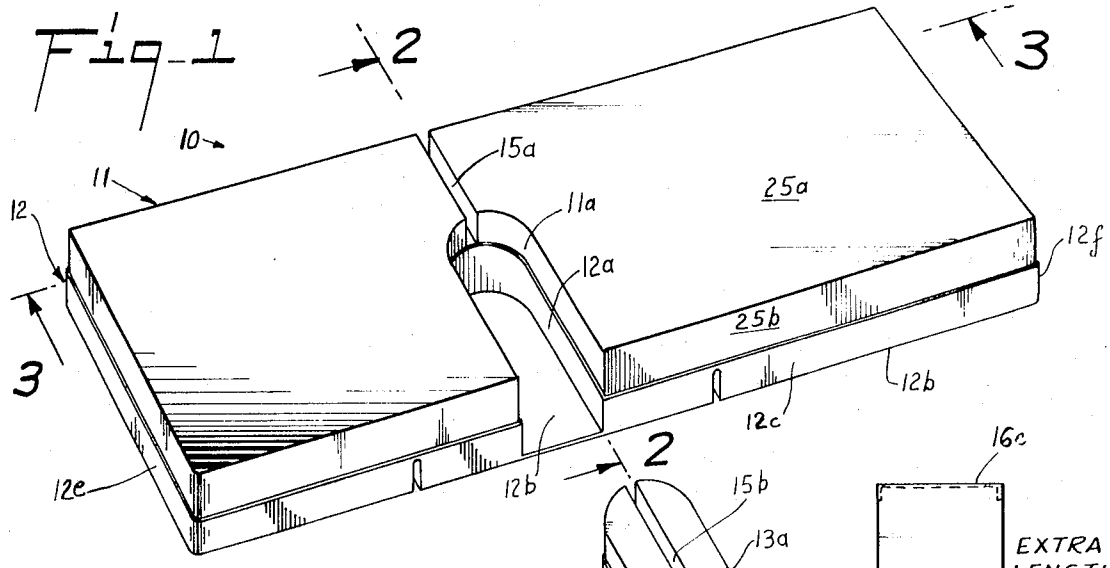
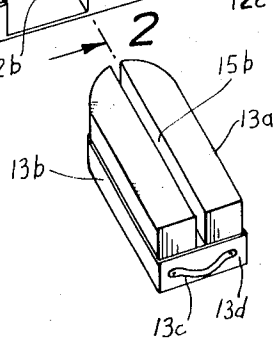
Nov. 30, 1971 J. H. STALEY ET AL 3,623,170

MATTRESS WITH SERVICE PLUG AND PROVISION FOR LONG SHEET

Filed Jan. 5, 1970

Fig. 1





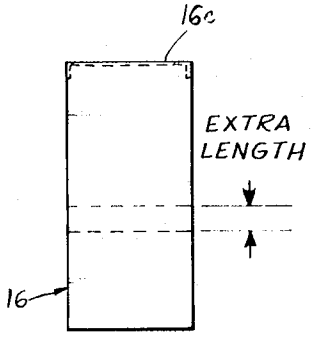


Fig. 7

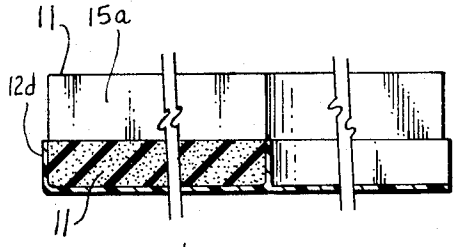


Fig. 2

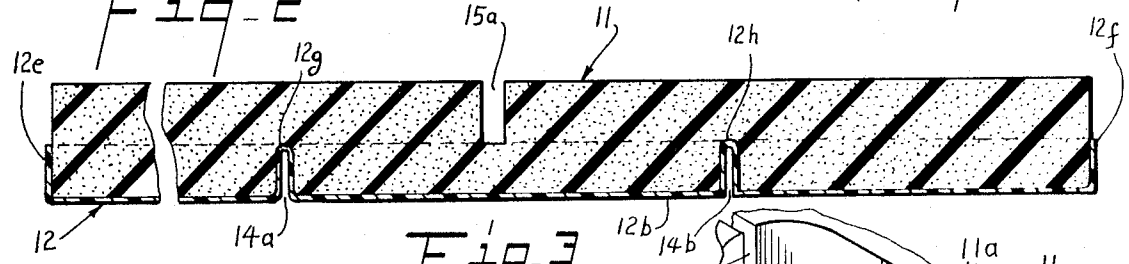


Fig. 3

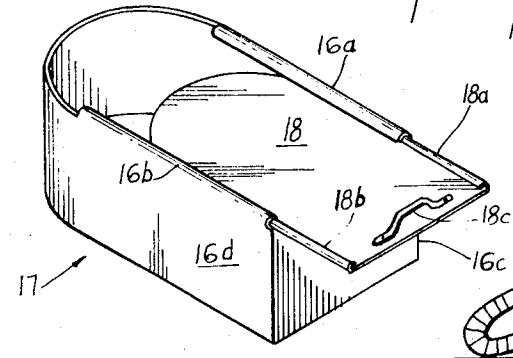


Fig. 4

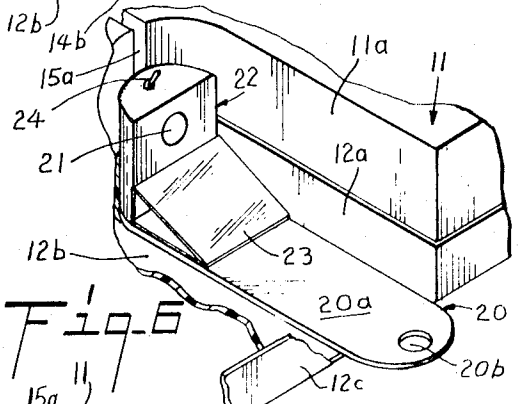


Fig. 6

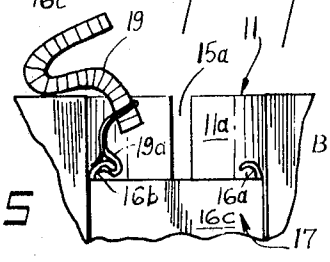


Fig. 5

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MATTRESS WITH SERVICE PLUG AND PROVISION FOR LONG SHEET

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ABSTRACT OF THE DISCLOSURE

The disclosure is to a mattress comprised of a base of flexibility but of substantial rigidity and a cushion of soft, yieldable, material, as foam rubber with the base having upwardly grooved ribs thereacross longitudinally spaced apart in correspondence with the spacing of the joints or pivot lines of hospital bed frames. An offset is provided into the mattress from one side thereof at relative distance from foot and head at which a conventional bed pan would be used, and a plug in correspondence with cushion and base materials is normally in place in the offset. A groove extends through the plug in direction transversely of the mattress when the plug is in place and a transverse groove across the cushion distance from offset to other side is in co-extension of the plug groove. Thus a cover sheet, may have that length thereof, in excess of conventional length, folded into the transversely aligned cushion and plug groove when the plug is in place. Then, with plug removed, the fold part of the sheet from the plug groove may be spread out to protectively cover the offset prior to the insertion of a service item, as a bed pan, into the offset. The invention may include other items than a special bed pan, as, for instance, an inspection mirror.

Broadly the invention relates to a hospital bed mattress adapted to provide a space of access below a patient so that the patient may not have to be moved, as lifted, as for the insertion of a special bed pan, or other service item into service position.

Consequently, it is a primary object of the invention to provide a mattress for hospital beds that provides a sidewardly removable plug therein removable to admit insertion of service items without requiring that the patient be lifted; the invention also including the removable plug and other service items insertable when the plug is removed.

It is also another and important object of the invention to provide a mattress of this class which is designed to flex or bend in accordance with adjustment of the hospital bed frame supporting the mattress, at the same time the mattress maintaining a properly soft, yieldable cushion, with sheet thereon upon which the patient may rest.

Also it is an important object of the invention to provide a mattress of this class which provides an extra length sheet, thus to provide protective coverage for the sheet to cover the offset area under a service item, as a bed pan that is inserted when the plug has been removed.

Additionally the invention provides special service items, as a special bed pan, as including a mounted urinal, or an inspection mirror, for service in the offset space provided below the patient when the plug has been removed.

Other and further objects will be apparent when the specification herein is considered in connection with the drawings, in which:

FIG. 1 is an isometric development view of a mattress which comprises an embodiment of the invention, the plug being shown removed to show details of base offset construction;

FIG. 2 is a transverse sectional elevation, taken along line 2—2 of FIG. 1;

FIG. 3 is a longitudinal sectional elevation, taken along line 3—3 of FIG. 1;

FIG. 4 is an isometric view of a bed pan employable as a service item for insertion into the offset with the plug removed therefrom;

FIG. 5 is a fragmentary, longitudinal elevational view, looking into the offset with the bed pan shown in FIG. 4 in place therein with a urinal shown clipped to the rear guide rail of the bed pan lid;

FIG. 6 is a fragmentary isometric view, showing an inspection mirror insertable into the offset after a bed pan may have been removed therefrom; and

FIG. 7 is a plan view demonstrative of the extra length sheet employable with the mattress shown in FIG. 1, thus to protectively cover over the offset when the plug has been removed therefrom.

Referring now to the drawings in which like reference numerals are assigned to like elements in the various views, a mattress **10** is shown in FIG. 1 as comprised of a cushion **11** seated in a box type base **12**. The cushion should be of a soft, springy, yieldable, material, as "foam rubber" or a light plastic, while the base may be of a plastic material that is of some rigidity while also being capable of flexibility or spring action. The base is offset inwardly from one side, the offset wall **12***a* being shown on the right side of FIG. 1, the relative longitudinal location of the offset from the foot, or head, of the mattress being determined by the average relative longitudinal location of usage of a conventional bed pan with relation to the length of a conventional bed. The cushion **11** is correspondingly offset around the offset wall **12***a* of the base and thereabove, as indicated by offset wall **11***a* of cushion **11** in FIG. 1.

The base **12**, FIGS. 1, 2, 3 and 6, comprises a floor **12***b*, side walls **12***c*, **12***d*, end wall **12***e*, **12***f*, with the aforesaid offset wall **12***a* upstanding from the floor **12***b* to the same height as the side wall **12***c* from which it extends inwardly. The inner portion of the offset wall **12***a* is shown arcuate or rounded, as is the cushion thereabove at **11***a*, this being for ease of plug fit of a plug **13**, FIG. 1, to be further described hereinbelow. At the relative locations above the pivot joints at which the bed frame supporting a conventional hospital bed mattress may pivot, the base **12** has cross-ribs **12***g*, **12***h*, thereacross providing upwardly extending grooves **14***a*, **14***b*, therein, whereby to provide leaf spring type hinges or lines of pivotal action, whereby the base **12**, and the flexible cushion **11** therein, may pivot in correspondence with bed adjustment.

The cushion **11**, on the side opposite the offset **11***a*, may be grooved at **15***a* to a depth substantially at the top of the base offset wall **12***a*, and a plug **13**, normally fitted into the offset **12***a*, cushion offset **11***a*, may have a corresponding groove **15***b* therein downwardly through the plug cushion **13***a*, to a depth substantially at the top of a plug box type base **13***b*. The plug cushion **13***a* and plug base **13***b* may be constructed of the same respective materials, with the plug base **13***b* to upstand to the same height as the mattress base offset walls **12***a*. A handle **13***c* is shown provided in the plug outer wall **13***d*, which, when the plug **13** has been fully inserted into the mattress **10**, extends parallel with, and in completion of the mattress base side wall **12**.

A protective sheet, or under spread **16** is provided, FIG. 7, to some predetermined length greater than a conventional hospital under sheet, such extra length being pro-

vided to be folded into the left side cushion groove **15***a* and into the plug cushion groove **15***b*, when the plug **13** is in place, as normally, when the patient does not require service. Thus, when the patient does require service, the extra length of sheet **16**, that has been folded into the plug cushion groove **15***b*, may be unfolded and spread to cover protectively the base floor offset portion and the base walls **12***a* and the mattress cushion walls **11***a* thereabove. Then, when the pan **17** is inserted into the offset space, it fits upon and within the extra length portion provided by the sheet **16**, and thus protects the base **12** and cushion **11** from being soiled by service of the patient.

The sheet **16**, FIG. 7, is indicated as providing the conventional cowl portion or hood **16***a* to provide a pocket into which the upper end portion of the cushion **11** may be fitted. Also, it is noticeable that the special sheet **16** has no such hood or cowl on its lower portion, and in this design follows a conventional hospital bed under sheet as to this feature.

When the plug **13** is removed, and the sheet **16** spread down over the offset, a bed pan **17** may be slid into the space thus provided. The bed pan is of box type and may be of enamel ware, plastic, painted metal, or of any other suitable material. Slide rails or guideways **16***a* and **16***b* are formed along the upper edges of the respective forward and rear walls **16***c*, **16***d* of the plug **13**. Thus, with the bed pan **17** in place, a lid **18** having corresponding slide bars **18***a*, **18***b* atop, or formed off the opposed forward and rear edges thereof, is provided to be slid inwardly upon the bed pan **17** a predetermined distance short of the inner wall thereof, thus to leave adequate opening space for patient service. For this purpose, a handle **18***c* is provided on the outer portion of the slide.

As best indicated in FIG. 5, a conventional flexible urinal tube or urinal **19** is shown mounted, as by a clamp **19***a*, to the lower guideway **16***a* (the one toward the foot of the mattress) of the bed pan **17**. In this view the lid **18** is not shown, and would be left off, thus to make room for the wire clamp **19**, of contour correspondingly as shown in FIG. 5, to be clamped to the bed pan slide rail **16***a*.

For purposes of inspection, with the bed pan **17** removed after usage, or independently of any preceding service within the offset, an inspection mirror mount **20** may be inserted, as shown in FIG. 6. Such mirror mount includes a base plate **20***a* of length some amount greater than the offset **12***a*, and with a handling hole **20***b* provided in the outer end thereof. A battery actuated electric light **21** is indicated as installed to shine from the upper, outer portion of the battery stand **22**, and above a reflection mirror **23** mounted just outwardly of the battery stand **22** and at an angle properly to reflect what may be envisioned therein as light images. A switch **24** on top of the battery stand **22** indicates that the light **21** may be battery actuated by a battery, not shown but provided in the battery stand.

The surface of the cushion **11** may be sprayed or substantially water-proofed with a suitable material that will prevent undesirable soilable matter from penetrating into the cushion material and thus enable the surface of the cushion to be washed easily to remove any undesirable material, liquid or solid, that may be deposited anywhere thereupon. Reference numerals **25***a* and **25***b* represent this coated feature as applied to the top surface and side surface of the cushion **11**.

The invention relates broadly to a sidewardly plugged mattress that may bend to follow conventional hospital bed spring adjustment, thus providing service space by plug removal without any necessity for lifting the patient. The disclosure includes service items, and exemplary claims complete the application.

What is claimed is:

1. A mattress for use with a plug and comprising the

combination of a base of a partially flexible, substantially rigid material including a floor with side and end members upstanding therefrom, said base providing longitudinally spaced apart, upstanding, transverse members thereacross with said transverse members being of cross-section to provide transverse groove means extending upwardly thereinto whereby said base may flex transversely in correspondence with the transverse pivoting of conventional hospital bed frame sections, a mattress cushion to fit within said base and transversely grooved to fit over said transverse members, said base being offset inwardly from one side thereof to receive a plug therein to fit over the lower level of said floor and with wall means upstanding from said floor to side member level around said plug, said cushion providing a transverse groove therein down to side member top and extending from the side of the cushion opposite said offset to said offset, whereby a cover sheet of length to provide fold into said cushion groove may be employed, and with the plug removed, the fold part of the sheet transversely opposite the cushion groove may be spread to cover the floor and sides of said offset whereby to receive an inserted service means as a bed pan thereupon.

2. A mattress as claimed in claim **1** in which a plug is additionally included to fit into said offset, said plug having a groove upwardly therethrough in aligned extension of said transverse groove in said cushion to receive cover sheet fold thereinto when said plug is in place of an inserted service means.

3. A mattress as claimed in claim **1** which additionally includes a cover sheet in excess of conventional length to provide fold on one side into said cushion groove and oppositely into said offset and over the floor thereof.

4. A mattress including a plug as claimed in claim **2**, said plug including a plug base with walls determined by said offset and outwardly by said one side, and of the height thereof, and with plug base filled with plug cushion to the height of said cushion in said mattress base, said plug groove aforesaid being provided in said plug cushion.

5. A mattress including a plug as claimed in claim **4** which additionally includes a handle extending outwardly from the outer wall of said plug base.

6. A mattress as claimed in claim **1** which additionally includes as said service means a bed pan in box form defined by said offset and providing oppositely, spaced apart slide rails atop the transversely extending walls thereof, a lid with slide bars to slide in said slide rails, said lid extending transversely outwardly of the outer wall of said bed pan and providing a pull handle on the outer portion thereof.

7. A mattress as claimed in claim **6** which additionally has a urinal attachable in clasping contact with a guide rail.

8. A mattress as claimed in claim **1** which said cushion is comprised of rubber foam.

9. A mattress as claimed in claim **1** in which said base is comprised of a light plastic.

10. A mattress as claimed in claim **1** with which a lighted mirror is included for insertion into said offset after a bed pan may have been removed therefrom.

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U.S. Cl. X.R.

5—91; 128—22