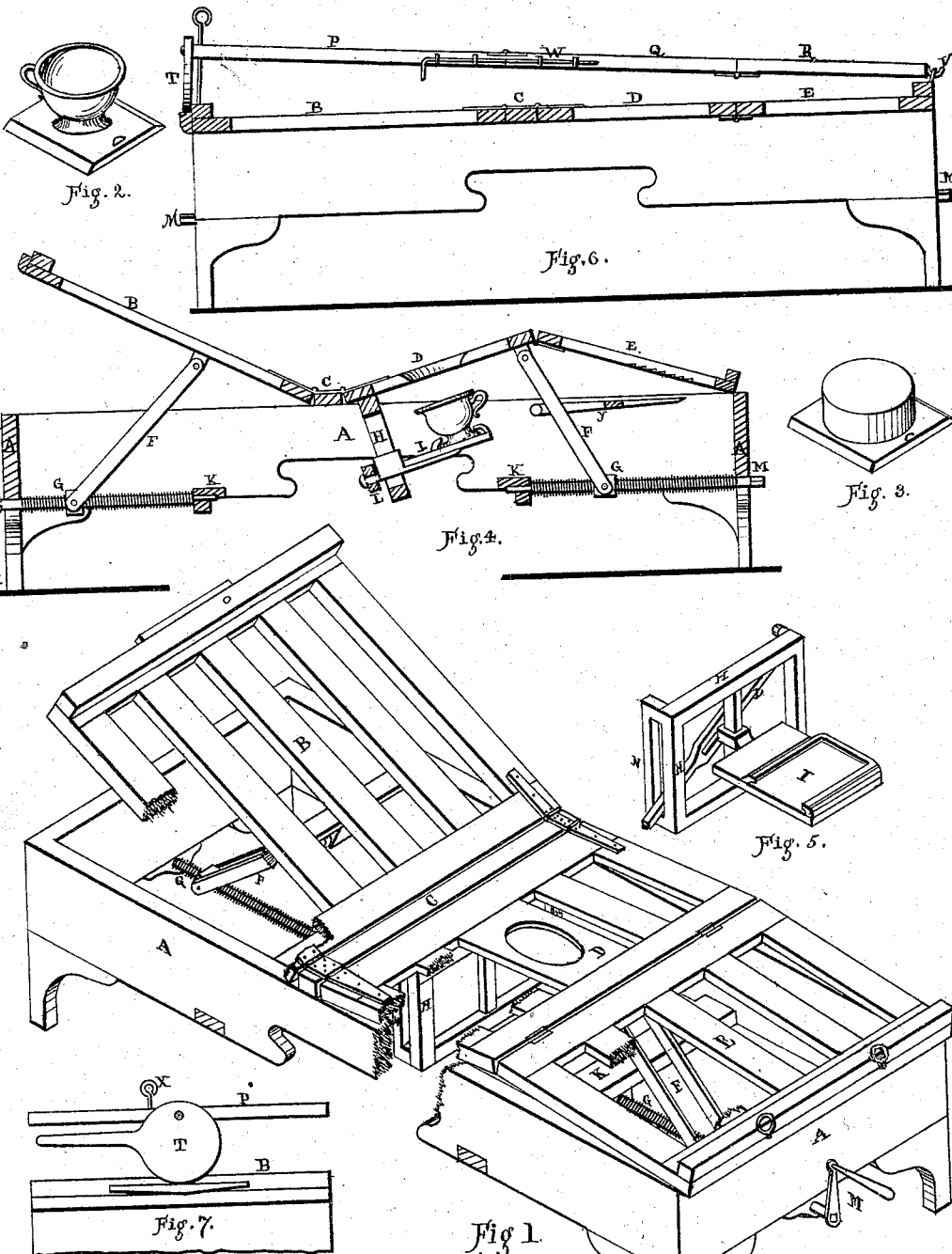


G. W. GROTE.
Invalid Bedsteads.

No. 138,083.

Patented April 22, 1873.



Witnesses.

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IMPROVEMENT IN INVALID-BEDSTEADS.

Specification forming part of Letters Patent No. **138,083**, dated April 22, 1873; application filed January 20, 1873.

To all whom it may concern:

Be it known that I, GORHAM WHITCOMB GROTE, M. D., of St. Catharine's, county of Lincoln, Province of Ontario and Dominion of Canada, have invented a new and Improved Invalid and Fracture Couch, of which the following is a specification:

The first part of my invention relates to the horizontal screw-shafts, nuts, and connecting-bars at each end of the couch. The object of this part of my invention is, first, to raise the patient's head and shoulders from the recumbent posture and incline them forward to any angle required. Second, to raise the patient's lower extremities until they assume the shape of a double incline plane; the two positions thus giving the patient the sitting-posture or reclining-posture of any angle. These objects are attained with the greatest possible ease to the patient, and require the least power of any other contrivance for raising a patient.

The second part of my invention relates to the bed-pan adjuster, pad, and pan. The object of this part of my invention is to obviate the necessity of moving a patient for the use of the bed-pan; also, that the bed-pan can be used, no matter what position the patient may be placed in. This is of the greatest importance in cases of fracture.

The third part of my invention relates to the canvas stretcher upon which the patient lies, mode of attachment to the couch, and eccentric lever for elevating the same. The object of this part of my invention is to provide a means of ventilation for the patient and bed-linen, thus preventing in a great measure the occurrence of bed-sores; also, to facilitate the making of the bed.

Figure 1 is a perspective view of the couch, showing some of the most important parts of my invention, and their adaptation. Fig. 2 is the bed-pan, which is made either of zinc or earthenware, or other suitable material. Fig. 3 is the pad, made of the same material as the mattress, and secured to a tray. Fig. 4 is a vertical longitudinal section through the center of the couch, showing the screw-shafts, nuts, connecting-bars, head-blocks for attaching the upper ends of the connecting-bars to the frame, and the sections of frame upon which the mattress rests. Fig. 5 is the bed-

pan adjuster, seen in position in Fig. 1. Fig. 6 is a section of the canvas-stretcher, elevated in a straight line from foot to head by means of eccentric lever T, Fig. 7.

A A, Fig. 1, is the frame of the couch, which, like all the other frame-work, may be constructed either of wood or iron, and should be substantially fastened at the corners. As it is intended to be moved from room to room, adjustable casters will be used, and can be removed if necessary. B, D, and E are sections upon which corresponding sections of mattress rest. Sections B and D are firmly hinged to a strong cross-board, C, by means of strong double hinges, single hinges not being of sufficient strength. D and E are hinged together by means of single hinges. Frames B and E have longitudinal laths fixed to them to support the mattress, while frame D has only a broad board fixed in the center, in the center of the upper end of which is an elliptical hole, through which the pad and pan are to pass. There is a corresponding hole in the mattress, exactly filled by the pad when in its place. G G are horizontal screw-shafts, placed in the center and on a level with the bottom of the couch, one end working in an ordinary bearing fixed in the end of the couch, and the other is adjusted in a like manner to a cross-board, K, which is secured to the bottom of the sides of the couch. Upon each screw-shaft runs a square nut, with a turned shoulder on two of its opposite sides, at right angles to the thread in the nut, to which are attached the connecting-bars F F at one end, which are kept in their places either by spring-pins or nuts. The other ends are attached in a similar way to a head-block with turned shoulders, and fixed to a cross-board secured to the longitudinal laths in section B; and the connecting-bars at the foot of the couch are attached at their upper ends to a head-block fixed to foot end of frame D. There are two connecting-bars attached to each nut and head-block.

When the sections or frames B D and E are upon a level, the connecting-bars F F are at such an angle of elevation as will require but slight power to raise either section when screw G is turned. The power is applied to screw G at either end of couch by means of crank-lever M, and the positions shown in Figs.

1 and 4 are obtained. Foot section E is elevated at any angle by the hand, and supported in its place by prop Y, fitting in a rack on the under surface of the two side pieces of frame E.

The bed-pan adjuster, Fig. 5, consists of a strong quadrilateral frame, H H, of wood, with a perpendicular square post firmly secured in its center, upon which moves up and down an exactly-fitting box, upon one side of which is a broad shoulder, upon which rests table I, which is firmly secured to it, and upon the other side is a round shoulder, which passes through a slot in the center of lever L, which slot takes the direction of the arc described by lever L while being moved up or down. Lever L is hinged to one perpendicular side of frame H, and movable at the other. Lateral motion of the movable end of lever L is prevented by guide N.

The object of the table I is to receive the pad or pan when required for use. The pad is secured to a tray with beveled sides which exactly fit in corresponding grooves on table I. The bottom of the pan has also beveled edges, to follow the grooves on table I. The pan is as easily constructed as any other form of bed-pan, whether made of zinc or earthenware, or other proper material.

When the pan is to be used, the pad is removed and the pan inserted in its place. In order to accomplish this movement, spring O is pushed to one side with the right hand, while lever L is pulled down with the left, table I following. The pad is then easily removed and the pan inserted. The pan is then passed up through the mattress close to the patient, by lifting the lever to the top, where it is supported by spring O.

Frame H is firmly bolted to the back cross-board of section D, as seen in Fig. 1, and is movable with it. The object of this adjustment is that the pan can be used quickly, and without disturbing the patient, whatever position may be assumed by the same. A space is cut away in frame A of the couch, to admit of a more easy introduction of the pad and pan into the bed-pan adjuster.

The canvas stretcher, Fig. 6, consists of a frame the full size of the couch, and the sections P, Q, and R correspond to the sections B, D, and E, Figs. 1 and 4, and are hinged to-

gether at the joinings, so as to assume the different inclinations required. (See Fig. 1.) When the canvas stretcher is to be raised, (which is done by means of eccentric lever T, Fig. 7, hinged to the center of head-section P by means of a strong bolt, and resting upon a shoulder which is attached to the head of section B, and upon which it rotates,) sections P and Q are bolted together on each side at the hinges by bolt W. The foot-hinges do not require bolting, as the hinges are on the under side of the frame, thus maintaining the required rigidity of sections Q and R.

The canvas stretcher is hinged to the foot of section E by means of a hook-hinge, V, in order that it may be adjusted more readily. When not required for use, it can be removed without difficulty.

The canvas which rests upon the mattress when in position has a hole through it corresponding with the one through the mattress, and is laced on the frame by means of a strong cord, which can be tightened when required.

While the canvas stretcher is elevated lateral motion is prevented by guide-bolt X, which passes through section P, and is fixed in a socket in the head of section B, close to the bolt which supports eccentric lever T, and is removed when not required for use. (See Fig. 7.)

I claim as my invention—

1. The couch proper, combining the frame A A, sectional mattress-frames B, D, and E, and adjusting screw-shafts G G, nuts, and connecting-bars F F, as and for the purpose hereinbefore set forth.

2. The bed-pan adjuster H L N I, including pan and pad, combined with and attached to sectional mattress-frame D, as and for the purpose hereinbefore set forth.

3. The upper frame or canvas stretcher with its sections P, Q, and R, (corresponding with sectional mattress-frames B, D, and E,) and draw-bolt w, provided with adjusting eccentric lever T and guide-bolt X, and combined with and attached to sectional mattress-frame at foot end of section E by adjustable hinges V V, as and for the purpose hereinbefore set forth.

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Witnesses:

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