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COLLAPSIBLE, INFLATABLE, DISPOSABLE BED PAN

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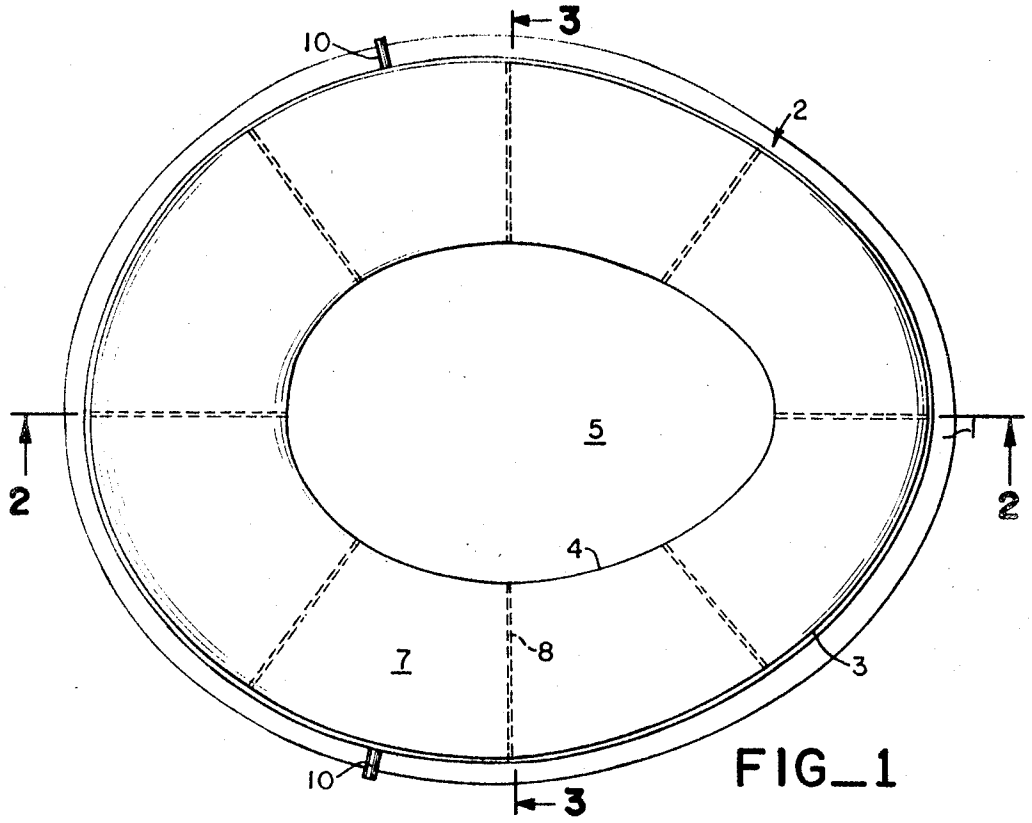


FIG_1

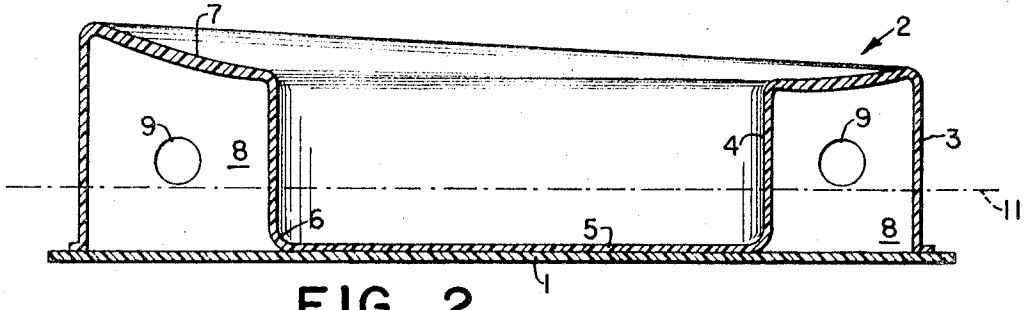


FIG_2

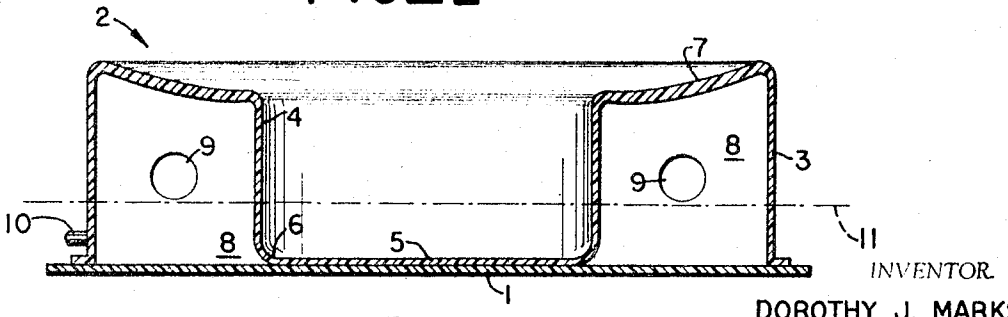


FIG_3

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COLLAPSIBLE, INFLATABLE, DISPOSABLE BED PAN

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ABSTRACT OF THE DISCLOSURE

A bed pan formed from non-metallic material having flexible walls supported on and secured to a semi-rigid base adapted to be positioned flat on a mattress or the like, and having a conformation and size similar to a conventional bed pan. The pan is collapsible to a flattened condition for storage and for insertion under a patient, and is inflatable for use and for also assisting in elevating the patient when placed below the latter in flattened or collapsed condition.

BACKGROUND OF THE INVENTION

Heretofore bed pans have been of rigid material such as metal or porcelain, and are not only quite cold to a patient, but the latter must be elevated to position the pan for use, and in hospitals where many pans are stored, the storage space required is substantial.

In modern hospitals compressed air is available in the rooms, and with the present invention the bed pan may be positioned under the patient in collapsed form and readily inflated to expanded form for use. In any event, a source of compressed air or gas may readily be provided for inflating the pan. Also, the pan, being of plastic or similar material, is relatively soft and warm compared to the conventional rigid pans.

A pan of the present invention is readily cleaned, and is sufficiently economical to make so that a new pan may be provided each patient for use of the latter during his or her stay in the hospital, and then discarded.

DESCRIPTION OF DRAWINGS

FIG. 1 is a top plan view of an inflated bed pan.

FIG. 2 is a cross-sectional view along line 2—2 of FIG. 1.

FIG. 3 is a cross-sectional view along line 3—3 of FIG. 2.

DECRIPTION OF THE INVENTION

A flat base member, preferably of plastic and semi-rigid material provides a base adapted to be flat on the upper surface of a bed, the outline of which base may substantially correspond to the outline of a conventional bed pan, although preferably it may be larger, as indicated in FIG. 1, so as to stabilize the pan portion adapted to be secured thereto against any tendency to tilt laterally under uneven distribution of weight thereon.

In use, the base portion 1 is substantially horizontal, and integrally secured to the upper side thereof is the pan portion, generally designated 2. This pan portion 2 is preferably horizontally elongated in one dimension and comprises an outer upstanding, endless wall 3 of generally ovoid outline in top plan view and an upstanding inner endless wall 4 spaced within wall 3 and also of generally ovoid outline in top plan view.

Walls 3, 4 are closer to each other at the narrower end of the pan (FIGS. 1, 2) than at the larger end, and the spacing becomes progressively greater in a direction away from the narrower or generally pointed end. Also, the height of the inner wall 3 may be uniform, while the

height of wall 4 is progressively greater from the more pointed end to the larger end (FIG. 2).

A bottom wall 5 is preferably integrally connected with the lower edges of the side walls 3, 4 and the corners are preferably rounded at 6 (FIG. 2) to facilitate cleaning. Said bottom wall is also preferably united or secured to the base 1.

The outer wall 3 is also secured to the marginal portion of the base wall 1.

The top wall 7 of the pan 2 is preferably integral with the upper edges of the inner and outer walls 3, 4, and it may be slightly thicker or more rigid than the side walls and formed with a slightly concavely formed upper surface, in cross-sectional contour transversely of the generally ovoid shape, to generally follow the contour of the buttocks of a patient or user. The corners at the junctures between the inner and outer walls 3, 4 are preferably exteriorly rounded (FIG. 2).

The pan portion 2 may be molded in one piece and then integrally united to the base portion 1, and at the same time, vertical flexible webs 8 may be formed between the walls 3, 4 integral with said walls and with the top wall 7, and which webs are also secured to the base portion 1. These webs are apertured at 9 for passage of air.

A conventional flexible air inlet valve 10 may be provided in each lateral wall 3 at opposite sides of the pan portion for access at either lateral side of the pan to a source of air under pressure according to the side that may be accessible to a nurse.

As seen in FIG. 2, the top wall not only may have a slightly concave upwardly facing surface, but is slanted downwardly from the highest upper edges of the side walls toward the more pointed end of the pan. Also, the side walls 3, 4 are preferably slightly tapered outwardly relative to each other in a downward direction, which contributes to greater stability under use.

While the present invention is not intended to be limited to any precise dimensions, it has been found in actual practice that where the length of the central upwardly opening portion of the pan along its major axis, as defined by the inner wall 4 is approximately ten inches, and the maximum width along the minor axis is approximately 6½ inches, is satisfactory. The height of the inner wall may be approximately 3½ inches and the height of the outer wall at the pointed or narrower end may be approximately 4 inches, while the height of the outer wall at the larger end, and along the major axis may be approximately 4½ inches. The spacing between the upper edges of walls 3, 4 at the narrow or lower end may be approximately 3 inches and the spacing between said upper edges at the larger end, and along the major axis may be approximately 4½ inches.

In operation, the bed pan, in a collapsed position, in which the top wall is at approximately the level of line 11 (FIGS. 2, 3) is a fraction of the height indicated in full line, FIGS. 2, 3, and may be readily slipped below the patient lying on a bed, which operation is relatively easy as compared with the difficulty lifting a patient for positioning a conventional pan.

After the pan is positioned, it is inflated with air and is expanded to the position shown in FIGS. 2, 3.

Being of plastic material, the pan is relatively warm and soft as compared with the conventional metal pans which is important, since the condition of an ill person confined to a bed may be aggravated by the shock incident to a sudden contact with a cold hard object of any kind, and particularly a bed pan, since the shock may, to a substantial degree, inhibit the normal and desired function of the body in discharging waste.

The provision of the webs 8 not only braces the pan

against undesirable distortion under the weight of a person, but also restrains walls 3, 4 against bellying outwardly under air pressure, and the greater rigidity of the upper wall cooperates with the webs to retain the desired cross-sectional curvature of the upper wall 7.

After use, the bed pan may be readily removed from below a patient, emptied and cleaned, and the economy of the present structure is such that, in hospitals and the like, a new pan may be provided for each patient during the stay of the latter, and then discarded.

In a hospital, one of the problems is storage space for bed pans. The present pan, being collapsible, solves the problem, inasmuch as a large number of such pans may be stored in a space in which only a relatively few conventional pans may occupy. Normally, many bed pans of the present invention may be held in collapsed condition in quantity in original packing cartons until used, there being no need for individual cartons.

With the present bed pans, there is no denting or breakage such as may occur with conventional pans, and virtually no noise by knocking the pans against shelves, furniture, or against each other. Sharp noise of hard objects striking together is particularly objectionable to persons who are ill, and in many instances has caused a relapse. Also, their light weight as compared with the weight of conventional pans, is a substantial benefit in being less fatiguing to nurses and attendants who must handle a large number during each day.

It is to be understood that changes, modifications, and substitutions may be made without departing from the spirit of the invention and the scope of the claims appended hereto.

I claim:

1. A bed pan having:

(a) a horizontally disposed flat base adapted to be supported flat on a bed,

(b) an upstanding endless, outer wall having a lower edge secured to said base and an endless upstanding inner wall spaced within said outer wall having a lower edge secured to said base, said inner and said outer walls being of similar outline in top plan view with said inner wall enclosing a central upwardly opening area,

(c) a top wall secured to the upper edges of said side walls extending between the space between them, said top wall being inclined downwardly from the upper edge of said outer wall to the upper edge of said inner wall,

(d) said inner and said outer walls being collapsible between said top wall and said base from an expanded position in which said top wall is spaced from said base substantially the full vertical height of said inner and said outer walls, to a collapsed position in which said top wall is relatively close to said bottom wall with said inner and said outer wall in folded condition,

(e) a valved inlet for air opening into the space between said inner and said outer walls for admitting air under pressure within the space between said walls for moving said inner and said outer walls to said expanded position and for supporting a person on said top wall when said inner and said outer walls are adjusted in said expanded position, and for collapsing said inner and said outer walls when said valved inlet is opened to exhaust of air from between said inner and said outer walls.

2. In a bed pan as defined in claim 1:

(f) a horizontal wall secured to the lower edges of said inner wall providing a bottom wall for the area enclosed by said inner wall,

(g) said bottom wall being secured to said base and the latter extending below said bottom wall.

3. In a bed pan as defined in claim 1:

(f) said base, inner wall, outer wall, and top wall being of plastic material and

(g) means between said inner wall and said outer walls foldable and expandable with said inner and said outer walls from said expanded to said collapsed position and vice versa of said inner and said outer walls, for holding said inner and said outer walls against substantial distortion under the weight of a person when said inner wall and said outer walls are in said expanded position.

4. In a bed pan as defined in claim 3:

(h) said top wall and said base being relatively rigid with respect to said inner and said outer walls to resist distortion, and

(i) the upper surface of said top wall being concavely curved in cross-sectional contour transversely thereof to generally correspond to the convex curvature of the buttocks of a person.

5. In a bed pan as defined in claim 1:

(f) said inner and said outer walls being generally ovoid in outline in top plan view, providing wider portion at one end than at the other end, with the lower end of said top wall at said lower end,

(g) said inner and said outer walls being approximately vertical when in expanded position, and said top wall being substantially more rigid than said inner and said outer walls and curved in cross-sectional contour transversely thereof to provide a concave upper surface.

6. In a structure as defined in claim 1:

(f) a plurality of vertically disposed flexible and foldable webs generally radially extending relative to the vertical axis of said base and inner and outer walls connected with said inner, outer, and top walls and with said base for holding said inner and outer walls against substantial distortion under the weight of a person when said inner and said outer walls are in said expanded positions, and

(g) said inner, outer, top and bottom walls and said webs being an integral unit secured to said base.

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