Oct. 22, 1940. J. D. DRY 2,218,572

HOSPITAL BED

Filed Jan. 30, 1937 2 Sheets-Sheet 1

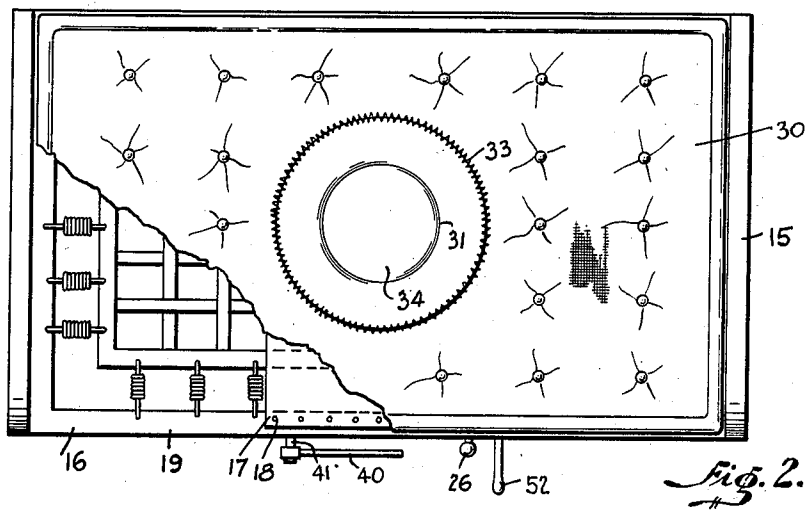


Fig. 2.

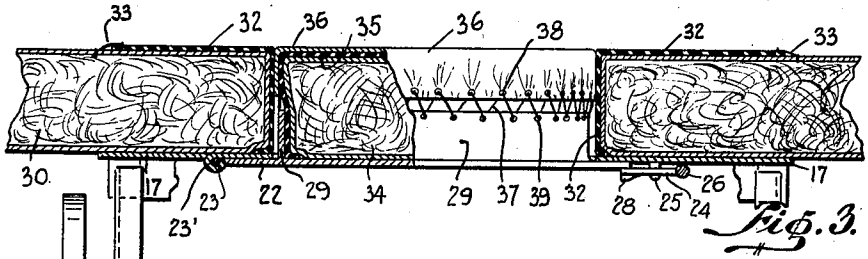


Fig. 3.

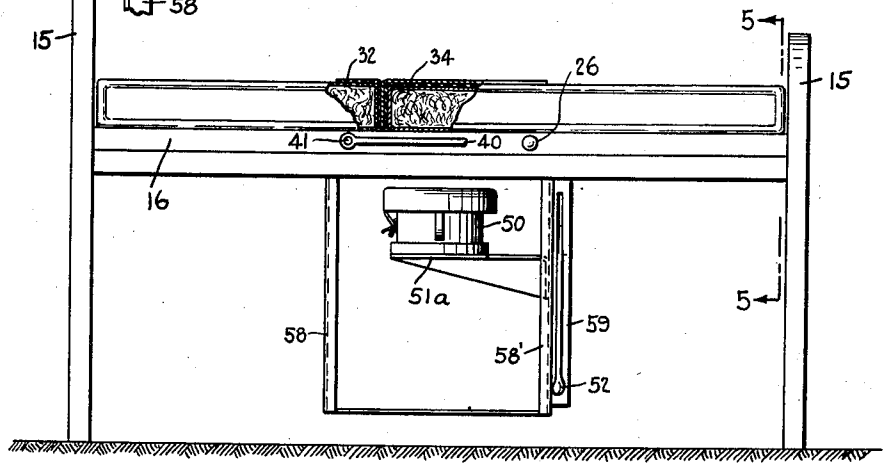


Fig. 1.

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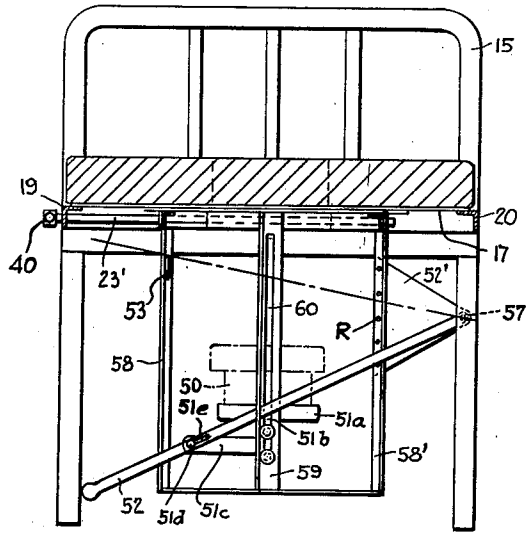


Fig. 5.

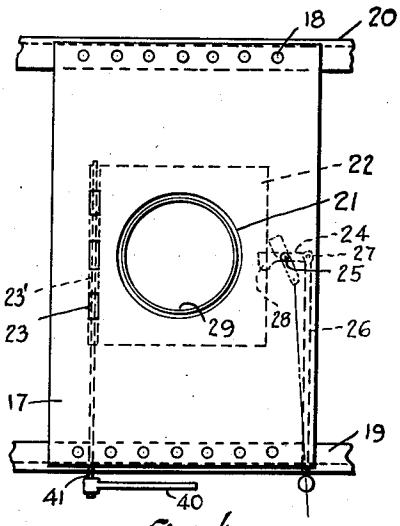


Fig. 4.

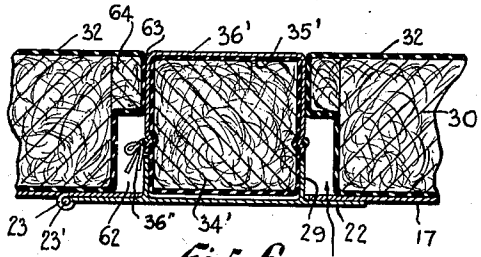


Fig. 6.

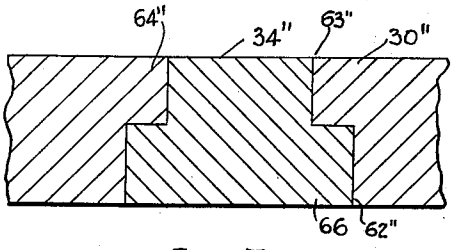


Fig. 7.

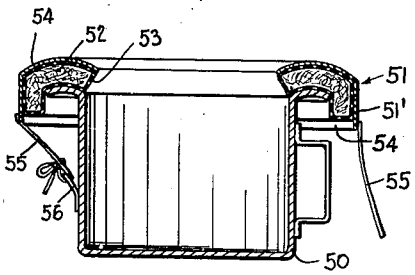


Fig. 8.

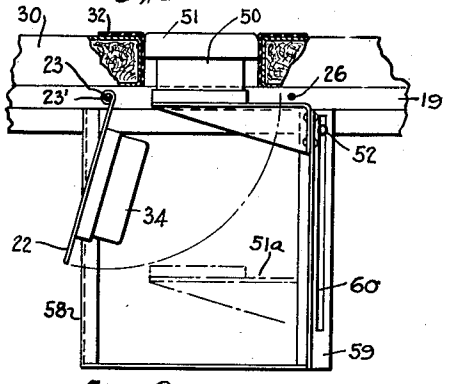


Fig. 9.

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UNITED STATES PATENT OFFICE

2,218,572

HOSPITAL BED

John D. Dry, New York, N. Y.

Application January 30, 1937, Serial No. 123,141

5 Claims. (Cl. 5—90)

This invention relates to improvements in invalid and hospital beds.

It is an object of the present invention to provide an economical, efficient and practical invalid or hospital bed having instrumentalities for permitting the patient to perform his eliminations without generally disturbing his comforts or his resting position.

A further object of the invention is to provide a hospital bed with a mattress having a central portion which is readily, conveniently and mechanically removable for substitution by a bed pan mechanically operable for placement thereof for said central portion, when necessary, for use by the patient.

A further object of the invention is to provide a hospital bed incorporating mechanical features for sanitarily introducing into the bed mattress a bed pan for use by the patient when desired.

Further objects and advantages of the invention will appear from the following disclosures thereof together with the attached drawings which illustrate certain forms of embodiment thereof. These forms are shown for the purpose of illustrating the invention since the same have been found in practise to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and that the invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

In the drawings:

Fig. 1 is a side-elevational view of a hospital bed incorporating the invention, the bed pan being shown in partly raised position.

Fig. 2 is a plan view of Fig. 1, the mattress being partly broken away.

Fig. 3 is an enlarged sectional view of the center portion of a preferred mattress employed in the invention.

Fig. 4 is a detail plan view of the intermediate portion of a bed with related elements embodying the invention.

Fig. 5 is an end view taken along line 5—5 of Fig. 1.

Fig. 6 is an enlarged fragmentary detail section taken adjacent the center opening of a mattress embodying the invention in a modified form, with closure cushion in place.

Fig. 7 is a diagrammatic fragmentary enlarged sectional view adjacent the center opening of a mattress embodying the invention in a still further modified form with closure cushion in place, the parts not being shown in detail.

Fig. 8 is a sectional view of a bed pan with cushion ring employable in the invention.

Fig. 9 is a partial sectional view of the center portion of the bed shown in Fig. 1, the bed pan being shown in operative position.

In the drawings which embody a preferred form of the invention, the bed frame 15 is provided with a conventional bed spring 16 having a flat plate 17 made preferably of metal secured at 18 to the two members 19 and 20 of bed spring 16. At the center of plate 17 is a preferably circular opening 21. A closure or cover 22 is hingedly secured to plate 17 at 23 and is held in closed position by a latch 24, which is fulcrumed at 25 to plate 17 and connected to an operating bar or lever 26 at 27. The latch 24 is provided with a tapered projection 28 to aid in gripping the cover when almost closed and forcing the same into closed position.

Cover 22 is operated for swinging movement by means of lever 40 secured to the extension 41 of the hinge pin 23'. In lieu of a lever 40, a wheel (not shown), may be employed to rotate hinge pin 23'.

A resilient element or mattress 30 has a preferably circular opening 31. The wall defining opening 31 is lined and the portion of mattress 30 adjacent opening 31 is covered with rubberized or other waterproof or non-absorbent material 32. Stitches 33 secure the material 32 to mattress 30. An upwardly-extending ring or flange 29 which is preferably made a part of cover 22 is used to secure in position a resilient element or cushion 34 adapted to fit within opening 31 as plainly illustrated in Fig. 3. The removable cushion 34 is preferably covered with suitable moisture-proof material 35, over which is placed a removable flexible cover 36 made preferably of suitable fabric secured by a string or other flexible member 37 through openings 38 and 39 in the sheet 36 and the flange 29, respectively.

The bed pan 50 rests on a vertically-slidable shelf or support 51*a* which may be operated upwardly and downwardly by a lever 52 connected thereto and fulcrumed at 57 on gusset 52', the latter being secured to frame member 58' by rivets or other suitable means R. Frame members, 58, 58' may be secured to plate 17. A bar 59 which may form part of frame member 58 has a vertical slot 60 which limits the up and down movement of shelf 51*a*. Shelf 51*a* is provided with a downwardly-projecting member 51*b* which forms at its extreme end the arm

51c having a pin 51d made to slide in the slot 51e of lever 52. A latch 53 secured to the upper part of frame member 58 keeps the lever 52 in its upper position. Lever 52 when raised places bed pan or chamber 50 in utilizable position as shown in Fig. 9. To place the bed pan in this latter position, latch rod 26 is first pulled outward to release the latch 24; lever 40 is then swung downwardly thus swinging in the same direction cover 22 carrying cushion 34 all as shown in Fig. 9. Bed pan 50 is placed on shelf 51a and lever 52 is then swung upwardly until engaging with latch 53. This places the bed pan 50 in opening 31. Thus bed pan 50 replaces cushion 34.

As indicated particularly in Fig. 8, the bed pan 50 is preferably covered with a cushion ring 51 having the depending flange 51'. This ring comprises the resilient filling 52 covered by a rubberized or other moisture proof or non-absorbing fabric 53, there being further provided a removable fabric cover 54, which may be secured to the bed pan 50 by means of cords or other flexible elements 55 tied to hooks or loops 56 of the bed pan.

Fig. 6 shows the mattress in a modified form. This mattress has a bottom opening 62 communicating with a reduced top opening 63 formed by the cushion ring 64 secured to the mattress body 30. Within these openings is normally positioned a cushion 34' of similar construction to that of cushion 34. The cushion 34' is drum-shaped and of a diameter to fit the reduced opening 63, leaving an annular space 65 surrounding cushion 34'. Cushion 34' is covered with suitable moisture-proof material 35', over which is placed a removable flexible cover 36' made of suitable fabric material and which may be held in place by any suitable means such as, for example, a string or cord 36'' or by snap fasteners (not shown). In Fig. 7 which is merely diagrammatic, the cushion 34'' is shaped to substantially snugly fit both openings 62'' and 63''. In this case the flange 64'' forms an integral portion of the mattress 30''. When using the mattress forms shown in Figs. 6 and 7, a bed pan without the padding 51 is preferably employed.

Operation of the device is as follows:

Mattress 30 is covered with regulation bed sheet having a central opening registering with the opening 31 in the mattress. Cushion 34 is normally in position shown in Fig. 1. This cushion 34 is covered with material 36 of similar character as that of the bed sheet (not shown), thereby providing a uniform surface similar to the conventional sick-bed mattress. The shelf 51a in this case will be in its lowered position as indicated in Fig. 9. If the patient desires to eliminate, the cushion 34 is swung downwardly by means of handle 40 as shown in Fig. 9, the bed pan 50 is placed on shelf 51a and the same is then raised until it completely fills the opening 31. After the elimination has been completed by the patient, the bed pan 50 is lowered on its shelf 51a for removal and the hinged cover 22 having the cushion 34 is swung upward and again held in place by means of the latch 24. These operations have been performed without in any way disturbing the patient's position which in many forms of diseases, abdominal operations and critical injuries is very undesirable and painful.

Although the drawings, and the above specification disclose the best modes in which I have contemplated embodying my invention, I desire in no way to be limited to the details of such disclosure, for in the further practical application of my invention many changes in the forms and proportions may be made as circumstances require or experience suggests without departing from the spirit of the invention within the scope of the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a structure of the character described, in combination a resilient element having an opening, a carrier for said resilient element, a downwardly swingable closure for said opening, a resilient member carried by said closure and receivable in said opening, a mechanism for swingably operating said closure, a frame rigidly connected to said carrier and extending downward therefrom and affording clearance for the movement of said closure, a movable support, means connecting said support to said frame and confining said support to vertical movement from an upper position to a lower position in which it is out of the way of the swinging movement of said swingable closure, said support adapted to carry a bedpan to and from said opening and mechanism including a vertically operable lever for slidably operating said support.

2. In a structure of the character described, in combination a resilient element having an opening, a carrier for said resilient element, a downwardly swingable closure for said opening, a resilient member carried by said closure and receivable in said opening, a mechanism for swingably operating said closure, means for maintaining said closure in closed position, a frame rigidly connected to said carrier and extending downward therefrom and affording clearance for the movement of said closure, a movable support, means connecting said support to said frame and confining said support to vertical movement from an upper position to a lower position in which it is out of the way of the swinging movement of said swingable closure, said support adapted to carry a bedpan to and from said opening and mechanism including a vertically operable lever for slidably operating said support.

3. In a structure of the character described, in combination a resilient element having an opening, a carrier for said resilient element, a downwardly swingable closure for said opening, a resilient member carried by said closure and receivable in said opening, a mechanism for swingably operating said closure, said mechanism including a lever pivotally connected to said carrier and operatively connected to said closure, a frame rigidly connected to said carrier and extending downward therefrom and affording clearance for the movement of said closure, a movable support, means connecting said support to said frame and confining said support to vertical movement from an upper position to a lower position in which it is out of the way of the swinging movement of said swingable closure, said support adapted to carry a bedpan to and from said opening and mechanism including a vertically operable lever for slidably operating said support.

4. In a structure of the character described, in combination a resilient element having an opening, a carrier for said resilient element, a downwardly swingable closure for said opening, a resilient member carried by said closure and receivable in said opening, a mechanism for swingably operating said closure, a frame rigidly connected to said carrier and extending downward

therefrom and affording clearance for the movement of said closure, a movable support, means connecting said support to said frame and confining said support to vertical movement from an upper position to a lower position in which it is out of the way of the swinging movement of said swingable closure, said support adapted to carry a bedpan to and from said opening and mechanism for slidably operating said support, said latter mechanism including a vertically operable lever pivotally connected to said carrier and operatively connected to said support.

5. In a structure of the character described, in combination a resilient element having an opening, a carrier for said resilient element, a downwardly swingable closure for said opening, a resilient member carried by said closure and receivable in said opening, a mechanism for swingably operating said closure, said mechanism including a lever pivotally connected to said carrier and operatively connected to said closure, means for maintaining said closure in closed position, a frame rigidly connected to said carrier and extending downward therefrom and affording clearance for the movement of said closure, a movable support, means connecting said support to said frame and confining said support to vertical movement from an upper position to a lower position in which it is out of the way of the swinging movement of said swingable closure, said support adapted to carry a bedpan to and from said opening, mechanism for slidably operating said support, said latter mechanism including a vertically operable lever pivotally connected to said carrier and operatively connected to said support, and means associated with said last named mechanism for maintaining said support in raised position.

JOHN D. DRY.