

No. 651,378.

Patented June 12, 1900.

S. NICHOLLS, SR.
INVALID'S BED.

(Application filed Feb. 27, 1900.)

(No Model.)

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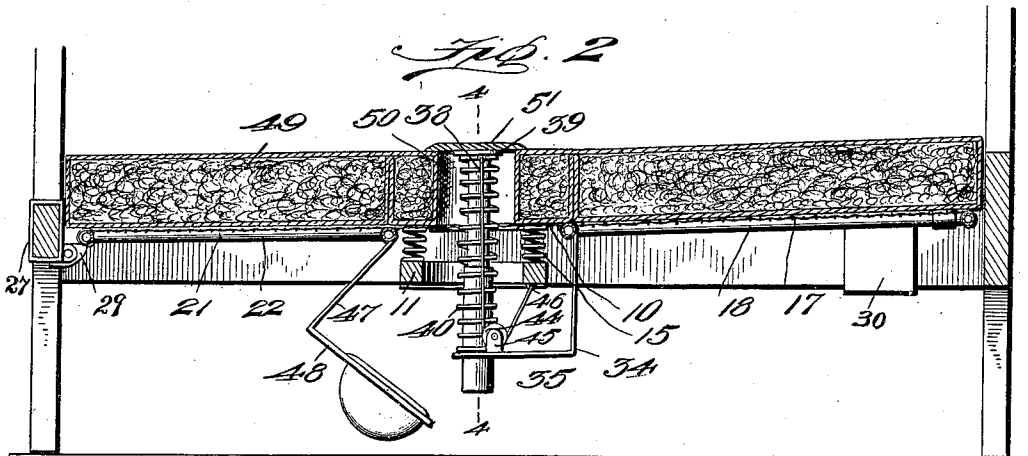
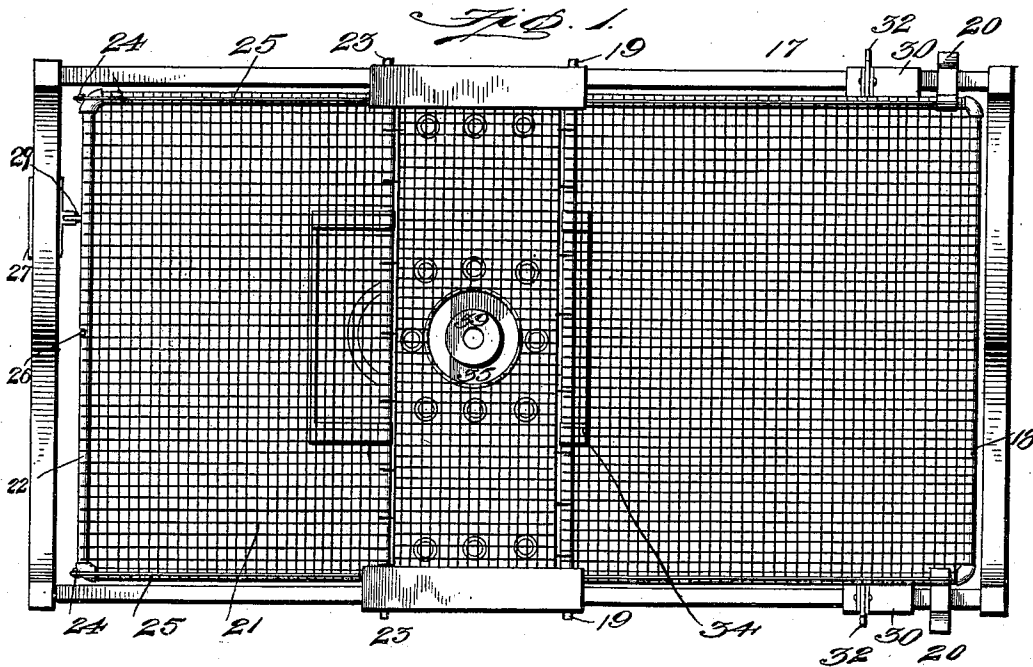
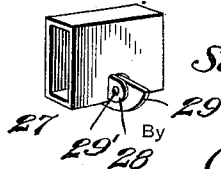
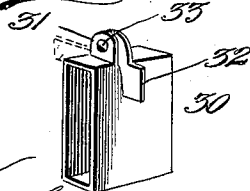


Fig. 5

Fig. 6



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2 Sheets—Sheet 2.

Fig. 3.

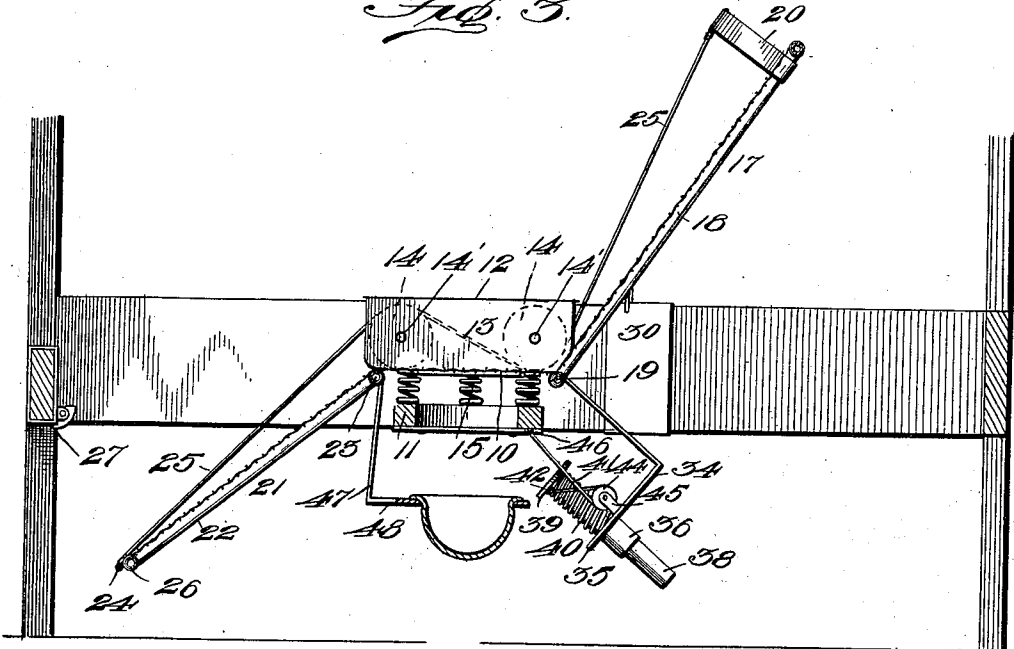
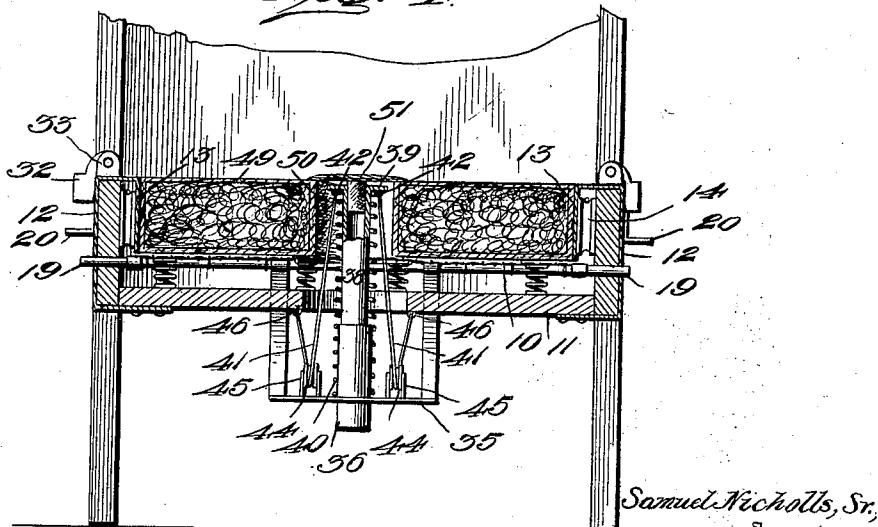


Fig. 4.



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UNITED STATES PATENT OFFICE.

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INVALID'S BED.

SPECIFICATION forming part of Letters Patent No. 651,378, dated June 12, 1900.

Application filed February 27, 1900. Serial No. 6,726. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL NICHOLLS, SR., a citizen of the United States, residing at Kenesaw, in the county of Adams and State of Nebraska, have invented a new and useful Invalid's Bed, of which the following is a specification.

My invention relates to improvements in invalids' beds; and one object is to provide a simple construction which promotes the comfort and convenience of the occupant.

A further object is to provide a construction which may be readily applied to ordinary bedsteads, and, furthermore, to provide means for holding the several parts in position so that the patient may without fatigue assume a sitting posture.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novelty in the combination of devices and in the construction and arrangement of parts will be defined by the claims.

In the drawings, Figure 1 is a plan view of a bedstead equipped with the improvements contemplated by the present invention. Fig. 2 is a longitudinal sectional elevation with the members of the bed-bottom in their horizontally-aligned positions. Fig. 3 is a similar section with the head member and the foot member raised and lowered, respectively. Fig. 4 is a transverse section in the plane of the dotted line 4 4 on Fig. 2. Fig. 5 is a detail perspective view of one of the supports employed to sustain the head-section in its raised position. Fig. 6 is a perspective view of the support adapted to maintain the foot-section in a horizontal position.

The same numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

The bed-bottom contemplated by this invention has its middle section 10 supported in a stationary position within the frame of an ordinary bedstead, at the middle part thereof, by means of a transverse rail 11. A pair of brackets 12 are fastened to the side rails of the bedstead in positions to have the end portions of the rails 11 secured firmly thereto, and these brackets are provided with overhanging flanges 13, disposed on the inside of the bedstead-rail to furnish supports

for the arbors 14' of the pulleys 14, the latter being housed or contained within the flanges and contiguous to the rails of the bedstead. This middle section 10 of the bed-bottom rests upon or is sustained by the coiled springs 15, which are seated on the rail 11, and in this rail and the middle section of the bed-bottom are provided the vertical openings 16.

The head-section 17 of the bed-bottom is secured at its edges to a frame 18, and the end of this frame contiguous to the middle section 10 is provided with hinge-bolts 19, which are supported in the brackets 12 or the side rails of the bedstead, whereby the head-section is hingedly supported at one end on the brackets, so that the other end of said head-section may be raised or lowered. At the free end of this head-section a frame 18 is provided with the outwardly-extending clips 20, which are adapted to rest upon or embrace the sides of the bedstead in order to support said head-section firmly when it is lowered to the horizontal position. (Shown by Fig. 2.)

The foot-section 21 of the bed-bottom is secured to a frame 22, which at the end adjacent to the middle section is furnished with the hinge-bolts 23, which are attached to the side brackets 12 or to the bedstead for the purpose of supporting one end of this fixed section hingedly within the bedstead, said foot-section adapted to be lowered to a position below the plane of the bedstead, as shown by Fig. 3; but normally the foot-section occupies a horizontal position in line with the middle section 10 and the head-section 17, as shown by Figs. 1 and 2. At its free end the frame of this foot-section is provided with hooks 24, which are engaged by cables or chains 25, the latter extending over and under the pulleys 14 and connected with the head-section 17. These cables or chains are so disposed with relation to the pulleys that an upward movement of the head-section operates to lower the foot-section for the purpose of having the parts assume the position shown by Fig. 3, and thus enable the patient or occupant of the bed to assume a sitting posture, in which the middle section 10 and its supporting-springs 15 afford a yielding seat for the occupant. It is evident that the head-section may be lowered to draw on the

cables or chains in a manner to raise the foot-section 21 to its alined position with the middle and head sections. The frame of this foot-section is provided with a notch 26, and on the foot-rail of the bedstead is fitted a slide 27, the latter carrying the lugs 28 on the inside of the bedstead in a position to clear the frame of the foot-section. A catch 29 is pivoted at 29' in the lugs of this slide, the latter being shiftably fitted on the foot-rail of said bedstead. The slide may be adjusted for the catch to assume a position at one side of the notch 26, and with the catch 29 in its projected position the frame of the foot-section is adapted to rest upon said catch in order to support the foot-section in the raised position. The slide may be shifted along the foot-rail of the bedstead to bring the catch in a position coincident with the notch, and this permits the foot-section to be lowered to the inclined position. I also provide means for supporting the hinged head-section at different inclinations to suit the convenience of the invalid. Such supporting means contemplates the employment of slides 30, which are fitted shiftably on the side rails of the bedstead in positions adjacent to the head-section. Each slide is provided with upstanding lugs 31, between which is pivoted a catch 32 by the pin 33, each catch adapted to be folded in a position outside of the bedstead-frame, so as to be out of the way of the head-section when it is desired to lower the latter to its horizontal position. The catch may be turned on its pivotal connection with the slide so as to have one end of the said catch abut against the slide while the other end of the catch projects into the path of the frame forming a part of the head-section. The catches of the two slides are thus adapted to sustain the head-section in an inclined position, and by shifting the slides on the side rails of the bedstead toward or from the pivotal points of the head-section the catches are made to sustain said head-section at different inclinations.

The frame of the head-section is provided with the depending arms 34 at or near its inner hinged end, said arms being connected by and serving to support a transverse plate 35. This plate has secured firmly thereto the lower member 36 of a telescopic tube. The upper slidable member 38 of this tube is provided with a head or flange 39. This tube is designed for use as a conduit for the relief of the invalid when he or she, as the case may be, is unable to assume a sitting posture, and it is made telescopic in order that its upper end may be projected upwardly through the aperture in the central bed-section or removed out of the way when the support 47 is presented before the opening. By reason of this telescopic or extensible character of the tube its replacement and retraction is effected with comparatively slight movement of its support. A coiled spring 40 loosely encircles the telescopic tube to have its lower end seated on the plate 35, while its upper end

bears against the head or flange 39 of the slidable tube member 38, whereby said slidable member is normally lifted and the tube is extended for the upper member to pass through the opening 16 in the rail 11 and the middle section 10 of the bed-bottom. To prevent the energy of the spring from lifting the slidable section to such an extent as to displace it from the fixed tube member 36, I provide the cords 41, the same being disposed on opposite sides of the tube. Each cord is secured firmly, as at 42, to the head or flange of the slidable tube member and from thence passes beneath a pulley 44, which is journaled in the clip 45, mounted on the plate 35, which is adjustable with the head-section, each cord having its other end attached at 46 to the fixed rail 11. The elevation of the head-section withdraws the plate 35 from beneath the rail 11, and the cords are strained, so as to make the slidable tube member 38 move toward the plate 35, whereby the tube is contracted in length and is drawn away from the rail 11, with the plate, on the elevation of said head-section.

The foot-section 21 of the bed-bottom is provided at its inner hinged end with the depending arms 47, the latter supporting a carrier-plate 48, on which may be placed a suitable vessel. The elevation of the head-section withdraws the tube from the openings in the rail 11 and the middle section 10, while the lowering of the foot-section adjusts the carrier-plate 48 in position beneath the rail 11, the telescopic tube thus making way for the carrier-plate to occupy a position below the openings in the rail of the middle section.

The mattress 49 is placed on the sectional and adjustable bed-bottom, and this mattress consists of sections which conform in area to the members of the bed-bottom and which, furthermore, are flexible connected together, so that the mattress-sections will conform to the adjustment of the bed-bottom sections. The central section of the mattress is provided with an opening 50, adapted to be closed by a padded cover 51, and by removing this cover a suitable vessel may be placed in the opening of the mattress itself.

From the foregoing description, taken in connection with the drawings, it will be seen that the improvements contemplated by this invention may be readily applied to ordinary bedsteads without involving modification in the construction thereof. The side brackets and the several clips may be fitted readily to the side rails and the foot-rail of the bedstead, and the several parts of the bed-bottom may thereafter be readily fitted within the bedstead in a manner to be supported centrally by the transverse rail 11. The parts are simple in construction, cheap of manufacture, and are easily adjustable to suit the convenience of the patient.

Changes within the scope of the appended claims may be made in the form and proportion of some of the parts, while their essential features are retained and the spirit of

the invention is embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

5 Having thus described the invention, what I claim is—

1. The combination with an apertured bed provided with operatively-connected hinged sections, of a support rigidly carried by and
10 depending from each of said sections, each of said supports being capable of presentation beneath the opening through the movements of the sections.

2. In an invalid's bed, the combination
15 with an apertured central member and movable head and foot sections, of a tube carried by one of said sections, and a carrier supported by the other section, said tube and carrier being capable of presentation below
20 the opening through the movement of its connected section.

3. The combination with an apertured bed provided with movable head and foot sections, of a support carried by each section
25 and capable of alternate presentation before the opening, and an extensible tube carried by one of said supports.

4. The combination with an apertured bed, of a carrier and extensible tube located below
30 the bed, means for effecting the alternate presentation of the carrier and tube below the aperture, and means for effecting the longitudinal extension and contraction of said tube.

5. The combination with an apertured bed provided with a pair of adjustable sections, of a contractible tube operatively connected
35 to one section, a carrier operatively connected to the other section, said tube and carrier being designed for alternate presentation below the aperture in the bed, and means for effecting the contraction and bodily removal of the tube through the movement of its connected
40 bed-section.

6. The combination with an apertured bed provided with a movable section, of an extensible tube located below the aperture, and means for extending or contracting the tube
45 longitudinally through the movement of the adjustable bed-section.

7. In an invalid's bed, the combination of a central member, a hinged head-section provided with the supporting-plate, a telescopic tube having one member fixed to said supporting-plate, a spring acting against the slid-
50 able member of said tube, and means for positively adjusting the slidable tube member against the tension of the spring on the elevation of the head-section, as set forth.

8. In an invalid's bed, the combination with

a central member, and a hinged head-section, of a carrier-plate depending from and movable with said head-section, a telescopic tube having a member carried by said plate, means
65 for projecting the slidable member of said tube, flexible connections between the slidable tube member and the central member, and guide devices for the flexible connections, movable with the carrier-plate.

9. In an invalid's bed, the combination with
70 a relatively-stationary member provided with an opening, of hinged head and foot sections, a carrier and an extensible tube carried by said sections and capable of alternate presentation before the opening, and means for effecting the extension of the tube through the
75 movement of the section to which it is connected.

10. In an invalid's bed, the combination with a central member, of a hinged head-section
80 provided with a supporting-plate, a foot-section, connections between the head and foot sections to lower the latter on the elevation of the former, an extensible tube carried by the supporting-plate of the head-section, and
85 a carrier movable with the foot-section and adapted to be placed below the central member on withdrawal of the extensible tube, as set forth.

11. In an invalid's bed, a central member
90 comprising the side brackets, a rail attached to said brackets, the top, and the coiled springs interposed between the top and the rail, combined with a hinged head-section, a hinged foot-section, and connections between the
95 head and foot sections, substantially as described.

12. In an invalid's bed, the combination with a bedstead and a hinged section of a foldable
100 bed-bottom, of the slides shiftably fitted on the side rails of the bedstead, and the catches pivoted to the slides and adjustable in the path of the head-section, as set forth.

13. In an invalid's bed, the combination with a bedstead, of a bed-bottom having a hinged
105 foot-section provided in its frame with a notch, a slide shiftably fitted on the foot-rail of the bedstead and adjustable toward and from the notch in the foot-section, and a catch pivoted to the slide to pass through the notch in the
110 foot-section, said catch being shiftably with the slide and adapted to be interposed in the path of the foot-section frame, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
115 the presence of two witnesses.

SAMUEL NICHOLLS, SR.

Witnesses:

G. F. WHITESELL,
S. F. GARRETT.