

A. F. CRANDALL.
BED FOR INVALIDS.
APPLICATION FILED FEB. 24, 1910.

972,100.

Patented Oct. 4, 1910.

3 SHEETS-SHEET 1.

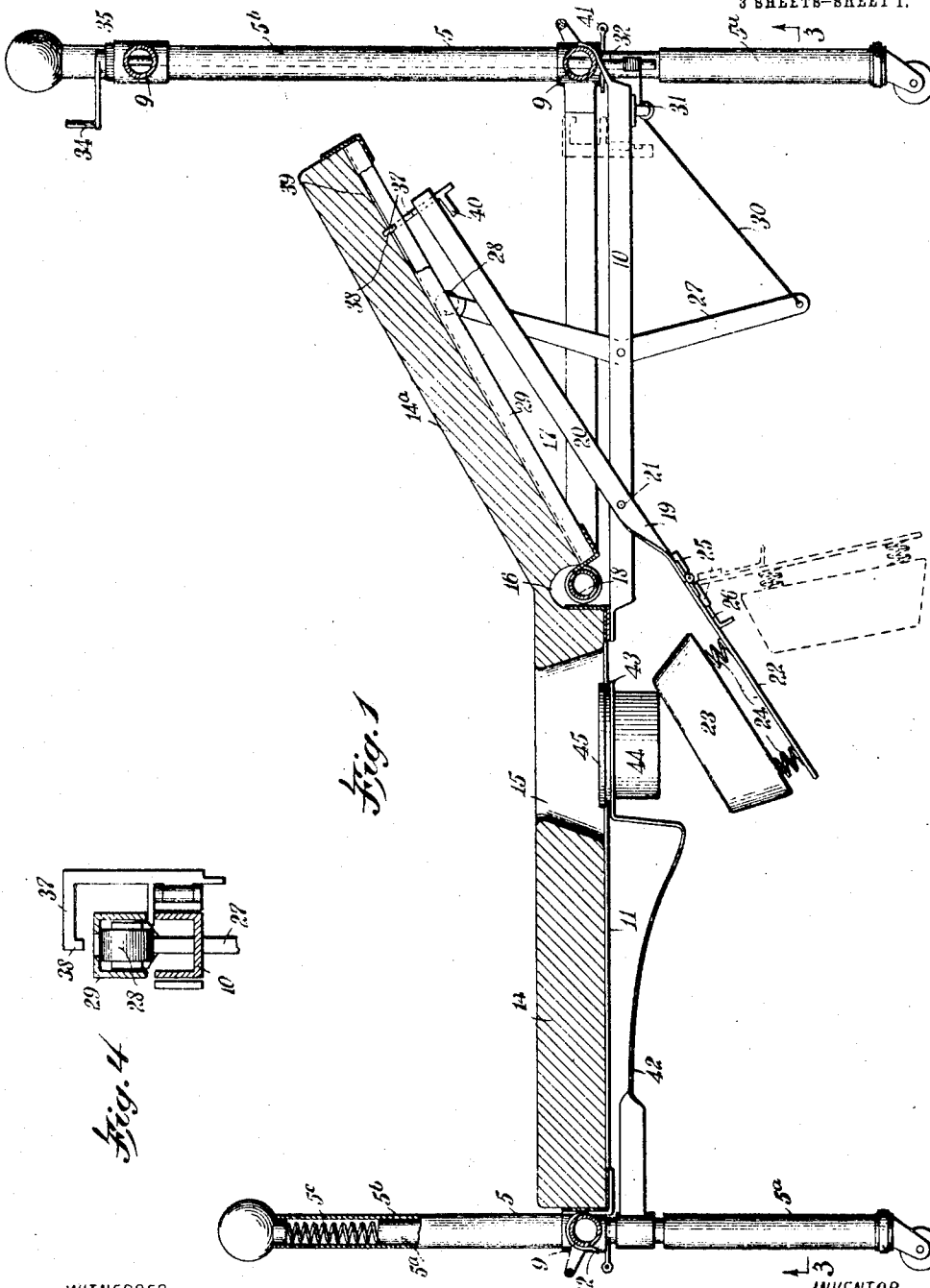


Fig. 1

Fig. 4

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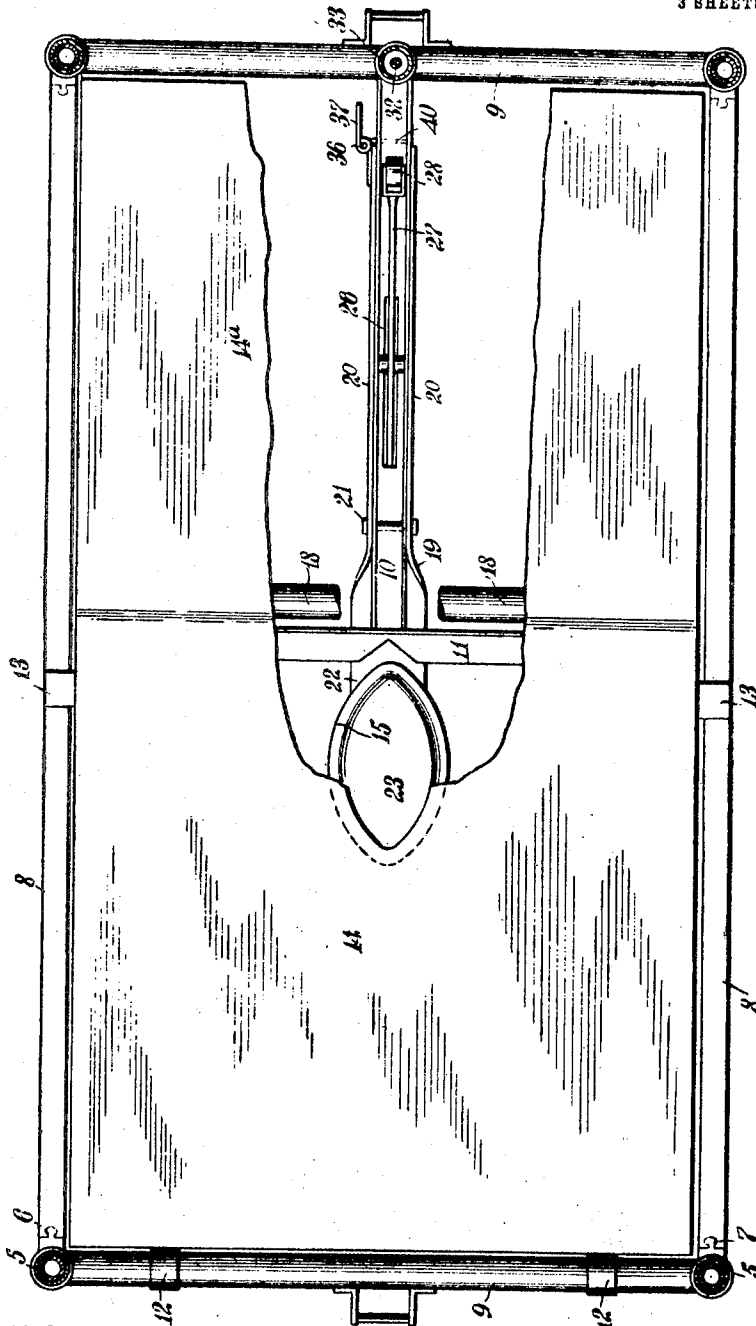
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3 SHEETS—SHEET 2.

Fig. 2.



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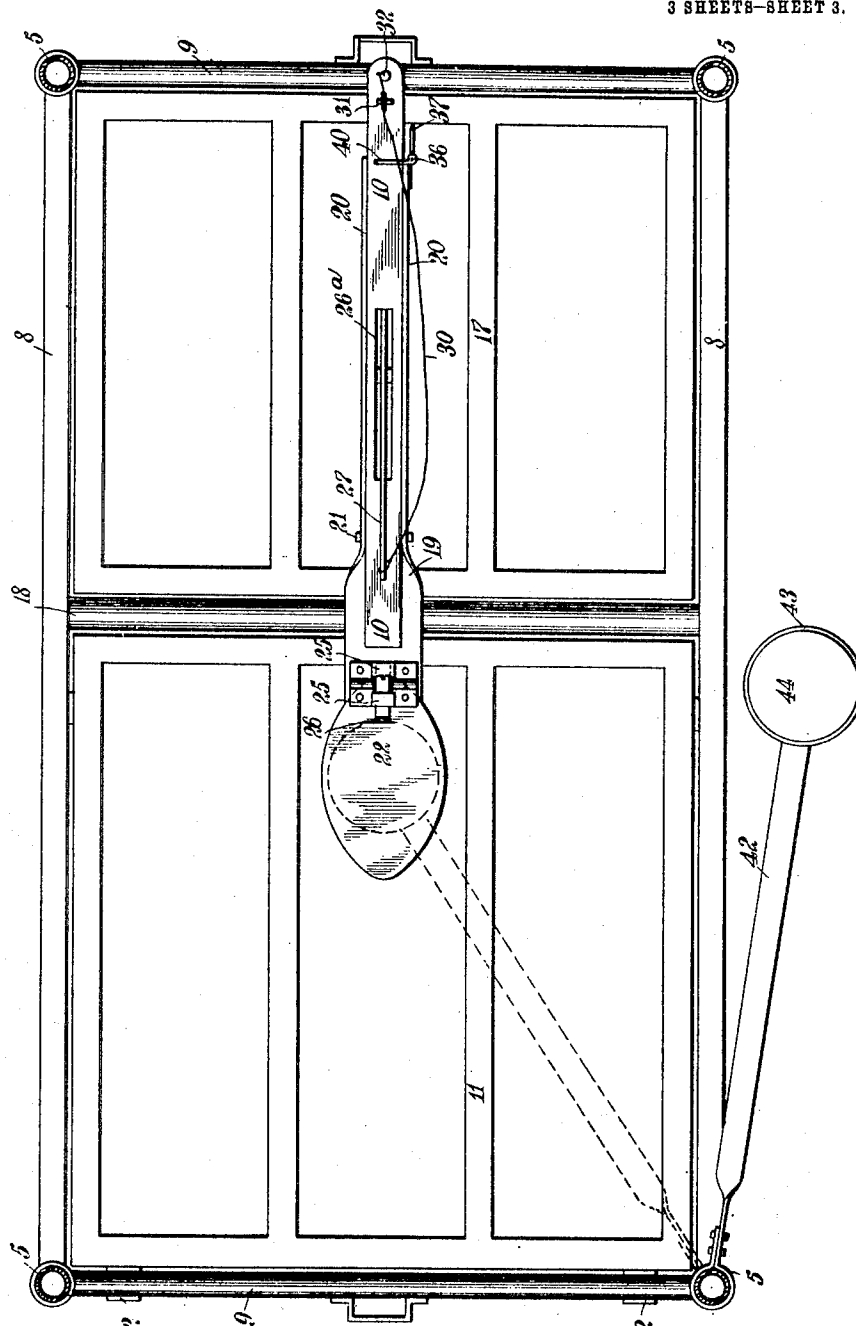
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3 SHEETS-SHEET 3.

Fig. 3



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BED FOR INVALIDS.

972,100.

Specification of Letters Patent.

Patented Oct. 4, 1910.

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To all whom it may concern:

Be it known that I, ARTHUR FREMONT CRANDALL, a citizen of the United States, and a resident of Beresford, in the county of Union and State of South Dakota, have invented a new and Improved Bed for Invalids, of which the following is a full, clear, and exact description.

My invention relates to beds, and it has for its object to provide a plug adapted to close a commode opening in the mattress of the bed, the member carrying the plug being adapted to be connected to a section of the mattress support, so that the plug will be moved relatively to the commode opening when the said mattress section is raised or lowered.

Another object of the invention is to provide means by which a section of the mattress support may be raised and lowered.

Still further objects of the invention will appear in the following complete description of the invention.

In this specification I will describe the preferred form of the invention, it being understood that the scope of the invention is defined in the appended claims.

In the drawings like characters of reference indicate corresponding parts in all the figures, in which—

Figure 1 is a longitudinal section of the bed; Fig. 2 is a plan view of the bed shown in Fig. 1, the corner posts being in section and a portion of the mattress being broken away; Fig. 3 is a sectional view on the line 3—3 of Fig. 1, and Fig. 4 is an enlarged detail sectional view showing the member carrying the plug about to be locked in horizontal position.

By referring to the drawings it will be seen that the bed is provided with corner posts 5, which have lugs 6 which engage in grooves 7 in the side bars 8, the side walls of the grooves 7 converging downwardly to prevent the lugs from slipping there-through. The corner posts 5 are connected by end bars 9, there being two end bars 9 disposed at the head of the bed and the same number at the foot, the end bars being disposed one over the other, respectively.

Secured to the lower end bar 9, at the head of the bed, and projecting toward the foot, is a bar 10, secured to a mattress support 11, which is provided with hooks 12 disposed over the lower end bar 9 at the

foot of the bed, and hooks 13, one at each side, disposed on the side bars respectively. The bar 10 and the mattress support 11 form part of the frame. Disposed on the mattress support 11 there is a mattress 14, having a commode opening 15. The mattress has a transverse cut 16 along its under side a short distance from the commode opening and in the direction of the head of the bed, to permit the portion 14^a of the mattress, which is disposed near the head of the bed, to be raised relatively to the remainder of the mattress. This portion 14^a of the mattress is disposed on a mattress support 17, which is pivoted to a transverse bar 18 secured to the side bars 8. A lever 19, having bifurcated arms 20, is fulcrumed at 21 to the bar 10, the bifurcated arms 20 being disposed one at each side of the bar 10. To an arm of the lever 19, a plate 22 is hinged, a plug 23 being mounted on the plate 22 by means of springs 24, the plug being adapted to close the commode opening 15 in the mattress. I prefer to cover the walls of the commode opening and of the plug with oil cloth, or other similar material which may be readily cleaned. In order to obtain a rigid connection between the plate 22 and the lever 19, when desired, guideways 25 are secured to the plate 22 and to the lever 19 respectively, a bolt 26 being provided which works in the guideways 25 and may be used to connect rigidly the plate and the lever.

In an elongated slot 26^a in the bar 10, is pivoted a lever 27, the arms of which are bent relatively to each other, the upper arm of the lever 27 carrying a roller 28, which is adapted to travel in a guideway 29 in the mattress support 17. To the other arm of the lever is secured a cord 30, which is carried over a pulley 31, the cord being then secured to a shaft 32 disposed in a vertical tube 33 at the head of the bed, the tube 33 connecting the upper and lower end bars 9 and being provided with suitable bearings in which the shaft 32 is journaled. To the top of the shaft 32 is secured a crank 34 and a ratchet wheel 35, a pawl (not shown) being mounted on the upper end bar 9, to engage the ratchet wheel 35.

Pivoted on one of the bifurcated arms 20 of the lever 19 is a locking member 36, this locking member 36 having two arms 37 disposed in the same direction, the upper arm

being adapted to be disposed above the guideway 29 and having a depending flange 38, which is adapted to be disposed in a slot 39 in the said guideway 29. The locking member 36 is also provided with an additional arm 40 near its lower terminal, this arm 40 being disposed preferably at right angles to the arms 37 and being adapted to be disposed under the bar 10 to lock thereto the bifurcated arms 20 of the lever 19.

The corner posts 5 are constructed in two sections, which are telescopic respectively, the lower members 5^a projecting into the upper members 5^b which are tubular. These members 5^a and 5^b may be held relatively to each other by any suitable means, but I prefer to construct the lower members 5^a with orifices in which are disposed pins 41, on which the upper members 5^b rest. In the upper members 5^b are disposed springs 5^c which press against the upper terminals of the lower members 5^a and hold the lower members yieldingly extended when the pins 41 are withdrawn.

To one of the corner posts 5 is pivoted an arm 42 having a ring-like terminal 43 in which is disposed a commode 44, the rim 45 of the commode resting on the ring-like terminal 43.

It will be understood that the bed may be inclined downwardly toward the head or foot by adjusting the upper members 5^b of the corner posts relatively to the lower members 5^a, the bar 9, the mattress support 11 and the side bars 8 being mounted on the upper members 5^b. Irrespective of the position in which the body of the bed may be disposed relative to the corner posts and irrespective of the position of the mattress section 14^a, the plug 23 may be lowered, to permit the commode to be disposed under the commode opening 15. If the condition of the invalid is such as not to permit the nurse to lift the mattress section 14^a, the plug is lowered by withdrawing the bolt 26 so that the plate 22 will fall carrying the plug, but in most cases the invalid is able to sit up in bed and when such is the case, the nurse may, by turning the locking member 36, disengage the arm 40 from the underside of the bar 10, which action will cause the upper arm 37 carrying the flange 38, to turn over the guideway 29. When this has been done, the nurse, by turning the crank 34, will raise the mattress support 17 which is pivoted to the transverse bar 18, carrying with it the bifurcated arms 20 of the lever 19, and as the plate 22 is secured rigidly to the lever 19 by means of the bolt 26, the plate 22 with the plug 23, are moved downwardly, permitting the nurse to swing the arm 42 so that the commode will be disposed under the commode opening.

The lower sheet for the bed is made in two sections, which overlap over the com-

mode opening and these sheet sections are held stretched over the mattress by buttons on the mattress, which engage button-holes in the sheet sections.

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

1. In a bed having a bar, a mattress support in two sections, one of which is adapted to be moved relatively to the other section, there being a commode opening in one of the sections, a plug adapted to be disposed in the opening, a lever pivoted to the bar, on which the plug is mounted, and a locking member for connecting the lever with the other section of the mattress support.

2. In a bed having a bar, a mattress support in two sections, one of which is adapted to be moved relatively to the other section, there being a commode opening in one of the sections, a plug adapted to close the opening, a plate having a guideway, on which the plug is mounted, a member having a guideway adapted to be moved relatively to the bar, the plate being hinged to the member, a bolt adapted to be disposed in the guideways for holding the plate rigid relatively to the member, and a locking member for connecting the member with the other section of the mattress support.

3. In a bed having a frame, a mattress support in two sections, one of which is adapted to be moved relatively to the other section, there being a commode opening in one of the sections, a plug, adapted to close the opening, a lever pivoted to the frame to which the plug is secured, means for holding the pivoted member in position with the plug in the opening at the will of the operator, a lever pivoted to the frame adapted for raising the other mattress section, and locking means for connecting the first-mentioned lever with the last-mentioned mattress section.

4. In a bed having a frame, a mattress support in two sections, one of which is pivoted to the frame, the other section having a commode opening, a plug for closing the commode opening, a lever pivoted to the frame on which the plug is mounted, a second lever pivoted to the frame, a roller mounted thereon, adapted for engaging the pivoted section of the mattress support, and a locking member for connecting the first-mentioned lever with the pivoted section of the mattress support and with the frame respectively.

5. In a bed having a frame, a mattress support in two sections, one of which is pivoted to the frame, the other section having a commode opening, a plug for closing the commode opening, a lever pivoted to the frame on which the plug is mounted, a second lever pivoted to the frame for engaging the pivoted mattress support section, and a

locking member having arms pivoted to the first-mentioned lever, one of the arms being adapted for engaging the pivoted mattress support and another arm being adapted for engaging the frame.

6. In a bed having a frame, a mattress support in two sections, one of which is pivoted to the frame, the other section having an opening, a plug closing the opening, a lever pivoted to the frame on which the plug is mounted, a second lever pivoted to the frame, the pivoted section of the mattress support having a guideway in which an arm of this second lever is adapted to travel, and a locking member having arms pivoted to the first-mentioned lever, one of the arms being adapted for engaging the guideway and having a depending lug adapted to be disposed in a slot in the guideway, another of the arms of the locking member being adapted for engaging the frame.

7. In a bed having a frame, a mattress support in two sections, one of which is adapted to be moved relatively to the other section, there being a commode opening in one of the sections, a plug, adapted to close the opening, a lever pivoted to the frame to which the plug is secured, means for holding the pivoted member in position with the plug in the opening at the will of the operator, a lever pivoted to the frame adapted for raising the other mattress section, locking means for connecting the first-mentioned lever with the last-mentioned mattress section, a shaft journaled to the frame, a crank secured to the shaft, and a cord connecting the second-mentioned lever with the shaft.

8. In a bed having a frame, a mattress support in two sections, one of which is pivoted to the frame, the other section having a commode opening, a plug for closing the commode opening, a lever pivoted to the frame on which the plug is mounted, a second lever pivoted to the frame for engaging the pivoted mattress support section, a locking member having arms pivoted to the first-mentioned lever, one of the arms being adapted for engaging the pivoted mattress support and another arm being adapted for engaging the frame, a shaft journaled to the frame, a crank secured to the shaft, and a

cord connecting the second-mentioned lever with the shaft.

9. In a bed having a bar, a mattress support in two sections, one of which is adapted to be moved relatively to the other section, there being a commode opening in one of the sections, a plug adapted to be disposed in the opening, a lever pivoted to the bar on which the plug is mounted, a locking member for connecting the lever with the other section of the mattress support, an arm pivoted to the frame, and a commode mounted on the arm.

10. In a bed, a frame having corner posts with telescopic members respectively, a mattress support mounted on the upper members of the corner posts, and means for locking the downward movement of the upper members relatively to the lower members.

11. In a bed having a frame, a mattress support in two sections, one of which is pivoted to the frame, the other section having a commode opening, a plug for closing the commode opening, a lever pivoted to the frame, on which the plug is mounted, and a locking member having an arm pivoted to the lever, the arm being adapted for engaging the pivoted mattress support.

12. In a bed having a frame, a mattress support in two sections, one of which is pivoted to the frame, the other having a commode opening, a plug for closing the commode opening, a lever pivoted to the frame on which the plug is mounted, and a locking member having arms, pivoted to the lever, one of the arms being adapted for engaging the pivoted mattress support and the other arm being adapted for engaging the frame.

13. In a bed, a frame, posts for the bed, each being composed of two sections, the upper sections being hollow and being secured to the frame, the lower sections projecting into the upper sections, and springs disposed in the upper sections for holding the lower sections yieldingly extended.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR FREMONT CRANDALL.

Witnesses:

G. E. DAVIS,
W. J. BULOW.