

Aug. 12, 1952

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2,606,327

VALVED BEDPAN

Filed Nov. 26, 1948

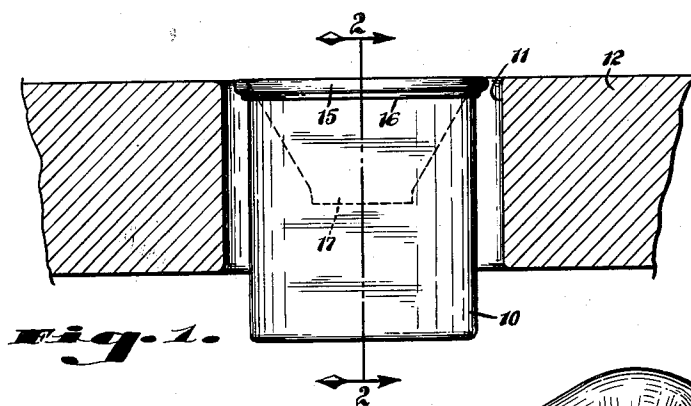


Fig. 1.

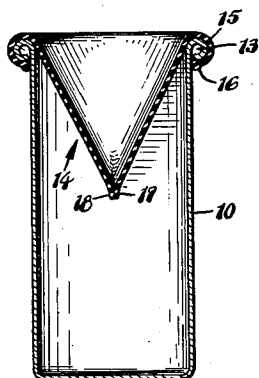


Fig. 2.

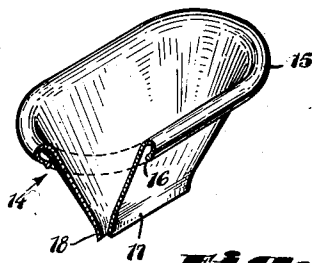


Fig. 3.

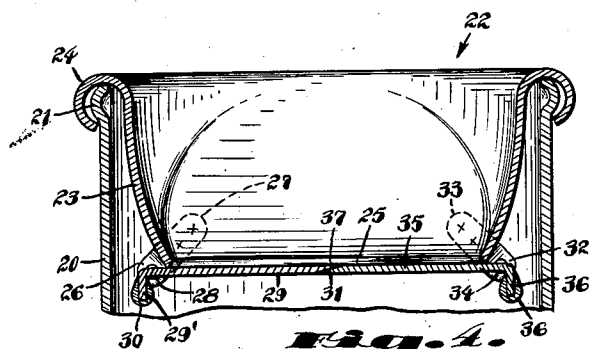


Fig. 4.

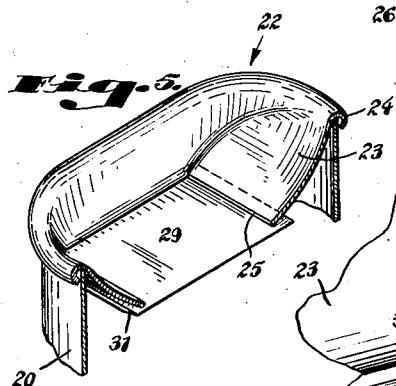


Fig. 5.

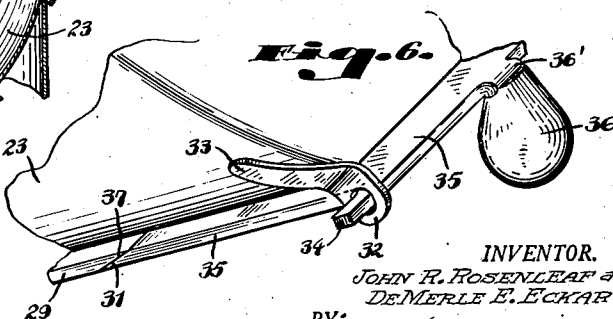


Fig. 6.

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2,606,327

VALVED BEDPAN

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Application November 26, 1948, Serial No. 62,113

3 Claims. (Cl. 4—112)

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The present invention relates to a bed pan, and more particularly to a container primarily intended for use in connection with the supporting mechanism of our co-pending application Serial Number 62,112, filed November 26, 1948, for Bed Pan Device, although it will be obvious that the invention may have other uses.

The primary object of the invention is to provide a device of the character described including valve means which will normally be closed, primarily to prevent the emanation of odors from the contents of the vessel, but which will open automatically, in response to extremely light pressures exerted thereon by materials deposited in the container, to permit the passage of such materials freely into the interior of the vessel, the valve means being of such character that it will reclose promptly after the passage of such material, to provide a substantially air-tight closure for the vessel. Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, our invention may be embodied in the forms illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific constructions illustrated and described, so long as the scope of the appended claims is not violated.

Fig. 1 is a side elevation of a bed pan constructed in accordance with our present invention, and shown located in an opening in a mattress, in accordance with the disclosure of our said co-pending application;

Fig. 2 is a section, upon a somewhat enlarged scale, taken substantially on the line 2—2 of Fig. 1; and

Fig. 3 is a broken perspective view of one form of valve means;

Fig. 4 is a longitudinal section, upon a further enlarged scale, showing the upper end of a vessel with a modified form of valve means associated therewith;

Fig. 5 is a fragmental perspective view of the assembly illustrated in Fig. 4; and

Fig. 6 is a further enlarged, fragmental perspective view of a detail of construction incorporated in the embodiment of Figs. 4 and 5.

Referring more particularly to the drawings, it will be seen that we have illustrated a container or vessel 10, having an open, upwardly directed mouth, disposed in an opening 11 in a mattress 12, the mouth of the container being flush with the upper surface of the mattress. In this form of the invention, we prefer to provide the vessel

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10 with a rolled bead 13 externally surrounding the perimeter of its mouth.

Valve means is indicated generally by the reference numeral 14 and comprises a tubular sleeve of sheet rubber, synthetic rubber, or suitably treated fabric whose upper end is preferably set, by vulcanization or otherwise, to provide an outwardly rolled collar 15 proportioned and designed to overlie and embrace the bead 13. Preferably, an elastic cord or coiled spring 16 will be suitably engaged in the extreme rim of the upper end of the sleeve 14 so that, when the parts are assembled in the manner illustrated in Figs. 1 and 2, the sleeve 14 will be firmly supported by the mouth of the vessel 10, the upper end of said sleeve having a substantially air-tight fit with said vessel mouth, and the body of said sleeve depending into the vessel 10.

The lower end of the sleeve 14 is pinched, in the manner illustrated, so that its opposite terminal wall portions 17 and 18 normally lie in mutual engagement, in the manner clearly illustrated in Fig. 2, to provide a closure which is substantially air-tight. The inherent resiliency of the material from which the sleeve 14 is made is such that the very slight downward pressure exerted upon the wall portions 17 and 18 by any material deposited in the sleeve 14 will be sufficient to separate the wall portions 17 and 18 to permit such materials to pass through the lower end of the sleeve 14 and into the vessel 10. Due to the inherent resiliency of such material, the wall portions 17 and 18 will immediately return into mutual engagement after passage of such materials to close the interior of the vessel 10 against the emanation of gases therefrom.

In the form of the invention illustrated in Figs. 4 to 6, the container 20 is distorted to provide a perimetral bead or perimetral spaced protuberances 21 adjacent its open mouth; and valve means 22, formed of any suitable material, is adapted to be supported upon said mouth to depend into the vessel 20 in the manner illustrated. In this form of the invention, the valve means comprises a tubular hopper 23 which may be formed of sheet metal, plastic, or any other suitable material having reasonable rigidity. At its upper end, the hopper 23 is formed with an outwardly rolled flange 24 adapted to engage over the open mouth of the vessel 20, preferably having a reasonably tight engagement with said mouth to prevent any substantial flow of gases therepast. At its lower end, the hopper 23 is formed to provide an open mouth 25 of suitable contour.

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Two perforated ears 26 are supported by straps 27 suitably secured to opposite walls of the hopper 23, said ears projecting beyond such walls to dispose their perforations in axial alignment; and trunnion elements 28 carried upon a valve leaf 29 are oscillably supported in the perforations of said ears. The arrangement of the parts is such that the leaf 29, in one position, will lie in engagement with a portion of the perimeter of the open end 25 of the hopper 23, to close the same. A counterweight 30 is carried upon a projecting finger 29' of the leaf 29 and normally resiliently holds said leaf in such closing relation with the lower end of the hopper 23, in the manner illustrated in Fig. 4. The free edge of the leaf 29 is preferably bevelled in the manner illustrated at 31.

At the opposite side of the hopper, and secured to the same two walls thereof are two perforated ears 32 carried by straps 33 and projecting beyond the adjacent wall of the hopper to dispose their perforations in axial alignment, the common axis of the perforations of the ears 32 being parallel with the common axis of the perforations of the ears 26. Trunnion elements 34 are oscillably entered in said perforations of the ears 32 to mount a second valve leaf 35 upon the hopper in such a position as to engage and close the remaining portion of the perimeter of the lower open end 25 of the hopper 23. A counterweight 36 carried by a finger 36' on the leaf 35 tends to hold said leaf 35 resiliently in such closing association with the lower end 25 of the hopper 23. The free edge of the leaf 35 is preferably bevelled in the manner illustrated at 37 for the illustrated cooperative engagement with the bevelled edge 31 of the leaf 29.

It will be seen that the leaves 29 and 35 normally cooperate to provide a substantially gas-tight closure for the open lower end 25 of the hopper 23; but that, since the counterweights 30 and 36 only slightly overbalance said leaves, even very small quantities of materials deposited upon said leaves will cause the leaves to swing downwardly to permit passage of such materials into the interior of the vessel 20; and that, immediately after the passage of such materials, the leaves will return automatically to their illustrated positions to reestablish the closure.

The interior surfaces of the valve means of both forms of our invention will preferably be waxed or otherwise rendered extremely smooth and impervious so that materials deposited thereon will not tend to adhere thereto, and to facilitate cleaning. If desired, the parts of the valve means of both forms may be constructed of extremely inexpensive materials, whereby they may be disposable; and of course the vessels 10 and 20 may also be made disposable. In the form of invention illustrated in Figs. 4 to 6, if the rolled portion 24

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of the hopper is rigid, the vessel walls may be slightly distorted to permit passage of the rim of said rolled portion past the bead or protuberances 21 for assembly and disassembly.

We claim as our invention:

1. A bed pan comprising a vessel having an open, upwardly-directed mouth, and normally-closed valve means supported from said vessel mouth, said valve means having a portion removably engaged with said vessel mouth and comprising two relatively movable leaves disposed within said vessel below the mouth thereof, said leaves being normally yieldably lightly biased toward mutual contact with each other to close communication between the interior of said vessel below said leaves and the atmosphere but being separable in response to downward pressure exerted thereon by small amounts of material deposited thereon.

2. A bed pan comprising a vessel having an open, upwardly-directed mouth, and normally-closed valve means supported from said vessel, said valve means comprising a tubular sleeve of liquid-proof, elastic material having one end engaged with the mouth of said vessel and its other end located within said vessel, opposite walls of said last-named end of said sleeve being normally resiliently pressed together to form a closure, but being readily separable by pressure applied therebetween.

3. A bed pan comprising a vessel having an open, upwardly-directed mouth, and normally-closed valve means supported from said vessel, said valve means comprising a generally tubular element having a perimetral flange near one end removably engageable with said vessel mouth to support said tubular element within said vessel, and a pair of valve leaves hingedly supported near the other end of said tubular element and biased toward mutual engagement to provide a closure, but swingable out of such engagement by slight downward pressure applied thereto by small amounts of material deposited thereon.

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