Dec. 30, 1969 J. L. YOUNGBLOOD ET AL 3,486,173

BEDPAN WITH DEODORIZING MEANS

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Fig. 1

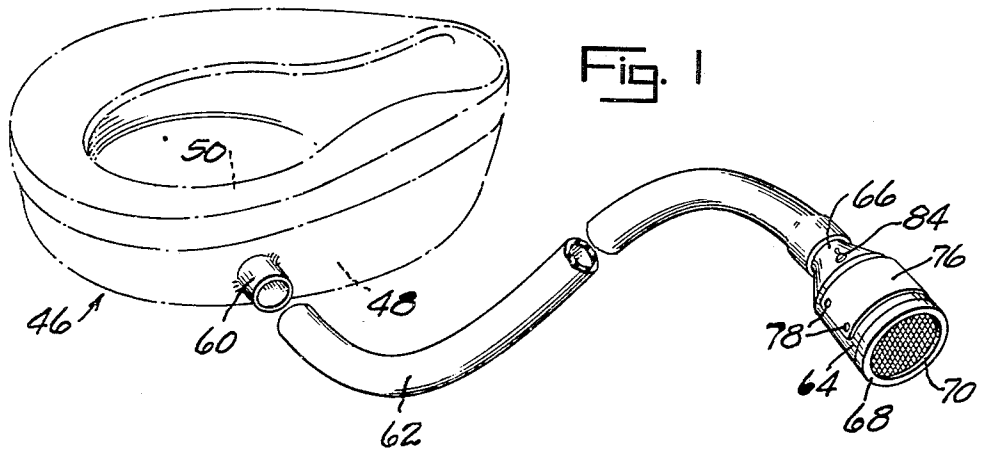


Fig. 2

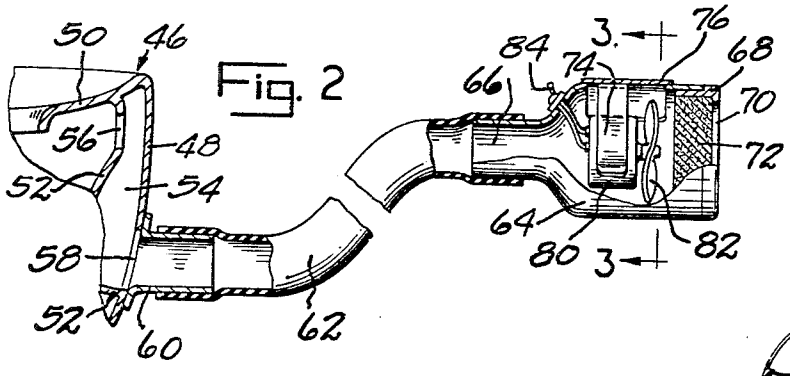


Fig. 3

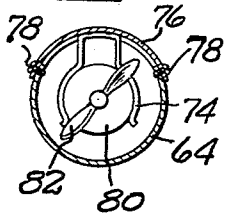


Fig. 4

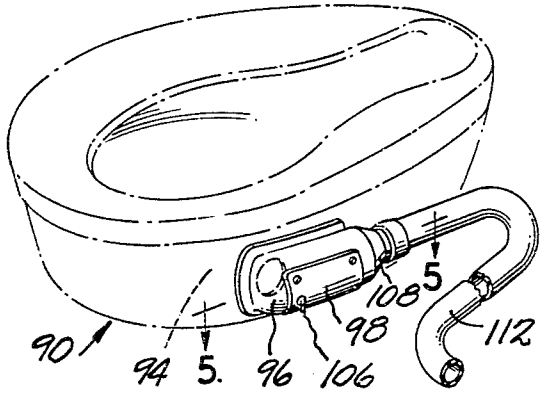
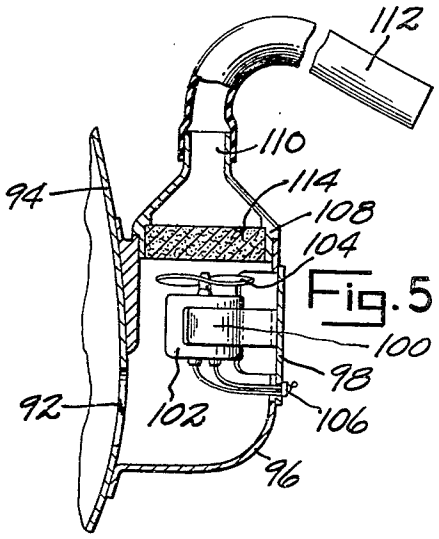


Fig. 5



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Fig. 6

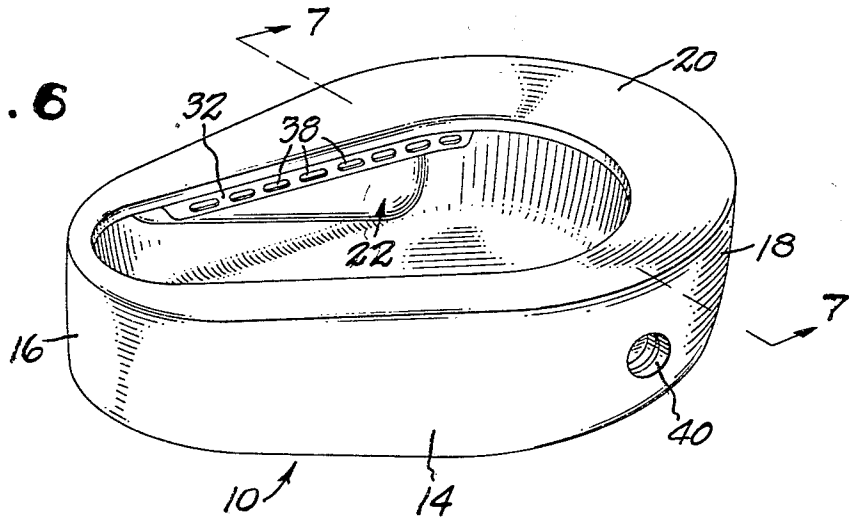


Fig. 7

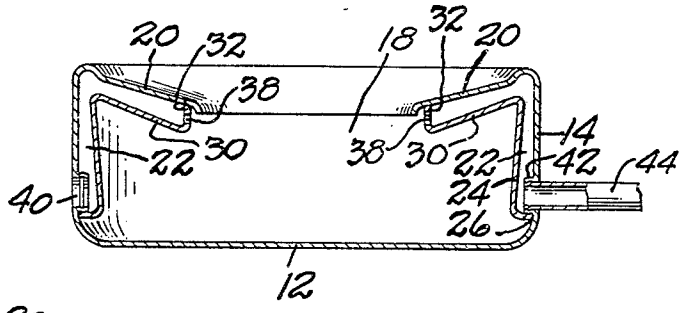


Fig. 8

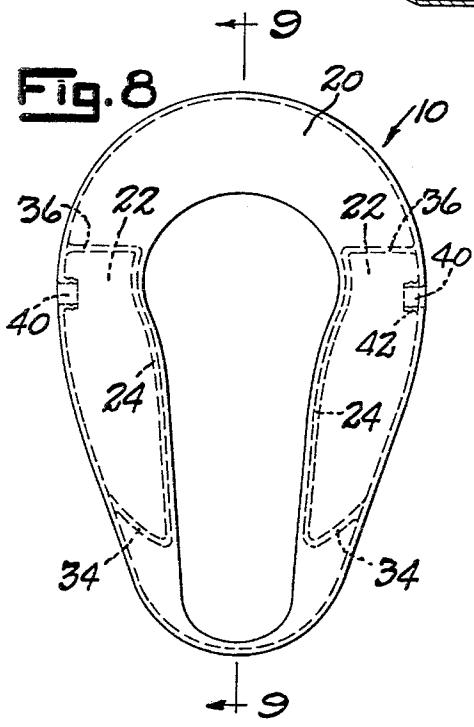
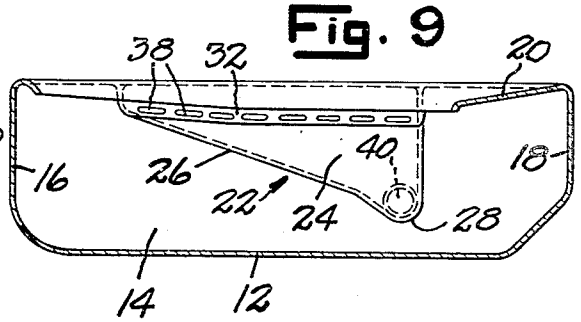


Fig. 9



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BEDPAN WITH DEODORIZING MEANS

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Int. Cl. A61g 9/00
U.S. Cl. 4—112 8 Claims

ABSTRACT OF THE DISCLOSURE

A bedpan with deodorizing means having an air chamber communicating with the interior of the pan at a high level inlet opening and connected with an air discharge means including an elongated conduit exhausting remotely from the pan and having a power driven fan drawing air from the chamber through the conduit and through an odor absorbing element.

This invention relates to a bedpan with deodorizing means.

The use of a bedpan is frequently attended by the emission of strong odors. These frequently become objectionable, particularly in cases where nurses and nurse's aides are busy and are unable to empty the bedpan and to wash the same promptly after use has ended.

Various efforts have been made to meet and solve this problem. Such efforts have commonly been directed along the lines of providing ventilation or by drawing odors for discharge to atmosphere through a window or a vent as in Patents 2,300,109 and 2,712,136. Another apparatus has been proposed by which the bedpan is provided with a hose or tube for connection with a remotely located source of suction, as shown in Patent 1,978,468. These prior devices have failed to receive acceptance because of various factors, such as the high cost thereof, the need for suction piping in a hospital, the difficulty in handling the unit, and the difficulty in cleaning the unit.

It is the primary object of this invention to provide a device of this character which overcomes the disadvantages of prior devices as aforementioned.

A further object is to provide a device of this character which utilizes means to remove odors without requiring discharge of odorous air externally of a building.

A further object is to provide a device of this character which is simple in construction, easy to handle and to clean, and which is compact and readily stored.

Other objects will be apparent from the following specification.

In the drawings:

FIG. 1 is a perspective view illustrating one embodiment of the invention.

FIG. 2 is an enlarged fragmentary sectional view of the device shown in FIG. 1 with parts shown in section.

FIG. 3 is a transverse sectional view taken on line 3—3 of FIG. 2.

FIG. 4 is a perspective view illustrating another embodiment of the invention.

FIG. 5 is an enlarged fragmentary detail sectional view taken on line 5—5 of FIG. 4.

FIG. 6 is a perspective view illustrating another embodiment of the invention.

FIG. 7 is a vertical transverse sectional view taken on line 7—7 of FIG. 6.

FIG. 8 is a top plan view of the device shown in FIG. 6.

FIG. 9 is a vertical longitudinal sectional view taken on line 9—9 of FIG. 8.

Referring to the drawings, and particularly to FIGS. 6 to 9 which illustrate one form of bedpan usable with the invention, the numeral **10** designates a bedpan formed of plastic, fiber glass, hard rubber, or metal having a bottom **12**, sides **14**, front end portion **16** and back end portion **18**. The portions **14**, **16** and **18** are preferably integral with the bottom and with a top flange **20** extending angularly downwardly and inwardly therefrom upon which the user rests while using the article.

At one or both of the opposite sides of the pan is formed an air chamber **22**. This chamber is preferably formed within the bedpan and may be defined by an inner wall **24** spaced inwardly from the side **14** and preferably welded or otherwise joined to side **14** at **26** adjacent to the bottom **12**. In the preferred form, the weld or joint **26** is inclined toward one end, as from the front end to a low point at **28** adjacent the rear of the construction. The upper part of each chamber preferably extends below the flange **20** at part **30** and is completed by an upper inner side wall **32** which is suitably joined, welded or adhered to the top flange **20** spaced from the inner margin thereof. A front wall **34** and a rear wall **36** cooperate with the walls **24**, **30** and **32**, being joined or united to the side walls **18** to complete air chamber **22**.

Openings are provided to establish communication between the interior of the air chamber **22** and the interior of the bedpan **10**. Such openings are preferably formed at **38** in the upper inner wall **32** of the air chamber and may extend along the length of that wall at spaced points. In the preferred form, the chamber wall **30** is preferably inclined upwardly and outwardly from inner upper wall **32** preferably above the level of the openings **38**. It will be observed that the openings **38** are spaced inwardly from the inner edges of the flange **20**, that is, between the inner edge of the flange and the outer wall **14**, so that the flesh of the user will not contact the apertured walls **32** so as to close the same. Each chamber **22** also has an opening **40** formed in the outer wall **14** which communicates therewith at the low point **28** of the air chamber **22**. Opening **40** is here shown as being defined by an inwardly projecting tubular part **42** in which the inner end of a flexible discharge tube **44** may be releasably inserted, or into which a sealing plug (not shown) may be inserted to close the opening **40**.

An alternative unit is illustrated in FIGS. 1 to 3. In this construction, the bedpan **46** has a side wall **48** and a top flange **50** with which a chamber defining wall **52** cooperates to define an air chamber **54**. Such chamber may be located at any selected point about the circumference of the bedpan, preferably at the side thereof and is provided with one or more intake openings **56** at the upper part of the wall **52** adjacent to the top flange **50**. The bedpan has an opening **58** in its outer wall **48** spaced below the inlet opening **56** and preferably at the level of the bottom of the air chamber **54**. An outlet fitting or tube **60** is secured to wall **48** around the opening **58** and in communication therewith.

The flexible discharge tube **62** or a tube such as **44** in FIG. 7, is detachably connected with the bedpan at a fitting or outlet **42** or **60**, respectively, and is of a length sufficient to extend to a point remote from the bedpan, for

example, of a length of 18 inches or more. To the outer end of such flexible tube **44** or **62** there may be attached a unit of the type best seen in FIGS. 1, 2 and 3 and comprising an open ended housing **64** having a neck **66** adapted for detachable connection with the outer end of the tube. Housing **64** may be of any shape desired and is preferably substantially cylindrical as here shown, being open and being larger than the neck **66** at its outer end. An end ring **68** is preferably detachably mounted upon the free end of the housing and has an opening **70** therein. The end ring **68** mounts and confines a suitable filter, such as activated charcoal confined in a container formed of fabric or screening or other material, through which and the filter material air may flow freely. A carrier **74**, such as a spring clip, may be mounted upon a closure plate **76** spanning an opening in the housing **64** and anchored thereto at **78**. The carrier **74** serves to mount an electric motor **80** upon whose shaft is mounted a fan blade **82**. Suitable electrical wires provide connection of the motor to a source of power under the control of a switch **84** carried by the housing **64**.

In the use of the device when a flexible conduit **44** or **62** is connected to the bedpan, the same may be located upon the bed or extended to the side of the bed at a position located clear of the bed covers so as to expose the opening **70** thereof to atmosphere. As the bedpan is being used, the switch **84** controls operation of the fan motor **80** to rotate the fan blade **82**, and draw air from the interior of the bedpan, as at the inlet openings **38** or **56** to the air chamber **22** or **54** and thence through the flexible conduit **44** or **62** to and through the housing **64**. Rotation of the fan blade **82** forces the air through the filter **72** which is capable of removing odors therefrom, so that the air discharged at the outlet **70** is odor free or substantially so.

The device is easily installed and for its connection requires only the plugging of an extension cord (not shown) into an electrical outlet. The device is easily disassembled after use by separating the flexible tube from the outlet of the air chamber so that the bedpan can be handled by itself while being emptied and cleaned. The high level location of the air inlet **38** or **56** to the air chamber in each form substantially protects against the entry of bedpan contents into the air chamber. If bedpan contents should accidentally enter the air chamber, the various openings of the chamber facilitates flushing thereof. Replacement of the filter material **72** is accomplished easily by the simple expedient of removing the end ring **68** to secure access to the filter and to accommodate removal thereof and insertion of a new filter before replacing ring **68**. The removable mounting of the motor **80** and the fan **82** are also of importance in the event replacement of the motor and fan blade is desired or in the event it is necessary to clean the interior of the housing **64**.

Another alternate construction is illustrated in FIGS. 4 and 5, wherein a bedpan **90** may have a chamber such as the chambers **22** and **54** described above, and an outlet opening **92** formed in the lower part of a side or end wall **94** thereof. A housing **96** is joined at its margin to the wall **94** around the opening **92**. Housing **96** is preferably part cylindrical and extends lengthwise along the wall. Housing **96** is preferably provided with a side opening spanned by a releasably mounted closure plate **98** mounting a carrier **100** for a motor **102** whose shaft mounts a fan blade **104**. The motor **102** has suitable electrical connections as through an extension cord (not shown), to a source of electrical energy, and is controlled by a switch **106**. Housing **96** also has an opening in the end thereof at which is releasably mounted an outlet member **108** having a reduced tubular outlet end **110** to which a flexible tube **112** is detachably connected. The outlet member **108** has a passage therethrough and at its large end mounts a filter unit **114**, such as a unit of the character described previously.

This embodiment of the invention has the same advantages of the device shown in FIGS. 1–3 and functions in the same manner. This unit is compact for storage in that the motor chamber **96** forms a permanent part of the bedpan and is handled therewith. The outlet tube **112** is optional but is preferred in order to provide an exhaust of air at a point remote from the bed pan so that the user of the device may remain under the bed covers and at the same time the discharge of air blown by the fan occurs in open air outwardly of the bed covers. This device has the same features of convenient and easy access to parts for replacement and for cleaning which characterizes the previously described embodiment.

While the air chamber has been illustrated herein as located within the bedpan, it will be understood that such an arrangement is not essential and that a construction may be provided wherein the air chamber is defined by a structure located exteriorally of the bedpan. In such a construction the air inlet opening would be provided adjacent the top as previously described. The housing **96** need not be permanently secured to the wall **94**, and instead may have a detachable sealed connection with wall **94**. Also, in all forms, the fan motor may be powered by a storage battery.

While the preferred embodiments of the invention have been illustrated and described, it will be understood that changes in the construction may be made without departing from the spirit of the invention.

We claim:

1. In combination,
- a bedpan having a bottom, upwardly extending walls and a top inwardly extending marginal flange,
- means carried by and cooperating with said bedpan to define an air chamber having an air intake opening therein communicating with said bedpan adjacent the level of and spaced outwardly from the inner margin of said top flange and also having an outlet opening,
- air discharge means communicating with said air chamber outlet opening and including an elongated passage defined in part by a removable flexible conduit,
- a motor operated fan carried by said discharge means, and
- an odor absorbing unit of filter material mounted in and spanning said air discharge means.

2. The combination as defined in claim **1**, wherein said air discharge means has an enlarged portion and said motor operated fan and filter are removably mounted in said enlarged portion.

3. The combination defined in claim **1**, wherein
- said flexible conduit is removably connected at said chamber outlet opening, and
- an open ended enlarged housing is connected to the outer end of said conduit and removably mounts said fan and said filter.

4. The combination defined in claim **1**, and
- an enlarged separable housing for said fan and filter forming part of said air discharge means.

5. The combination defined in claim **1**, wherein
- said filter comprises a porous body of activated charcoal retained in an enclosure through which air passes freely.

6. The combination defined in claim **1**, wherein
- a housing is mounted on said bedpan in communication with the outlet of said air chamber and includes means removably mounting said fan and filter, said housing having an outlet to which said flexible conduit is removably connected.

7. The combination defined in claim **1**, wherein
- said air chamber is located within said bedpan alongside and partly defined by one of the upwardly extending walls thereof and by said flange.

8. The combination defined in claim **1**, wherein
- said air chamber is defined by a wall within said bedpan in cooperation with one of said upwardly extending wall of said flange, and

said chamber-defining wall includes a portion inclined upwardly and outwardly from said intake opening to a level above the levels of said intake and outlet openings.

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