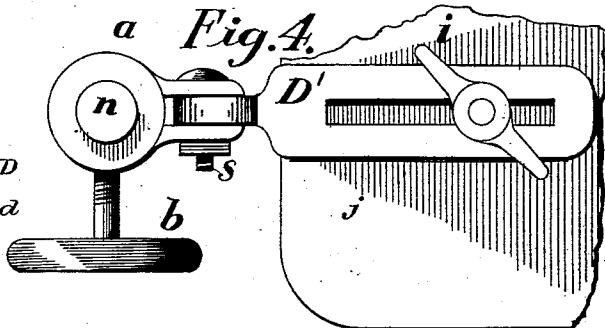
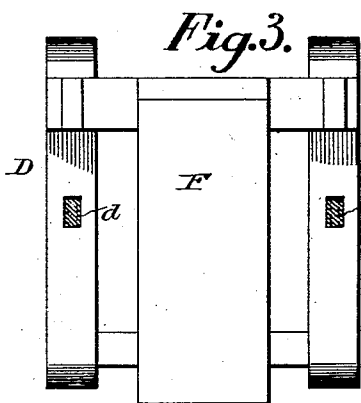
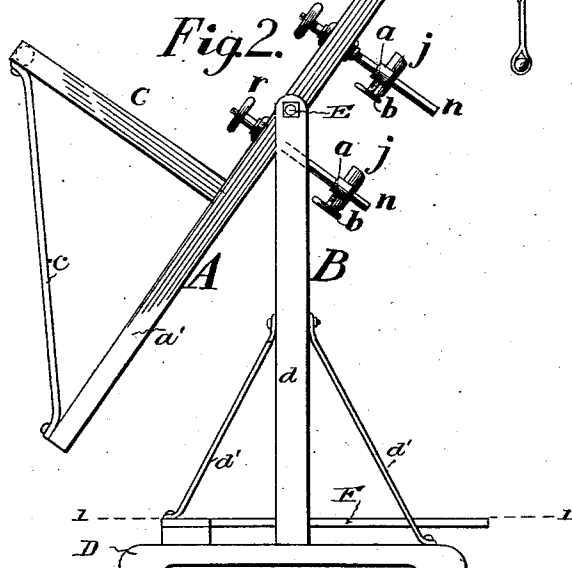
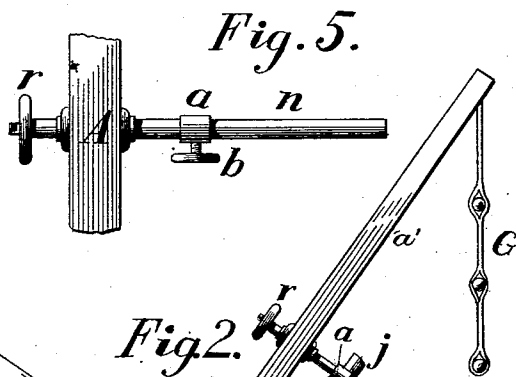
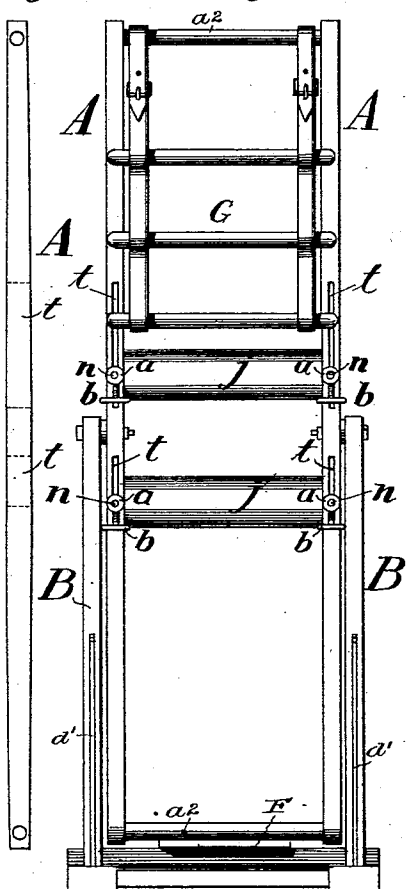


W. H. VOSS.
SURGICAL APPARATUS.

No. 572,139.

Patented Dec. 1, 1896.

Fig. 6. Fig. 1.



Witnesses.
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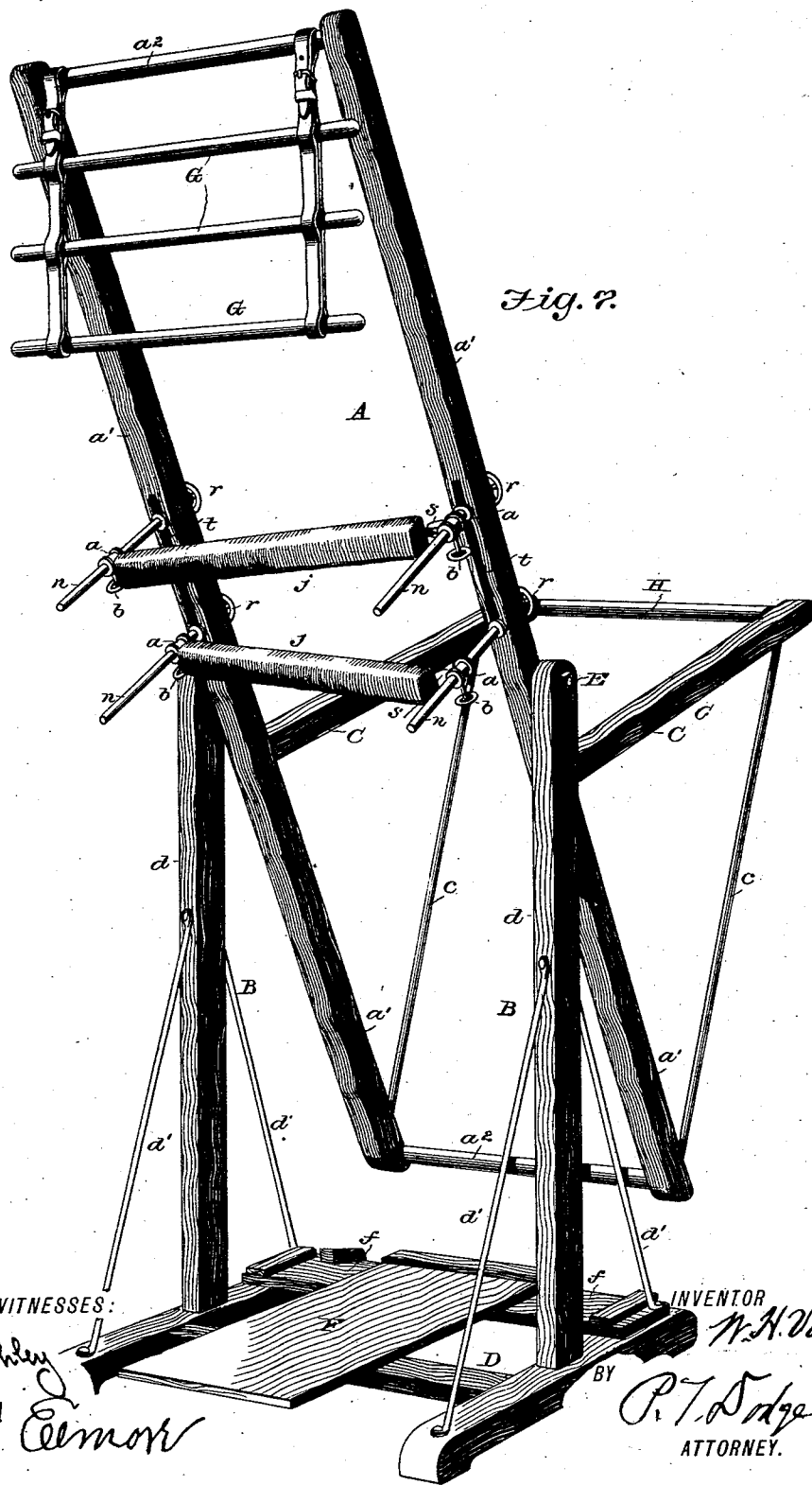
(No Model.)

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UNITED STATES PATENT OFFICE.

WILLIAM H. VOSS, OF DAVENPORT, IOWA.

SURGICAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 572,139, dated December 1, 1896.

Application filed June 30, 1896. Serial No. 597,540. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. VOSS, of Davenport, county of Scott, and State of Iowa, have invented a new and useful Improvement in Surgical Apparatus, of which the following is a specification.

This invention has reference to an apparatus for treating curvatures of the spine and other spinal diseases; and it consists of the combination, with a fixed standard or support, of a relatively-movable suspending-frame by which the patient is lifted and suspended, and a body rest or rests carried by the suspending-frame in such position as to give lateral support to the body of the suspended patient.

The invention consists also in providing for various adjustments of the body-rest to adapt the apparatus for the treatment of patients differing in stature, &c., and for the treatment of diseases differing in character.

The invention also consists in the details of construction and combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a rear elevation of my improved apparatus. Fig. 2 is a side elevation of the same. Fig. 3 is a horizontal section on the line 1 1 of Fig. 2. Fig. 4 is a rear elevation, on an enlarged scale, of one of the devices by which the body-rest is secured to the suspending-frame to adapt it to be adjusted to different positions. Fig. 5 is a side elevation of the same and the sustaining-rod by which it is connected to the suspending-frame. Fig. 6 is an elevation of one of the side bars of the suspending-frame. Fig. 7 is a perspective view of the device as viewed from the rear.

Referring to the drawings, my apparatus comprises, primarily, a fixed stand or support B, a suspending-frame A, pivoted between its ends to said stand, and body-rests *j*, connected to the suspending-frame. The stand consists of a suitable base D, from which rise two vertical standards *d*, suitably braced by rods *d'*. Between the upper ends of the standards the suspending-frame A is pivoted by bolts E. This frame consists of two side bars *a'*, connected at their upper and lower ends by cross-bars *a*² to form a rectangular frame. The pivoting-bolts E extend through the side bars about midway of

their length and sustain the suspending-frame pivotally, so that it may be swung or turned on a transverse axis, the depression of its lower end elevating its upper end, and vice versa.

In the use of the apparatus the patient grasps one of a series of transverse bars G, suspended by straps from the upper cross-bar *a*², and the operator depresses the lower end of the suspending-frame, thereby lifting its upper end and elevating the patient from the ground.

In the treatment of spinal curvatures and other diseases of the spine it is highly important that the body of the patient when suspended be given a partial lateral support. For this purpose I provide the body-rests *j* before alluded to. In the present instance they are two in number, consisting each of a padded bar *j*, extending transversely across the rear side of the suspending-frame. The bars are connected at their ends adjustably to plates D', which are hinged, as at *s*, between ears or sleeves *a*, which latter encircle supporting-rods *n*, projecting rearwardly from the side bars of the suspending-frame. The sleeves are held on the supporting-rods by clamping-screws *b*, and the supporting-rods are extended at their forward ends through slots *t* in the side bars of the frame and are held thereon by clamping-nuts *r*, screwed onto the threaded ends of the bars and arranged to bind against the front faces of the side bars of the frame. By the construction described the body-rests may be adjusted lengthwise of the frame by the movement of the supporting-bars *n* in the slots and from the frame by the movement of the sleeves *a* on the supporting-bars, and the ends of the body-rests may be adjusted independently along the supporting-rods to set the rests at angular positions, the hinge-joint *s* permitting such independent adjustments to be effected. These various adjustments of the body-rests are indispensable to adapt the device to meet the varying conditions encountered in practice, such as the size of the patient and the nature of the disease with which he is afflicted.

In order that the patient may not be subjected to any undue shocks when stepping in place or when lowered from a suspended po-

sition, I provide a spring-board F, fixed at its forward end to a cross-bar *f*, secured to the base D and having its opposite end free.

In order to afford a means for conveniently manipulating the apparatus, I fix to the side bars below the pivot-bolts E two forwardly-projecting arms C, braced by bars *c* and connected at their rear ends by a cross-bar or handle H.

10 In the operation of the apparatus the body-rests are first adjusted to accommodate the peculiarities of the patient's disease and his stature. The patient then steps on the spring-board and grasps one of the bars G. The
15 operator then grasps the handle H and depresses the lower end of the suspending-frame, which action will elevate the upper end and lift the patient bodily from the ground, his body engaging and receiving lateral support
20 from the body-rests *j*. After being suspended for the required time the lower end of the frame is elevated and the patient lowered, the spring-board receiving his weight and taking up any undue shocks which would
25 otherwise be present.

Having thus described my invention, what I claim is—

1. In a surgical apparatus the combination with the two standards of the suspending-frame pivoted between its ends between said
30 standards and movable freely therebetween, a body-rest sustained at the back of the frame and adjustable longitudinally thereof and a cross-bar at the upper end of the frame adapted to be grasped by the patient.
35

2. In a surgical apparatus the combination with the standards of the suspending-frame pivoted thereto on a horizontal axis, body-rests sustained at the back of the frame, ad-
40 justable longitudinally thereof and to and from the same and a handle at the upper end

of the frame adapted to be grasped by the patient.

3. In a surgical apparatus the combination with the rectangular suspending-frame of the
45 body-rests sustained at the back of the same and connected thereto at their opposite ends and adjustable independently at their ends to and from the frame, and a handle attached to the frame and adapted to be grasped by the
50 patient.

4. In a surgical apparatus, the combination with the suspending-frame provided with slots, of the supporting-rods mounted adjust-
55 ably in said slots to move longitudinally of the frame, sleeves encircling said rods and adjustable thereon to and from the frame, and a body-rest fixed at its ends to said sleeves.

5. In a surgical apparatus, the combination with the suspending-frame of the supporting-
60 rods mounted thereon and adjustable longitudinally thereof, sleeves encircling said rods and adjustable thereon to and from the frame, plates pivoted to said sleeves and a body-rest connected at its ends to said plates.
65

6. In a surgical apparatus, the combination with the two vertical fixed standards of a rec-
70 tangular suspending-frame pivoted between its ends to said standards and comprising two side bars and connecting end bars, supporting-rods mounted in slots in said side bars, nuts for holding said rods in place, sleeves encircling said rods, clamping-nuts therefor and a body-rest attached to said sleeves.

In testimony whereof I hereunto set my
75 hand, this 22d day of June, 1896, in the presence of two attesting witnesses.

WILLIAM H. VOSS.

Witnesses:

WM. E. PULS,
B. L. SCHMIDT.