United States Patent

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[45] Patented **Dec. 21, 1971**

[54] **COLLAPSIBLE AND DISPOSABLE BEDPAN**
10 Claims, 12 Drawing Figs.

[52] **U.S. Cl.** 4/113
[51] **Int. Cl.** A61g 9/10
[50] **Field of Search** 4/112, 113, 110, 142, 111, 138, 143

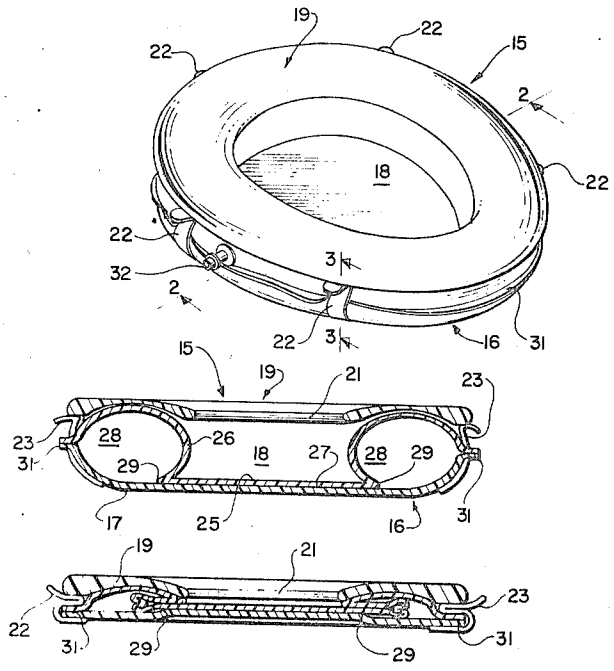
[56] **References Cited**

UNITED STATES PATENTS

2,466,142	4/1949	Yost	4/113
2,503,284	4/1950	Mason	4/113
2,714,212	8/1955	Reed	4/113 X
2,750,600	6/1956	MacDonald	4/113
3,061,840	11/1962	Presseisen	4/113
3,069,693	12/1962	Bradsky	4/112
3,249,950	5/1966	Wilson	4/112
3,418,663	12/1968	Scott	4/113
3,513,488	5/1970	Oring et al.	4/112
3,546,717	12/1970	Kuhn	4/113
3,579,654	5/1971	Kuhn	4/113

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ABSTRACT: A bedpan is provided which is collapsible and may be disposable. The two main components of the bedpan are a rigid seat which may be sterilized, and a disposable waste receptacle. The waste receptacle consists of an inflatable donut-shaped ring of flexible material, and a membrane of the same material within the ring to retain the waste. The disposable component is designed to facilitate construction in either heat-sealed vinyl, or moulded rubber. The bedpan may be conveniently positioned under the patient in its collapsed state of approximately 1-inch height, inflated to usable size, used, removed, emptied and washed, deflated and reused as required. When no longer necessary, the flexible portion may be detached and disposed of, and the rigid seat sterilized for reuse, cooperating snap elements being provided to attach the seat to the inflatable receptacle. The unit may be inflated by a hand- or foot-operated pump, a compressed air supply, or a charged capsule, either by a patient or by an attendant. An alternate construction may consist of an integral seal and inflatable waste receptacle using a throwaway liner in the receptacle.



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SHEET 1 OF 2

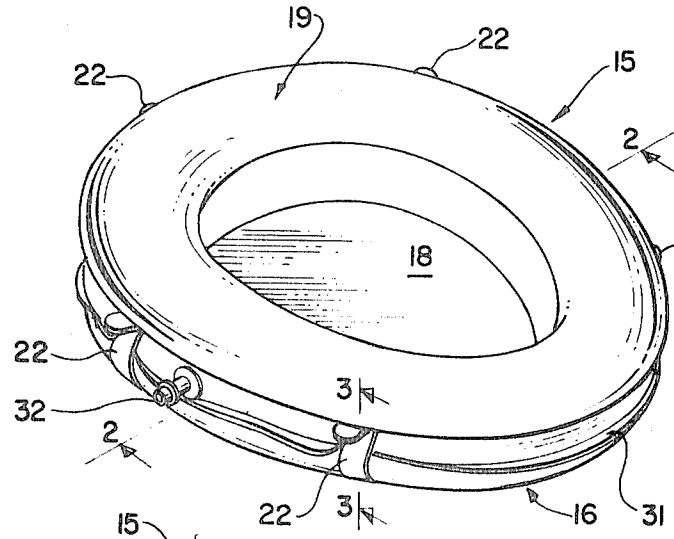


FIG. 1.

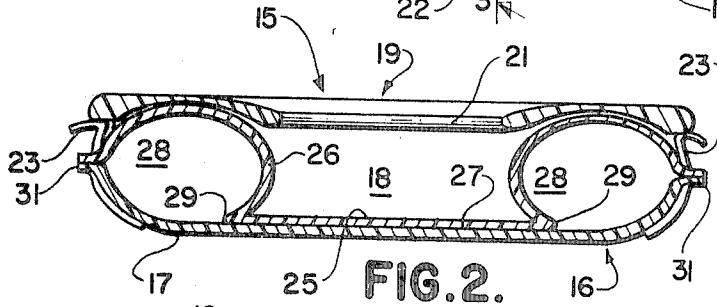


FIG. 2.

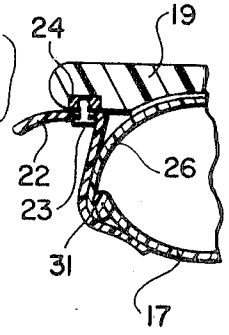


FIG. 3.

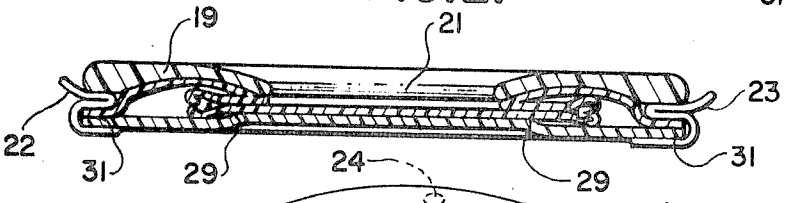


FIG. 4.

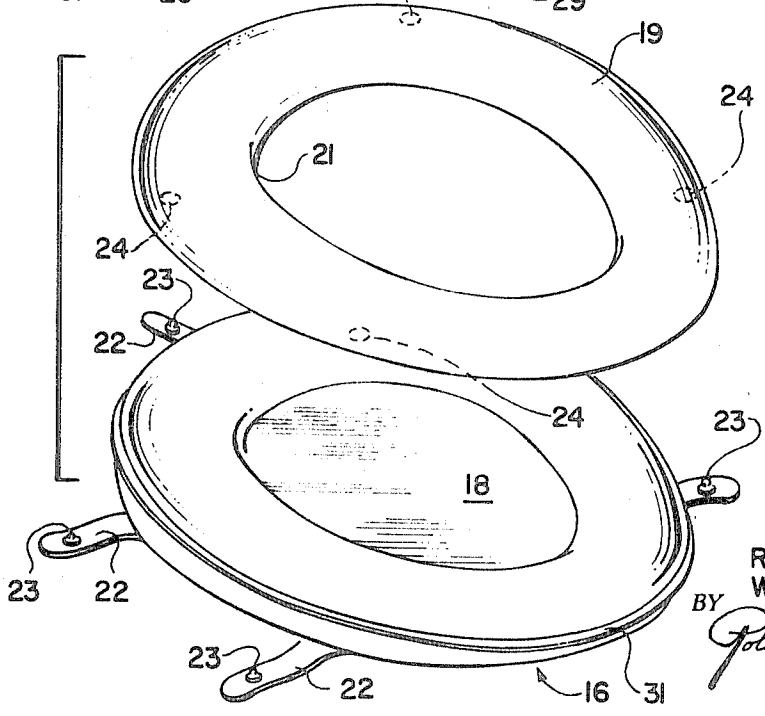


FIG. 5.

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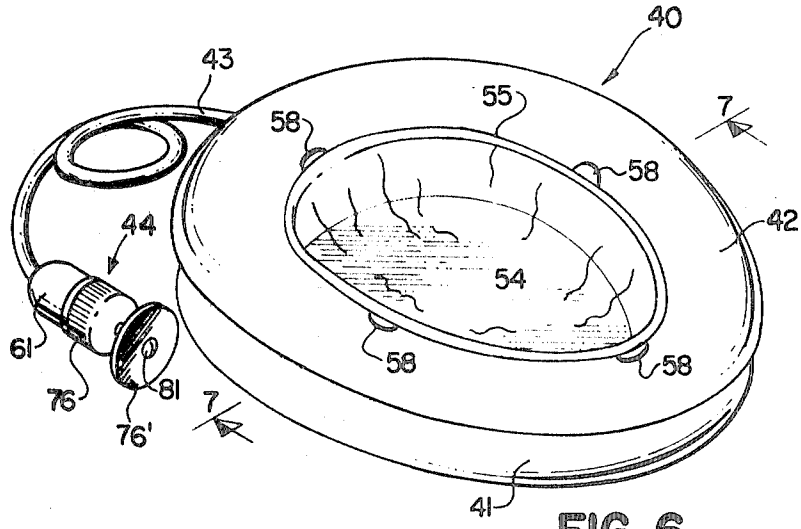
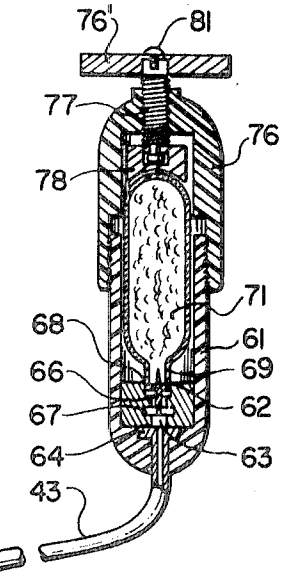


FIG. 6.



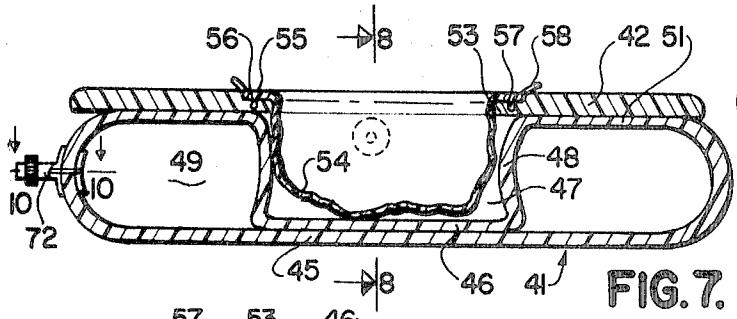


FIG. 7.

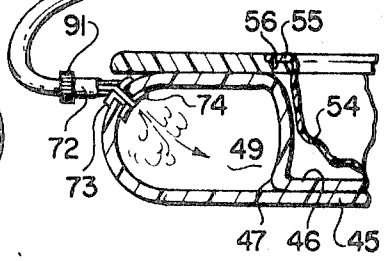


FIG. 8.

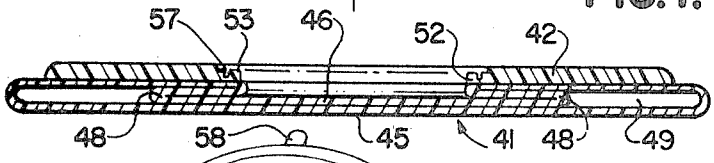


FIG. 9.

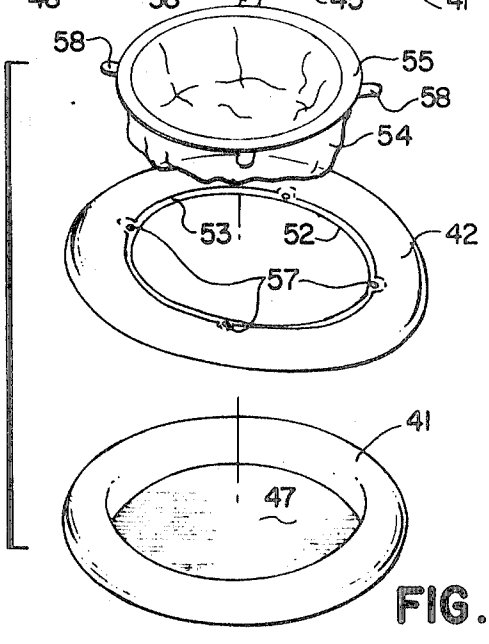


FIG. 12.

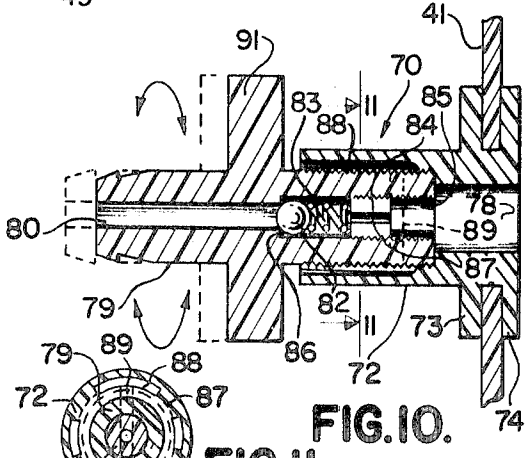


FIG. 10.

FIG. 11.

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COLLAPSIBLE AND DISPOSABLE BEDPAN

This invention relates to a collapsible bedpan which may be disposable.

It is a principal object of the present invention to provide a bedpan, which is collapsible and disposable, and such that it can be inserted under the patient while in its collapsed form and thereafter inflated to assume the usual height of a standard rigid bedpan, wherein the collapsed height being about an inch in thickness thereby provides more comfort for the patient and less difficulty for the hospital attendant.

It is another object of this invention to provide a bedpan which is in part disposable due to the inexpensive nature of the construction.

It is another object of the present invention to provide a two-part collapsible bedpan in which the parts can be separated and made washable and at the same time reusable after having been washed and sterilized, the rigid seat thereby being easily sterilized for continuing hospital use.

It is another object of the invention to provide a collapsible bedpan of generally donut shape, providing for a double wall thickness in the bottom of a central opening and a rigid seat attached to the top of the inflatable bottom with its opening in alignment with the opening of the inflatable bottom part.

It is another object of the invention to provide a collapsible bedpan which may have its own device for effecting the inflation of the same at the will of the patient and by the mere puncturing of a charged capsule for admitting the gas under pressure into the inflatable bottom part of the bedpan to inflate the same.

It is still another object of the invention to provide a bedpan which is flexible, has a cushionlike feeling, easy for mounting by the patient, and in which the bedpan can be mounted without strain from the patient and the patient lifted by effecting the inflation of the bedpan.

Other objects of the invention are to provide a collapsible bedpan, having the above objects in mind, which is of simple construction, inexpensive to manufacture, has a minimum number of parts, easy to assemble, easy to operate, easy to clean, sanitary, efficient and effective in use.

Reference may be had to the following detailed description taken in connection with the accompanying drawings, in which:

FIG. 1 is a top perspective view of an inflatable bedpan, with a rigid molded seat detachable therefrom.

FIG. 2 is a transverse sectional view of the collapsible bedpan as viewed on line 2—2 of FIG. 1.

FIG. 3 is a fragmentary vertical sectional view of the bedpan taken on line 3—3 of FIG. 1 and at the detachable strap snap-fastening part that connects the rigid seat with the inflatable basin.

FIG. 4 is a transverse sectional view taken generally along the same line of 2—2 of FIG. 1 with the basin part deflated and the bedpan collapsed.

FIG. 5 is a top collective and perspective view of the collapsible bedpan parts with the basin inflated and the rigid molded seat separated or lifted therefrom.

FIG. 6 is a top perspective view of a collapsible bedpan and of a cartridge device serving to effect the inflation of the bedpan, the top molded seat being rigidly fixed to the collapsible bottom and a liner detachably connected to the rigid molded seat and which can be thrown away with its contents and replaced by another inexpensive liner.

FIG. 7 is a transverse vertical sectional view of the inflated bedpan as viewed on line 7—7 of FIG. 6.

FIG. 8 is a fragmentary vertical sectional view of the inflated bedpan and a longitudinal sectional showing of the puncturing device used for loading a compressed gas capsule, with illustration being made as to the manner in which the bedpan is inflated, this view being taken on line 8—8 of FIG. 7.

FIG. 9 is a deflated sectional view taken generally on line 7—7 of FIG. 6, but with the bedpan being in its collapsed state, and before inflation.

FIG. 10 is an enlarged longitudinal sectional view taken of the one-way valve at one side of the inflated member to control the flow of gas into the member upon the same being inflated and operable to allow the gas to be exhausted when the pan is to be collapsed.

FIG. 11 is a vertical section taken through the one-way valve as viewed on line 11—11 of FIG. 10.

FIG. 12 is a top perspective and collective view of the parts of the collapsible bedpan of FIG. 6, comprising the inflatable basin, the normally rigid molded seat that is fixed to the inflatable basin and the throwaway liner, the parts lifted vertically from one another.

Referring now particularly to FIGS. 1 to 5, 15 generally represents a bedpan constructed according to the first form of the invention which is comprised generally of an inflatable basin part 16 of more or less donut shape, having a bottom 25 and a recess or central space 18 for receiving fecal and urine discharges from a bedridden patient and a rigid molded seat 19, having a central opening 21 to be aligned with the space 18 of the basin and which is detachably secured to the top of the inflatable basin 16 by snap-fastening straps 22, each of which including a male snap element 23 adapted to be attached to a corresponding female snap-fastening element 24 lying in the underside of the outer periphery of the molded seat 19.

The inflatable basin 16 is made from inflatable vinyl material comprising a bottom part or piece 25, generally of ring shape and serving as the bottom surface of the bedpan and on the top of which there is secured by heat-sealing a differently shaped piece but conforming generally to donut shape, this piece being indicated at 26, and having a bottom 27 that is spread flush with the bottom piece 17 to provide a double thickness bottom for the space 18, and which is heat-sealed about the periphery of the bottom portion 27, and within the gas space 28 as at 29 to provide a gastight union thereat and to maintain generally the donut-shaped gas space 28. The bottom 27 of the upper part 26 may also be secured by heat-sealing directly to the bottom part 17 to hold the parts in the bottom of the space 18 in double thickness with one another. After the heat-sealing has been effected at 29, the top vinyl member 26 is welded to the bottom vinyl at the outer periphery of the pieces 17 and 26 as indicated at 31.

There are four snap-fastener straps 22 secured to the inflatable bottom basin 16, on opposite sides of the basin and circumferentially spaced from one another there around for immediately securing the seat 19 to the basin 16. After the bedpan has been used, the seat 19 is detached from the basin part, the basin part can be emptied of its contents, cleaned and washed and made ready for reuse, or by replacing it with a new one.

The space 18 of the basin can be delivered compressed air or gas through valve 32, as best seen in FIG. 1.

In use the bedpan can be placed under the patient having the shape shown in FIG. 4, the height of the collapsed bedpan being probably not more than 1 inch in thickness and which can be thereby placed under the patient with less difficulty by the hospital staff and with the patient being immobile or bedridden and thereby mounted on the rigid top seat 19. Thereafter by applying a pump or some other means for inflating the basin part 16, the bedpan can be restored to its normal size and the patient lifted easily at the same time to open up the collection contents space 18 and to provide thereby a more or less normal-shaped bedpan, but at the same time providing an air cushion feeling to the patient so that the patient can adapt himself readily upon the bedpan and without need for centralizing his weight thereupon as with a rigid-type solid metal bedpan now generally in use in hospitals. Once the patient has used the bedpan it can be removed as any other bedpan is removed from the patient and in some instances it can be deflated, as when it can contain nothing but urine, so that strain does not have to be placed upon the back of the patient. The deflation is effected by opening the one-way valve 32 and does not need to be total, but it may in some instances

even be collapsed to the same extent as the bedpan is collapsed as shown in FIG. 4. Once the bedpan has been removed, the straps 22 are pulled from the basin part to remove the rigid seat 19 and thereby permit the bottom part 16 to be emptied of its contents and washed or sterilized either in its inflated shape or collapsed shape.

Referring now particularly to FIGS. 6 to 12, there is shown a second and modified form of the invention, in which 40 generally represents the entire assembly comprising an inflatable bottom part 41, a rigid seat part 42 that is fixedly secured to the top of the bottom part 41 and further including a gas cartridge puncturing device assembly 44 connected by a rubber hose 43 with the inflatable bottom part 41.

The bottom part 41 is constructed similarly to the bottom part 16 of the first mentioned form of the invention, but without a peripheral heat-sealed flange connecting together two parts, but being generally of donut shape and preferably made from a specially prepared and shaped balloon member so as to provide upon completion of the bottom part, one which is generally of donut shape. This bottom part 41, being made of a closed member is finally shaped to have a bottom portion 45, which serves as the bottom surface of the bedpan and to the central area thereof there is dropped from the top of the bottom part material and heat-sealed thereto an inner floor 46 providing a central space 47 shaped from an upstanding wall 48 upon the donut-shaped or gas-receiving space 49 being inflated as best shown in FIG. 7. The shaping of this bottom part 41 to provide the space 47 is effected by adequate heat-sealing so that the bottom part 41 will be caused to have its donut shape when inflated.

The rigid seat 42 is heat-sealed or adhered on its bottom surface with the top surface of the bottom part 41 as at 51 and has a central opening 52, the periphery of which is flanged as shown at 53 to provide a top annular space for receiving the periphery of a removable liner 54. This liner 54 is made of thin inexpensive liquid-containing material and has a top flange 55 that contains snap-fastening elements 56 that can cooperate with corresponding snap-fastening elements 57 peripherally spaced along the flange 53 at the opening 52 at the seat part 42. Tabs 58 are provided on the flange 55 of the liner adjacent to the male fastening elements 56 so that the liner can be easily pulled out of the seat opening 52 and off its flange 53.

The capsule-puncturing device 44 as best shown in FIG. 8, comprises generally a bottom cup-shaped part 61, having a plug 62 in the bottom thereof with an axial opening 63 with which hose 43 communicates and connected by its flange 64 to the bottom closed end of the bottom part of 61. In the opening 63 there is fixed a vertically extending puncturing pin 66 extending rigidly from a perforated washer 67. The upper end of the central opening 63 is sized as indicated at 68 to receive a reduced diameter and closure 69 of a charged capsule 71 and when pressure is applied downwardly to this capsule the capsule will be punctured by the puncturing pin 66 so that its compressed gas will be discharged into the hose 43 that is connected by a valved inlet device 70 which is held by flanges 73 and 74 in the wall of the bottom part 41 so that the inflating gas is delivered to space 49.

The capsule 71 is inserted in the bottom part of 61 and inserted thereto is a top part 76 that has an adjustable screw 77 inserted into its upper end and to the bottom end of which is secured a seat part conforming to the rounded end of the capsule to distribute equal pressure thereover as the screw 77 is turned by a handle 76' fixed by rivet 81 to the upper end of the screw 77. The capsule is in this way punctured so that the compressed gas is readily discharged from this device 44 into the annular chamber 49 of the bottom part 41 to inflate the same from a deflated condition as shown in FIG. 9 to an inflated condition as shown in FIGS. 6, 7 and 8.

The valve 70 is a one-way valve and is adapted so that it can be turned to permit the discharge of the air from the donut-shaped space 49 of the bottom part 41. FIGS. 10 and 11, the flanges 73 and 74 are shown to be a part of a fitting 72 that is clamped by the flanges 73 and 74 to the wall of the inflatable bottom part 41. This fitting 72 has a central opening 78 that is enlarged at its outer ends and threaded to receive a nozzle fitting 79 that has a central hole 80 for receiving the gas from the hose 43 that is fixed thereover, and a spring ball valve 82, having a retaining spring 83 and a retainer screw 84. The ball 82 with its spring 83 and screw 84 provided in an enlarged inserted opening as indicated at 85, so that as pressure is applied to the ball 82 it will open from its seat 86 to allow the gas to pass through a hole 87 in the screw 84, the passage 78 and into the space 49.

The flanged fitting 72 has in the part of its axial opening 78 receiving the valved fitting 79, discharge grooves 88 with which a transverse hole 89 can be aligned upon turning the valved fitting 79 by its knob 91 for alignment with these recesses 88. Thus when it is desired to deflate the bottom part 41 and the space 49 therein, the knob 91 is turned to a position as shown in FIG. 11 for the gas to be exhausted from the opening 78 and the flanged fitting 72. When it is desired to again inflate the bedpan, the capsule-puncturing device is again loaded by removing the top 76 and placing another capsule 71 therein. Turning the screw 77 will again discharge the capsule 71 and inflate the bedpan. Either before inflating the bedpan or after, liner 54 can be inserted into the space 47 and snap fasteners 56 in its periphery 55 joined with the fastener openings in the flange 53 of the rigid seat part 42.

The deflated bedpan 40 can be inserted under the patient easily since its height may not be more than 1 inch in dimension and the patient can thereby be easily located on the same without strain to the back, either by himself or by the hospital attendant. Once the patient is upon the seat the capsule 71 can be punctured and immediately the central space 47 is restored so that the liner bottom can drop thereinto and thereby provide means for collecting fecal matter or urine from the patient. Thereafter the bedpan can be removed and with the liner taken therefrom it can be thrown away with its content so that the bedpan can thereafter be used again with little washing or cleaning. This same bedpan, of course, can be used without the liner since the space 47 is provided, but will be more difficult to clean than with the first form of the invention wherein the seat is removable from the bottom part.

It will be understood that the inflation can be effected by a foot pump, a hand pump, a compressed air source or a carbon-dioxide cylinder as well as by the means that has been shown. When the bottom part of the bedpan is inflated, the bedpan may have its normal height of from 3 to 4 inches. The patient himself may, through the capsule means shown in the second form of the invention, handle the inflation of the bedpan by himself.

What is claimed is:

1. A collapsible bedpan comprising an inflatable, disposable bottom part, generally of donut shape, having a central bottom closed opening, a rigid seat conforming generally to the shape of the bottom part and adapted to overlie the periphery of the same and having a central opening aligned with the central opening in the bottom part to receive fecal matter and urine from a patient seated upon the seat, said bedpan upon being collapsed being of the order of 1 inch in thickness and when inflated being from 3 to 4 inches in height the same as a standard metal bedpan, valved means connected to the inflatable bottom part through which gas under pressure can be passed to inflate the bottom part.

2. A collapsible bedpan, as defined in claim 1, and said rigid seat being detachably secured to the upper surface of the bottom part.

3. A collapsible bedpan, as defined in claim 1, and said seat being fixedly attached to the top surface of the bottom part, said seat opening having fastening elements about the periphery thereof, and a liner adapted to fill the space within the bottom part and to be attached by cooperating fastening elements on the periphery thereof to the fastening elements of the seat, said liner thereby being detachably removable from the inflatable bedpan.

4. A collapsible bedpan, as defined in claim 1, and a capsule-puncturing device adapted to receive a charged capsule and having means for effecting the puncturing of capsule when located therein to discharge inflating gas, a hose extending from the puncturing device to the inflatable bottom part, and means connecting the hose to the inflating bottom part including a one-way valve fitting, a flange fitting connected to the wall of the bottom part and said valve fitting turnable in said flange fitting, said flange fitting having exhaust recesses cooperable with the one-way ball valve fitting to discharge the gas from the bottom part without removal of the ball valve fitting therefrom and adapted to be further turned to close off the exhaust passages of the flanged fitting.

5. A collapsible bedpan, as defined in claim 2, and said bottom part having snap fastener tabs peripherally spaced around the outer periphery thereof with fastener elements thereon, and said seat having cooperating fastening elements spaced about the underside of the outer periphery of said seat and adapted to cooperate with the fastener tabs of the bottom part, whereby to releaseably secure the rigid seat to the bottom part.

6. A collapsible bedpan, as defined in claim 3, and said seat having an inwardly extending flange about its opening, said liner having a peripheral flange with the snap fastener elements thereon, and cooperating snap fastener elements provided upon the inwardly extending flange in the opening of the seat part, tabs extending from the periphery of the liner element to facilitate the removal of the liner from the opening of the seat part.

7. A collapsible bedpan, as defined in claim 1, and said inflatable bottom part comprising a bottom member providing the full bottom surface of the bedpan, a top member secured to the bottom member inwardly of the outer periphery thereof to provide the inflatable donut-shaped space thereover and having an outer peripheral flange and the outer flanges of the top and bottom member being sealed together thereabout.

8. A collapsible bedpan, as defined in claim 7, and snap fastener straps connected to the inflatable bottom part and extending upwardly over the flanged periphery of the bottom part and having snap fastener elements thereon, said seat part having snap fastener elements on the bottom and about the periphery thereof and receiving respectively the snap fastener elements of the straps connected to the bottom part whereby the seat part is made detachably connected to the inflatable bottom part.

9. A collapsible bedpan, as defined in claim 1, and said bottom part being formed of an inflatable member having a bottom portion and a top portion, and said top portion being drawn into the member and a bottom wall of the recess being spread over the bottom portion to provide a double thickness bottom space within the central space of the inflatable bottom part.

10. A collapsible bedpan, as defined in claim 1, said seat being reusable, and said inflatable bottom part being made of vinyllike material, may be reusable and disposable.

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