(No Model.) 2 Sheets—Sheet 1.

A. LESLIE.

INVALID HAMMOCK.

No. 317,383. Patented May 5, 1885.

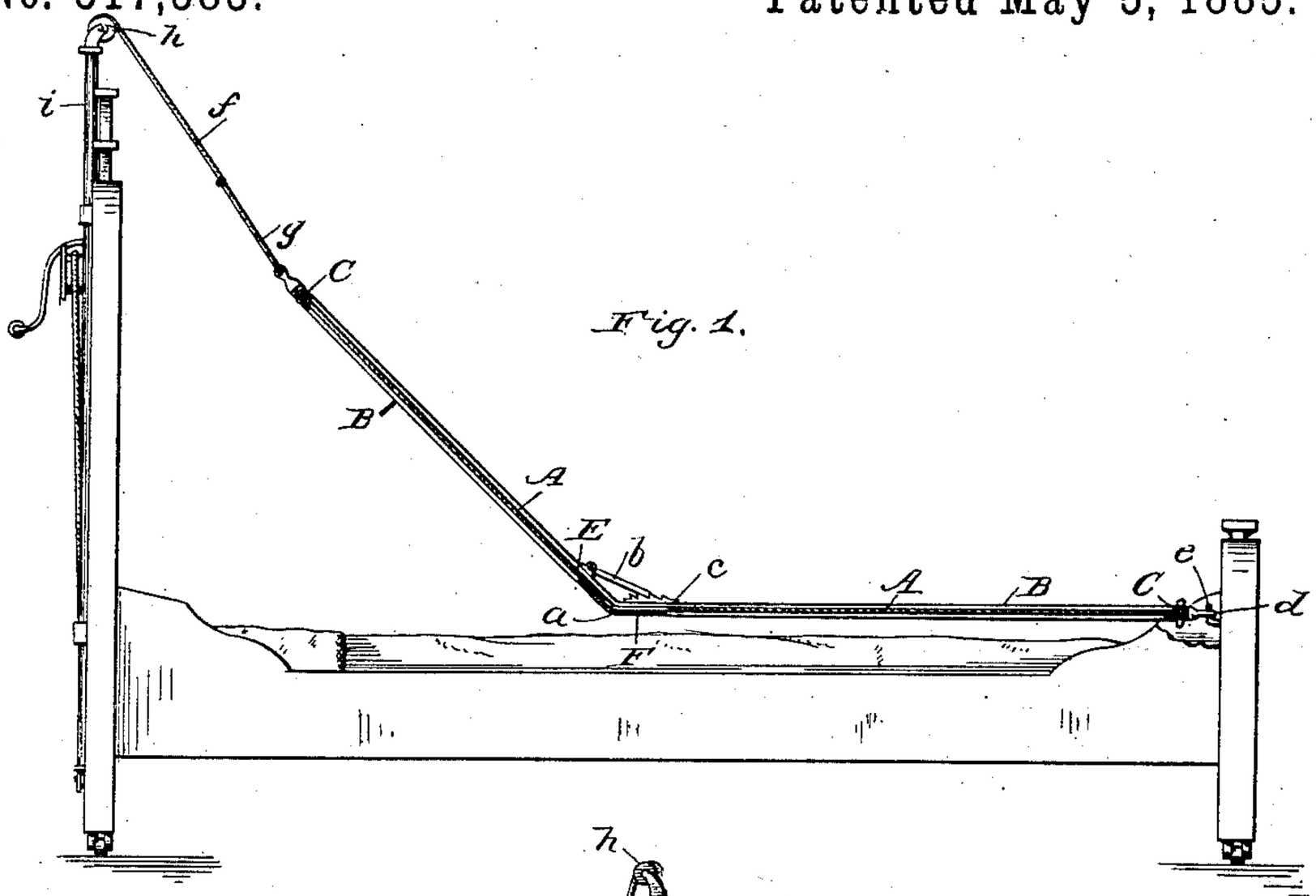

Fig. 1.

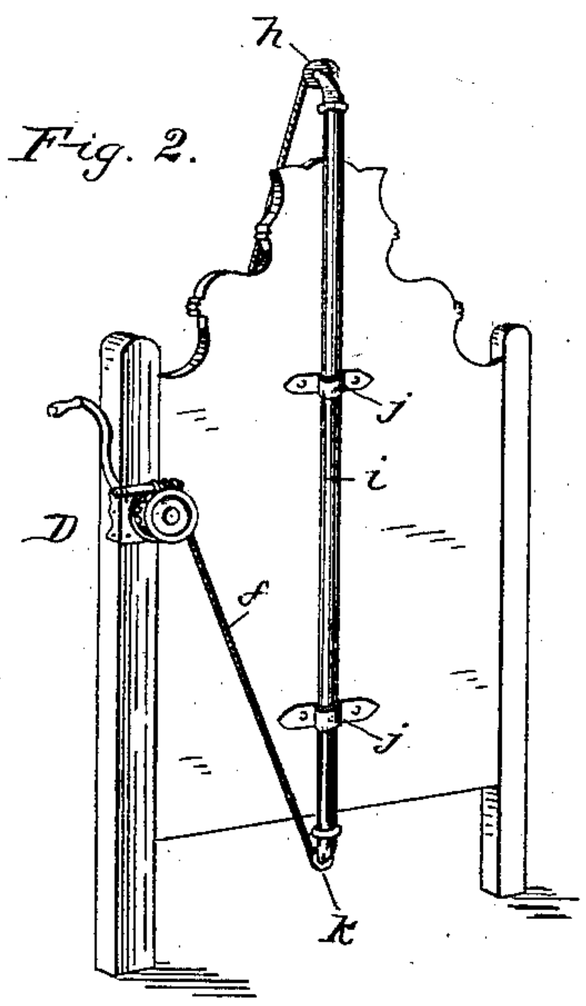

Fig. 2.

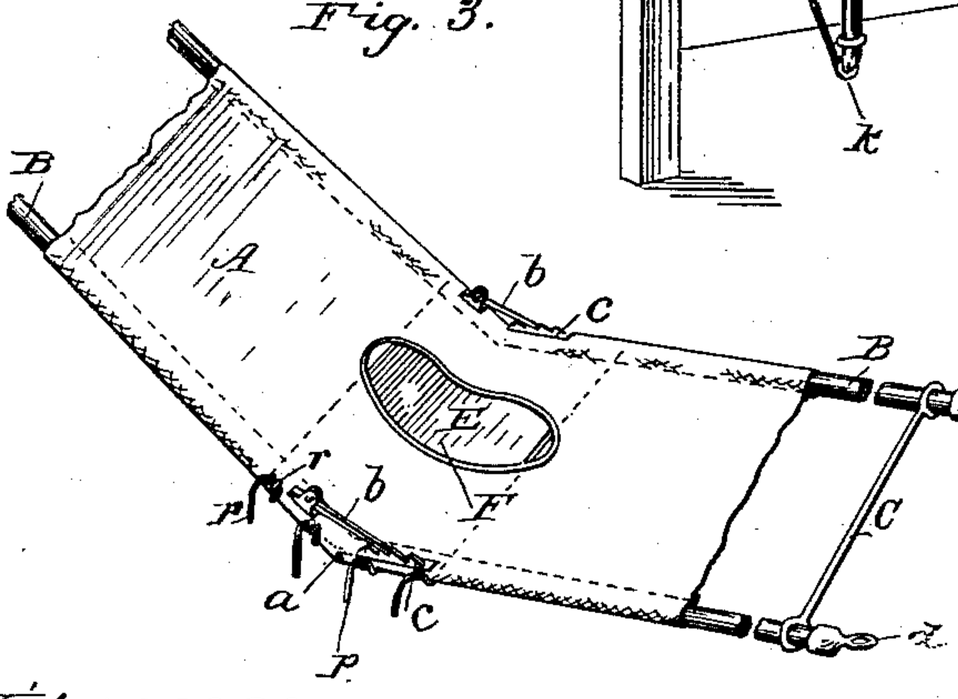

Fig. 3.

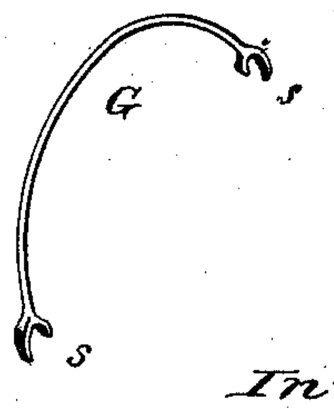

Fig. 4.

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Inventor:
Andrew Leslie
by Marcellus Bailey
his Attorney

(No Model.) 2 Sheets—Sheet 2.

A. LESLIE.

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Fig. 5.

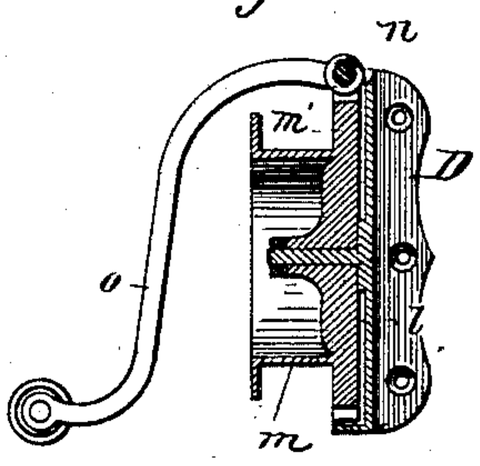


Fig. 6.

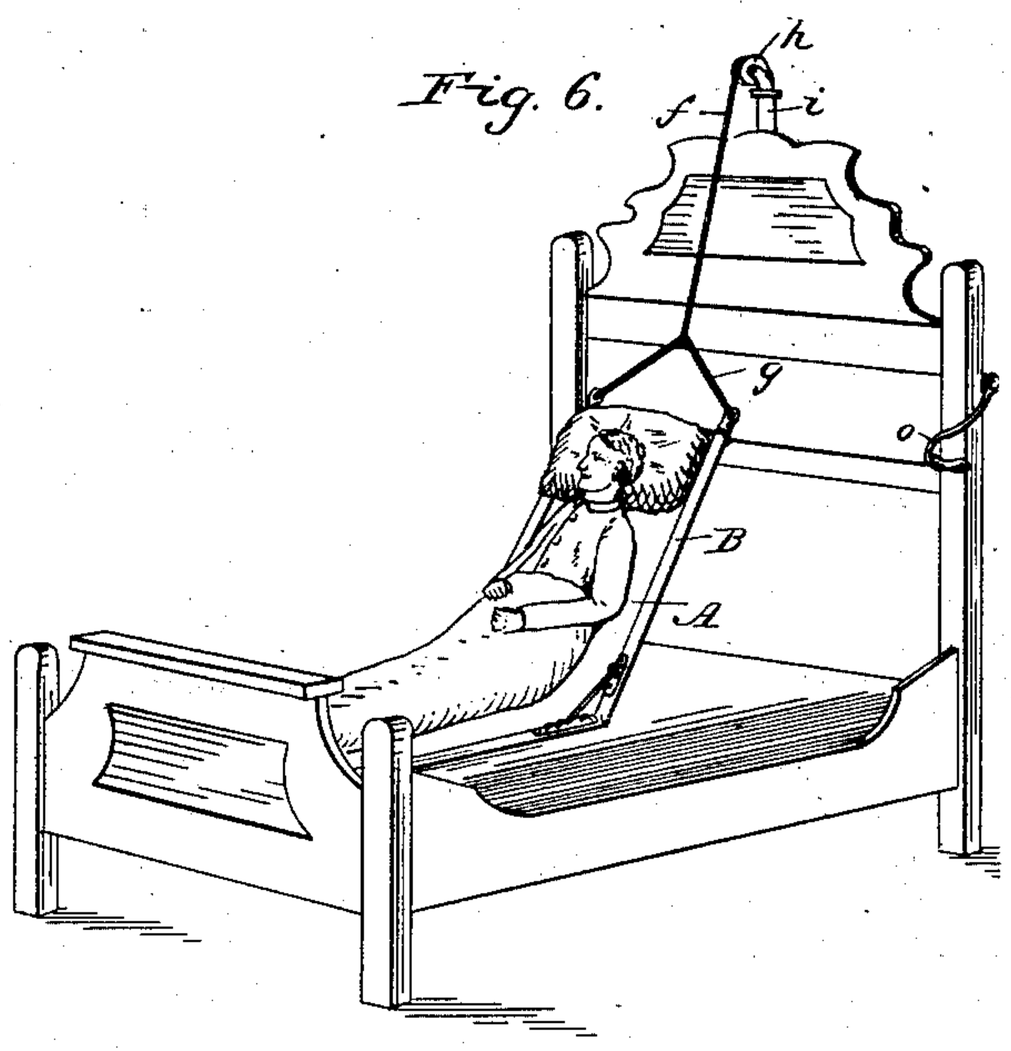


Fig. 7.

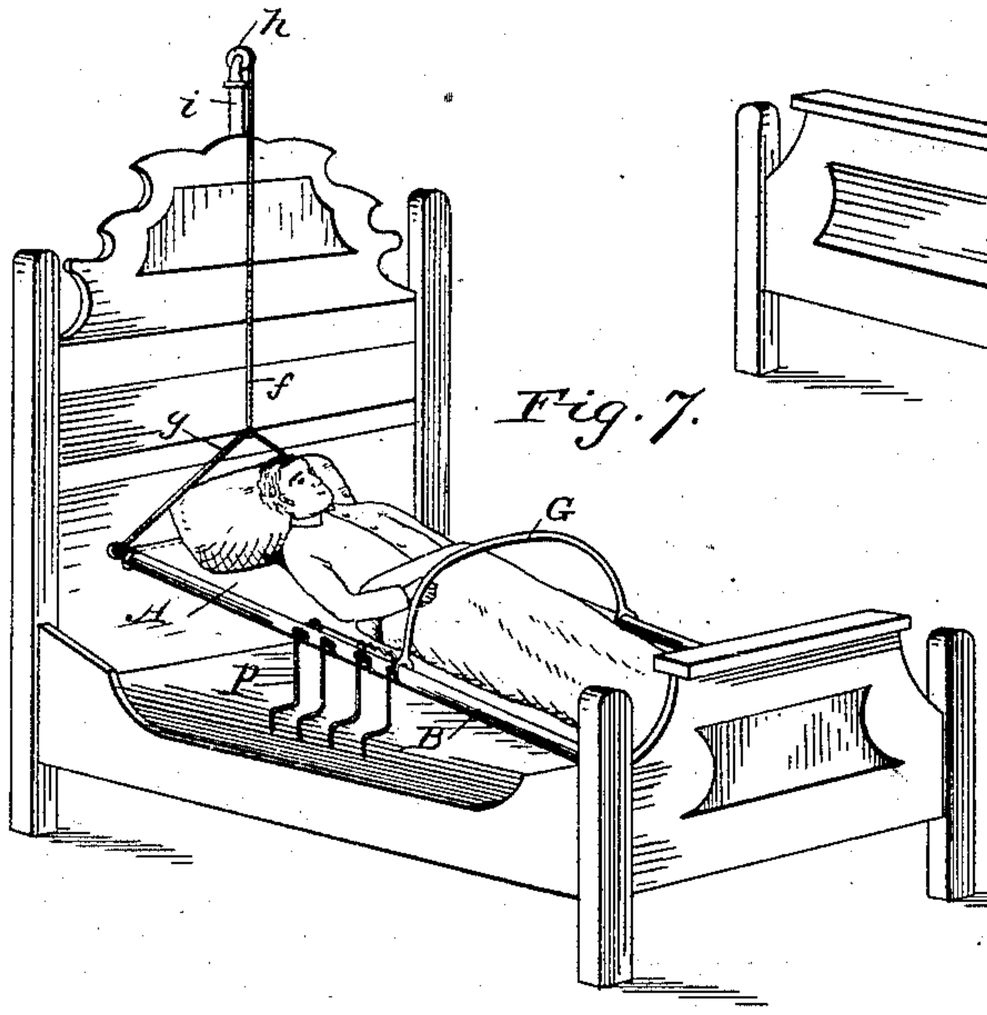
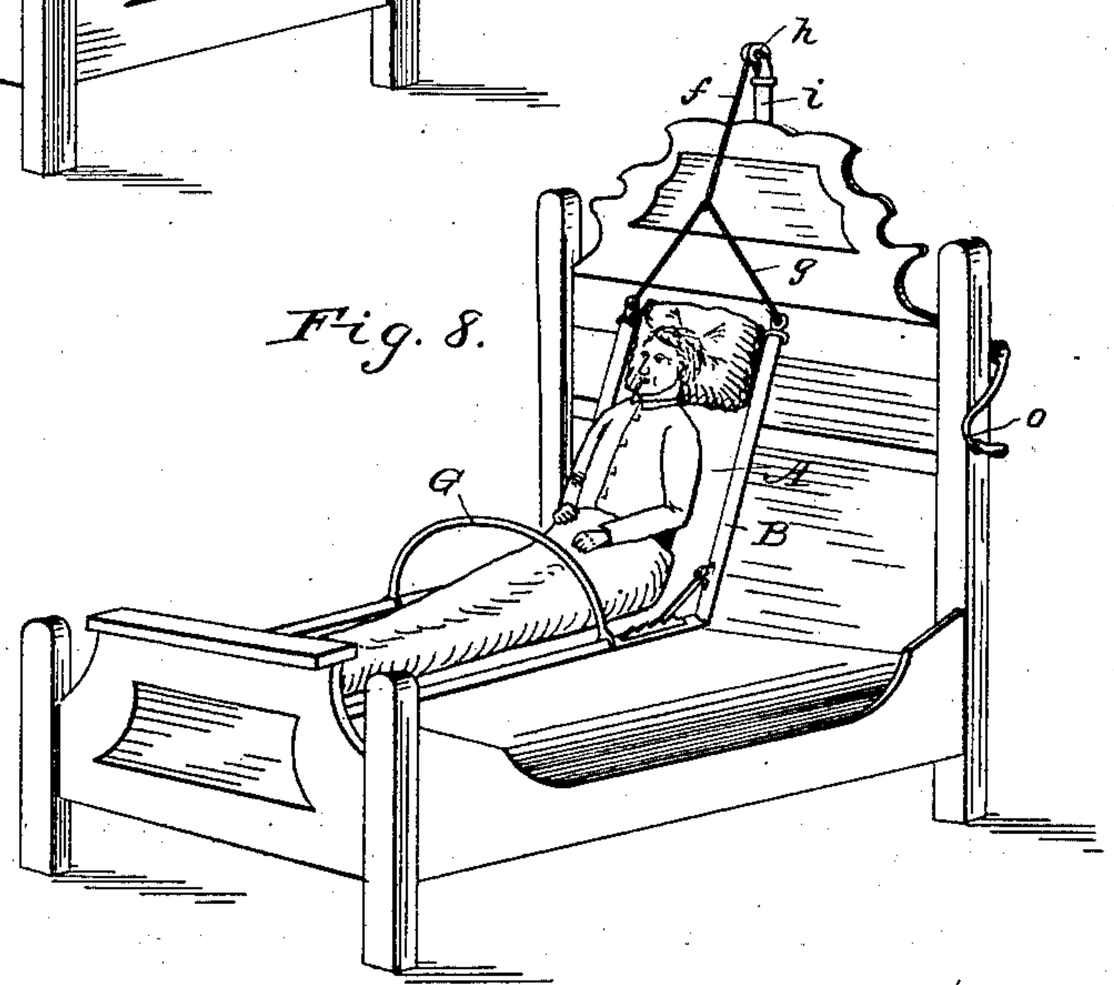


Fig. 8.



Witnesses:

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UNITED STATES PATENT OFFICE.

ANDREW LESLIE, OF ST. LOUIS, MISSOURI, ASSIGNOR TO MARY A. LESLIE, OF SAME PLACE.

INVALID-HAMMOCK.

SPECIFICATION forming part of Letters Patent No. 317,383, dated May 5, 1885.

Application filed October 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, ANDREW LESLIE, of St. Louis, in the State of Missouri, have invented new and useful Improvements in Invalid-Hammocks, of which the following is a specification.

My invention has relation to that kind of invalid-hammock described and illustrated in my Letters Patent No. 266,167, dated October 17, 1882—that is to say, a hammock adapted to be attached at its lower end to the foot of the bedstead, and connected at its upper end with a hoisting or lifting device which, whether attached to the bedstead or to any convenient part of the room in which the bedstead may be located, is adapted to raise or lower or sustain that end of the hammock.

The invention consists in certain improvements which are the outgrowth of experience, and are intended to obviate certain objections and difficulties which have been met with in the practical use of the hammock.

The hammock proper shown in my Letters Patent consists of a strip of canvas-duck of suitable length and width, which at each end is attached to round sticks or rods, the foot-rod being attached to the foot of the bedstead, and the head-rod being connected by a rope to the hoisting device, which, preferably, is attached to the head of the bedstead.

I have found by experience that there are several classes of cases to which this special apparatus is not well adapted—for instance, patients with fracture of the bones of the lower extremities, cases which will not admit of motion at the hip-joint and knee for any cause, cases in which flexion or movement of the spinal or vertebral column is not admissible, and rheumatic cases. In the first-named instance the apparatus is apt to cause too much motion and pain in the region of the injured parts, and in rheumatic cases it has at times proved unserviceable by causing the patient too much pain by doubling him together in the effort to elevate him. In the other instances named it has been found impracticable to successfully employ the apparatus. Thus, while the particular form of apparatus shown in my patent in illustration of my invention possesses features of advantage, and can be successfully used in many cases, yet there are some classes of cases to which it is not adequate.

It is with a view to adapt my patented invention to all cases as far as practicable that my present improvements have been devised. To this end the hammock proper consists of a quadrangular frame within which is stretched the canvas-duck or other pliable fabric or material. The side rails of the frame prevent the doubling together of the hammock, while the end rails keep the side rails at the proper distance apart. At the same time, to permit the doubling or bending of the hammock in cases where it may be convenient or necessary, I make each side rail in two pieces, hinged together, so as to permit the rail to bend at the joint, and with the hinge I combine means by which the hinged rail-sections can be set or fixed at any desired angle with respect to one another. When the patient is in some positions—as, for instance, when the hammock is entirely lifted from the bed, in either straight or bent position—it may be found desirable to brace apart the side rails at a point intermediate between their ends; and to this end I provide a removable brace, which can be applied to or taken away from the hammock as desired. The canvas is perforated, as in my patented device, to permit the use of a bed-pan, and I also employ a covering-flap; but the arrangement of the latter is different from that shown in my patent, the flap extending transversely instead of lengthwise of the hammock, and having cords adapted to catch in hooks on one of the side rails of the hammock.

The preferred means by which I attach the foot of the hammock to the bedstead consists of eyes on the foot-rail of the hammock, adapted to fit upon pins or hooks fast to the foot-board of the bedstead.

The hoisting device is of the same general character as that shown in my Letters Patent with some variation in the construction and arrangement of parts which will be hereinafter described.

The nature of my improvements and the manner in which the same are or may be carried into effect will be readily understood by

reference to the accompanying drawings, in which—

Figure 1 is a sectional side elevation of a bedstead provided with a hammock embodying my improvements in their preferred form. Fig. 2 is a rear view of the head-board of the bedstead, showing the hoisting device in place thereon. Fig. 3 is a perspective view of the central portion of the hammock proper, representing the hinges of the side rail-sections, and the preferred means for fixing the hinges at any desired angle. Fig. 4 is a view of the detachable brace. Fig. 5 is a vertical cross-section of the hoisting device. Figs. 6, 7, and 8 are views representing some of the various positions in which the hammock can be placed.

The hammock proper consists of canvas A, of suitable width and length, secured at its longitudinal edges to side rails, B, which latter are braced apart by head and foot cross-rails C, the rails B and C thus forming a stiff rectangular frame in which the canvas is stretched.

To allow the occupant of the hammock to be put in a sitting position whenever desired, each side rail is hinged at or near its middle, as seen at *a;* and in order to set or fix the angle at which the two sections of the rail may stand with respect to one another, a hinged pawl, *b*, is attached to one of the sections in a position to engage a ratchet or notched bar, *c*, on the other. Thus the rails can be held stiff and straight, or can be permitted to turn on their hinges more or less as required. The parts *b c* are the means which at present I prefer for fixing the angle of the hinge; but other means which will suggest themselves to the skilled mechanic may be substituted for them.

In cases where the hammock is to be raised entirely from the bed, it is necessary to secure its lower end to the foot of the bedstead. To provide for this, I put on the foot ends of the side rails rings *d*, which are adapted to fit over pins or hooks *e* on the foot-board of the bedstead. When the hammock is not lifted from the bed, it is not necessary that the rings and hooks should engage one another. From the head of the hammock extends the rope *f*, which connects it with the hoisting device. I prefer to attach this rope to a cord or rope, *g*, extending between and fastened to the upper or head ends of the side rails, B. The rope *f* passes up over a pulley, *h*, on the upper end of a tubular post, *i*, fixed by bands *j* to the back of the head-board, thence down through the post to a second pulley, *k*, on the lower end of the latter, and thence to the hoisting device D. This device consists of a bed-plate, *l*, adapted to be conveniently applied to any suitable part of the bedstead, and supporting in proper bearings a winding-drum, *m*, to which rope *f* is made fast, and a worm, *n*, provided with a winch or handle, *o*, and gearing with a worm-wheel, *m'*, fast to drum *m*. The hoisting device thus constructed can, it will be observed, easily be fastened to any convenient part of the bed—the head-board, the foot, or the sides—which permits the bed to be placed in any part of the room.

At the proper point in canvas A is formed the opening E, and beneath this opening, on the under side of the canvas, is the covering-flap F, which extends crosswise of the hammock. It is attached at one end to one side of the hammock, and its other end has knotted cords *p*, which drop into hooks *r* on the adjoining rail, and thus hold the flap in position to close the opening when it is not desired to use a bed-pan.

Fig. 6 shows the patient elevated in sitting posture for the comfort of that position, and for eating and reading. In this case the hammock simply lies on the bed without being attached thereto at its lower end, the hinges of the side rails are unlocked, and the upper end or section of the hammock is lifted and held at the desired inclination by the hoisting device. In this position it is not requisite that the pawl and ratchet should engage one another.

Fig. 7 shows the patient elevated in reclining position when motion at the hip-joint is not permissible, or when, for other reasons, it is not desirable to permit the hammock to bend. In this case the foot of the hammock is hooked to the foot-board of the bed, and the pawls and ratchets engage one another in such position as to hold the side rails stiff and straight. In this position the bed-pan can be used, the bedding changed, and the body cooled.

Fig. 8 represents the patient elevated from the bed in sitting posture. In this position of the hammock the pawls and ratchets are so adjusted as to fix the angle of the hinged side rails. The bed-pan is more conveniently applied in this position than in the one preceding.

When the hammock is elevated above the bed, as in Figs. 7 and 8, it is desirable to brace the side rails apart at about the middle of the hammock or at some point intermediate between the ends. To this end I provide a detachable cross-brace, G, consisting of a piece of metal arched or equivalently formed, so that it may not interfere or be brought in contact with the patient, and formed at each end with a foot, *s*, to fit over and take hold of the side rail. This device can be readily fitted to or removed from the hammock as desired.

The apparatus which I have described above possesses all the advantages ascribed to my patented apparatus, while at the same time it is fitted for much wider and extensive use by reason of the improvements which have been embodied in it.

I am aware that the flap for covering the hole in the hammock-body has been held in place by buttons and button-holes, hooks and eyes, and like fastenings, and this I do not claim. The practical disadvantage attending such fastenings in the present connection is that, with the weight of the patient on the hammock, it is difficult to undo them without

disturbing him. No such trouble can arise with the fastenings employed by me.

What I claim as new and of my own invention is—

1. The hammock proper, consisting of a body of canvas or other suitable material held in a frame composed of side rails and end rails or bars, in combination with means for hinging its lower end to the foot of the bedstead, and a hoisting device applied to its opposite end and adapted to raise, lower, and sustain the hammock from that end, substantially as and for the purposes set forth.

2. The hammock-body and its supporting-frame, consisting of cross bars or rails and hinged side rails, in combination with means, substantially as described, located on the rail-sections and upon opposite sides of the hinges, uniting said sections for fixing the angle of the hinge, substantially as and for the purposes set forth.

3. The combination, with a bedstead, of the hammock-body and hammock-frame, the eyes and pins or hooks attached to the hammock-frame and bedstead foot-board, respectively, for securing the foot of the hammock to the bedstead, and the hoisting device for elevating and sustaining the other end of the hammock.

4. The hammock-frame provided with hinged side rails and means for fixing the angle of the hinge, in combination with devices for hinging its lower end to the foot of the bed, and a hoisting device applied to its opposite end and adapted to raise, lower, and sustain the hammock from that end, substantially as and for the purposes hereinbefore set forth.

5. The hammock-frame and hammock-body with opening therein, in combination with the transverse covering-flap, its retaining-cords, and the hooks on the hammock-frame for receiving said cords.

6. The combination, with the hammock-frame provided with hinged side rails and means for fixing the angle of the hinge, of the arched detachable cross-brace, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand.

ANDREW LESLIE.

Witnesses:
EDWD. C. ELIOT,
WM. E. FISSE.