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INFLATABLE BED CHAMBER

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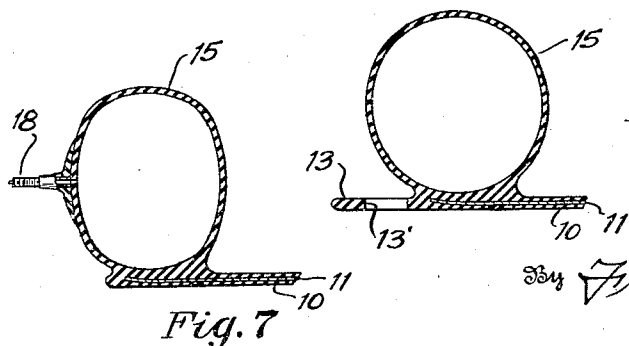
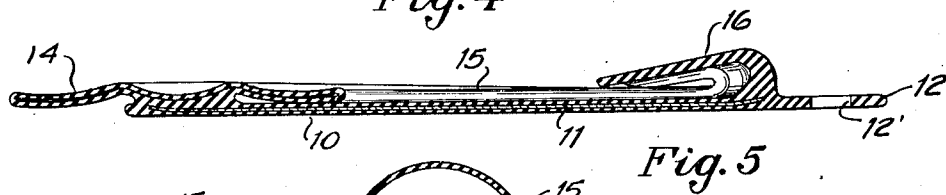
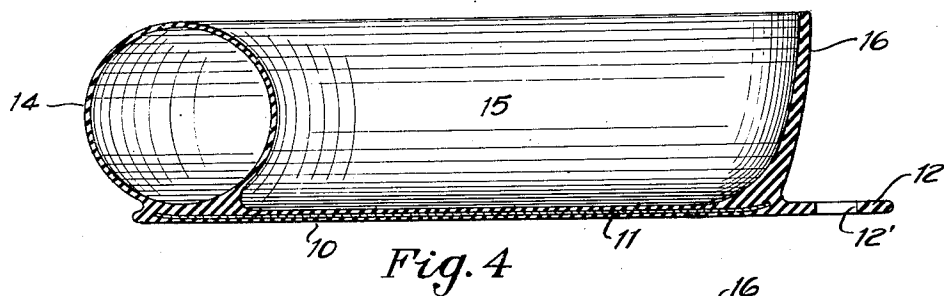
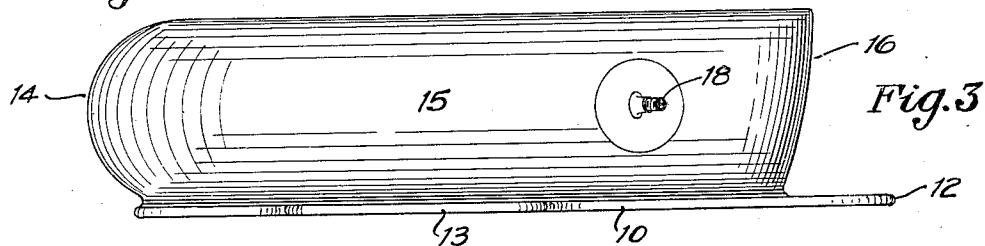
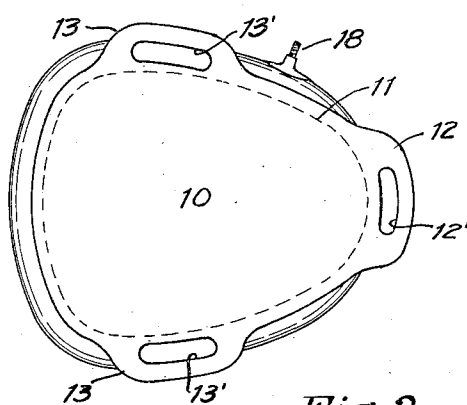
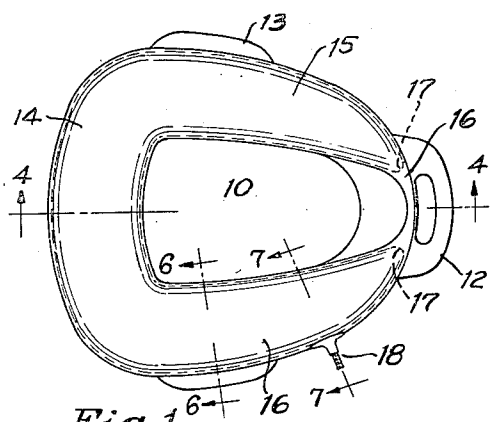


Fig. 6

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INFLATABLE BED CHAMBER

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2 Claims. (Cl. 4—113)

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The invention relates generally to bed pans or chambers for patients confined to their beds, and more particularly to a novel inflatable chamber which can be placed in a flat condition under the patient and then inflated to a receptacle shape.

Conventional bed pans are ordinarily made of sheet metal coated with enamel or lacquer or the like, and their necessary depth makes it difficult to place them under a patient in a bed, particularly if the patient is weak. Thus, when the patient is not able to raise his own body, the nurse or attendant must lift the torso of the patient sufficient to insert the pan, and this may be dangerous if the patient has internal or back injuries.

While the conventional rigid bed pan is shaped to some extent to conform to the body, at best it is always uncomfortable, and in many cases it becomes painful, especially where the patient is thin or where the body is bruised or otherwise injured, because the rigid metal presses painfully into the body and becomes increasingly painful the longer the body is positioned thereon.

It is therefore an object of the present invention to provide a novel and improved bed chamber which is easily inserted beneath the body of a patient confined to his bed without requiring any material lifting of the body weight by an attendant.

Another object is to provide a novel inflatable bed chamber which is adapted to be inserted under the body in flat condition, and to be readily inflated to a receptacle shape.

A further object is to provide an inflatable bed chamber having a substantially flat reenforced base provided with handles for aiding in inserting and removing the bed chamber.

Another object is to provide a novel inflatable bed chamber which is so designed and constructed as to lie substantially flat when deflated, and to assume a receptacle shape when inflated such as to support a patient's body comfortably and without pain or danger to the patient.

Finally, it is an object of the present invention to provide a novel and improved bed chamber which is simple and inexpensive to make, and adapted for efficient use by an inexperienced person in the performance of its intended function.

These and other objects which will become apparent to those skilled in the art are accomplished by the devices, constructions, and arrangements comprising the present invention, a preferred embodiment of which is shown by way of example in the accompanying drawings and which is hereinafter described in detail and set forth in the appended claims.

In general terms, the invention may be described as including a bed chamber constructed of rubber and the like and having a substantially flat reenforced bottom wall, and a tubular pe-

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ripheral side wall made up of three substantially straight portions arranged in a substantially triangular shape, said tubular portion being provided with a suitable valve for inflating the same, and there being flexible rubber handles attached to the outer rim of the base at conveniently spaced locations.

Referring to the drawing forming part hereof;

Figure 1 is a top plan elevation of a preferred embodiment of the improved inflatable bed chamber in inflated condition;

Fig. 2 is a bottom plan elevation thereof;

Fig. 3 is an enlarged side elevation of the improved bed chamber in inflated condition;

Fig. 4 is an enlarged transverse sectional view thereof as on line 4—4, Fig. 1;

Fig. 5 is a similar cross sectional view, showing the bed chamber in deflated substantially flat position;

Fig. 6 is an enlarged transverse sectional view as on line 6—6, Fig. 1; and

Fig. 7 is an enlarged transverse sectional view as on line 7—7, Fig. 1.

Similar numerals refer to similar parts throughout the several views of the drawing.

While the improved bed chamber is shown and described as being constructed of rubber which may be either natural or synthetic rubber, it is to be understood that the chamber may be constructed of other flexible and resilient material, such as plastic material which is adapted to be molded or formed in a tubular shape, and to contain air or gas under pressure without leakage. The improved bed chamber may be made satisfactorily of rubber of the type used in automobile tire inner tubes, or hot water bottles and the like.

The improved bed chamber is preferably molded out of one piece of rubber and includes the flat piece or bottom wall 10 which has a thin metal plate 11 embedded therein, for reenforcing and stiffening the bottom wall so as to make it lie substantially flat upon the mattress of a bed, whether the chamber is inflated as in Fig. 4 or deflated as in Fig. 5. The outline of the outer edge of the reenforcing plate 11 is shown in dotted lines in Fig. 2.

Preferably, the bottom wall 10 is substantially triangular or oval in shape and has a laterally projecting handle 12 at its small end or apex, and handles 13 projecting laterally from opposite sides of the bottom wall adjacent its large end opposite the apex. The handles 12 and 13 are preferably extensions of the bottom wall 10 which project laterally beyond the reenforcing plate 11. The handles 12 and 13 are provided with suitable finger slots 12' and 13' respectively, and since the handles project beyond the reenforcing plate 11, they are extremely flexible so that they can be raised above the supporting mattress for inserting the fingers therein.

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The side walls of the improved bed chamber are preferably in the form of a peripheral tube which in plan view substantially follows the triangular or oval configuration of the base 10. The peripheral tube may be considered as embodying three portions, a slightly curved portion 14 opposite the apex or small end, and two slightly curved portions 15 connected to the opposite ends of the portion 14 and terminating at the solid rubber wall 16 forming the apex of the substantially triangular side walls; or stated in another way, forming the small curved end of the oval shaped side wall. The terminations of the tubular side wall portions 15 of the peripheral tube are indicated in dotted lines 17 in Fig. 1.

By making the peripheral tubular wall so that it assumes this substantially triangular or oval shape when inflated, the length of the inner periphery of the large end portion 14 approaches the length of its outer periphery, and the length of each side portion 15 approaches the length of its outer periphery, so that when the tubular side wall is completely deflated, as shown in Fig. 5, it will lie substantially flat with very little puckering of the rubber along the inner periphery. If the tubular wall were made in the shape of a torus, the length of the outer periphery would be so much greater than that of its inner periphery, that a considerable amount of puckering of the rubber would result, which would provide a somewhat scalloped edge; and this would be uncomfortable or painful when being inserted under a patient's body.

The tubular portion 14 is substantially circular in cross section, as indicated in Fig. 4, while the cross section of each of the tubular portions 15 is substantially elliptical, as indicated in Figs. 6 and 7.

As shown in Fig. 5, in the completely deflated position the solid rubber wall 16 at the apex is readily folded inwardly and downwardly so as to become substantially flat, and in the position of Fig. 5, the chamber can be easily inserted and pulled under the patient's body by using the handles 12 and 13, without requiring any substantial lifting of the body weight. As shown in Fig. 4, the solid rubber wall 16 has a thickened curved bottom portion which merges gradually into the base. As shown, one of the tubular side wall portions, as for example, one of the portions 15, is provided with valve means for inflating or deflating the tubular side wall, and such valve means may be an ordinary tire tube valve 18, such as in use on all inner tubes add adapted for connection with compressed air hoses at service stations. Thus, air or gas can be admitted into or exhausted from the tube through the valve 18, and the inflating operation may be accomplished by means of a pump, as compressed air line, or a suitable gas cartridge containing carbon dioxide or the like under pressure and adapted for detachable connection to the valve 18.

In using the improved bed chamber, the same is inserted in deflated condition under the body of a patient lying in bed, in the manner previously described, and when properly positioned, it may be quickly inflated to the receptacle shape shown in Figs. 1, 3 and 4 by attaching a pump or gas cartridge to the valve 18, the body of the patient being raised as the tubular side wall becomes inflated. In its inflated condition, the improved bed chamber provides a very comfortable cushion seat for the patient, being shaped substantially like a conventional toilet seat, as shown in Fig. 1, and being flexible and resilient to conform to the

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part of the body resting thereon. There are no sharp edges or rigid parts to press into the body and cause pain or injury, regardless of how long the body is supported by the chamber.

When it is desired to remove the chamber, the same can be accomplished easily by the attendant pulling on one or two of the handles while preferably at the same time inserting his hand between the patient's body and the upper surface of the chamber to facilitate its withdrawal. Preferably, the chamber is made with a very smooth outer surface so as not to cling to the patient's skin, and such condition may be further avoided by sprinkling talc or antiseptic powder on the chamber surface before inserting it under the patient's body.

The novel bed chamber comprising the present invention is simple and inexpensive to make, and is readily adapted to be used by an inexperienced person, to promote greater comfort and safety to a patient requiring its use.

In the foregoing description, certain terms have been used for brevity, clearness and understanding, but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such words are used for descriptive purposes herein and are intended to be broadly construed. For example, the term "rubber" as used herein is intended to include any flexible, resilient material which is adapted to contain air or gas under pressure without leakage.

Having now described the invention, the construction, operation and use of a preferred embodiment thereof, and the advantageous, new and useful results obtained thereby; the new and useful constructions, and reasonable mechanical equivalents thereof, are set forth in the appended claims.

I claim:

1. An inflatable bed chamber including a flat reinforced bottom wall, an inflatable tubular rubber side wall having three substantially straight communicating tubular portions arranged in a generally triangular shape so as to lie substantially flat when deflated, and a foldable solid rubber wall connecting the ends of two of said side wall portions to form a complete peripheral wall, said solid rubber wall having a curved thickened base portion merging into said bottom wall.

2. An inflatable bed chamber including a flat reinforced bottom wall, an inflatable tubular rubber side wall having three substantially straight communicating tubular portions arranged in a generally triangular shape so as to lie substantially flat when deflated, a foldable solid rubber wall connecting the ends of two of said side wall portions to form a complete peripheral wall, said solid rubber wall having a curved thickened base portion merging into said bottom wall, a flexible handle projecting laterally from said base portion, and flexible handles projecting laterally from the straight tubular portions connected by said solid rubber wall.

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