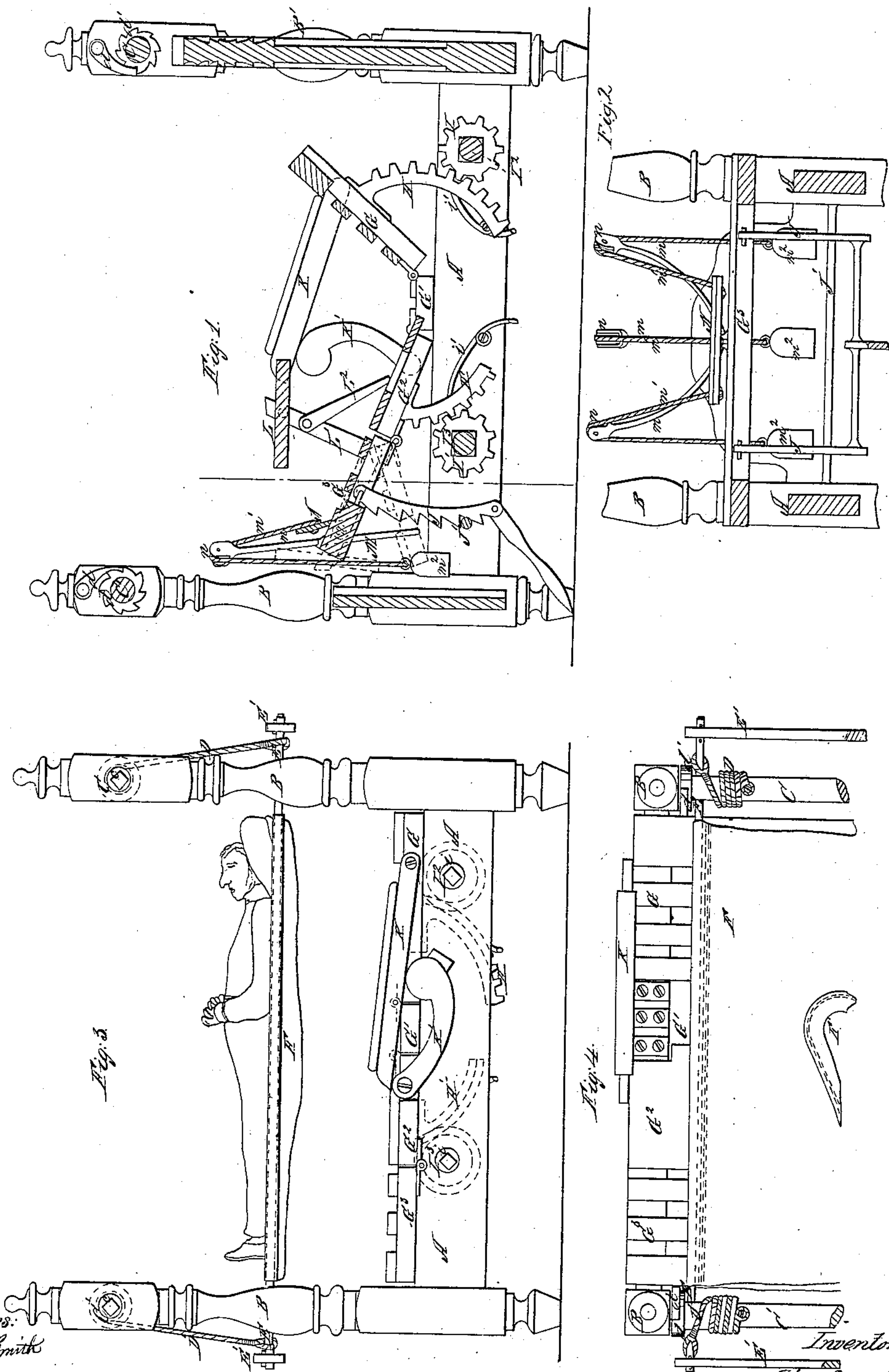


*T. Mc Ilroy,*  
*Invalid Bedstead,*

*Nº 71,196.*

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*Witnesses:*  
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# United States Patent Office.

THOMAS McILROY, OF NEW YORK, N. Y.

*Letters Patent No. 71,196, dated November 19, 1867.*

## IMPROVED INVALID AND FRACTURE-BEDSTEAD.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, THOMAS McILROY, of the city and county of New York, in the State of New York, have invented a new and useful Invalid and Fracture-Bedstead; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which are made a part of this specification.

The subject of this invention is a bedstead, designed, in general terms, to increase the comfort of the invalid, and enable the more effective treatment of fractures of the leg.

My invention consists, first, in means for elevating the patient from the bed or mattress, and sustaining him at any desired height above the same, in order to cool the bedding, facilitate discharges, or place the patient in a more convenient position for manipulation.

My invention consists also of a sectional bed-bottom, in connection with peculiar adjusting devices, whereby the leg may be supported in such position as may be most favorable to the particular kind of fracture under treatment.

My invention consists, further, in the employment of certain appliances which afford the conveniences of an arm-chair, with a table for eating, reading, or other purposes, said table serving as a foot-rest, when not otherwise employed.

My invention further consists of an improved appliance for the extension of fractured limbs.

Figure 1 is a vertical longitudinal section of a bedstead illustrating my invention.

Figure 2 is a vertical transverse section of the same, the line *x x*, fig. 1, indicating the plane of section.

Figure 3 is a side elevation of the same.

Figure 4 is a top view of a portion of the bed.

Similar letters of reference indicate corresponding parts in the several figures.

In the drawings, A may represent a bedstead or frame of any desired construction, and B the posts thereof, the latter rising to a sufficient height above the frame to enable the patient to be raised and lowered by means of the shafts C C', as represented in fig. 3. The shafts C C' are journaled in the upper parts of the posts B, and said shafts may be formed with hollow sockets *c* at their ends, in order that they may be rotated by means of a crank-shaped handle, having a square head fitting into said sockets. Any other means may be employed for rotating the shafts C C'; for example, cog-wheels or worms turned by hand and engaging with worm-wheels or cog-wheels on the shafts. D D' D D' are straps or cords, whose upper ends are fastened to the shafts C C', and whose lower ends are attached to rods E E. The rods E E are situated at each side of the bed, and the sheet F, or a piece of canvas under the patient, may be sewed, strapped, or otherwise attached to the said rods, so that when the shafts C C' are rotated, as above described, the patient may be elevated, as shown in fig. 3. The patient, when elevated, is sustained by the engagement of pawls or ratchets *d* with the ratchet-wheels *d'*, the backward motion of the shafts C C' being thereby prevented.

This contrivance enables the patient to be easily raised without subjecting him to the pain and discomfort which cannot be avoided in making up and airing beds which are not provided with my improved elevator. The sheet F may have an opening, as at F', fig. 4, through which excrement, &c., may be discharged into a receptacle when the patient is elevated. Of course both the shafts C C' may be rotated at the same time, but one person, turning one shaft at a time, can raise and lower the patient with facility. The rods E E are held asunder and steadied by the transverse rigid bars E' E', which are fitted upon their ends, as shown in figs. 3 and 4, and these bars serve to prevent the undue sagging of the sheet F. Spaces are left between the head-board and head-posts of the bedstead, to permit the unobstructed vertical movement of the bars E E.

The bed-bottom is divided transversely into four parts or sections G G<sup>1</sup> G<sup>2</sup> G<sup>3</sup>, of which the section G supports the head and back of the patient, while the remaining sections support the legs. The sections G and G<sup>2</sup> are hinged to the stationary section G<sup>1</sup>, and the section G<sup>3</sup> is hinged to the section G<sup>2</sup>, as represented in fig. 1. H H' are segmental racks secured to the under side of the respective sections G G<sup>2</sup>, and engaging with cog-wheels I I' on the shafts I<sup>2</sup> I<sup>3</sup>, which are journaled in the sides of the bedstead-frame A, and which are held against backward motion by the pawls *z'* engaging with the cogs I I'. The outer ends of the shafts are provided with sockets *z*, (see fig. 3,) to enable said shafts to be rotated by means of the square-headed key or crank-handle



which is used to rotate the elevating-shafts C C'. By means of the parts I I' I<sup>2</sup> I<sup>3</sup> H H', the sections G and G<sup>2</sup> may be raised so as to stand at any desired angle to the bedstead-frame A, and thus they may be made to assume such relative positions as are best adapted for the support of variously fractured limbs, or for the comfort or favorable treatment of other invalids. The section G<sup>3</sup> may, by means of the notched pendent-bars J J and rod J', be held so as to form an incline to support an elevated limb in a straight position from the ischium to the foot, when desired; but when a fracture of the femur, or a spinal or rheumatic or other affection may require the elevation of the knee and the depression of the foot, a double incline for the support of the segments of the deflected limb may be afforded by adjusting the section G<sup>3</sup> as indicated by red lines in fig. 1.

K K are arms, hinged or pivoted to the opposite sides of the section G, and adapted to be supported in an elevated and nearly horizontal position, (as shown in fig. 1,) by means of the arms K', which are pivoted or hinged to the section G<sup>2</sup>. These arms, when raised, as shown in fig. 1, impart to the couch the appearance of an arm-chair, and add to the comfort of the patient when in a reclining or sitting posture. The inner ends of the arms K K' are provided with a mortise and tenon respectively, which allow them to be united or separated at will.

The detachable foot-board, shown in blue lines, fig. 1, is provided with legs L<sup>1</sup>, and braces L<sup>2</sup>, the former, L<sup>1</sup>, being capable of attachment to the sections G<sup>3</sup> by screws or otherwise, so that said foot-board may be supported horizontally upon the sections G<sup>2</sup> G<sup>3</sup>, as shown in full lines at L, fig. 1. In this latter position it serves as a table upon which the food, writing materials, or reading matter may be placed for the patient.

My appliance for the extension of the limbs is shown in figs. 1 and 2. It may consist of a standard or upright, M, from which three arms m m m rise to an equal height. Upon the upper termini of the arms m are mounted rollers n n n, as shown in fig. 2. The standard M is to be attached to the rear end of the section G<sup>3</sup>, by a screw-clamp which admits of raising and lowering the standard, and holding it in any desired position. When this appliance is brought into requisition, the foot of the limb to be extended is secured to the board N by means of adhesive plaster. The said board N has an aperture at its mid-length, and an aperture near each end for the attachment, respectively, of the cords m<sup>1</sup> m<sup>1</sup> m<sup>1</sup>, as shown in fig. 2. The cords m<sup>1</sup> are passed thence over the rollers n, and their depending extremities are weighted as at m<sup>2</sup>, in order to apply the requisite tension to the limb. By the use of the three points of attachment, the foot or limb is prevented from turning, and maintained in the proper upright position. The ordinary appliances of this kind have but a single weighted cord, which does not prevent the foot from turning.

The above-described extension appliance is not exclusively applicable to the bedstead herein described, as it may be used with equally beneficial results in connection with other bedsteads.

By lowering the section G to the horizontal position shown in fig. 3, and leaving the sections G<sup>2</sup> G<sup>3</sup> in the inclined position shown in fig. 1, the patient is placed in an inclined position, with his feet elevated. The weight of his body will then resist the strain of the extension-cords, and by this means the practitioner is enabled to dispense with the painful and injurious appliances usually depended on for counter-extension.

Having thus described my invention, the following is what I claim as new herein, and desire to secure by Letters Patent:

1. I claim the rods E E, cords or other connections D D', and shafts C C', when employed conjunctively as a means for elevating the patient above the bed, in the manner and for the purpose set forth.

2. I claim the sectional bed-bottom G G<sup>1</sup> G<sup>2</sup> G<sup>3</sup>, in combination with the segments H H', cog-wheels I I', shafts I<sup>2</sup> I<sup>3</sup>, pawls i', notched bars J J, and rod J', all arranged and employed in the manner and for the purpose set forth.

3. I claim the device M m m m, or any substantial equivalent thereof, to enable the employment of three (or a plurality) of extension-weights, as and for the object set forth.

4. I claim the foot-rest L, provided with legs and braces L<sup>1</sup> L<sup>2</sup>, and adapted to be used as a table, as explained.

5. I claim the arms K K', arranged so as to be detached from and united to each other by mortise and tenon, and employed substantially as and for the purpose explained.

THOS. McILROY.

Witnesses:

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