmentary plan view of the portion of the seat shown in FIG. **5.**

DESCRIPTION

Referring to FIG. **1,** the invention is adapted to be provided on a toilet **10** of conventional construction having a toilet seat **11** pivoted by a hinge assembly **12** to the toilet. An arm **13** having spaced ends **14, 15** and an intermediate hand-gripping portion **16** is mounted as presently described to provide support for the user.

Referring to FIGS. **3** and **4,** the arm **13** is generally tubular. The hinge means **12** comprises an integral body **17** which has a base **18** and spaced integral portions **19** that are enlarged. A pivot pin **20** extends between the spaced portions and has its ends extending into openings **21** to provide the pivot for the toilet seat **11.** Nylon washers **22** are interposed between the toilet seat and the spaced portions **19.** Each spaced portion **19** includes an opening **23** extending laterally into which the end **14** of the arm is directed. Spaced plastic sleeves **24** are interposed between the end **14** and the sides of the opening **23** and screws **25** are threaded radially inwardly to engage the sleeves and thereby provide a yielding force tending to hold the arm in any position so that the arm will not drop by gravity with any force. A plug **25** of plastic is positioned in the end of the arm **13** and supports a second plug **26** into which a screw **27** is threaded to hold spaced nylon washers **28** and an intermediate washer **29** in spaced relation to the end of the arm **13.** A lock screw **30** is threaded radially inwardly into the space so that the arm is thereby retained against axial outward movement.

Referring to FIGS. **5** and **6,** the other end **15** of the arm has a plastic plug **31** frictionally held therein and having a tapered portion **32** that supports tube **33** of smaller cross section. The tube **33** extends into an opening **34** of the seat **11,** the opening extending substantially midway between the sides of the seat. A pin **35** is inserted in the tube **33** before insertion in the opening **34,** the pin having an enlarged head **36** with an outer diameter substantially equal to that of the outer diameter of the tube **33** so that both the tube and the pin frictionally engage the opening **34** of the seat. The opening **34** has a countersunk portion **37** into which the reduced straight end **38** of the plug **31** extends.

It has been found that by an arrangement wherein the end of the arm **13** extends into **34,** the strength of the entire assembly is substantially increased over a construction wherein the end of the arm is fastened to the underside of the seat by screws and the like. In addition, the underside of the seat is easier to clean and does not tend to collect dirt.

I claim:

1. In a toilet support for use in a toilet bowl having hinge means hinging a toilet seat to the bowl about a hinge axis, the combination comprising

an arm having spaced ends and an intermediate hand-gripping portion,

bearing means for mounting one end of said arm adjacent said hinge means, the other end of said arm being held in said seat

said toilet seat having a laterally extending opening,

and means extending from the other end of said arm into said opening whereby when said arm is raised, the toilet seat is raised or vice versa.

2. The combination set forth in claim **1** including friction means yieldingly opposing the movement of said arm.

3. The combination set forth in claim **1** wherein said arm has a portion of solid cross section extending into said opening.

4. The combination set forth in claim **1** wherein said arm is tubular,

said arm having a portion of reduced cross section extending into said opening.

5. The combination set forth in claim **4** wherein said portion of reduced cross section is tubular and extends into said opening,

and a pin in said tubular portion having an enlarged head frictionally engaging the sides of said opening.

6. The combination set forth in claim **1** wherein the other end of said arm extends into said toilet seat substantially midway between the side edges thereof.

7. The combination set forth in claim **1** wherein said bearing means comprises an integral housing having integral spaced bearing portions,

a pivot pin extending between said spaced portions and forming the hinge means for the toilet seat,

each said spaced portions have a laterally extending opening into which the one end of the arm extends,

plastic sleeves interposed between said one end of said arm and the sides of said opening,

screws extending into and engaging said sleeves to form yielding means resisting the pivotal movement of said arm.

8. The combination set forth in claim **8** including means for locking said one end of said arm against axial withdrawal from said opening.

9. The combination set forth in claim **8** wherein said last-mentioned means comprises spaced portions, and a laterally extending member interposed between said spaced portions and extending from said spaced portion of said housing.

10. The combination set forth in claim **8** wherein said pivot pin is provided in a reduced portion of the opening in said enlarged integral bearing portion of said housing.

11. In a toilet support for use in a toilet bowl having hinge means hinging a toilet seat to the bowl about a hinge axis, the combination comprising

an arm having spaced ends and an intermediate hand-gripping portion,

bearing means for mounting one end of said arm adjacent said hinge means the other end of said arm being held in said opening in said seat,

said bearing means comprising a bearing portion,

a pivot pin extending between said spaced portions and forming the hinge means for the toilet seat,

said spaced portion having laterally extending opening into which the one end of the arm extends,

plastic sleeves interposed between said one end of said arm and the sides of said opening,

screws extending into and engaging said sleeves to form yielding means resisting the pivotal movement of said arm.

12. The combination set forth in claim **11** including means for locking said one end of said arm against axial withdrawal from said opening.

13. The combination set forth in claim **11** wherein said last-mentioned means comprises spaced portions, and a laterally extending member interposed between said spaced portions and extending from said spaced portion of said housing.

14. The combination set forth in claim **12** wherein said pivot pin is provided in a reduced portion of the opening in said bearing portion.

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