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(71) Applicant (for all designated States except US): **MED-LOGIC LTD** [IL/IL]; 15 Neufeld street, Kiriat Herzog, 51242 Bnei Brak (IL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **SIKIROV, Berko, Dov** [IL/IL]; 15 Neufeld street, Kiriat Herzog, 51242 Bnei Brak (IL).

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(54) Title: TOILET DEVICE

(57) Abstract: A toilet device for facilitating defecation by a user in a natural squatting posture over a conventional toilet. The toilet device comprises a platform adapted to support a user with areas for a user's feet and an opening therethrough aligned with the toilet's bowl; and a urinal pan located to serve as a urinal when the user is in the squatting posture. The urinal pan is adapted to be pivotably adjustable between an operative position and an inoperative position and comprises front and side walls. In particular embodiments, the urinal pan walls are constituted by front and side plates, U-shaped inter-cooperating plates or a sheet such as a urine-resistant cloth or plastic. The device may also comprise a water hose for rinsing the urinal pan; and may further comprise an automatically controlled valve for automatic rinsing of the urinal pan upon use of thereof.

TOILET DEVICE

FIELD OF INVENTION

The present invention relates to a toilet device, in particular a toilet device
5 for use in conjunction with a conventional toilet to facilitate use in a natural
squatting posture.

BACKGROUND OF THE INVENTION

The use of the natural (relatively deep) squatting posture during
10 defecation has been proposed as a healthier and more natural method for
defecating. US 4,819,277 (Sikirov) discloses a sanitary appliance useful for
such squatting, mountable over a conventional ("western") toilet; and provides
evidence of the amelioration of hemorrhoid symptoms upon use of a squatting
posture during defecation. Such a squatting posture may also be beneficial
15 against constipation and other ailments.

WO 03/074799 (Sikirov) discloses a squatting toilet similar in concept to
that of US 4,819,277, however comprising an improved urinal pan.

It is well known that upon defecation, the urinary bladder also empties.
For this reason, in US 4,819,277 and WO 03/074799 the sanitary appliance and
20 squatting toilet, respectively, each comprise a urinal pan to minimize splashing
of urine. However, further improvements in such pan are warranted.

SUMMARY OF THE INVENTION

The present invention relates to a toilet device designed for use in
25 combination with a conventional toilet (i.e. so-called "western style" or sit-down
toilet) for facilitating defecation in a natural (relatively deep) squatting posture.
The device is designed to be positioned over the conventional toilet, although it
may be incorporated as part of the toilet, for example, as disclosed in US

4,819,277, which is incorporated by reference; WO 03/074799 is also incorporated by reference.

It is a particular object of the present invention to provide such a toilet device comprising a urinal pan that is relatively easy to manufacture and use.

5 Accordingly, the toilet device of the present invention comprises a platform adapted to support a user and having areas for a user's feet and an opening therethrough designed to be aligned with the toilet bowl; and a urinal pan located to serve as a urinal when the user is in the squatting posture, the urinal pan comprising a front wall and side walls, one edge thereof mounted to
10 the platform and adapted to be pivotably adjustable between an operative position and an inoperative position.

BRIEF DESCRIPTION OF THE DRAWINGS

15 The invention may be more clearly understood upon reading of the following detailed description of non-limiting exemplary embodiments thereof, with reference to the following drawings, in which:

Fig. 1 is a perspective view of an embodiment of the toilet device of the present invention comprising a urinal pan in its operative position - and shown
20 with a conventional toilet;

Fig. 2 is a perspective view of the toilet device of Fig. 1 with the urinal pan in a folded inoperative position;

Fig. 3 is a is a perspective view of another embodiment of the toilet device of the present invention comprising a modified urinal pan in a compacted
25 inoperative position;

Fig. 4 is a perspective view of the toilet device of Fig. 3 with the urinal pan in an expanded operative position;

Fig. 5 is a cut-away of an enlarged perspective view of the urinal pan of Fig. 4;

Fig. 6 is a perspective view of the toilet device of the present invention in an upright in-operative position;

Fig. 7 is a perspective view of a further embodiment of the toilet device of the present invention comprising another modification of the urinal pan;

5 **Figs. 8 and 9** are perspective views of a still further embodiments of the toilet device of the present invention comprising modified urinal pans; and

Fig. 10 is a slightly enlarged view of the underside of the toilet device's platform illustrating an exemplary automatic rinsing valve.

10 DETAILED DESCRIPTION OF THE INVENTION

Referring first to Figs. 1 and 2, there is shown a first embodiment of a toilet device for mounting over a toilet bowl **1**, the device comprising a platform **2** having an opening **3** aligned with the bowl. The platform **2** is constructed in a generally planar shape for supporting a user (not shown); is supported by legs
15 **20**; and includes areas **A** intended for placement of the user's feet for facilitating defecating in a natural squatting posture.

The toilet device further comprises a urinal pan **4** generally defined by side plates **5a** and **5b**, front plate **5c** (the lower edges of the plates attached to the platform **2**) and a floor **6** and is located adjacent the opening **3**. The floor **6** may
20 be lower than the top surface of the platform **2** and/or inclined thus forming a channel for the collecting and draining of urine from the urinal pan **4** and onward via the opening **3** and into the bowl **1** – rather than onto the bathroom floor (not shown) or other inappropriate locations.

The urinal pan is shown in its operative position in Fig.1 and in its
25 inoperative position in Fig. 2 and comprises first hinges **19a** for the purpose of folding the plates **5a - 5c** between those positions. Attached to the plates **5a - 5c** is a connector **7** for holding the plates together to form the urinal pan **4** in its operative position (Fig. 1). The connector **7** can be constituted by a number of connection concepts, for example rope, a ring, a hook and loop strap and so on.

The urinal pan 4 may include an axle 8 at the base of the front plate 5c, the axle comprising a handle 9, exemplified as an L-shaped portion of the axle. The handle 9 and axle 8 can be used to conveniently put the urinal pan 4 in its operative position (Fig. 1), and back to its inoperative, folded down position (Fig. 2). For this purpose the handle 9 can be turned in the direction toward the front of the platform 2 to raise plate 5c thereby raising plates 5a and 5b prior to use and turned back after use. Alternatively, the plates 5a-5c can be raised to put the urinal pan 4 in its operative position by raising the bottom-most plate (front plate 5c in the present embodiment), for which purpose it may include a handle (not shown). Raising of the bottom-most plate (e.g. plate 5c) would push up the other plates (i.e. plates 5a and 5b).

It should be understood that the urinal pan 4 could be designed in a manner such that it is continually in its operative position, however, the option to close or fold the pan down may be convenient to ease alighting onto the platform 2.

In this regard, the embodiments herein will be described with reference to a low profile (short) toilet bowl in that the device will be low/short enough for a user to climb thereon without undo effort. However, it should be understood that the device could include a means to aid alighting thereon, for example a step (not shown).

The urinal pan 4 typically further comprises a rinse hose 16, fed by a main water pipe 17; and the flow is controlled by a valve 18. Thus, after urinating, the pan 4 can be rinsed clean with an appropriate amount of water. The hose 16 typically comprises a plurality of apertures or nozzles 24 (seen in Fig. 7) to produce a water spray for suitable rinsing.

Figs 3-5 illustrate another embodiment of the toilet device wherein there is a urinal pan 4a comprising sides formed by a plurality of inter-cooperating U-shaped plates 10, which when in their inoperative position (Fig. 3) form a

relatively low-profile 3-sided box 11 and are movable about a pivot 12 for opening into an operative position (Fig. 4).

The plates 10, which are sized to fit one inside the other (best seen in Fig. 5) are configured in a concatenating fashion, by way of projections 13, so that
5 lifting of the smallest and inner-most plate 15 pulls up the following increasingly larger plates one after another - with the exception of the largest and outer-most plate 14, which is attached to the platform 2. Pressing down on inner-most plate 15 collapses the wall formed by the plates 10 to the inoperative position (Fig. 3).

10 Fig. 6 shows the toilet device in its upright in-operative position. Second hinges 19a are provided to aid in tilting the device. It is noticed that the front two legs 20 are retracted, which can be provided for by use of pivot points, for example hinges (not seen) connecting the legs and platform 2. As such, one can use the conventional toilet in the sitting position if so desired. For simplicity, a
15 toilet seat is not shown.

Figs. 7-9 illustrate further embodiments of the toilet device having modified urinal pans. In Fig. 7 the toilet device comprises a urinal pan 4c comprising sides formed by a sheet 22 (e.g. a urine-resistant cloth or plastic sheet) its bottom edge attached to the platform 2 and its upper edge attached to
20 the rinse hose 16. In Fig 7, it is seen that the hose 16 includes the nozzles 24 to help rinse the urinal pan 4c, and one or more handles 26 for raising it so as to form the walls of thereof. For the same purpose as valve 18 (Fig. 1), the device may include a main valve 28 and/or an automatic valve 30, or a pair thereof. Automatic valve 30 is detailed below with reference to Fig. 10.

25 Such a urinal pan may be held in its operative (upright) position by a variety of mechanisms; one such mechanism illustrated in Figs. 8 and 9 wherein there is shown a urinal pan 4d that is similar to urinal pan 4c, however it comprises a cover 32. Not only is such a cover typically more aesthetic, the handles 26 can be attached thereto for raising the urinal pan 4d and further be

used to fold the cover **32** backward (Fig. 9) whereby the cover's free edge can rest at a support bar **34**, thus holding the pan **4d** in an operative position..

Fig. 10 shows a view of the automatic valve **30** wherein it is seen that it comprises a member or valve handle **36** that interfaces with the underside of the platform **2**. With such configuration, when the urinal pan **4c** or **4d** is lifted and put into its operative position, the valve handle **36** is automatically turned, typically about 30 to 45 degrees, and the automatic valve **30** is opened to supply water for rinsing the pan. Upon returning the pan to its inoperative position, the handle **36** is turned in reverse and the automatic valve **30** is closed.

It should be understood that there are various devices for facilitating defecation in a natural squatting posture that can be devised according to the present invention and that the above description is merely explanatory. Thus, the present toilet device can be embodied in a variety of aspects falling within the scope of the present invention, *mutatis mutandis*.

15

CLAIMS

1. A toilet device for facilitating defecation by a user in a natural squatting posture over a conventional toilet having a bowl, the device comprising: a platform adapted to support a user and having areas for a user's feet and an opening therethrough designed to be aligned with the toilet bowl; and a urinal pan located to serve as a urinal when the user is in said squatting posture, said urinal pan comprising a front wall and side walls, one edge thereof mounted to said platform and adapted to be pivotably adjustable between an operative position and an inoperative position.
2. The device according to claim 1, wherein the front wall and side walls are constituted by plates.
3. The device according to claim 2, wherein the walls are held together by a connector when the urinal pan is in its operative position.
4. The device according to claim 1, wherein the side and front walls are constituted by a plurality of inter-cooperating U-shaped plates sized to fit one inside the other in a concatenating fashion.
5. The device according to claim 1, wherein the side and front walls are constituted by a sheet.
6. The device according to any of the preceding claims, further comprising a hose attached to a water source and a valve for controlling a water supply for rinsing the urinal pan.
7. The device according to claim 6, wherein the valve is adapted to be an automatic valve so as to allow the flow of rinse water upon adjustment of the urinal pan into its operative position.
8. The device according to claim 5, wherein the sheet forms walls of the urinal pan and is attached to a hose at an upper edge of said sheet, said hose forming a frame therefor.
9. The device according to claim 5, wherein the urinal pan further comprises a cover covering said pan when in its inoperative position.

10. The device according to claim 9, wherein the cover is adapted to support the urinal pan in its operative position.

11. The device according to claim 6, wherein the hose comprises a plurality of apertures for directing a water spray for rinsing the urinal pan.

5 12. The device according to claim 1, wherein the device is incorporated with the toilet.

13. The device according to claim 1, wherein the platform is supported by support legs.

10

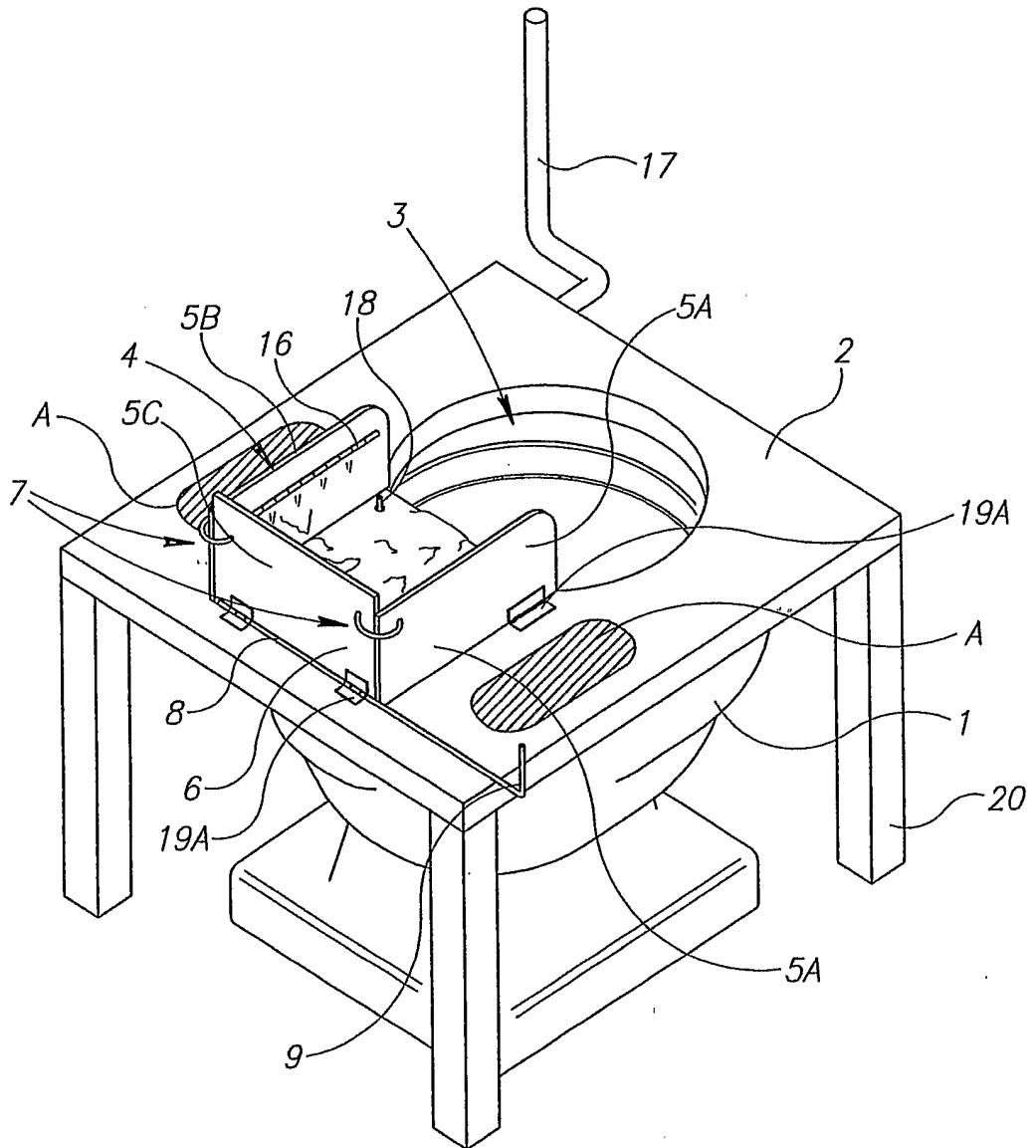


FIG.1

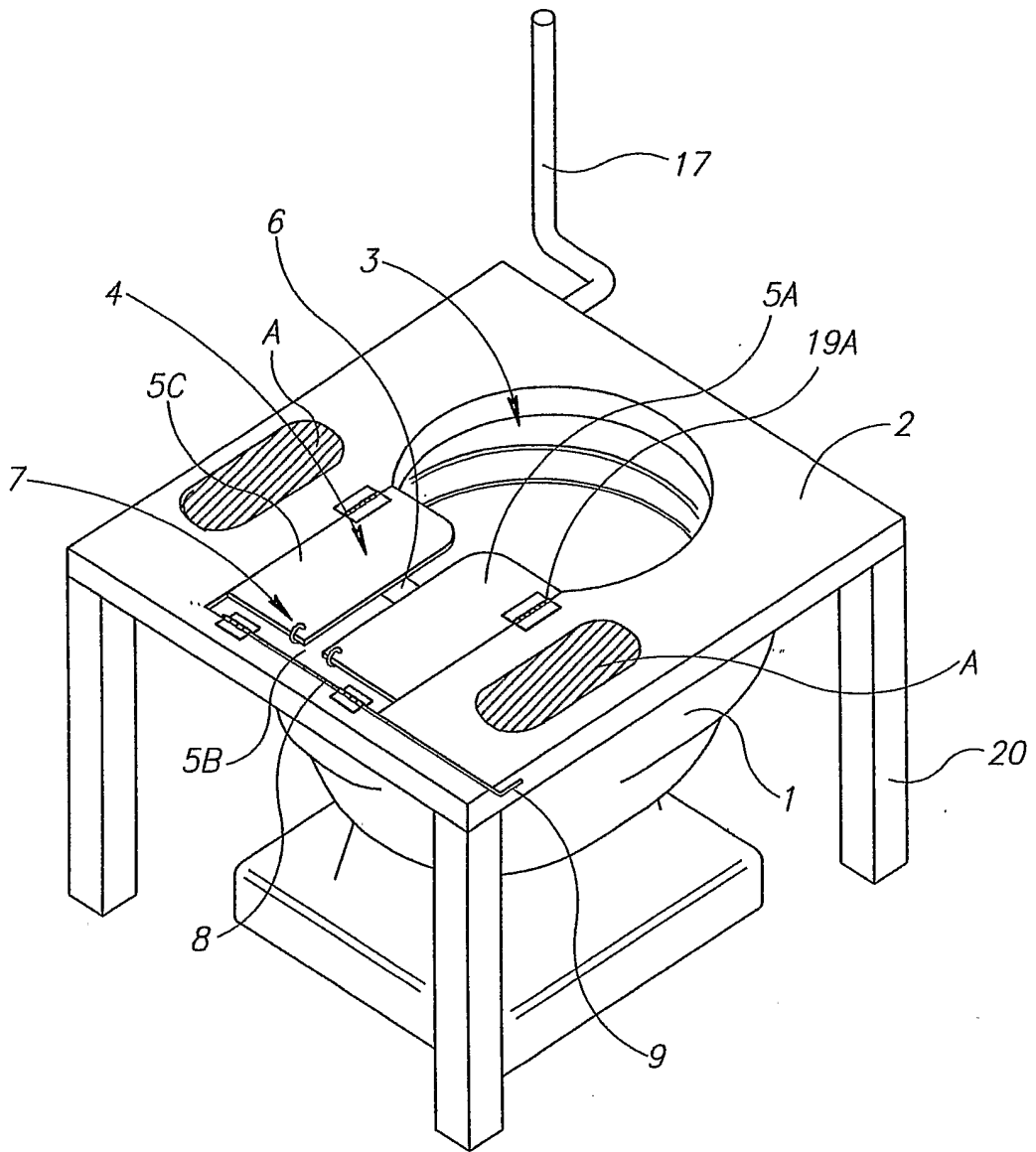


FIG. 2

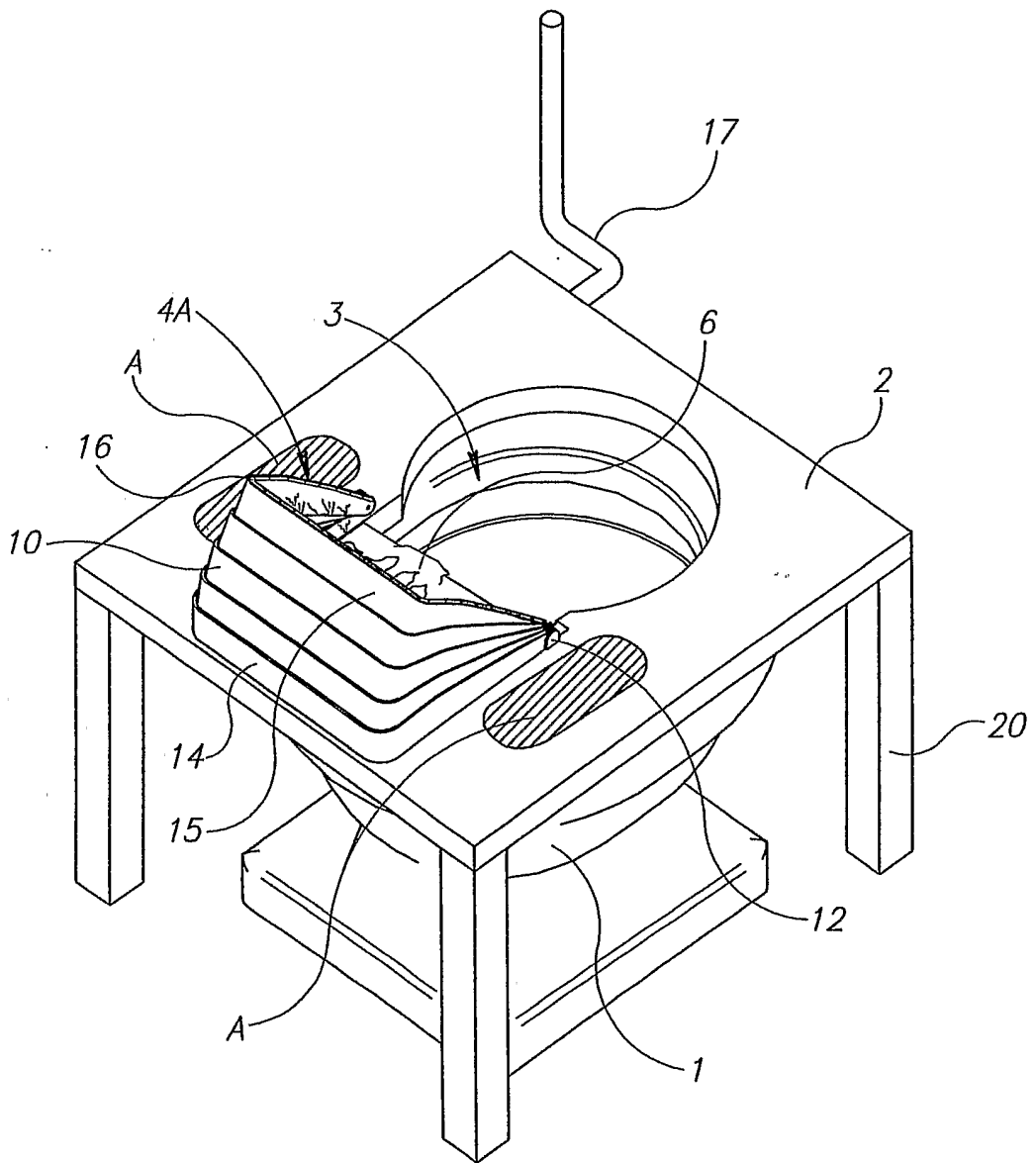


FIG.4

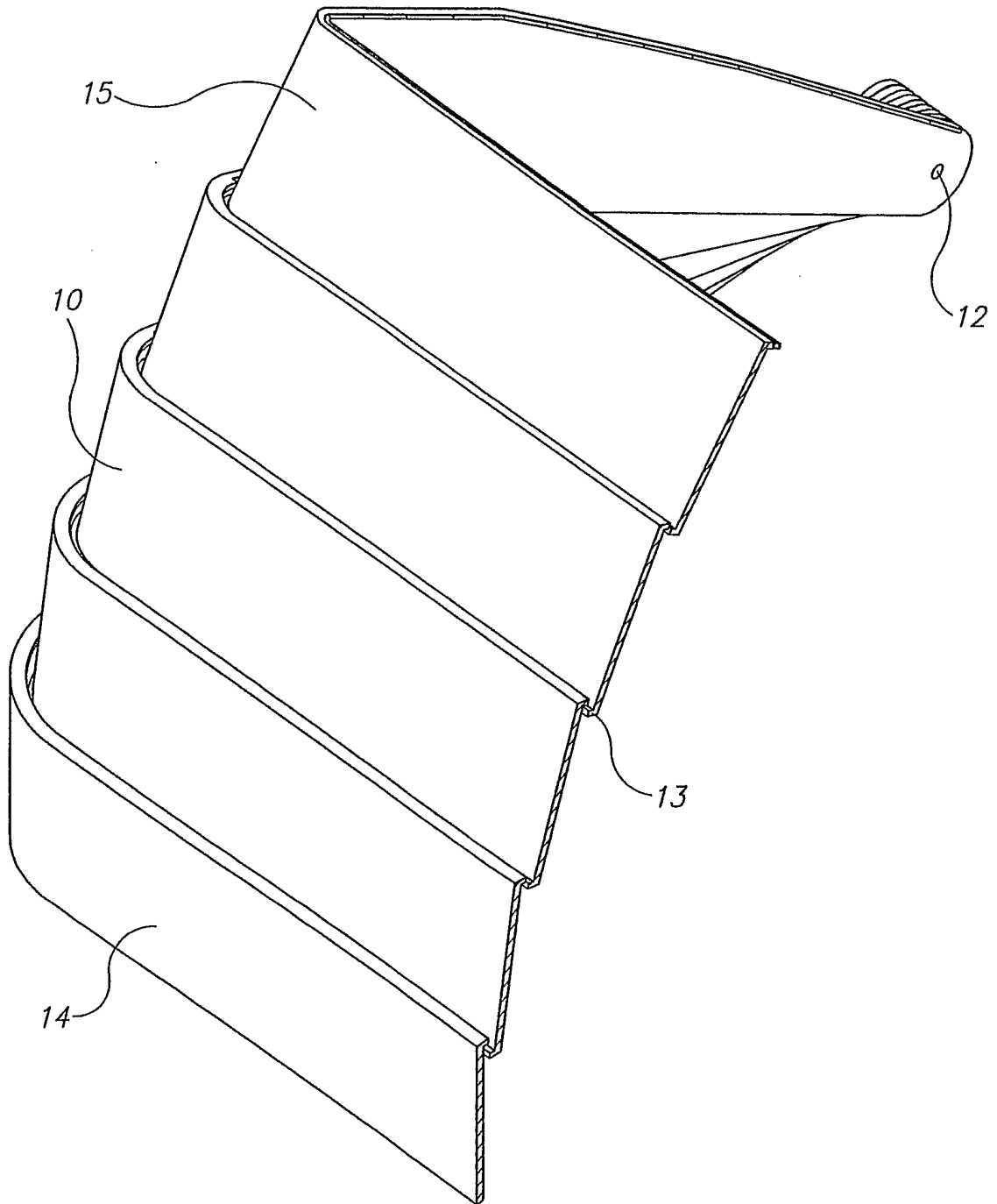


FIG.5

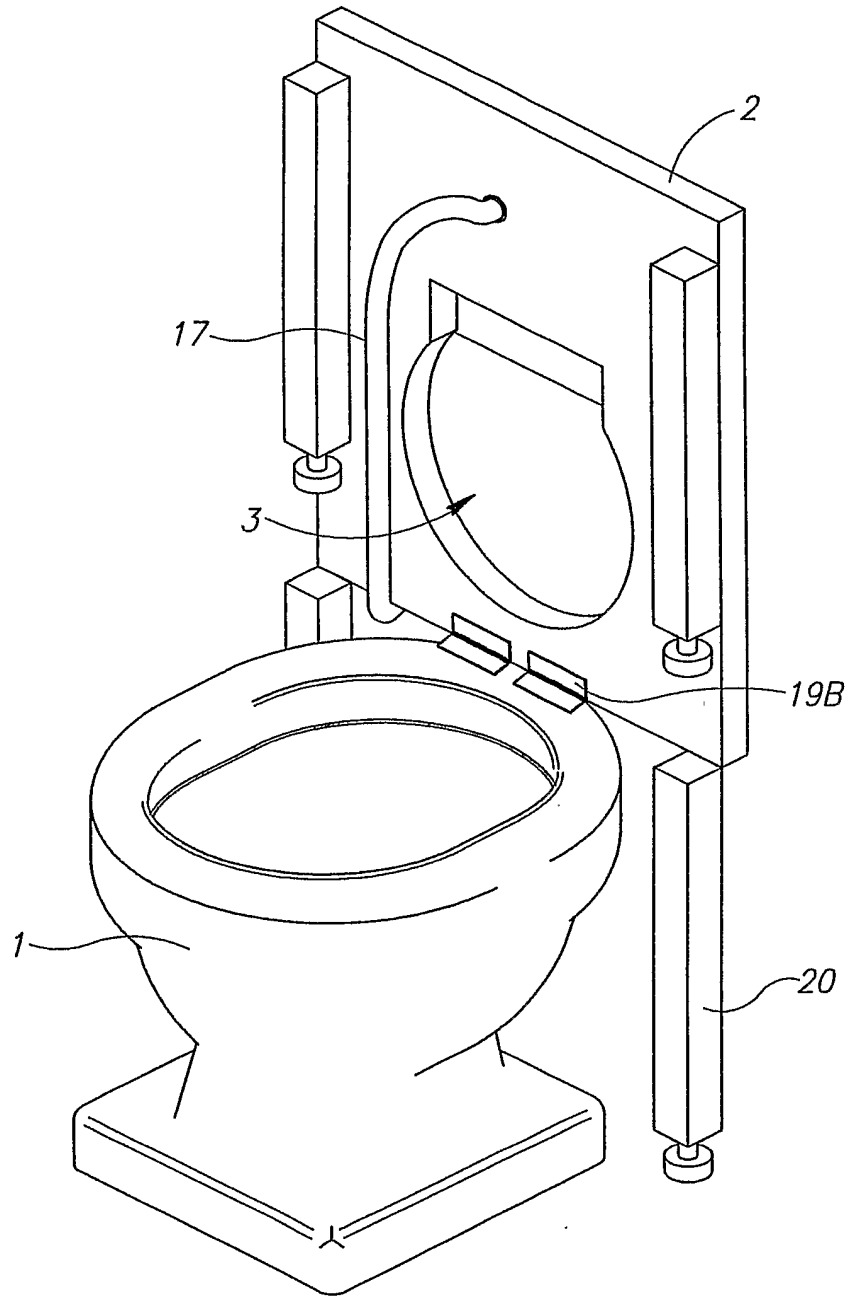


FIG.6

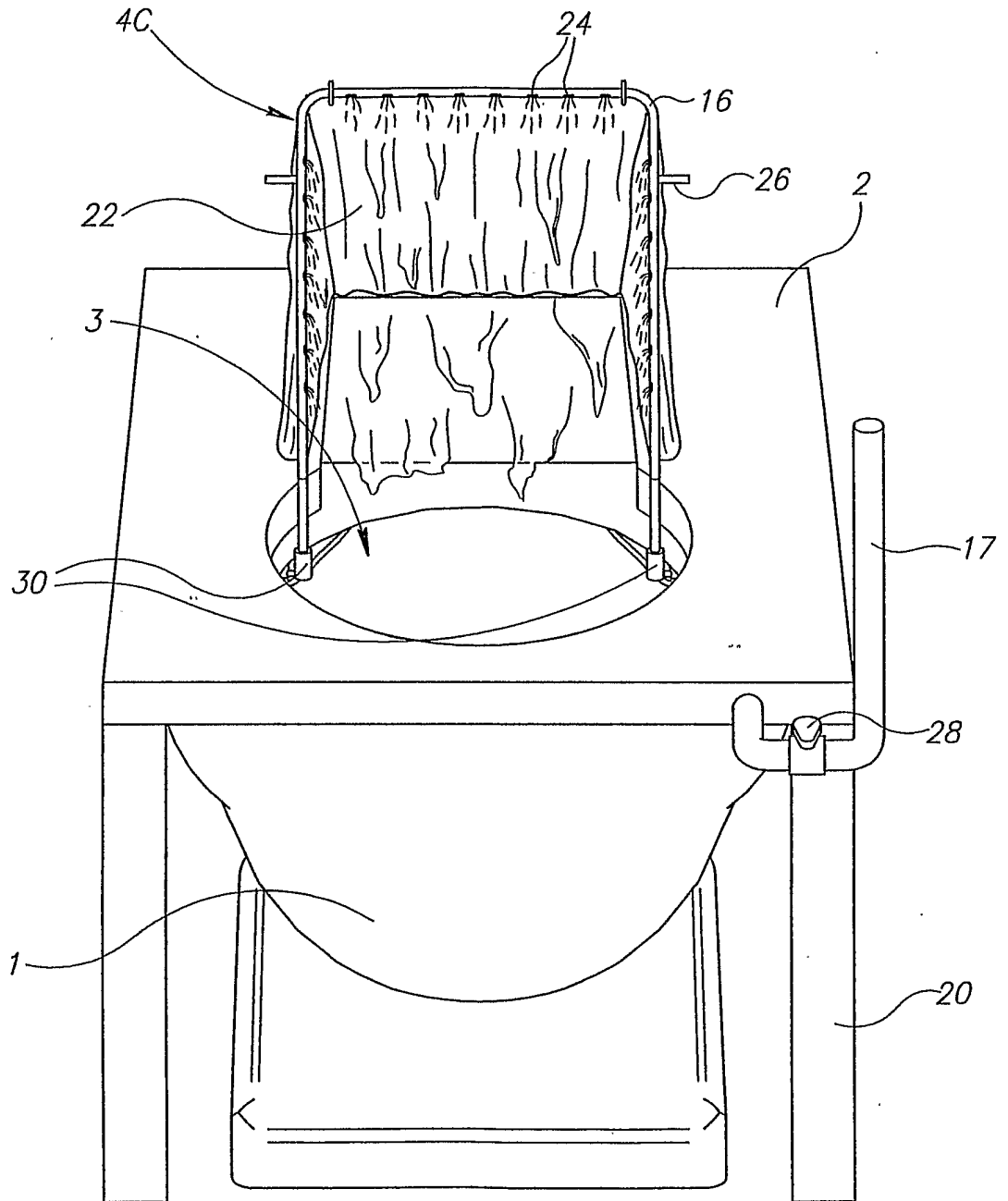


FIG. 7

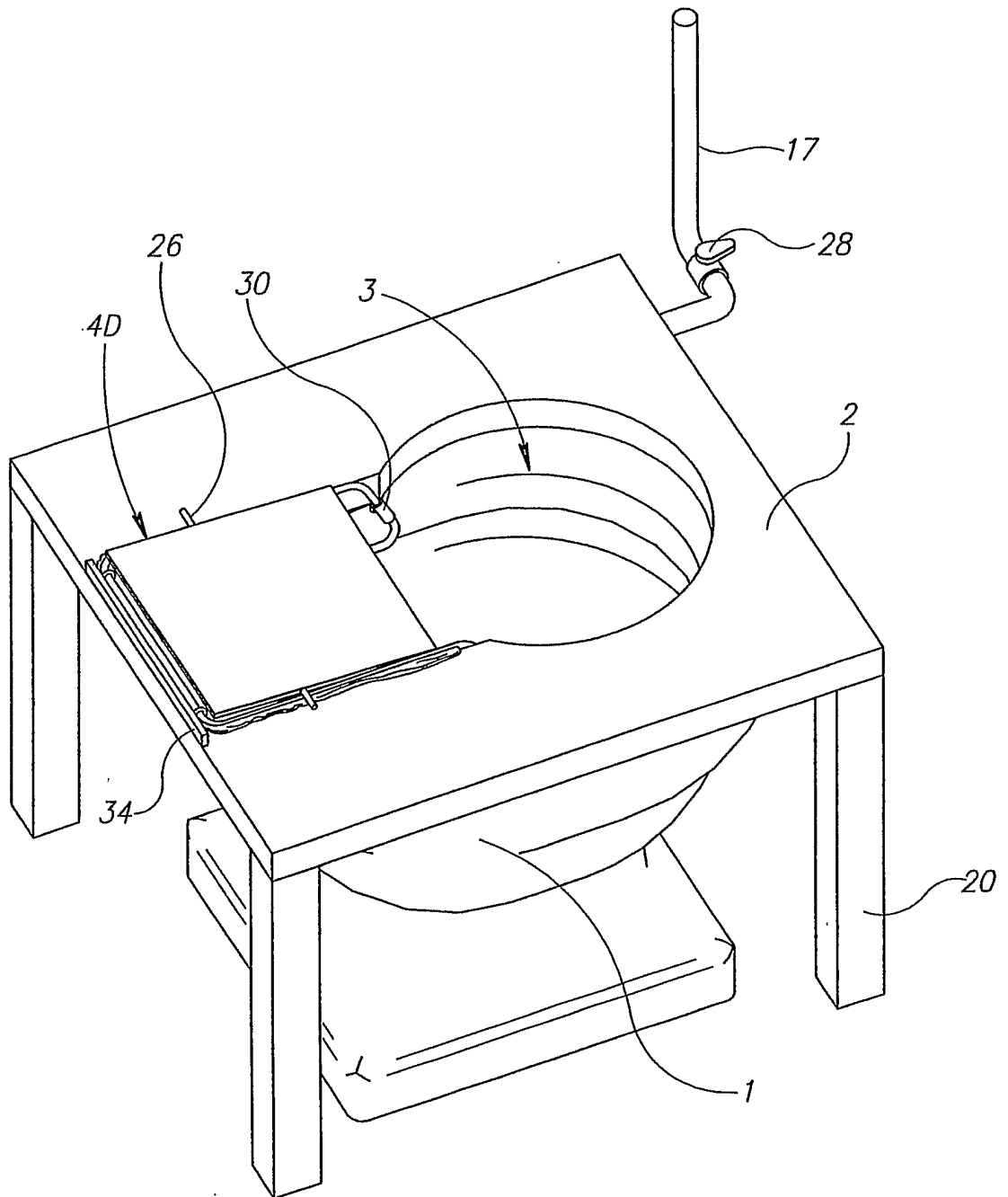


FIG. 8

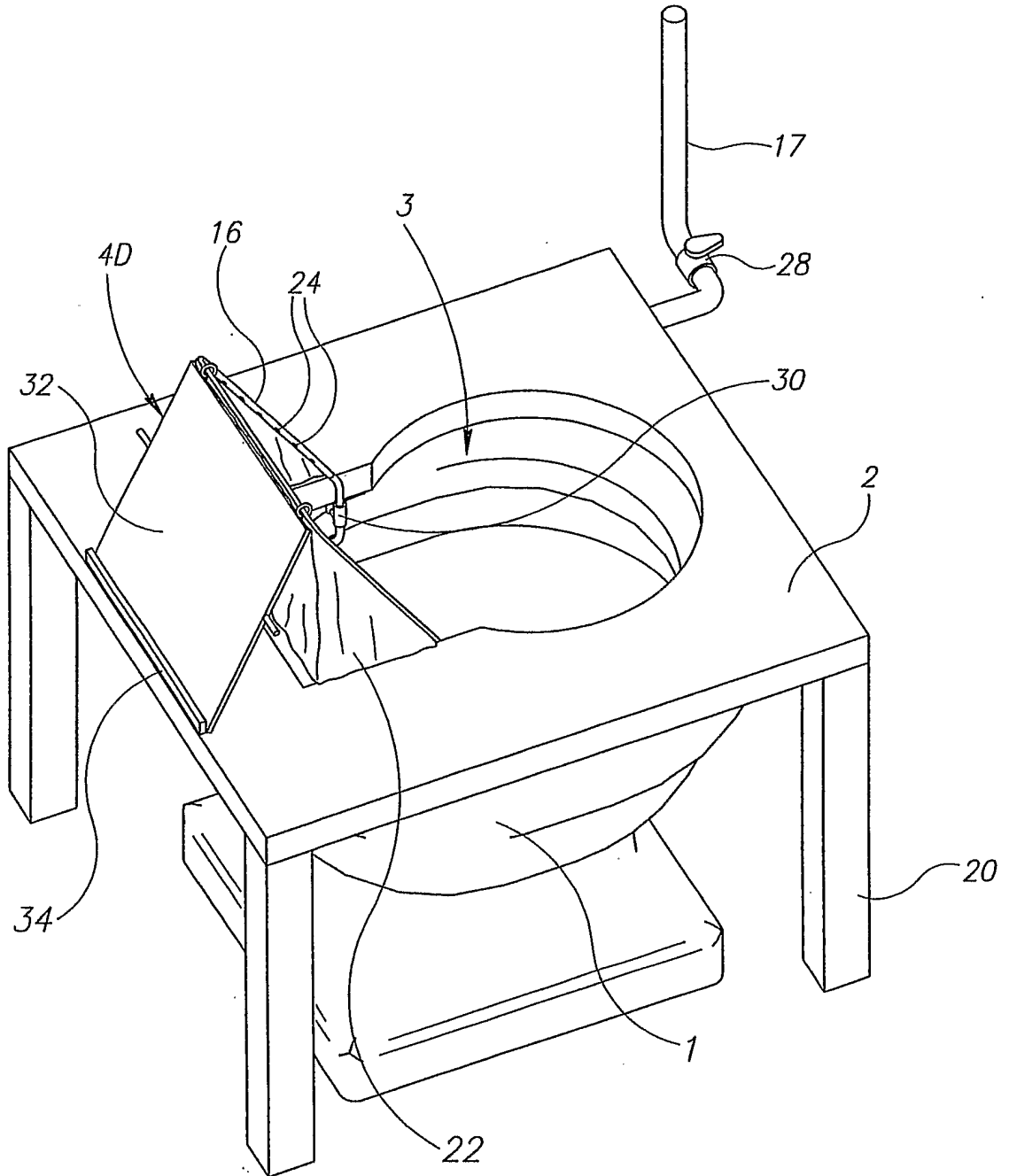


FIG.9

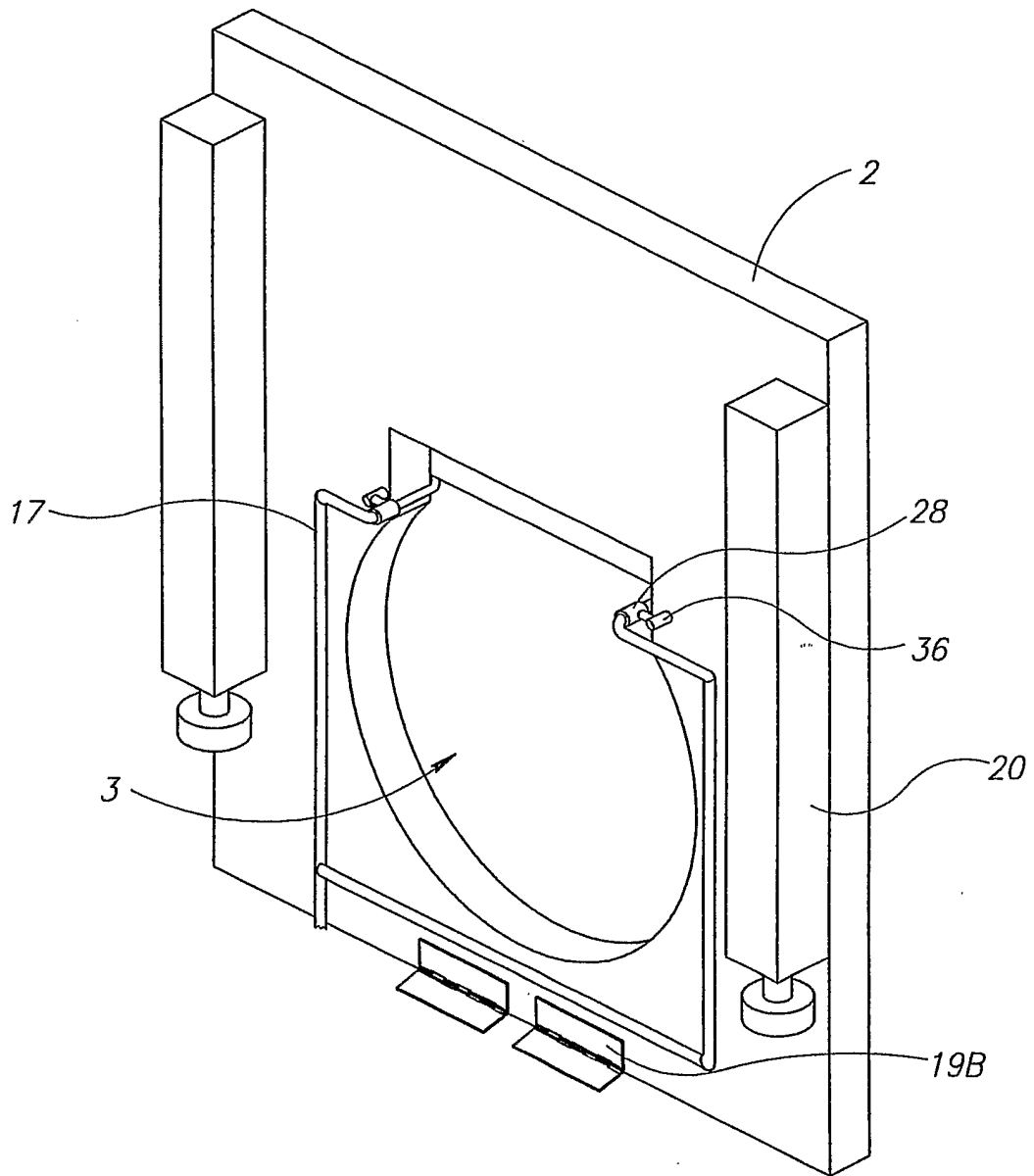


FIG.10