PORTABLE TOILET DEVICE FOR A SMALL CHILD

BACKGROUND

[0001] A known portable toilet device for a small child includes a seat sized to accommodate a small child, and a pair of pivoting legs that can be folded inwardly for compact storage. Problems arise with the ease of use of these toilet devices.

SUMMARY

[0002] In ~~view of the foregoing~~a first aspect, a toilet device includes a seat having a main opening, a first leg connected with the seat for pivotal movement about a first axis, a second leg connected with the seat for pivotal movement about a second axis, a first hinge mechanism connecting the first leg with the seat, and a second hinge mechanism connecting the second leg with the seat. The first hinge mechanism includes a button moveable ~~along the first axis between a first position and a second position~~independently of the first leg along the first axis between a first position and a second position, with the button in the first position movement of the first leg with respect to the seat is precluded, wherein movement of the button along the first axis toward the second position places the first hinge mechanism in an unlocked state, which allows for pivotal movement of the first leg with respect to the seat. With the button in the first position, movement of the first leg with respect to the seat is precluded. Movement of the button along the first axis toward the second position places the first hinge mechanism in an unlocked state, which allows for pivotal movement of the first leg with respect to the seat. The second hinge mechanism can be configured similarly to the first hinge mechanism.

[0002a] In a second aspect, a toilet device is provided, comprising:

a seat having a main opening;

a first leg and a second leg, each leg connected with the seat for pivotal movement about a first axis and a second axis, respectively; and

a first hinge mechanism connecting the first leg with the seat and a second hinge mechanism connecting the second leg with the seat, wherein the first hinge mechanism

includes an axle movable in a first axial direction parallel with the first axis and toward an unlocked position, and a spring biasing the axle in a second axial direction, which is opposite the first axial direction, toward a locked position, and the first hinge mechanism being configured to preclude pivotal movement of the first leg with respect to the seat when the axle is in the locked position and to allow pivotal movement of the first leg with respect to the seat when the axle is in the unlocked position.

[0002b] In a third aspect, a toilet device includes a seat having a main opening; a first leg and a second leg, each leg connected with the seat for pivotal movement about a first axis and a second axis, respectively, and each leg includes a bag holder opening; a bag holder received in each bag holder opening on each leg, each bag holder including a plurality of resilient fingers extending inwardly toward a smaller central opening from an edge surrounding the bag holder opening, each finger is configured to flex from a normal state when a predetermined force is applied to the respective finger, each finger is also configured to return toward the normal state when the predetermined force is removed or a lower force than the predetermined force is being applied to the respective finger; and a tab extending downwardly from each leg when the legs are in an extended orientation where the legs extend away from the seat and each other, each tab being configured to engage a standard toilet seat when the toilet device is resting on the standard toilet seat so as to center the seat with respect to the standard toilet seat, wherein each tab is integrally formed with a respective bag holder.

[0003] Another example of a toilet device includes a seat having a main opening, a first leg, a second leg, a first hinge mechanism connecting the first leg with the seat and a second hinge mechanism connecting a second leg with the seat. Each leg connects with the seat for pivotal movement about a first axis and a second axis, respectively. The first hinge mechanism includes an axle moveable in a first axial direction parallel with the first axis and toward an unlocked position. The axle is biased in a second axial direction, which is opposite the first axial direction, toward a locked position. The first hinge mechanism is configured to preclude pivotal movement of the first leg with respect to the seat when the axle is in the locked

CLAIMS :

1. A toilet device comprising:

a seat having a main opening;

a first leg connected with the seat for pivotal movement about a first axis; a second leg connected with the seat for pivotal movement about a second axis;

a first hinge mechanism connecting the first leg with the seat; and

a second hinge mechanism connecting the second leg with the seat, wherein the first hinge mechanism includes a button movable independently of the first leg along the first axis between a first position and a second position, with the button in the first position movement of the first leg with respect to the seat is precluded, wherein movement of the button along the first axis toward the second position places the first hinge mechanism in an unlocked state, which allows for pivotal movement of the first leg with respect to the seat.

2. The toilet device of claim 1, wherein the button is movable between an unlocked position and a locked position, when in the locked position movement of the button along the first axis is precluded, when in the unlocked position movement of the button along the first axis is allowed.

3. The toilet device of claim 2, wherein the button rotates about the first axis between the unlocked position and the locked position.

4. The toilet device of claim 2, wherein the button includes a tab that aligns with and is receivable in a slot provided in the first hinge mechanism when the button is in the unlocked position.

5. The toilet device of claim 1, wherein the first hinge mechanism includes an axle operatively connected with the button, wherein movement of the button along the first axis results in movement of the axle along the first axis.

6. The toilet device of claim 1, further comprising a bag holder on each leg,

each bag holder including a plurality of resilient fingers.

7. A toilet device comprising:

a seat having a main opening;

a first leg and a second leg, each leg connected with the seat for pivotal movement about a first axis and a second axis, respectively; and

a first hinge mechanism connecting the first leg with the seat and a second hinge mechanism connecting the second leg with the seat, wherein the first hinge mechanism includes an axle movable in a first axial direction parallel with the first axis and toward an unlocked position, and a spring biasing the axle in a second axial direction, which is opposite the first axial direction, toward a locked position, and the first hinge mechanism being configured to preclude pivotal movement of the first leg with respect to the seat when the axle is in the locked position and to allow pivotal movement of the first leg with respect to the seat when the axle is in the unlocked position.

8. The toilet device of claim 7, wherein each leg is movable between a first orientation where the legs are folded toward the seat, a second orientation where the legs are generally upright, and a third orientation where the legs extend away from the seat.

9. The toilet device of claim 7, wherein the first hinge mechanism includes an axle support including an axle opening in which the axle is received and a catch opening offset from the axle opening, and a protuberance on the axle is received in the catch opening when the axle is in the locked position.

10. The toilet device of claim 9, wherein the protuberance on the axle is not received in the catch opening when the axle is in the unlocked position, which allows for rotation of the first leg with respect to the seat.

11. The toilet device of claim 9, wherein the axle support includes a planar face normal to the first axis and a plurality of catch openings are offset from the axle opening, at least a portion of at least one of the plurality of catch openings is formed in the planar face, and the protuberance contacts

and moves relative to the planar face as the first leg rotates with respect to the seat.

12. The toilet device of claim 7, wherein the first hinge mechanism includes a button configured to be pressed by an operator, wherein the button is operatively connected with the axle such that pressing the button results in movement of the axle toward the unlocked position, and the button is rotatable with respect to an axle support including an axle opening in which the axle is received.

13. A toilet device comprising:

a seat having a main opening;

a first leg and a second leg, each leg connected with the seat for pivotal movement about a first axis and a second axis, respectively, and each leg includes a bag holder opening;

a bag holder received in each bag holder opening on each leg, each bag holder including a plurality of resilient fingers extending inwardly toward a smaller central opening from an edge surrounding the bag holder opening, each finger is configured to flex from a normal state when a predetermined force is applied to the respective finger, each finger is also configured to return toward the normal state when the predetermined force is removed or a lower force than the predetermined force is being applied to the respective finger; and

a tab extending downwardly from each leg when the legs are in an extended orientation where the legs extend away from the seat and each other, each tab being configured to engage a standard toilet seat when the toilet device is resting on the standard toilet seat so as to center the seat with respect to the standard toilet seat, wherein each tab is integrally formed with a respective bag holder.

14. The toilet device of claim 13, wherein each bag holder is configured to receive an associated plastic bag inserted in an insertion direction through the bag holder opening, and the resilient fingers are configured retain the associated plastic bag by engaging the associated plastic bag after the respective associated plastic bag has been inserted.

15. The toilet device of claim 14, wherein each bag holder is configured to release the respective handle of the associated plastic bag when the handle is pulled through the bag holder opening in a releasing direction, which is opposite the insertion direction, at a force greater than the predetermined force.

16. The toilet device of claim 13, wherein each bag holder opening is centrally located between a front section and a rear section of the seat.

17. The toilet device of claim 16, wherein each leg is generally U-shaped, and each bag holder opening is centrally located between a forward end section and rear end section of the respective leg.

CLAIMS:

1. A toilet device comprising:

a seat having a main opening;

a first leg connected with the seat for pivotal movement about a first axis;

a second leg connected with the seat for pivotal movement about a second axis;

a first hinge mechanism connecting the first leg with the seat; and

a second hinge mechanism connecting the second leg with the seat, wherein the first hinge mechanism includes a button movable along the first axis between a first position and a second position, with the button in the first position movement of the first leg with respect to the seat is precluded, wherein movement of the button along the first axis toward the second position places the first hinge mechanism in an unlocked state, which allows for pivotal movement of the first leg with respect to the seat.

2. The toilet device of claim 1, wherein the button is movable between an unlocked position and a locked position, when in the locked position movement of the button along the first axis is precluded, when in the unlocked position movement of the button along the first axis is allowed.

3. The toilet device of claim 2, wherein the button rotates about the first axis between the unlocked position and the locked position.

4. The toilet device of claim 2, wherein the button includes a tab that aligns with and is receivable in a slot provided in the first hinge mechanism when the button is in the unlocked position.

5. The toilet device of claim 1, wherein the first hinge mechanism includes an axle operatively connected with the button, wherein movement of the button along the first axis results in movement of the axle along the first axis.

6. The toilet device of claim 1, further comprising a bag holder on each leg, each bag holder including a plurality of resilient fingers.

7. A toilet device comprising:

a seat having a main opening;

a first leg and a second leg, each leg connected with the seat for pivotal movement about a first axis and a second axis, respectively; and

a first hinge mechanism connecting the first leg with the seat and a second hinge mechanism connecting the second leg with the seat, wherein the first hinge mechanism includes an axle movable in a first axial direction parallel with the first axis and toward an unlocked position, and the axle is biased in a second axial direction, which is opposite the first axial direction, toward a locked position, and the first hinge mechanism being configured to preclude pivotal movement of the first leg with respect to the seat when the axle is in the locked position and to allow pivotal movement of the first leg with respect to the seat when the axle is in the unlocked position.

8. The toilet device of claim 7, wherein each leg is movable between a first orientation where the legs are folded toward the seat, a second orientation where the legs are generally upright, and a third orientation where the legs extend away from the seat.

9. The toilet device of claim 7, wherein the first hinge mechanism includes an axle support including an axle opening in which the axle is received and a catch opening offset from the axle opening, and a protuberance on the axle is received in the catch opening when the axle is in the locked position.

10. The toilet device of claim 9, wherein the protuberance on the axle is not received in the catch opening when the axle is in the unlocked position, which allows for rotation of the first leg with respect to the seat.

11. The toilet device of claim 9, wherein the axle support includes a planar face normal to the first axis and a plurality of catch openings are offset from the axle opening, at least a portion of at least one of the plurality of catch openings is formed in the planar face, and the protuberance contacts and moves relative to the planar face as the first leg rotates with respect to the seat.

12. The toilet device of claim 7, wherein the first hinge mechanism includes a button configured to be pressed by an operator, wherein the button is operatively connected with the axle such that pressing the button results in movement of the axle toward the unlocked position, and the button is rotatable with respect to an axle support including an axle opening in which the axle is received.

13. A toilet device comprising:

a seat having a main opening;

a first leg and a second leg, each leg connected with the seat for pivotal movement about a first axis and a second axis, respectively; and

a bag holder on each leg, each bag holder including a plurality of resilient fingers, each finger is configured to flex from a normal state when a predetermined force is applied to the respective finger, each finger is also configured to return toward the normal state when the predetermined force is removed or a lower force than the predetermined force is being applied to the respective finger.

14. The toilet device of claim 13, wherein each leg includes a bag holder opening for receiving a respective bag holder.

15. The toilet device of claim 14, wherein each bag holder is configured to receive an associated plastic bag inserted in an insertion direction through the bag holder opening, and the resilient fingers are configured retain the associated plastic bag by engaging the associated plastic bag after the respective associated plastic bag has been inserted.

16. The toilet device of claim 15, wherein each bag holder is configured to release the respective handle of the associated plastic bag when the handle is pulled through the bag holder opening in a releasing direction, which is opposite the insertion direction, at a force greater than the predetermined force.

17. The toilet device of claim 13, wherein each bag holder opening is centrally located between a front section and a rear section of the seat.

18. The toilet device of claim 17, wherein each leg is generally U – shaped, and each bag holder opening is centrally located between a forward end section and rear end section of the respective leg.

19. The toilet device of claim 13, further comprising a tab extending downwardly from each leg when the legs are in an extended orientation where the legs extend away from the seat and each other, each tab being configured to engage a standard toilet seat when the toilet device is resting on the standard toilet seat so as to center the seat with respect to the standard toilet seat.

20. The toilet device of claim 19, wherein each tabs is integrally formed with a respective bag holder.