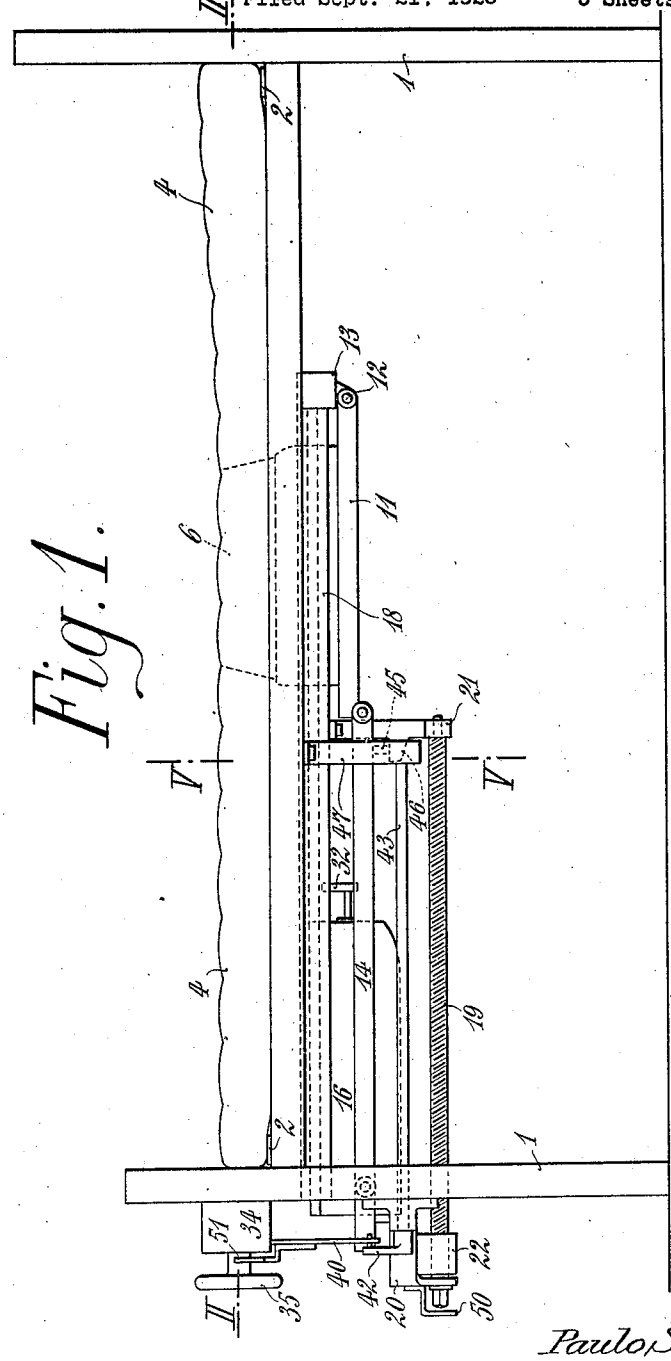
April 8, 1924. 1,490,029

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Filed Sept. 21, 1923 5 Sheets-Sheet 1

Fig. 1.



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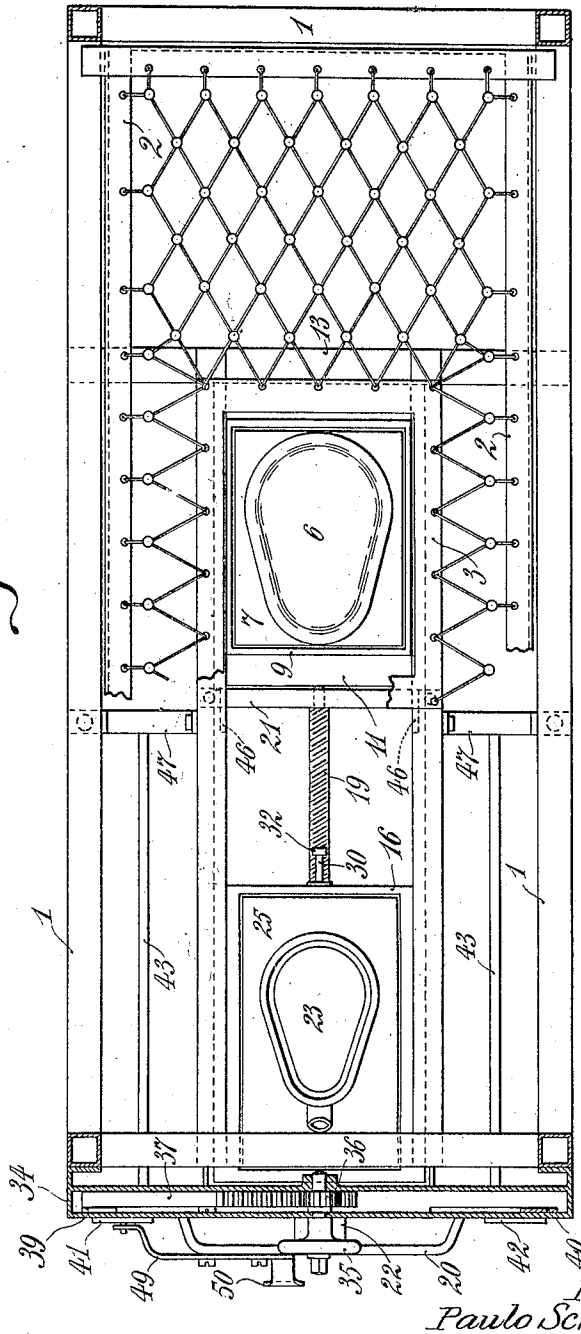
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Fig. 2.



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April 8, 1924. 1,490,029

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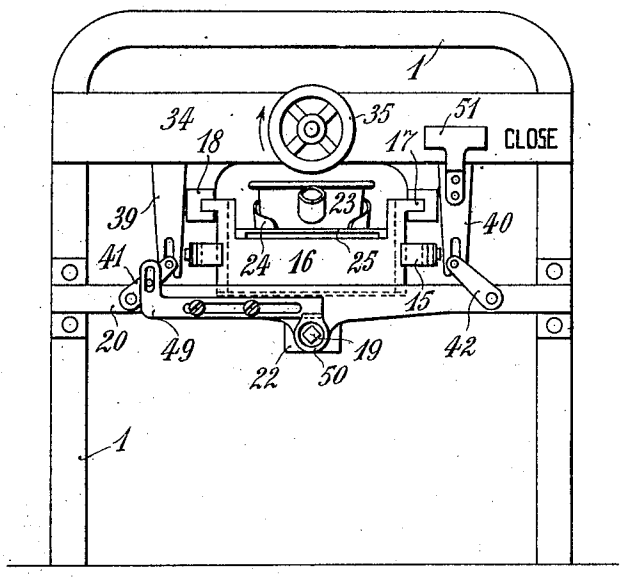


Fig. 3.

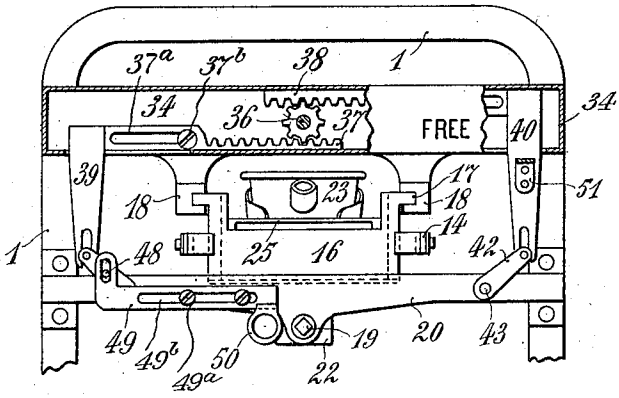


Fig. 4.

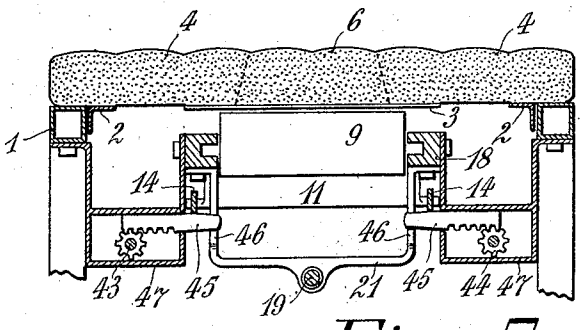
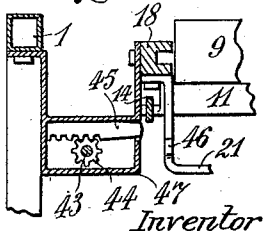


Fig. 5.

Fig. 6.



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Filed Sept. 21. 1923 5 Sheets-Sheet 4

Fig. 7.

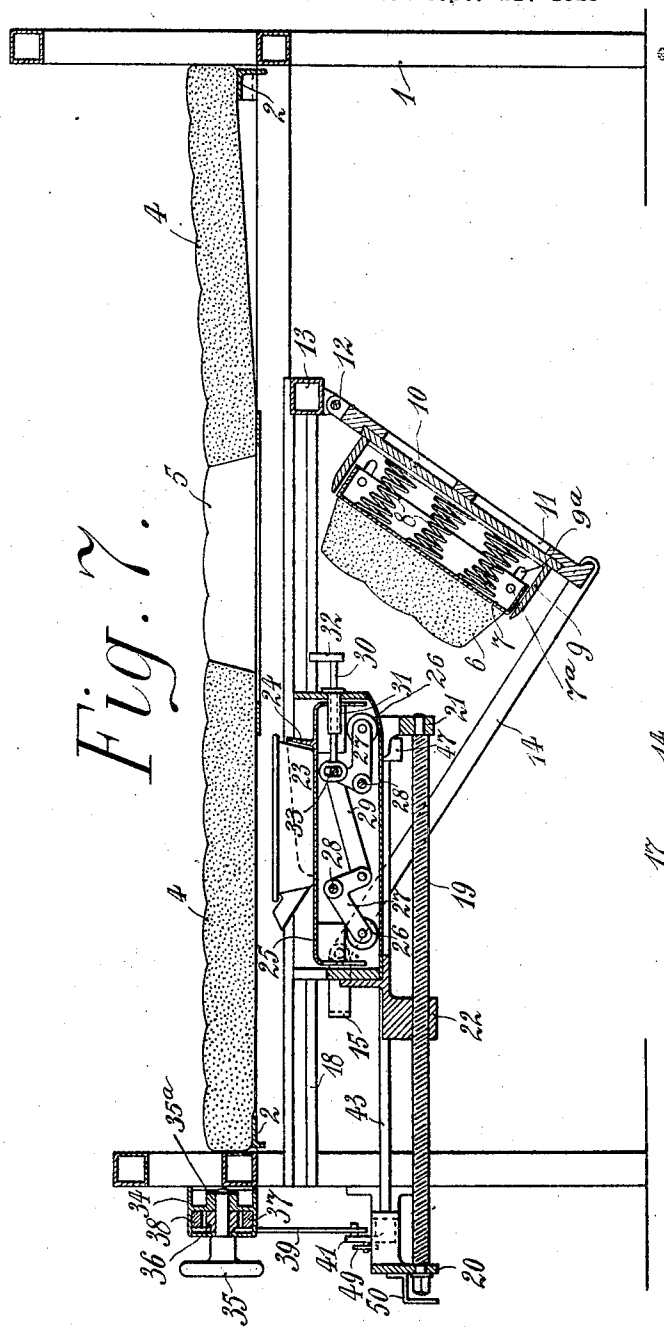
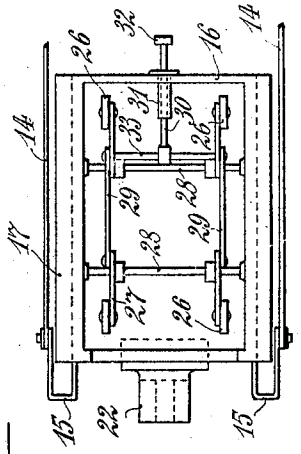


Fig. 8.



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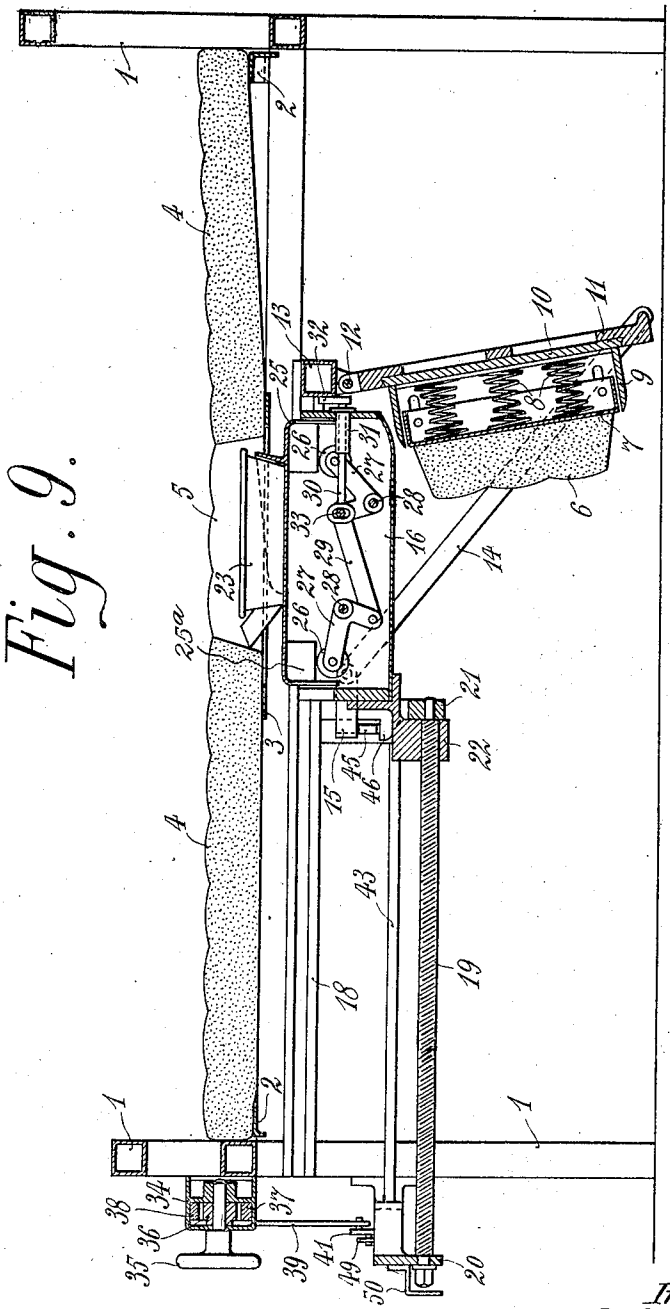
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Fig. 9.



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UNITED STATES PATENT OFFICE.

PAULO SCHELIGA, OF WASHINGTON, DISTRICT OF COLUMBIA.

HOSPITAL BED.

Application filed September 21, 1923. Serial No. 664,105.

To all whom it may concern:

Be it known that I, PAULO SCHELIGA, a citizen of Brazil, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Hospital Beds, of which the following is a specification.

This invention relates to improvements in beds and has for an object the provision of a bed especially adapted for the use of invalids.

An object of the present invention is the provision of a bed which includes a bed pan support and means whereby a pan may be moved into and out of position for use without disturbing the occupant of the bed, provision being made for moving the pan into and out of an opening in the mattress and for filling the opening when the pan is not in use.

Another object of the invention is the provision of means for preventing accidental movement of the opening filling means, or of the pan, so that the former will not interfere with the comfort of the patient, nor the pan be accidentally upset.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is a side elevation of a bed constructed in accordance with the invention with the parts in their normal position.

Figure 2 is a top plan view with the mattress removed and parts broken away and others shown in section, the figure being substantially on the line II—II of Figure 1.

Figure 3 is an end view.

Figure 4 is a fragmentary end view partly in section.

Figure 5 is a fragmentary section taken substantially on the line V—V of Figure 1, the mechanism being shown in locked position.

Figure 6 is a similar view showing the mechanism in released position.

Figure 7 is a longitudinal sectional view with the mattress section lowered and the bed pan about to be moved into position.

Figure 8 is a top plan view of the bed pan support or carriage with the top removed.

Figure 9 is a view similar to Figure 7 showing the parts in different position.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the bed comprises a supporting frame which may be of any suitable style or material and which is designated generally at 1. Mounted upon this frame is a spring 2 which includes a substantially central frame 3 forming an opening.

The mattress is indicated at 4 and is provided with an opening 5 which is disposed directly above the opening formed by the frame 3 and which is adapted to receive a movable mattress section 6.

This movable mattress section is mounted upon a carrrier and is secured to a base 7 which rests upon springs 8. These springs are arranged within a frame 9 which provides a guide for the base 7, movement of the latter being limited by means of pins 7^a which operate in slots 9^a. The frame 9 forms the side walls of a box or container 10 which is secured to a carrier 11 and the latter is hingedly secured as shown at 12 to a transverse bar 13 supported by the bed 1.

Pivotally secured to the carrier 11 are rods 14 and the latter are in turn pivotally secured to brackets 15 mounted upon opposite sides of a horizontally movable carriage 16. This carriage includes oppositely located bars 17 which are slidable within grooved guides 18 which extend longitudinally of the bed upon opposite sides of the carriage.

The carriage 16 is movable longitudinally beneath the mattress and for this purpose there is provided a threaded shaft 19 whose outer end is swiveled within a bar 20 which extends transversely of and is secured to one end of the bed as shown in Figure 3. The shaft 19 has its opposite end mounted in a bearing bracket 21 and the latter is secured to the grooved guides 18, as shown in Figure 5 of the drawings. Secured to one end of the carriage 16 is a bracket 22 which is provided with an internally threaded opening for the reception of the threaded shaft 19, so that when the latter is rotated, the carriage will be moved longitudinally. Inward movement of the carriage is limited by means of the brackets 15 which are substantially U-shaped as shown

in Figure 8 and which receive and engage the spaced vertically disposed arms of the bearing bracket 21. When in this position, the carriage 16 will be positioned directly beneath the opening 5 of the mattress.

The carriage 16 is designed to support a bed pan 23 and for this purpose there is provided a flange 24 which extends upward from a platform 25, the latter forming the top of the carriage. The flange 24 is so shaped as to receive the bed pan 23.

In order to raise the pan 23 into the opening 5 as shown in Figure 9 of the drawings, the platform 25 is capable of vertical movement. To accomplish this movement there is provided rollers 26 which are mounted on bell crank levers 27, the latter operating on pivot bars 28 which extend transversely of the carriage 16. The bell crank levers 27 are connected by links or bars 29 so as to provide for simultaneous pivotal movement and to accomplish this movement there is provided a longitudinally movable rod 30 which has a bearing within a sleeve 31 mounted within the carriage. This rod 30 is provided at one end with a head 32 and has a link at its opposite end which loosely receives a bar 33, the latter connecting one pair of bell crank levers 27.

As shown in Figure 9 of the drawings, when the carriage 16 is moved inward so that the pan 23 is beneath the opening 5 in the mattress the head 32 will engage the transverse beam 13 previously mentioned and will push the rod 30 inward to rock the bell cranks 27 upon their pivots 28. This will cause the rollers 26 to move upward and to engage blocks or bars 25^a secured beneath the platform 25 so that the said platform will move upward within the opening 5 as clearly shown in Figure 9 of the drawings.

By reference to Figures 7 and 9 of the drawings it will be seen that as the carriage 16 moves inward, the carrier 11 moves downward so as to permit the carriage to occupy a position beneath the opening in the mattress, this movement of the carrier being effected through the rods 14. When the carriage moves outward, these rods 14 move the carrier pivotally upward so that the mattress section 6 will enter the opening 5.

Secured transversely of one end of the bed is a hollow member or casing 34 which has extending through one wall thereof the shank of a hand wheel 35, the latter being mounted in a bearing 35^a as shown in Figure 7. This shank has secured thereon a pinion 36 which engages upper and lower oppositely movable racks 37 which are guided within the member 34. These racks are slotted as shown at 37^a for the reception of guide pins or studs 37^b and have extending downwardly from their opposite outer ends arms 39 and 40. These arms operate through slots provided in the bottom of the member 34, as shown in Figure 4 of the drawings. The arms 39 and 40 have a pivotal and slidable connection with crank arms 41 and 42 and the latter are secured upon the outer ends of rock shafts 43. The inner ends of these shafts have secured thereon pinions 44 which engage oppositely and horizontally movable rack bars or locking bolts 45 whose outer ends are adapted to engage over lugs 46 carried by the bracket 21, as clearly shown in Figures 1, 5 and 6 of the drawings. When in this position, these bolts 45 may also engage beneath the rods 14 when the mattress section 6 is in place. Downward pivotal movement of the carrier 11 will thus be prevented. In addition, these bolts 45 may be moved into the path of the upper ends of the bars 14 when the pan is in position for use so as to prevent accidental movement of the pan.

The bars or bolts 45 operate through and are guided within brackets 47 secured to the bed 1 and the guide bars 18 while the outer ends of the rock shafts 43 are mounted in bearings provided in the transverse bar 20. The crank arm 41 has extending therefrom a stud 48 which enters a slot provided at one end of a slide bar 49, the latter being mounted for sliding movement upon the bar 20 through the medium of pins 49^a which are secured to said bar 20 and which pass through a slot 49^b provided in the slide bar 49. The last mentioned bar carries an apertured lug 50 which when the bars or bolts 45 are in locking position, will be positioned in front of the squared end of the shaft 19 as shown in Figures 3 and 9 of the drawings. As this shaft is designed to be rotated through the medium of a removable crank handle and as the opening in the lug 50 is too small to permit of the passage of the said handle, the mechanism cannot be operated until the hand wheel 35 is rotated to disengage the bars or bolts 45 and a person unfamiliar with the operation of the bed will find the parts securely locked. The arm 40 has secured thereto a plate 51 which is adapted to cover either the word "Free" or "Close" provided upon the member 34 so as to indicate the position of the locking mechanism.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. A bed comprising in combination a mattress having an opening therein, a mattress section adapted to be moved into and out of the opening, a bed pan, movable means for supporting the bed pan, means

whereby the bed pan may be moved into and out of the opening, movable means for supporting the mattress section, means operatively connecting the pan supporting means and mattress section supporting means to provide for simultaneous movement, means including locking bolts movable transversely of the bed for locking either the mattress section or pan within the opening and means located at one end of the bed and operatively connected to the locking bolts for controlling the operation of the latter.

2. A bed comprising in combination a mattress having an opening therein, a mattress section adapted to be moved into and out of the opening, a bed pan, movable means for supporting the bed pan, means whereby the bed pan may be moved into and out of the opening, movable means for supporting the mattress section, means operatively connecting the pan supporting means and mattress section supporting means to provide for simultaneous movement and means including oppositely and transversely movable locking bolts for locking either the mattress section or pan within the opening.

3. A bed comprising in combination a mattress having an opening therein, a mattress section adapted to be moved into and out of the opening, a bed pan, movable means for supporting the bed pan, means whereby the bed pan may be moved into and out of the opening, movable means for supporting the mattress section and means operatively connecting the pan supporting means and mattress section supporting means to provide for simultaneous movement, a transversely movable member for locking either the mattress section or pan within the opening, a longitudinally disposed rotatable shaft operatively connected to said member, a crank arm secured to said shaft, a tranvsersely movable rack bar, means whereby the rack bar may be moved and means operatively connecting the rack bar and crank arm.

11. A bed comprising in combination a mattress having an opening therein, a mattress section adapted to be moved into and out of the opening, a bed pan, movable means for supporting the bed pan, means whereby the bed pan may be moved into and out of the opening, movable means for supporting the mattress section and means operatively connecting the pan supporting means and mattress section supporting means to provide for simultaneous movement, a transversely movable member for locking either the mattress section or pan within the opening, a longitudinally disposed rotatable shaft operatively connected to said member, a crank arm secured to said shaft, a transversely movable rack bar, means whereby the rack bar may be moved and an arm having one end rigid with the rack bar and its opposite end pivotally and slidingly connected to the crank arm.

5. A bed comprising in combination a mattress having an opening therein, a mattress section adapted to be moved into and out of the opening, a bed pan, movable means for supporting the bed pan, means whereby the bed pan may be moved into and out of the opening, movable means for supporting the mattress section and means operatively connecting the pan supporting means and mattress section supporting means to provide for simultaneous movement, transversely movable members upon opposite sides of the bed for locking either the mattress section or pan within the opening, longitudinally disposed rock shafts operatively connected to said members, crank arms secured to said shafts, transversely movable rack bars, means whereby the rack bars may be moved and means operatively connecting the rack bars and crank arms.

6. A bed comprising in combination a mattress having an opening therein, a pivotally mounted mattress section adapted to be moved into and out of the opening, a bed pan, means for supporting the bed pan for horizontal movement, means whereby the pan supporting means may be operated, means connecting the pan supporting means and pivotally mounted mattress section, whereby horizontal movement of the former will move the latter pivotally and means for moving the pan vertically when the said pan reaches the inward limit of its horizontal movement.

7. A bed comprising in combination a mattress having an opening therein, a pivotally mounted mattress section adapted to be moved into and out of the opening, a bed pan, means for supporting the bed pan for horizontal movement, means whereby the pan supporting means may be operated, means connecting the pan supporting means and pivotally mounted mattress section, whereby horizontal movement of the former will move the latter pivotally and means including spaced pairs of bell crank levers operable to move the pan vertically when said pan reaches its inward limit of horizontal movement.

8. A bed comprising in combination a mattress having an opening therein, a pivotally mounted mattress section adapted to be moved into and out of the opening, a bed pan, means for supporting the bed pan for horizontal movement, means whereby the pan supporting means may be operated, means connecting the pan supporting means and pivotally mounted mattress section, whereby horizontal movement of the former will move the latter pivotally and means whereby horizontal movement of the pan

supporting means will move said pan vertically when the latter reaches its inward limit of horizontal movement.

9. A bed comprising in combination a mattress having an opening therein, a pivotally mounted mattress section adapted to be moved into and out of the opening, a bed pan, means for supporting the bed pan for horizontal movement, means whereby the pan supporting means may be operated, means connecting the pan supporting means and pivotally mounted mattress section, whereby horizontal movement of the former will move the latter pivotally, a vertically movable section included in the pan supporting means, vertically movable levers supporting said movable section and means operated by the horizontal movement of the pan supporting means to operate said levers and move the pan vertically when said pan reaches its inward limit of horizontal movement.

10. A bed comprising in combination a mattress having an opening therein, a pivotally mounted mattress section adapted to be moved into and out of the opening, a bed pan, means for supporting the bed pan for horizontal movement, means whereby the pan supporting means may be operated, means connecting the pan supporting means and mattress section whereby horizontal movement of the former will move the latter pivotally, a vertically movable section included in the pan supporting means and means operated by the horizontal movement of the pan supporting means and including a horizontally movable rod operatively connected to the levers for actuating the latter to move the pan vertically when said pan reaches its inward limit of horizontal movement.

11. A bed comprising in combination a mattress having an opening therein, a pivotally mounted mattress section adapted to be moved into and out of the opening, a bed pan, means for supporting the bed pan for horizontal movement, means whereby the pan supporting means may be operated, means connecting the pan supporting means and mattress section whereby horizontal movement of the former will move the latter pivotally, a vertically movable section included in the pan supporting means, spaced pairs of pivotally mounted levers arranged for simultaneous movement and supporting said movable section and means operated by the horizontal movement of the pan supporting means to operate said levers and move the pan vertically when said pan reaches its inward limit of horizontal movement.

12. A bed comprising in combination a mattress having an opening therein, a pivotally mounted mattress section adapted to be moved into and out of the opening, a bed pan, means for supporting the bed pan for horizontal movement, means whereby the bed pan supporting means may be operated, means connecting the pan supporting means and mattress section whereby horizontal movement of the former will move the latter pivotally, a vertically movable section included in the pan supporting means, vertically movable levers supporting said movable section, a horizontally disposed longitudinally movable rod operatively connected to said levers and means located in the path of the rod and engaged by the latter when the pan supporting means is moved horizontally inward to operate said levers and move the pan vertically.

In testimony whereof I affix my signature.

PAULO SCHELIGA.