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(54) **TOILET SEAT LIFT DEVICE**

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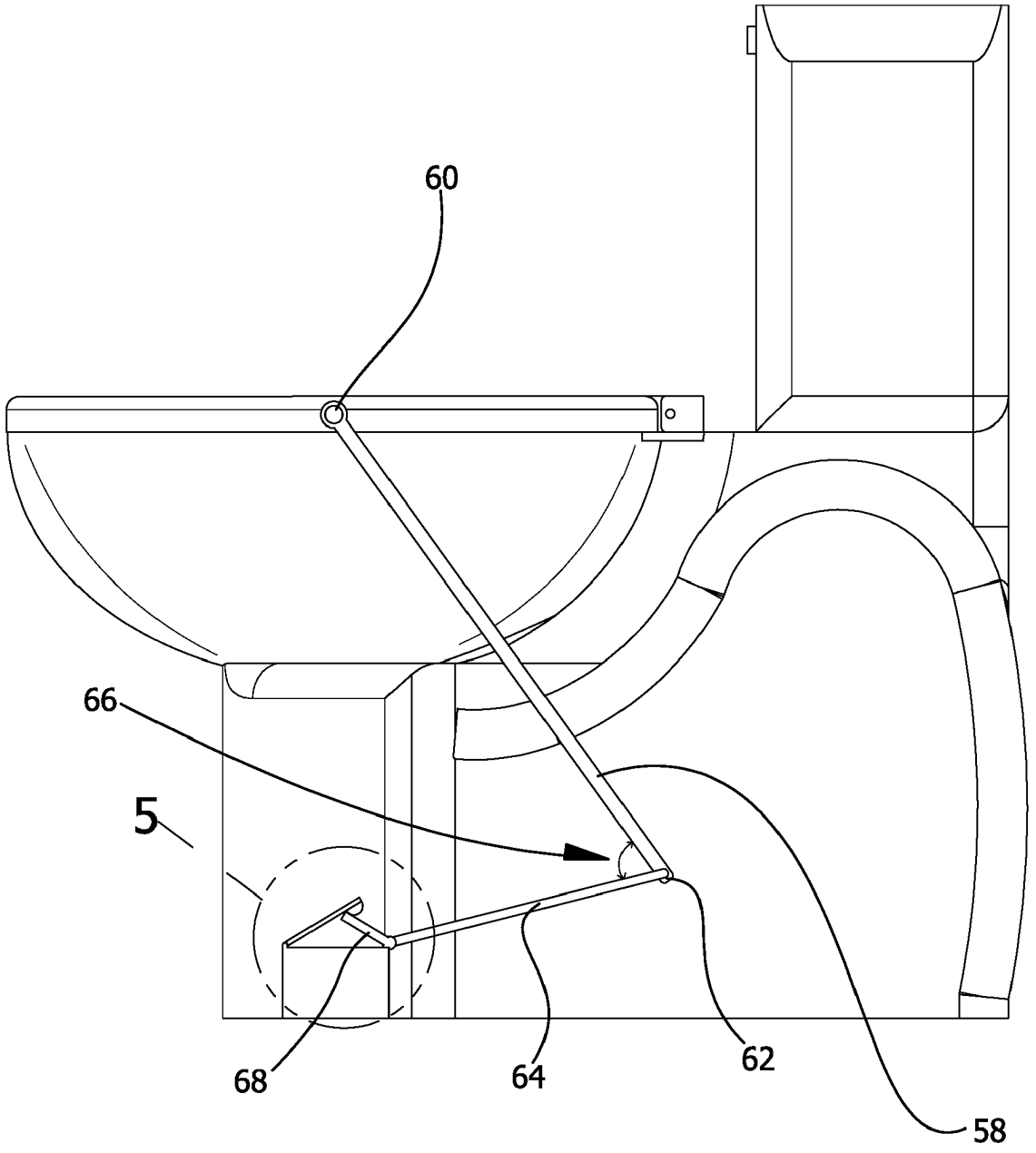
(57) **ABSTRACT**

A toilet seat lift device for hands-free lifting and lowering of a toilet seat includes a toilet having a bowl and a seat. The seat is pivotably coupled to the bowl. The seat is pivotable between a raised position and a lowered position. The device further includes a pedal and an arm that is coupled to and extends between the seat and the pedal. Pressure on the pedal lifts the seat into the raised position. The seat pivots into the lowered position when pressure is removed from the pedal.



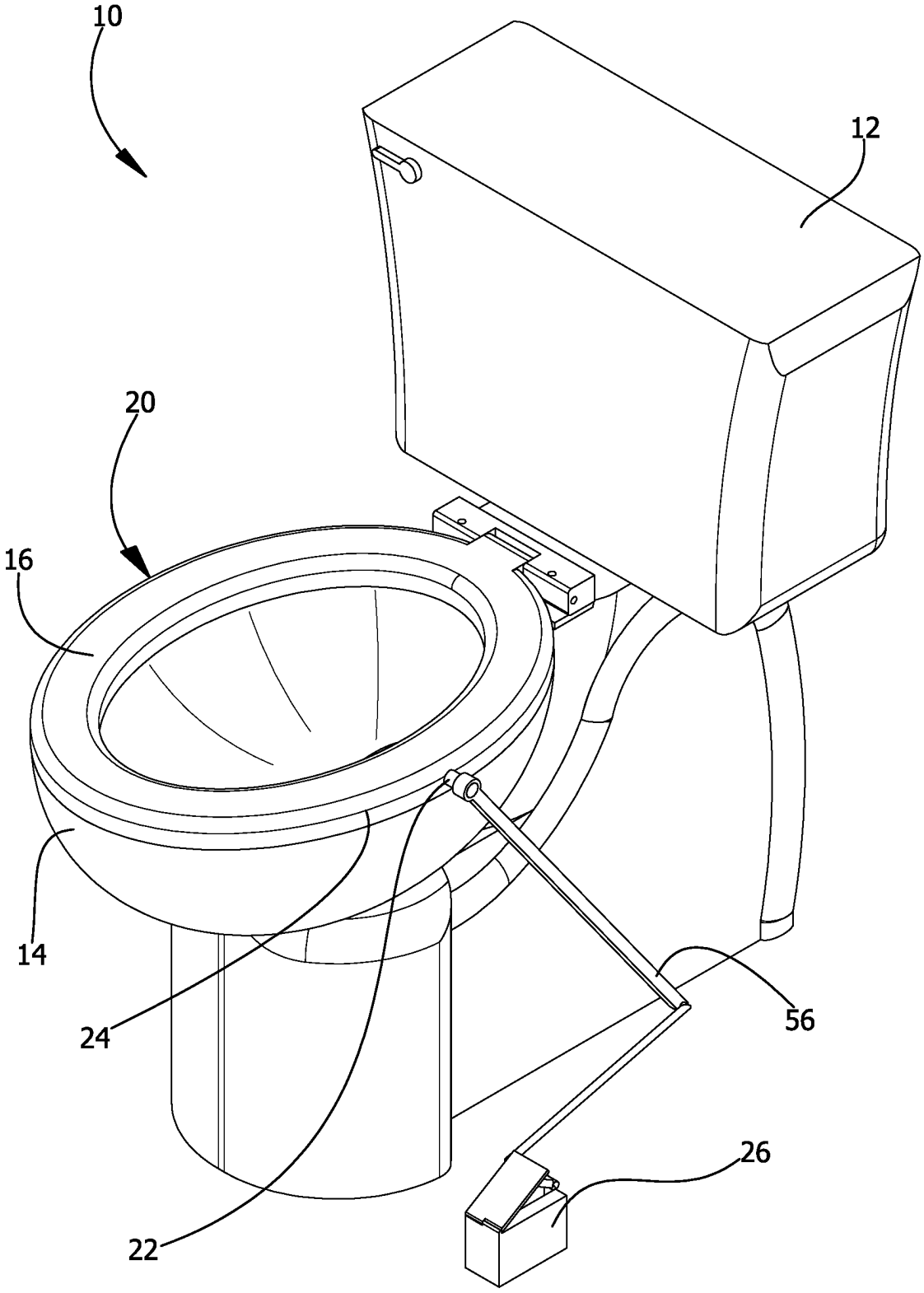


FIG. 1

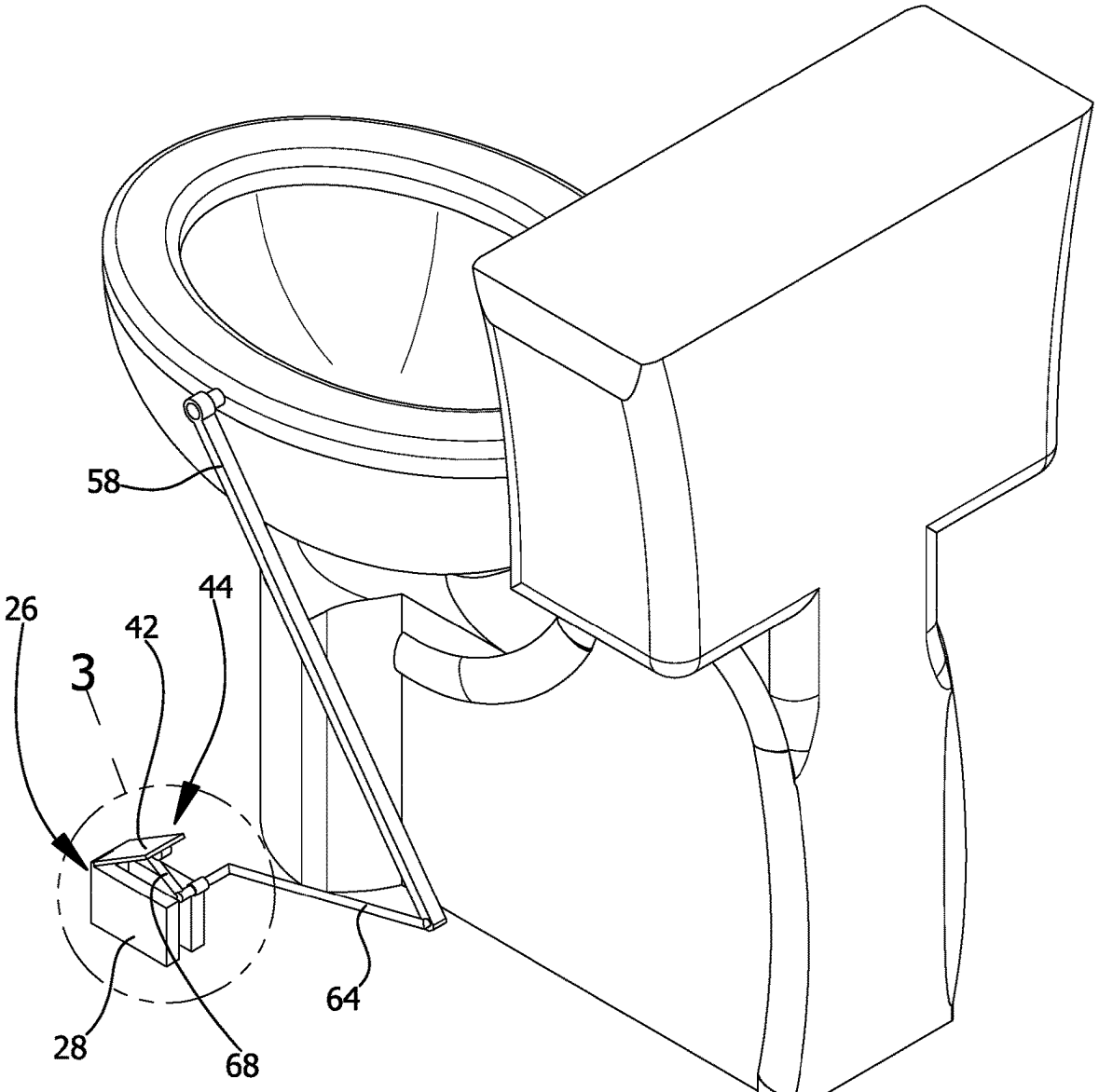


FIG. 2

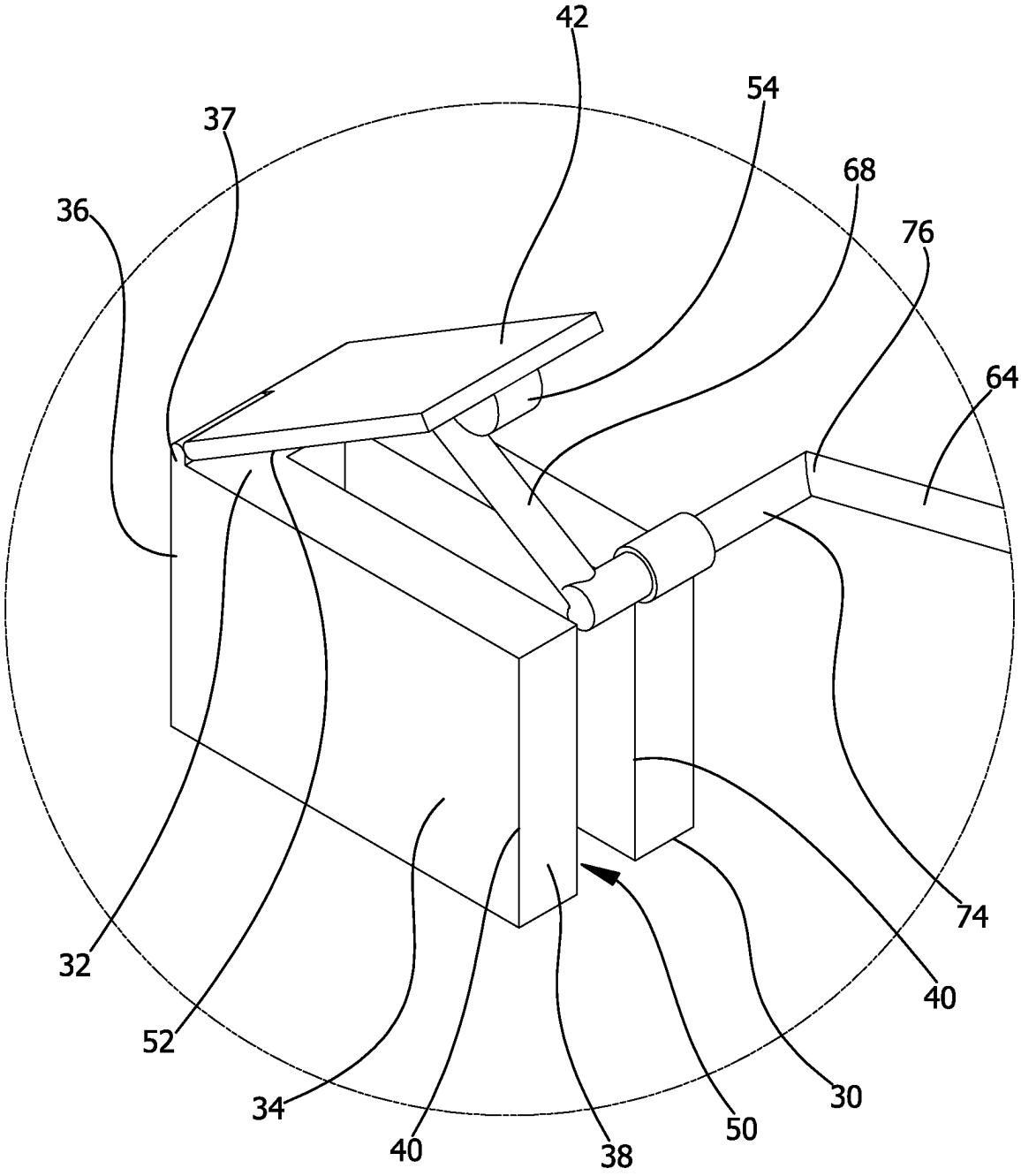


FIG. 3

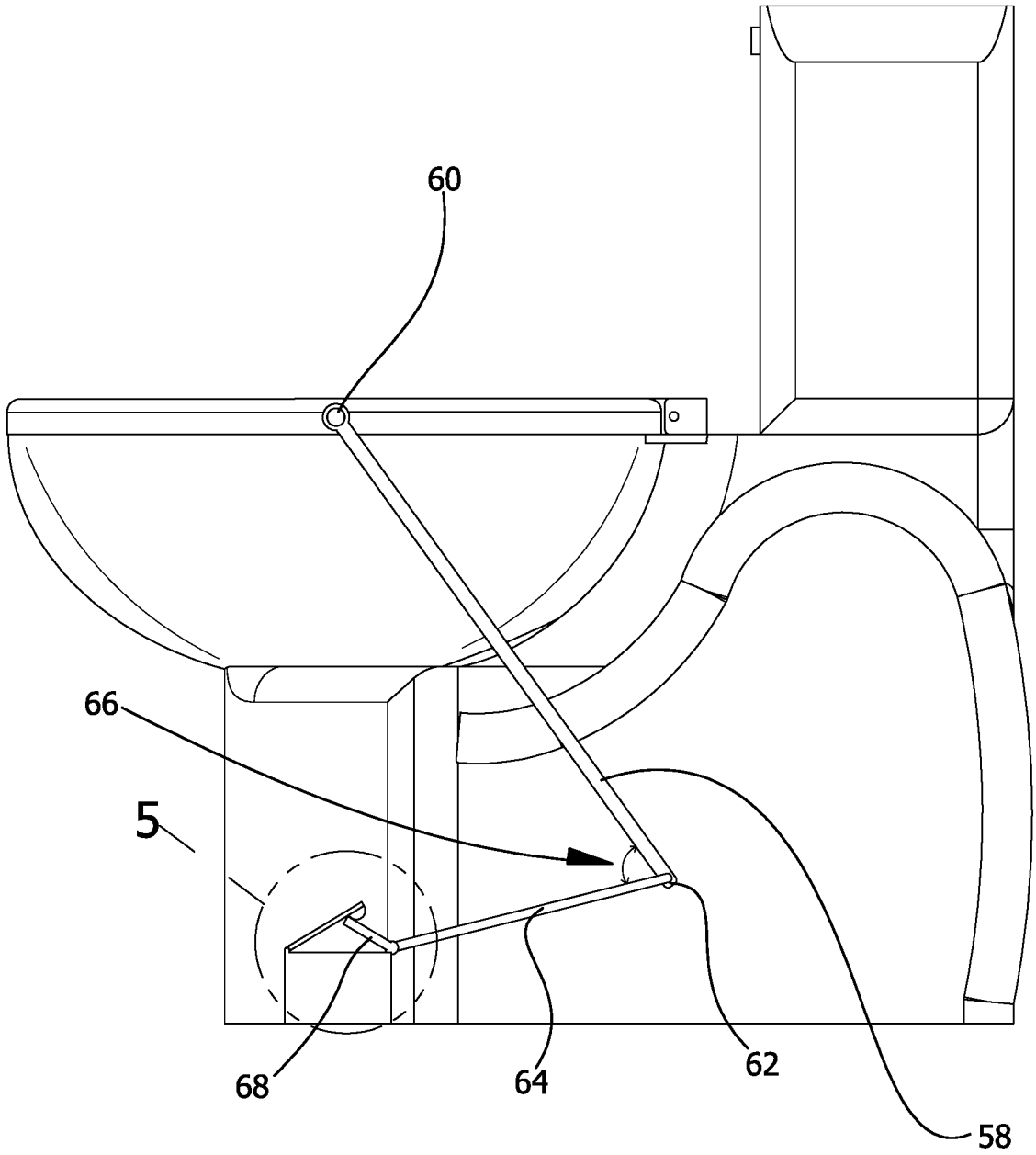


FIG. 4

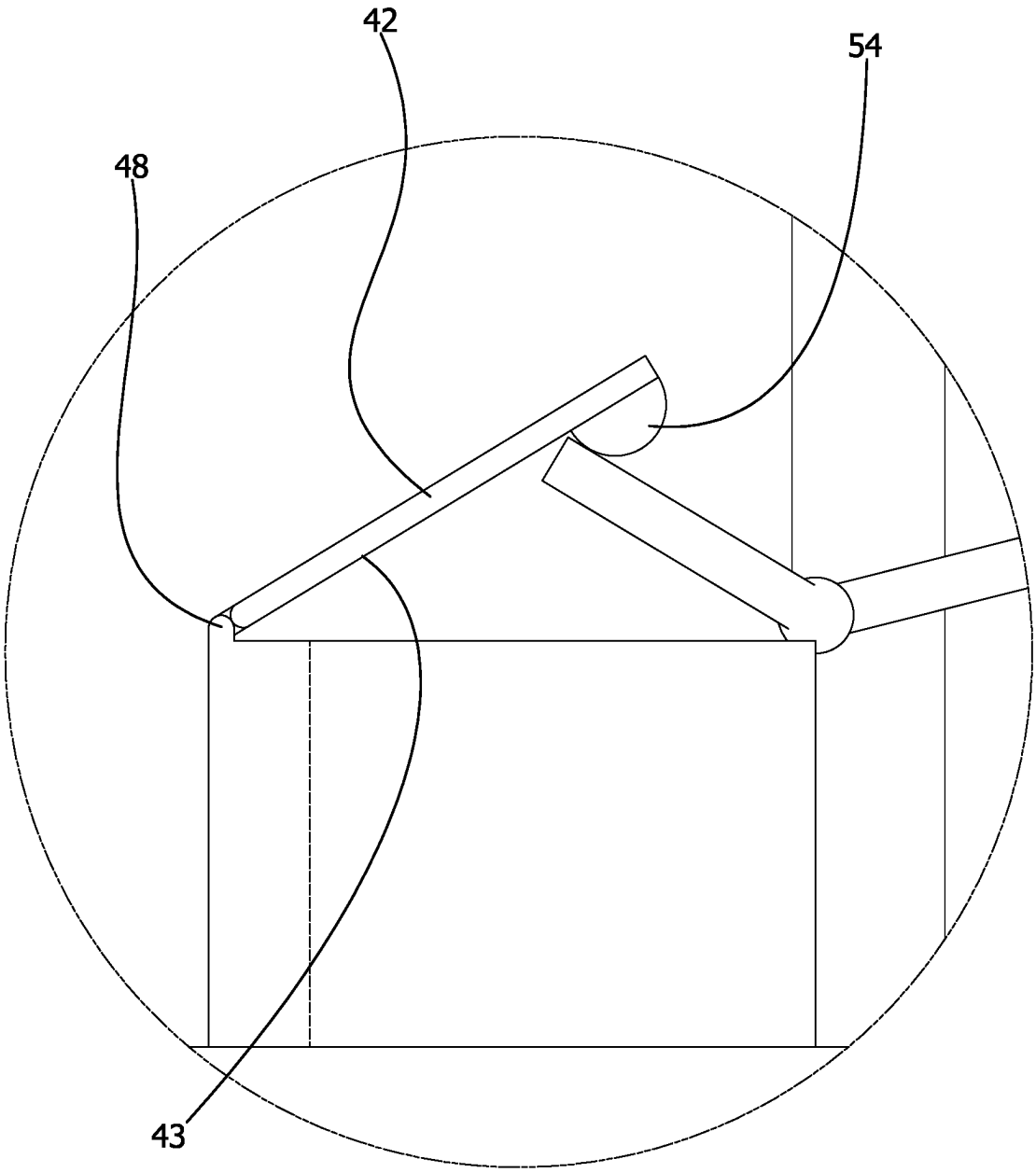


FIG. 5

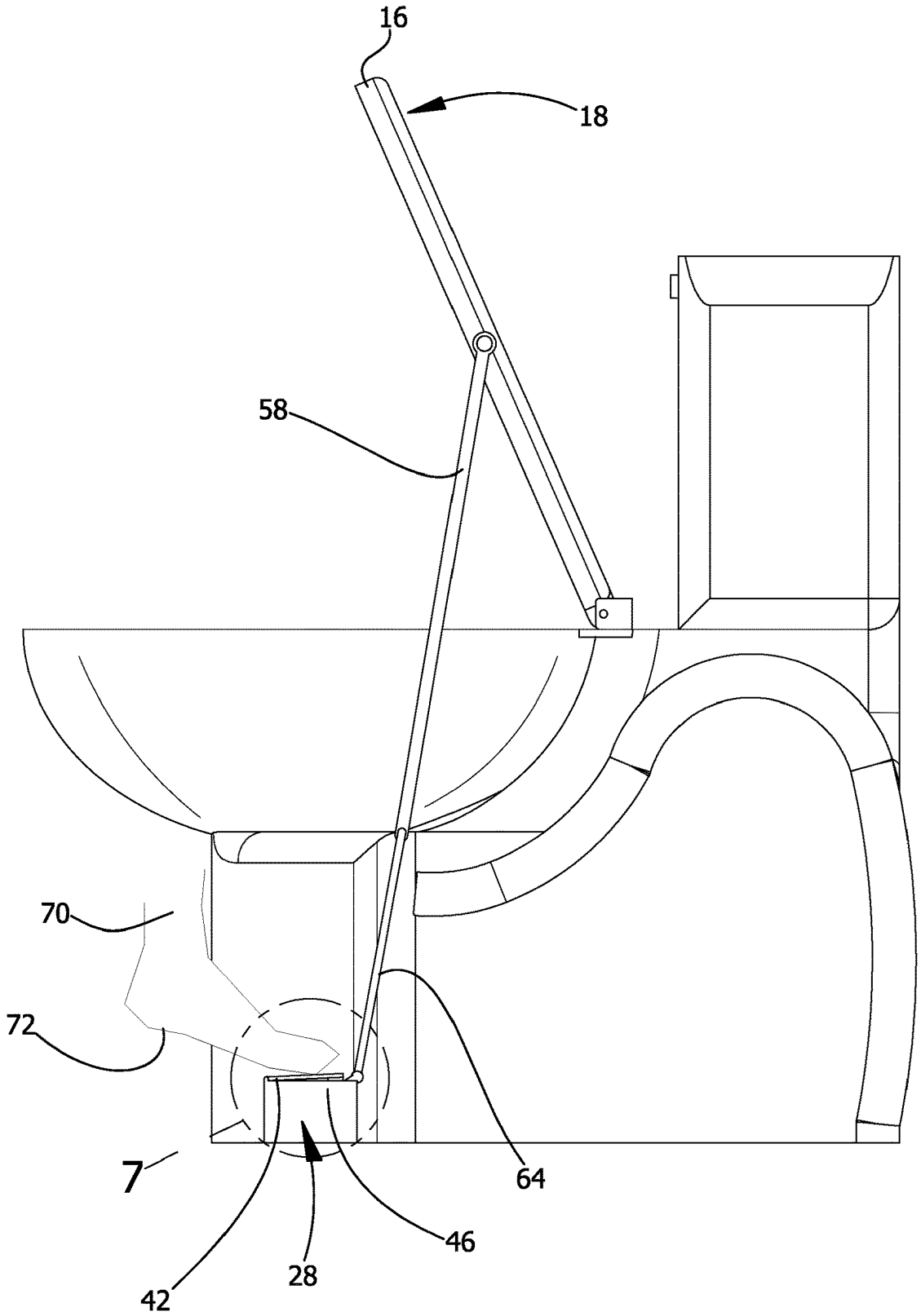


FIG. 6

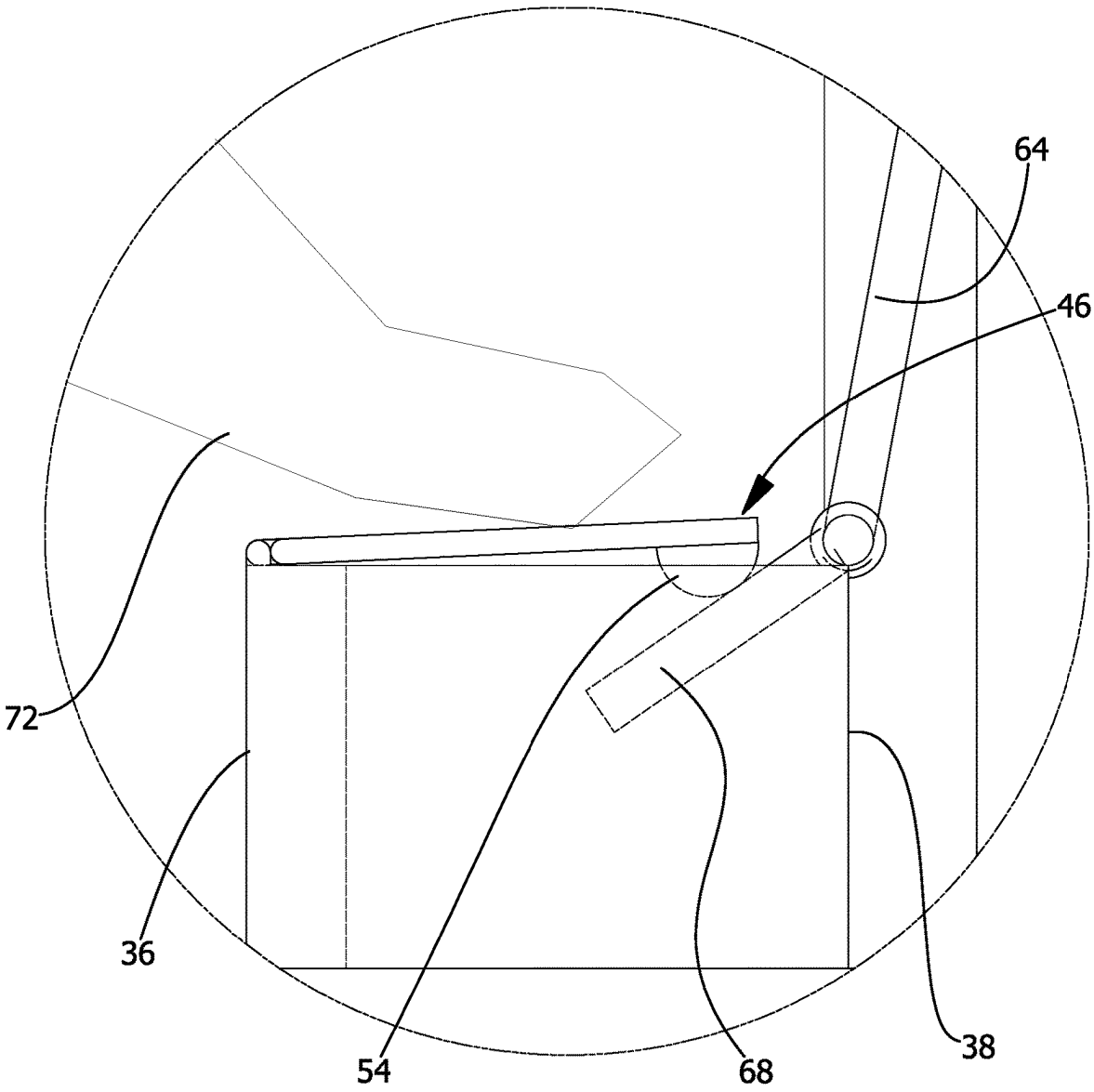


FIG. 7

TOILET SEAT LIFT DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not Applicable

THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT

[0003] Not Applicable

INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC OR AS A TEXT FILE VIA THE OFFICE ELECTRONIC FILING SYSTEM

[0004] Not Applicable

STATEMENT REGARDING PRIOR DISCLOSURES BY THE INVENTOR OR JOINT INVENTOR

[0005] Not Applicable

BACKGROUND OF THE INVENTION

(1) Field of the Invention

[0006] The disclosure relates to lift mechanisms and more particularly pertains to a new lift mechanism for hands-free lifting and lowering of a toilet seat.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98

[0007] The prior art relates to lift mechanisms. The prior art discloses various lift mechanisms for raising a toilet seat. However, such devices often leave the toilet seat in a raised position after a user is finished using the toilet. When a subsequent user tries to sit down on the toilet, they may fall into the bowl of the toilet because the seat is in the raised position. This can be an extremely uncomfortable and unsettling experience. Thus, there is a need in the art for a toilet seat lift mechanism that will also lower the seat after the user is finished.

BRIEF SUMMARY OF THE INVENTION

[0008] An embodiment of the disclosure meets the needs presented above by generally comprising a toilet having a bowl and a seat. The seat is pivotably coupled to the bowl. The seat is pivotable between a raised position and a lowered position. The embodiment further comprises a pedal and an arm that is coupled to and extends between the seat and the pedal. Pressure on the pedal lifts the seat into the raised position. The seat pivots into the lowered position when pressure is removed from the pedal.

[0009] There has thus been outlined, rather broadly, the more important features of the disclosure in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the disclosure that will be described hereinafter and which will form the subject matter of the claims appended hereto.

[0010] The objects of the disclosure, along with the various features of novelty which characterize the disclosure, are pointed out with particularity in the claims annexed to and forming a part of this disclosure.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWING(S)

[0011] The disclosure will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

[0012] FIG. **1** is a top front isometric view of a toilet seat lift device according to an embodiment of the disclosure.

[0013] FIG. **2** is a top rear isometric view of an embodiment of the disclosure.

[0014] FIG. **3** is a detail view of an embodiment of the disclosure.

[0015] FIG. **4** is a side view of an embodiment of the disclosure.

[0016] FIG. **5** is a detail view of an embodiment of the disclosure.

[0017] FIG. **6** is a side view of an embodiment of the disclosure.

[0018] FIG. **7** is a detail view of an embodiment of the disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0019] With reference now to the drawings, and in particular to FIGS. **1** through **7** thereof, a new lift mechanism embodying the principles and concepts of an embodiment of the disclosure and generally designated by the reference numeral **10** will be described.

[0020] As best illustrated in FIGS. **1** through **7**, the toilet seat lift device **10** generally comprises a toilet **12** having a bowl **14** and a seat **16**. The seat **16** is pivotably coupled to the bowl **14**. The seat **16** is pivotable between a raised position **18** and a lowered position **20**.

[0021] An axle **22** may be coupled to and extend outwardly from a perimeter edge **24** of the seat **16**. For example, the axle **22** may be positioned on a side of the seat **16** so that the axle **22** does not interfere with the movement of the seat **16** relative to the bowl **14**. When the axle **22** is on the side of the seat **16**, the axle **22** also does not interfere with the comfort of the seat **16**, for example when a user **70** is sitting on the seat **16**.

[0022] A pedal **26** is positioned proximate to the toilet **12**. For example, the pedal **26** may be positioned on the same side of the toilet **12** as the axle **22**, or in other words, the pedal **26** may be positioned beneath the axle **22**.

[0023] The pedal may include a box **28** having a lower surface **30**, an upper surface **32**, and a peripheral surface **34** that is coupled to and extends between the lower surface **30** and the upper surface **32**. The lower surface **30** is generally flat so that the box **28** is stabilized while resting on the floor next to the toilet **12**. The box **28** generally has a front side **36**, a back side **38**, and a pair of lateral sides **40** that is coupled to and extends between the front side **36** and the back side **38**.

[0024] A plate **42** may be pivotably coupled to the upper surface **32** of the box **28**. The plate **42** is pivotable between an elevated position **44** and a depressed position **46**. Generally, pressure on the plate **42** lowers the plate **42** into the depressed position **46**. The plate **42** may contact the upper surface **32** when the plate **42** is in the depressed position **46**. The plate **42** pivots into the elevated position **44** when pressure is removed from the plate **42**. The plate **42** is configured for manipulation by a foot **72** of the user **70**.

[0025] A hinge **48** may pivotably couple the plate **42** to the upper surface **32**. For example, the hinge **48** may be positioned at a top edge **37** of the front side **36** of the box **28**. The hinge may bias the plate **42** in the elevated position **44** whereby the plate **42** pivots into the elevated position **44** when pressure is removed from the plate **42**.

[0026] A channel **50** may extend into the back side **38** of box **28** through each of the peripheral surface **24**, the lower surface **30**, and the upper surface **32**. As shown in FIG. **3**, the channel **50** may be aligned with the pair of lateral sides **40**. The channel **50** may have an inner edge **52** that is spaced from the top edge **37** of the front side **36** of the box **28**.

[0027] A knob **54** may be coupled to and extend downwardly from a bottom face **43** of the plate **42**. The knob **54** is generally positioned within the channel **50** when the plate **42** is in the depressed position **46**. In some embodiments, the knob may have a half-cylinder shape, as shown in FIG. **5**.

[0028] An arm **56** is coupled to and extends between the seat **16** and the pedal **26**. Pressure on the pedal **26** lifts the seat **16** into the raised position **18**. The seat **16** pivots into the lowered position **20** when pressure is removed from the pedal **26**. For example, the weight of the arm **56** may pull the seat **16** downward into the lowered position **20** when pressure is removed from the pedal **26**. The weight of the seat **16** may also urge the seat **16** back to the lowered position **20** when pressure on the pedal **26** is removed.

[0029] Embodiments of the arm **56** may further comprise a first section **58** having a first end **60** and a second end **62**. The first end **60** may be coupled to the axle **22** extending outwardly from the seat **16**, and the axle **22** may extend through the first end **60**. In other embodiments, the first end **60** may be coupled to the seat **16**.

[0030] A second section **64** is pivotably coupled to the second end **62** of the first section **58**. The second section **64** may be aligned with the first section **58** when the seat **16** is in the raised position **18**. The first section **58** and second section **64** may form an acute angle **66** when the seat **16** is in the lowered position **20**. A bar **74** may be coupled to and extend outwardly from a bottom end **76** of the second section **64**. The bar **74** may be perpendicular to the second section **64**.

[0031] A third section **68** may be pivotably coupled to the second section **64** distal to the second end **62** of the first section **58**. For example, the third section **68** may be coupled to and extend upwardly from the bar **74** coupled to the bottom end **76** of the second section **64**. The third section **68** is generally in contact with the pedal **26**, for example touching the knob **54** on the bottom face **43** of the plate **42**. The plate **42** may push the third section **68** downwardly into the channel **50** when pressure is applied to the plate **42**. The third section **68** pivots the second section **64** into alignment with the first section **58** when pressure is applied to the plate **42** whereby the plate **42** is pivoted downwardly into the depressed position **46** and the seat **16** is pivoted upwardly into the raised position **18**.

[0032] The arm **56** may pivot relative to the seat **16** when the arm **56** moves the seat **16** into the raised position **18**. The arm **56** may pivot relative to the seat **16** when the seat **16** moves into the lowered position **20**. For example, the arm **56** may pivot around the axle **22** that extends outwardly from the perimeter edge **24** of the seat **16**.

[0033] In use, the user **70** may press the pedal **26** while standing in front of the toilet **12**. The pedal **26** will move the arm **56** to raise the seat **16** to the raised position **18**, exposing the bowl **14**. Once the user **70** is finished using the toilet **12**, the user **70** can remove the foot **72** from the pedal **26**. The plate **42** will then pivot to the elevated position **44**, and the arm **56** will lower as the seat **16** pivots downwardly to the lowered position **20**.

[0034] With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of an embodiment enabled by the disclosure, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by an embodiment of the disclosure.

[0035] Therefore, the foregoing is considered as illustrative only of the principles of the disclosure. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the disclosure to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the disclosure. In this patent document, the word "comprising" is used in its non-limiting sense to mean that items following the word are included, but items not specifically mentioned are not excluded. A reference to an element by the indefinite article "a" does not exclude the possibility that more than one of the element is present, unless the context clearly requires that there be only one of the elements.

I claim:

1. A lift system comprising:

a toilet having a bowl and a seat, the seat being pivotably coupled to the bowl, the seat being pivotable between a raised position and a lowered position;

a pedal; and

an arm being coupled to and extending between the seat and the pedal, wherein pressure on the pedal lifts the seat into the raised position, the seat pivoting into the lowered position when pressure is removed from the pedal.

2. The lift system of claim **1**, further comprising an axle being coupled to and extending outwardly from a perimeter edge of the seat.

3. The lift system of claim **2**, wherein the axle is positioned on a side of the seat.

4. The lift system of claim **2**, wherein the pedal is positioned proximate to the toilet and is aligned with the axle.

5. The lift system of claim **1**, the pedal further comprising:

a box having a lower surface, an upper surface, and a peripheral surface being coupled to and extending between the lower surface and the upper surface; and

a plate being pivotably coupled to the upper surface, the plate being pivotable between an elevated position and a depressed position, wherein pressure on the plate lowers the plate into the depressed position.

6. The lift system of claim **5**, wherein the plate pivots into the elevated position when pressure is removed from the plate.

7. The lift system of claim **5**, wherein the plate is configured for manipulation by a foot of a user.

8. The lift system of claim **5**, the pedal further comprising:

a channel extending into the back side of box through the peripheral surface, the lower surface, and the upper surface; and

a knob being coupled to and extending downwardly from a bottom face of the plate, the knob being positioned within the channel when the plate is in the depressed position.

9. The lift system of claim **8**, wherein the knob has a half-cylinder shape.

10. The lift system of claim **8**, the box further comprising a front side, a back side, and a pair of lateral sides being coupled to and extending between the front side and the back side, wherein the channel has an inner edge being spaced from the front side of the box.

11. The lift system of claim **10**, further comprising a hinge pivotably coupling the plate to the upper surface, the hinge being positioned on the front side of the box.

12. The lift system of claim **1**, the arm further comprising:

a first section having a first end and a second end, the first end being coupled to the seat;

a second section being pivotably coupled to the second end of the first section, the second section being aligned with the first section when the seat is in the raised position; and

a third section being pivotably coupled to the second section distal to the second end of the first section, the third section being in contact with the pedal wherein the pedal pushes the third section downwardly and the third section pivots the second section into alignment with the first section whereby the seat is pivoted upwardly into the raised position.

13. The lift system of claim **12**, wherein the first section and second section form an acute angle when the seat is in the lowered position.

14. The lift system of claim **1**, wherein the arm pivots relative to the seat when the arm moves the seat into the raised position.

15. The lift system of claim **1**, wherein the arm pivots relative to the seat when the seat moves into the lowered position.

16. A lift system comprising:

a toilet having a bowl and a seat, the seat being pivotably coupled to the bowl, the seat being pivotable between a raised position and a lowered position;

an axle being coupled to and extending outwardly from a perimeter edge of the seat, the axle being positioned on a side of the seat;

a pedal being positioned proximate to the toilet beneath the axle, the pedal comprising:

a box having a lower surface, an upper surface, and a peripheral surface being coupled to and extending between the lower surface and the upper surface, the box having a front side and a back side;

a plate being pivotably coupled to the upper surface, the plate being pivotable between an elevated position and a depressed position, wherein pressure on the plate lowers the plate into the depressed position, the plate contacting the upper surface when the plate is in the depressed position, the plate pivoting into the elevated position when pressure is removed from the plate, the plate being configured for manipulation by a foot of a user;

a hinge pivotably coupling the plate to the upper surface, the hinge being positioned at a top edge of the front side of the box;

a channel extending into the back side of box through the peripheral surface, the lower surface, and the upper surface, the channel having an inner edge being spaced from the top edge of the front side of the box;

a knob being coupled to and extending downwardly from a bottom face of the plate, the knob being positioned within the channel when the plate is in the depressed position, the knob having a half-cylinder shape;

an arm being coupled to and extending between the seat and the pedal, wherein pressure on the pedal lifts the seat into the raised position, the seat pivoting into the lowered position when pressure is removed from the pedal, the arm further comprising:

a first section having a first end and a second end, the first end being coupled to the axle, the axle extending through the first end;

a second section being pivotably coupled to the second end of the first section, the second section being aligned with the first section when the seat is in the raised position, the first section and second section forming an acute angle when the seat is in the lowered position; and

a third section being pivotably coupled to the second section distal to the second end of the first section, the third section being in contact with the knob wherein the plate pushes the third section downwardly into the channel when pressure is applied to the plate and wherein the third section pivots the second section into alignment with the first section when pressure is applied to the plate whereby the plate is pivoted downwardly into the depressed position and the seat is pivoted upwardly into the raised position;

wherein the arm pivots relative to the seat when the arm moves the seat into the raised position; and

wherein the arm pivots relative to the seat when the seat moves into the lowered position.

* * * * *