

No. 829,481.

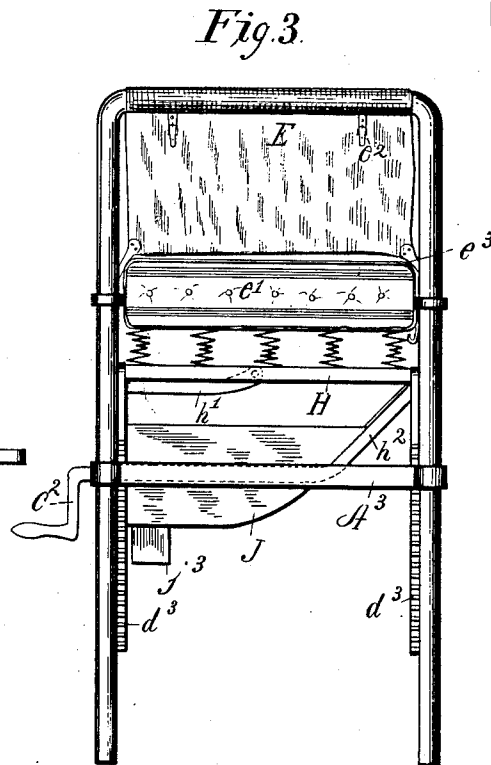
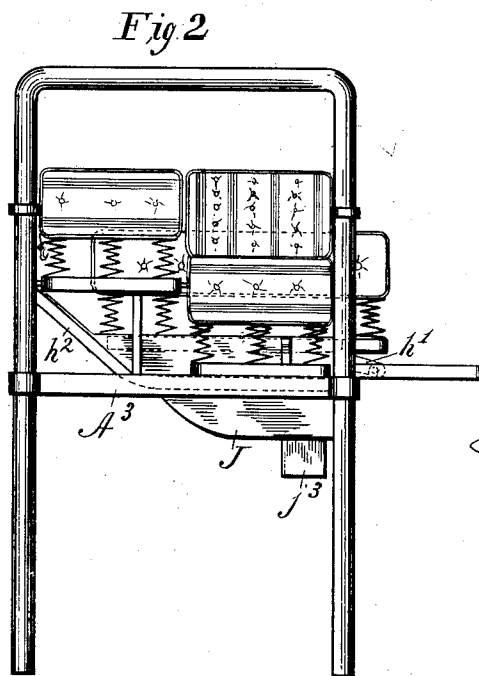
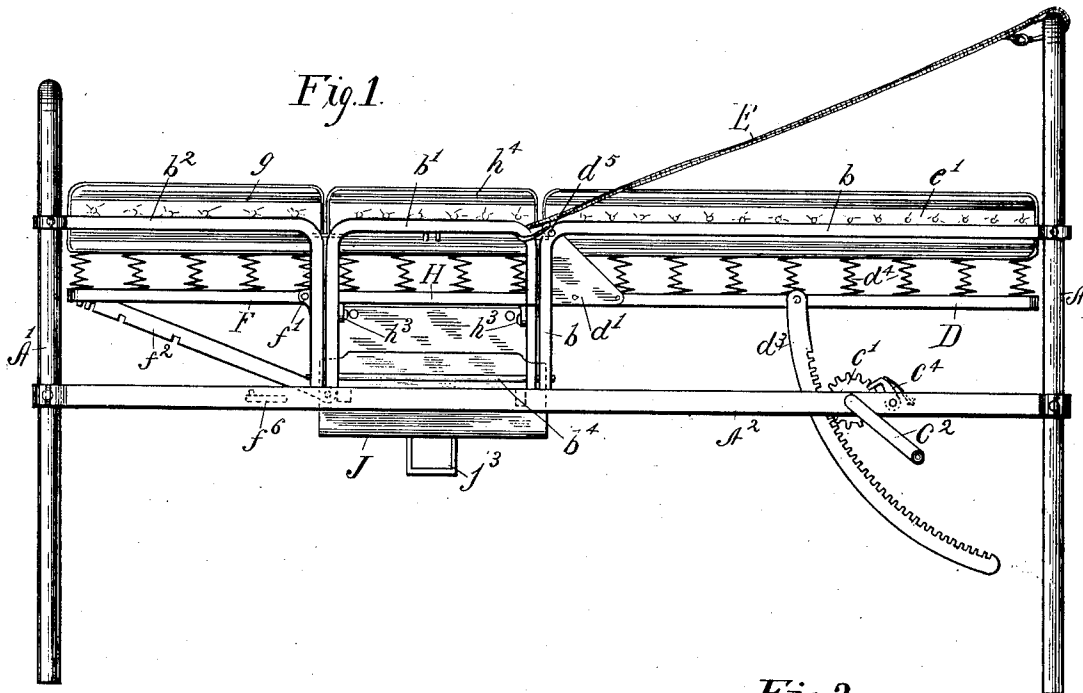
PATENTED AUG. 28, 1906.

F. W. MITCHELL.

INVALID BED.

APPLICATION FILED FEB. 23, 1905.

2 SHEETS—SHEET 1.



Witnesses:

Chas. T. Bassett

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Fredrick W. Mitchell
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Fredrick Benjamin
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2 SHEETS—SHEET 2.

Fig. 4.

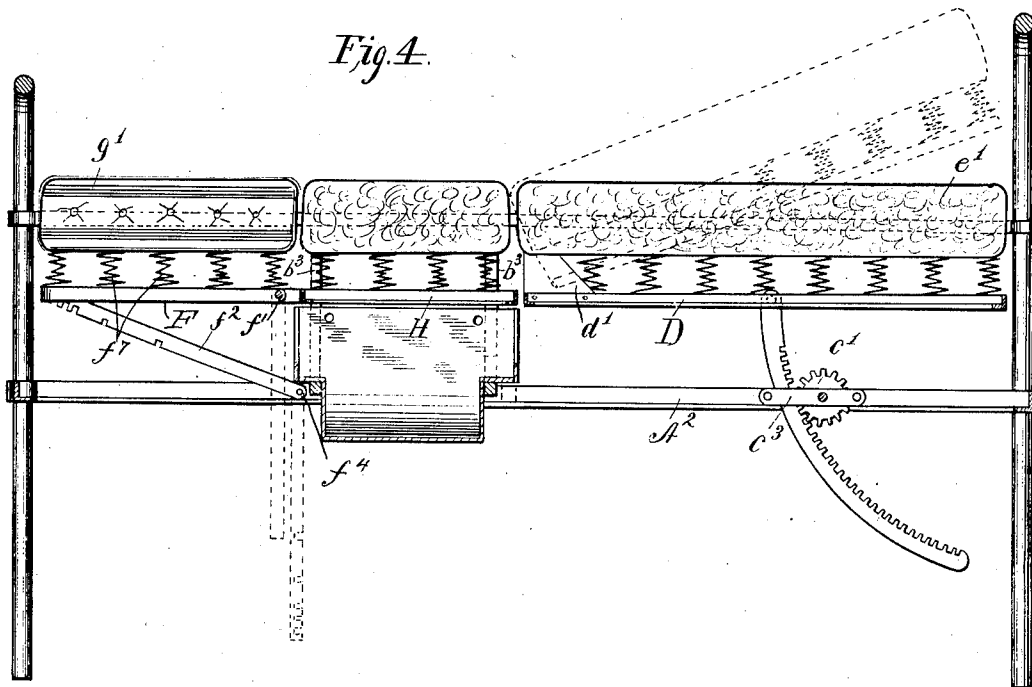


Fig. 5.

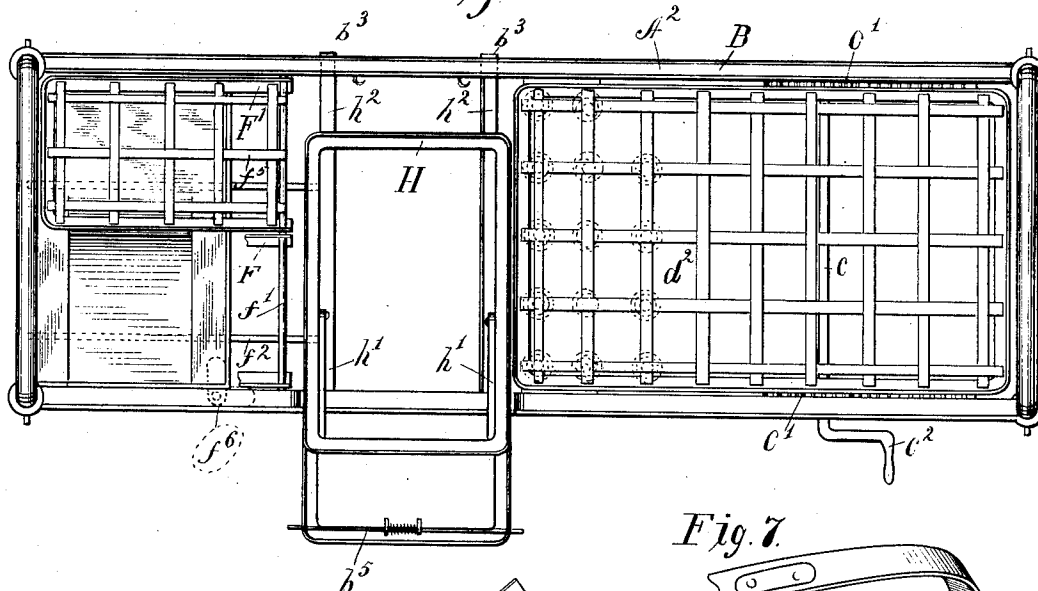
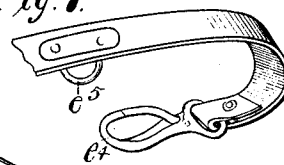


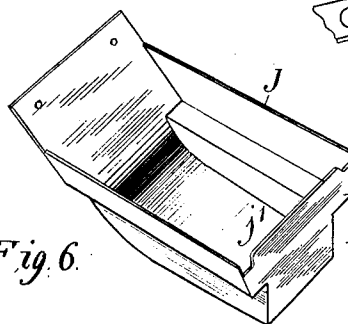
Fig. 7.



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Fig. 6.



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UNITED STATES PATENT OFFICE.

FREDERICK W. MITCHELL, OF FORT SMITH, ARKANSAS.

INVALID-BED.

No. 829,481.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed February 23, 1905. Serial No. 246,904.

To all whom it may concern:

Be it known that I, FREDERICK W. MITCHELL, a citizen of the United States, residing at Fort Smith, in the county of Sebastian and State of Arkansas, have invented certain new and useful Improvements in Invalid-Beds, of which the following is a specification.

This invention relates to improvements in invalid-beds, in which is included the frame or bedstead proper, the direct supports for the mattress, and the mattress itself.

The special object of my improvements is to produce a bed of this character that can be manufactured economically, that will be easy to operate, and in which provision is made for the comfort of the occupant and the convenience of the attending doctor or nurse. In carrying out this object and others of general utility I have designed a bed in which the mattress and its direct supporting elements are divided into four movable and adjustable sections, each section being movable and adjustable independently of the complementary sections, in which the moving and adjusting of the mattress-sections are accomplished with a minimum of disturbance to the occupant and in which the attendant may reach for bathing or treatment any part of the anatomy of the occupant without serious inconvenience to either.

A further object attained by the improvements embodied in my invention is the ability to effect radical as well as slight changes in the position of the body and lower limbs of the occupant, thus relieving the pain and tedium usually resulting from long-maintained positions.

Figure 1 is an elevation of my improved bed, taken at the left-hand side. Fig. 2 is an elevation taken at the foot of the bed. Fig. 3 is an elevation taken at the head of the bed. Fig. 4 is a longitudinal section through the bed. Fig. 5 is a top plan view of the bed-frame and bed-spring-supporting elements. Fig. 6 is a detail in perspective of the bed-pan which forms an essential part of my bed, and Fig. 7 is a fragmentary detail of a fastening device used in connection with one of the vital elements of my bed.

Referring to the drawings in detail, A represents a tubular metal head-piece; A', a corresponding foot-piece; A², the side rails,

which connect the head-posts to the foot-posts, and A³ the cross-rails, which connect the head-posts with each other and the foot-posts with each other, said head and foot pieces and rails constituting the main frame of my bed. Along the right-hand side of the bed above the rail A² is a rail B, the ends of which are secured to the head and foot posts, respectively. Said rail B is connected with the rail A² by vertical bars b³, thus forming a rigid and continuous frame for that side of the bed. On the opposite side of the bed above the rail A² is a rail b, one end of which is connected with the head-post A, and the opposite end is bent downwardly and secured to the rail A², and said rail extends about one-half the length of the bed. A rail b² is secured at one end to the foot-post A' and has its other end bent downwardly and secured to the rail A² and extends about one-fourth the length of the bed, thus leaving a gap between the vertical portions of the two rails b b². This gap is filled by a drop-section b', consisting of a rail bent in the form of an inverted U with its ends connected by a bar b⁴, which extends at each end sufficiently to pass through the adjacent vertical portions of the rails b b², and thereby serve as a hinge or pivot for said section. A spring-catch b⁵ of well-known form is connected with the upper part of the drop-section and engages suitable openings in the rails b b² to lock the section in its vertical or closed position. Extending transversely of the bed and journaled in the said rails A² and in guide-plates c³ is a rod c, on which are fixed gears c' and on one end of which is secured a crank c². The gears are mounted on the rod between the side rails and the guide-plates, thus forming slideways for the curved rack-bars d³ d³, the teeth of which engage said gears. The upper ends of the rack-bars are pivoted on the sides of the mattress-frame D. This frame is rectangular in form, made of angle-iron or other suitable material, and has extending thereacross flat metal straps d², which support the springs d⁴, upon which the mattress-section e rests. At two corners of the mattress-supporting frame are secured angular plates d' d', in the upper corner of each of which is fixed a pin d⁵, which enters a suitable hole in the bars B b, respectively, forming pivots or pintles on which the frame is hung at said

points and supported in connection with the curved rack-bars d^3 . The mattress-section e' is preferably detachably connected with the springs d^4 in any convenient or well-known manner, so that when the frame D is raised, as shown by dotted lines, Fig. 4, the mattress will be held in its proper relation to the springs and frame. The frame is locked in its adjusted position by a pawl e^4 , which is pivoted on the rail A^2 , so that its hooked end may engage the teeth of the adjacent pinion e' .

To facilitate changing the sheet on the mattress e' or beating up the latter in the usual manner, I provide a sheet E, made of strong material, to which are secured straps e^2 , adapted to engage the head-post, and other straps e^3 , which may be suitably secured to the rails B b' . These straps are equipped with snaps e^4 and staples e^5 for holding the ends of the straps and permitting the sheet E to be drawn and held in the position indicated in Fig. 1, thus raising from the mattress the body of the occupant of the bed. When not so used, the sheet will hang down behind the head-piece out of the way or may be placed on the mattress under the ordinary sheet with the straps e^3 projecting in position to be grasped at any time it is desired to raise the body of the occupant.

A rod f' has its ends secured in a lug on the vertical portion of the rail b^2 , and in one of the posts b^3 on the opposite side of the bed and pivotally mounted on said rod are two independently-operating frames F F' of corresponding size and form. These frames are supported in a horizontal position by bars f^2 , pivoted on a rod f^4 , the ends of which are fixed in the side rails A^2 and have notches at their outer ends to engage the corresponding outer portions of the frames, as indicated in Fig. 4. Metal straps f^5 connect the side pieces of the frames F and support the coil bed-springs f^7 , which in turn support and are detachably connected with the mattress-sections $g g'$ in the same manner as the section e' . It will be apparent that by disconnecting the bars f^2 from the frames F F' the latter may be dropped down, as indicated in dotted lines, Fig. 4. As these sections are adapted to support the feet and legs of the occupant of the bed, if it be desired to raise him to a sitting posture the sections will be dropped, as described. As the sections are independently adjustable, the limbs of the occupant may be placed on one section while the other is being "made up," thus permitting change of sheets or slips with but little disturbance of the invalid. In practice it will be preferable to have all of the mattress-sections of my bed covered with slips instead of sheets, an advantage to which they lend themselves because of their comparative small size. By placing notches at different points along the bars f^2 provision is made for holding the

frames F at different angles, as will be readily apparent.

Inclined bars $h^2 h^2$ extend from the right-hand rail A^2 forwardly to the left-hand rail A^2 and are rigidly secured thereto. Resting on the upper part of the inclined portions of these bars is a metal frame H, rectangular in form, the front end of which is supported by pivoted braces h' , the free ends of which are hooked and engage pins h^3 , which project inwardly from the vertical portions of the rail b' , whereby as the gate formed by said rail is swung on its hinge the frame H will be moved outwardly and downwardly, the rear end sliding on the inclined bars h' , so that it will be held in a horizontal plane at all times. This frame supports bed-springs and a mattress-section h^4 in the same manner as the other frames described, and as it can be moved independently of the other frames adjustment, change of bedclothes, and work on the patient or invalid are all facilitated.

Arranged under the frame H and removably supported on the bars h^2 and the rails A^2 is a bed-pan J, made of any suitable metal and formed with an inclined bottom j' and overhanging sides j^2 , which are adapted to rest on the bars h^2 and rails A^2 . The pan has secured to its under-side a bracket j^3 , which is adapted to receive a suitable alcohol-stove (not shown) for heating the contents of the pan. If it be desired to use the pan when the bed is occupied, the gate is swung outwardly on its hinges and the mattress-section h^4 , with its frame H, removed, or if the pan is required at the feet of the invalid the frames F F', with their mattresses, are dropped to a vertical position and the pan inserted with one side resting on the rail A^3 , its ends supported on the rails $A^2 A^2$ and one corner supported by the pivoted latch f'' , shown in dotted lines, Figs. 1 and 5, as mounted on one of the side rails A^2 .

It will be seen that my improved bed has as important elements a head-section comprising a pivoted frame supporting springs and mattress and means for adjusting said frame at different angles, a sheet detachably secured to the head-frame and adapted to be stretched at an angle over the head-section, a middle section comprising a frame supporting springs and mattress and adapted to be swung outwardly and downwardly from the bed, two foot-sections comprising frames independently hinged and adjustable, and a bed-pan adapted to be supported at the middle section or the foot-section of the frame.

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

1. A bedstead comprising a main frame and head and foot boards, said frame having a hinged middle section on one side, and means for supporting said section in a horizontal position, an auxiliary middle-section

mattress-supporting frame removably and slidably supported on said main frame, in combination with a bed-pan, removably and slidably supported on said main frame and below said auxiliary frame.

2. A bedstead comprising a main frame and head and foot boards, said frame having a hinged middle section on one side and means for supporting said section in a horizontal position, an auxiliary head-section mattress-supporting frame hinged at its lower end on the main frame and adapted to be adjusted at different angles above and below its normal horizontal position, means for adjusting said frame and holding it in its adjust-

ed positions, an auxiliary middle-section mattress-supporting frame removably and slidably supported on said main frame, auxiliary foot-section mattress-supporting frames independently hinged at their upper ends on said main frame and independent means for adjusting said frames at different angles relative to each other and to the main frame.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK W. MITCHELL.

Witnesses:

J. E. STEVENSON,
EDWIN MECHEM.