No. 646,574. Patented Apr. 3, 1900.

G. E. GORHAM.

OPERATING TABLE.

(Application filed Sept. 22, 1898.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

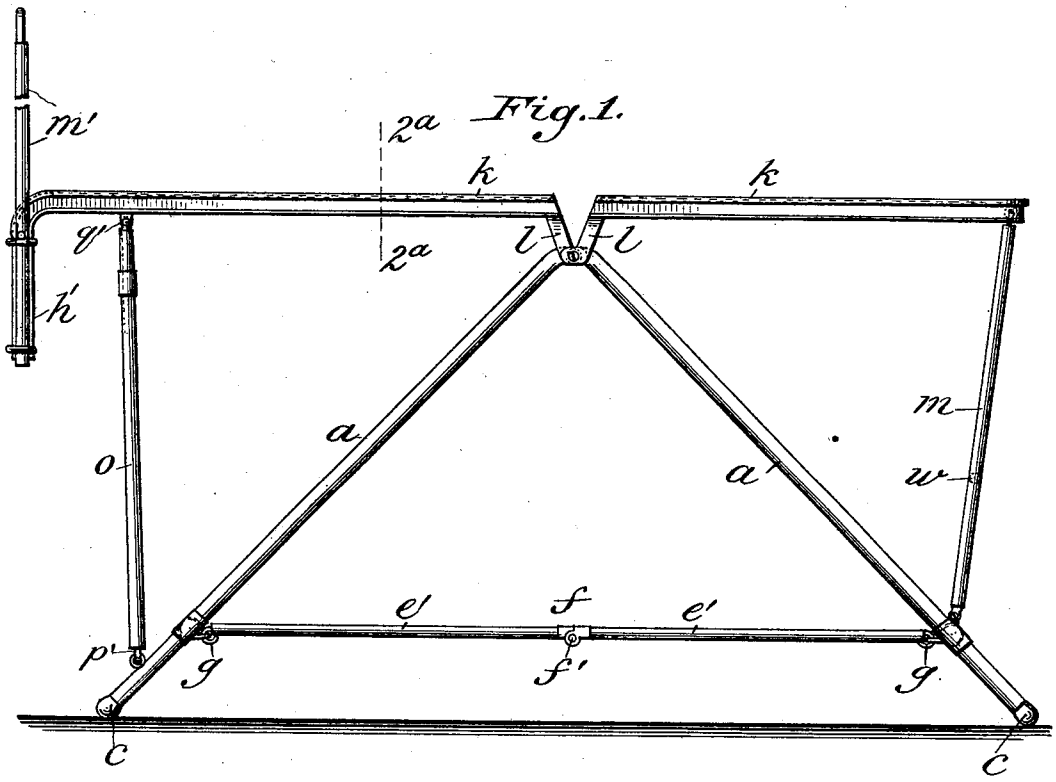


Fig. 2.

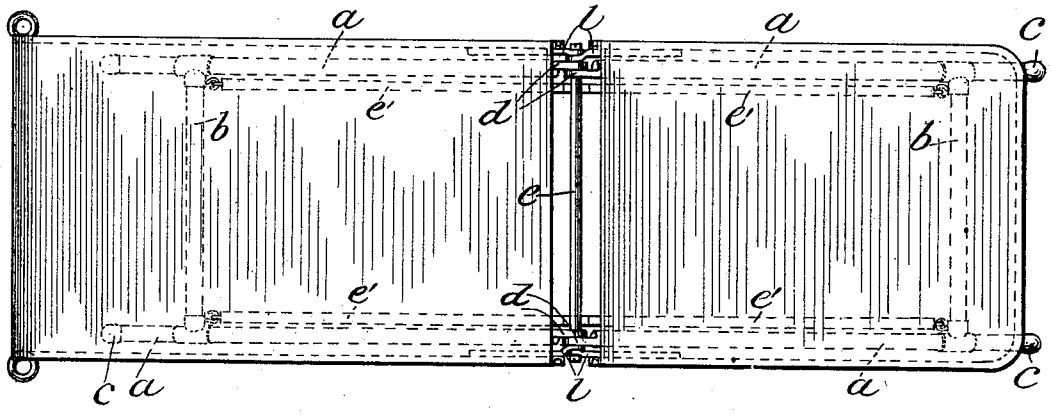
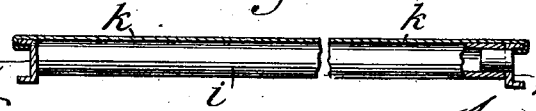


Fig. 2a.



Witnesses
F. H. Schott
J. E. Hutchinson Jr.

Inventor
Geo E. Gorham,
by Edwin V. Goldsborough
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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G. E. GORHAM.

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Fig. 3.

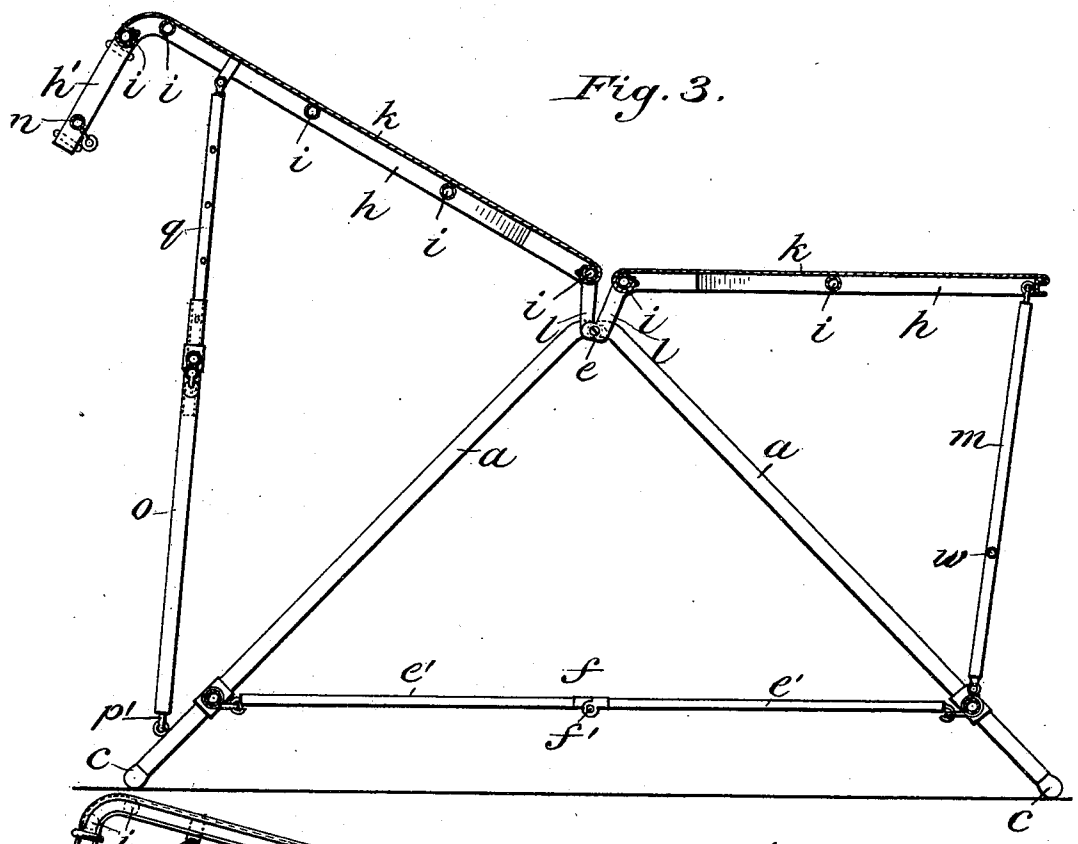
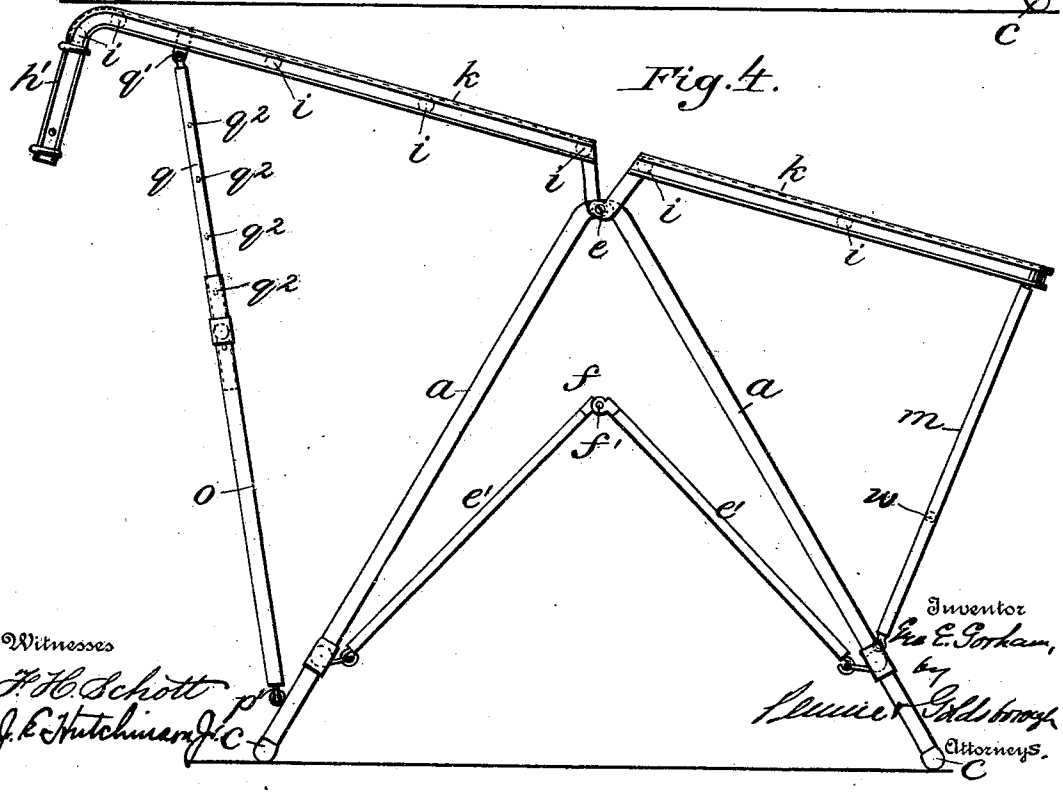


Fig. 4.



Witnesses
F. H. Schott
J. E. Hutchinson Jr.

Inventor
Geo. E. Gorham,
by
Lemuel Gilbreath
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 646,574. Patented Apr. 3, 1900.

G. E. GORHAM.

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Fig. 5.

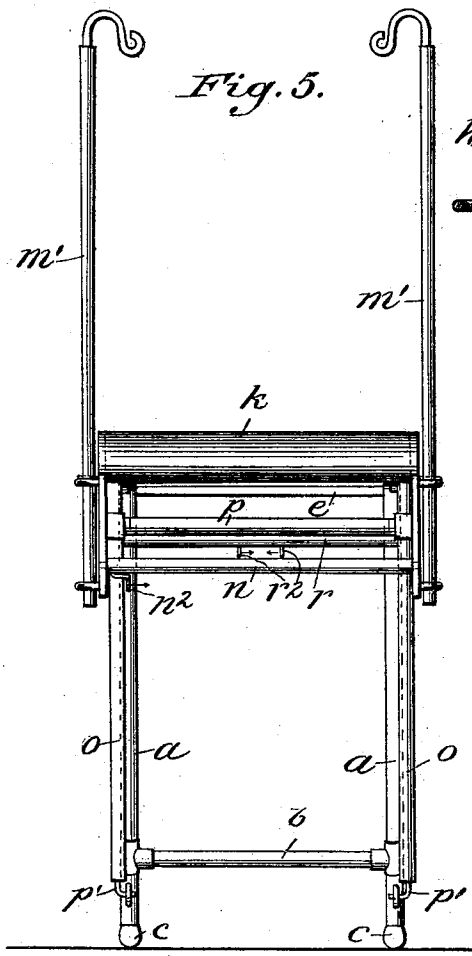


Fig. 7.

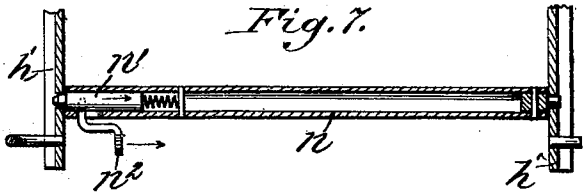


Fig. 6.

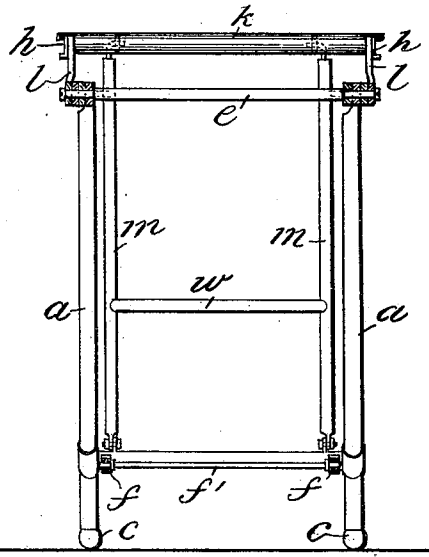


Fig. 8.

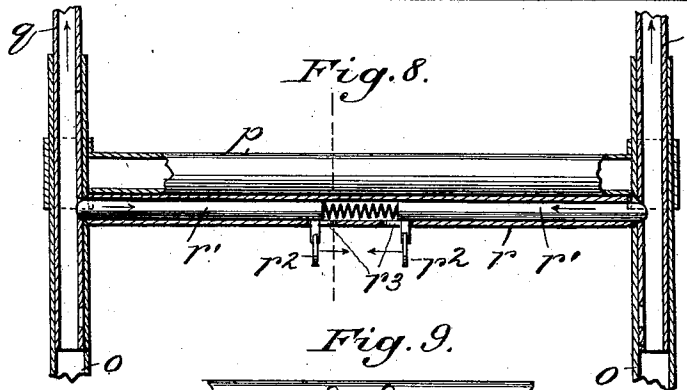


Fig. 9.

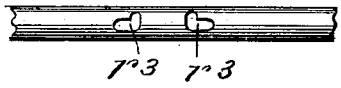
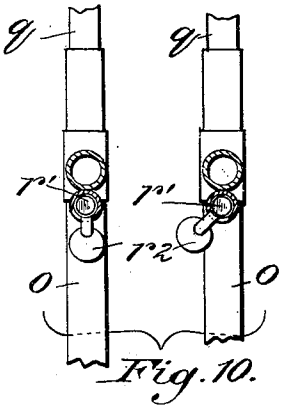


Fig. 10.



Witnesses

J. H. Schott

J. B. Hutchinson Jr.

Inventor,

Geo. E. Gorham,

by Munn & Goldsborough,

Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 646,574. Patented Apr. 3, 1900.

G. E. GORHAM.

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Fig. 12.

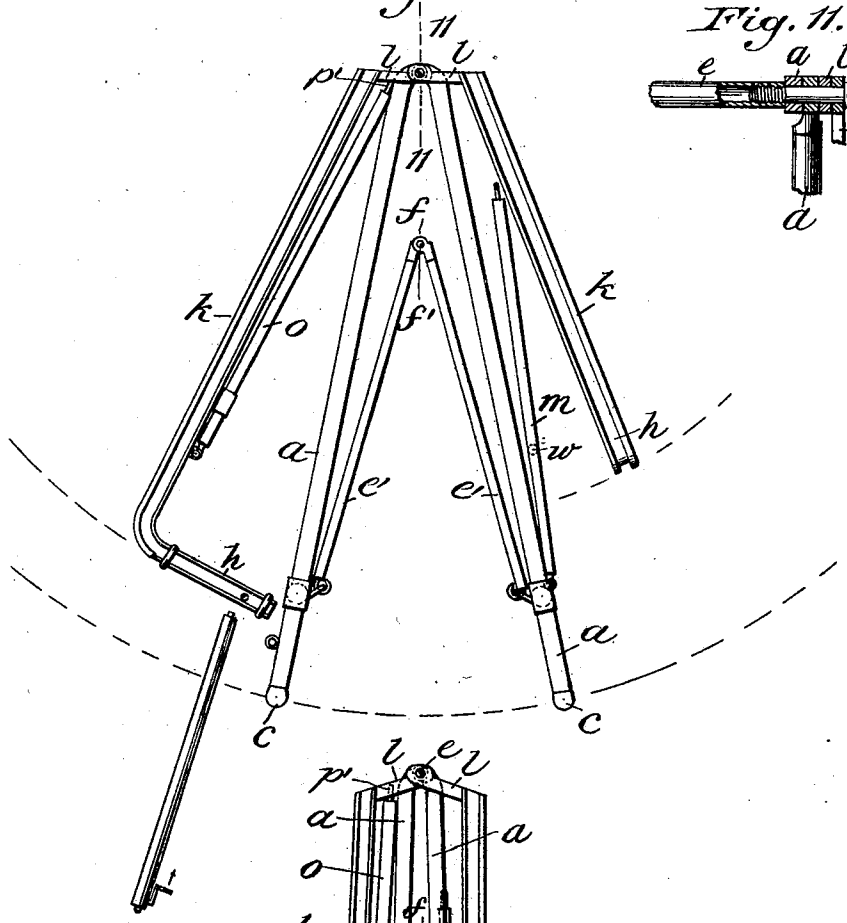
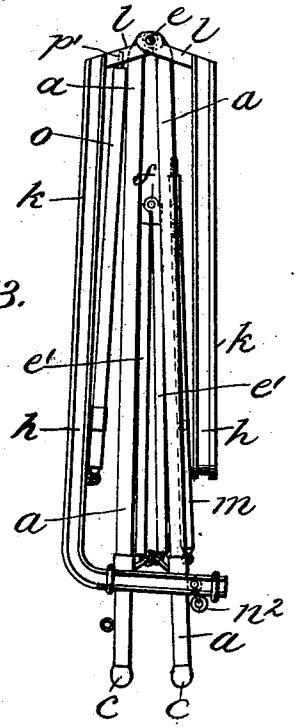


Fig. 11.

Fig. 13.



Witnesses

H. C. Schott

J. L. Hutchinson Jr.

Inventor

Geo. E. Gorham,

by Munn & Goldsborough

Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE ELMER GORHAM, OF ALBANY, NEW YORK.

OPERATING-TABLE.

SPECIFICATION forming part of Letters Patent No. 646,574, dated April 3, 1900.

Application filed September 22, 1898. Serial No. 691,642. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ELMER GORHAM, a citizen of the United States, residing in Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Operating-Tables; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in operating-tables for surgical uses and is designed to embody in an apparatus fully subserving the purpose for which such tables are required ease, certainty, and safety of manipulation, together with great simplicity of structure, moderate weight, and a capacity to be folded into a comparatively-small compass, so as to be readily shipped or transported.

In the accompanying drawings, Figure 1 represents a side elevation of an operating-table embodying my invention, showing the table in a horizontal position. Fig. 2 represents a top plan view thereof. Fig. 2^a represents a section on the line 2^a 2^a of Fig. 1. Fig. 3 represents the table in the well-known Trendelenburg adjustment. Fig. 4 represents another adjustment of which the table is capable. Fig. 5 represents an end elevation of the table. Fig. 6 represents a central transverse sectional elevation thereof. Fig. 7 is a detail, partly in section, of the removable cross-brace and its means of connection to other parts. Figs. 8, 9, and 10 are details showing the structure of cross-tube and its means of detachable connection with the supports. Fig. 11 shows in enlarged sectional detail the form of hinge connection for the legs and their connected parts. Fig. 12 represents the table partially closed, and Fig. 13 represents the table as entirely closed ready for shipment.

Similar letters of reference indicate similar parts throughout the several views.

Referring to the drawings, it will be noted that the table consists, in the main, of a stand, a table-top, and appropriate adjustable supporting-braces.

The stand consists of the inclined legs *a*, preferably of metallic tubing, connected by the transverse tubing *b*, securely brazed thereto and provided with rounded end plugs *c* of wood or the like. Within the upper ends of the inclined legs are brazed metal plugs *d*, whose overlapping free ends are perforated for the passage of the hinge-rod *e*. The legs *a* are normally held apart by hinged side braces, consisting of the tubular pieces *e'*, jointed at *f* to a connecting cross-rod *f'* and having at their ends hooks *g*, engaging with corresponding eyes upon the coupling-sleeves, which unite the legs *a* and the cross-braces *f*, as shown.

The table top consists of separate head and foot portions, each of which is built up of a frame of channel-iron, over which is stretched a metallic cover *k*, preferably of sheet-iron, which cover is crimped at its side edges over the upper flange of the channel-iron, thereby presenting an absolutely plane smooth surface for the table-top throughout its entire extent. The frame *h* is braced by cross-tubing *i*, thereby giving it additional strength and rigidity, and the inner ends of the sheet-metal covers, together with the outer end of the head-section cover, are bent around corresponding members of this series of braces. From the inner ends of the head and foot sections extend straps or lugs *l*, perforated at their extremities for the passage of the through-bolt *e* and serving as hinges for the bed-top sections. To the rear cross-brace of the stand is hinged a frame consisting of the uprights *m* and transverse piece *w*, all preferably of tubing brazed together, the said uprights being provided at their upper ends with inwardly-projecting hooks adapted to engage with corresponding eyes upon the channel-iron portion of the head-section.

The channel-irons of the foot-section at their outer ends are bent downwardly to form prolongations *h'*, said prolongations bearing eyes for the reception of the usual leg-holders *m'*, the hooks on the leg-holders receiving the customary strap, which passes around the leg to elevate it during plastic operations. Spanning the lower portion of the extensions *h'* is the removable cross-brace *n*, provided with a fixed stud at one end for engagement with a corresponding aperture in one of the extensions and with a spring-seated stud *n'* in the other end, having a thumb-piece n^2 for shift-

ing it longitudinally, whereby the brace n may be removed or inserted, as desired. When the patient is in the Trendelenburg position, with his legs hanging over the bend of the foot-section, the legs may be strapped to the cross-brace n, thereby obviating all possibility of an accidental shifting of his position.

In order to bring the foot-section into an inclined position and to securely lock it in the inclination chosen, there is interposed between the stand and the foot-section a swinging telescopic frame. The uprights o of this frame are connected by a cross-brace p, brazed thereto, and at their lower ends are provided with hooks p' for engagement with corresponding eyes upon the stand. From the frame of the foot-section depend the swinging tubes q, hinged at q' and having a series of openings q^2, spaced at suitable distances apart. A cross-tube r contains spring-seated studs r', adapted to enter the openings q^2 and to thereby lock the foot-section in the desired plane of inclination. The studs r' are provided with thumb-pieces, whereby they may be shifted longitudinally, so as to release them from engagement with the openings q^2, and the lower surfaces of the ends which engage with the openings q^2 are rounded or inclined, so that the act of raising the foot-section will force the studs rearwardly out of locking engagement with the openings without the necessity of manipulating the thumb-pieces r^2. It will also be noted that the openings r^3 for the passage of the small pins which connect the thumb-pieces r^2 with the rear ends of the studs r' are of angular shape, (see Figs. 9 and 10,) so that the studs r' may be locked out of engagement by an appropriate manipulation, as illustrated in Fig. 10.

The operating-table when the top is in the horizontal position, as shown in Fig. 1, presents the relative arrangement or adjustment of parts illustrated in said figure. In order to adjust the top to the Trendelenburg position, (shown in Fig. 3,) it is merely necessary to raise the foot-section of the top by taking hold of the free end thereof and elevating it to the inclined position desired, the telescopic brace-frame accommodating itself to this movement, as will be readily understood. When it is desired to bring the head-section into the same inclined position which is occupied by the foot-section, as illustrated in Fig. 4, it is merely necessary to actuate the hinged joint connecting the members e' e' and to correspondingly bring the table-legs closer together. This latter adjustment is of special utility where a patient under the influence of ether exhibits a tendency to succumb, for which reason it is desirable to quickly bring him into an inclined position, with his head lowermost, so that the heavy ether-vapors may more readily issue from his lungs. The same adjustment is also of service to enable the operator to have close access to the head of the patient at a low level.

In some instances—as, for instance, when operating upon the lower orifices of the body—the patient is drawn forward, so that the back and head rest wholly upon the foot-section of the table. The head-section may thereupon be dropped upon its hinges, so as to permit the person giving the anesthetic to sit where he can easily reach the patient's head.

In Figs. 12 and 13 I have illustrated the manner in which the table is folded in order to readily transport or ship it, the folding operation being readily apparent from the illustration given. It will be noted that in order to fold the table the cross-bar n is removed, as illustrated in Fig. 12, and after the table has been entirely folded the cross-bar n is again inserted in place, thereby locking the folded parts together.

Having thus described my invention, what I claim is—

1. An operating-table comprising a stand, a table-top made up of a foot-section and a head-section hinged at their adjacent ends to the stand and each adapted to be tilted in opposite directions to a position either above or below the top of the stand, and braces for maintaining them at the desired incline; substantially as described.

2. An operating-table comprising a stand, a table-top made up of a foot-section and a head-section hinged at their adjacent ends to the stand and each adapted to be tilted in opposite directions to a position either above or below the top of the stand, and braces for maintaining them at the desired incline, the foot-section having depending extensions at its free end and a cross-bar spanning said extensions; substantially as described.

3. An operating-table, comprising a stand having inclined legs and a table-top made up of a foot-section and head-section, the said legs and the said sections being connected by a hinge-joint common to them all and upon which they are adapted to fold; substantially as described.

4. An operating-table, comprising a stand having inclined legs and a table-top made up of a foot-section and head-section, the said legs and the said sections being connected by a hinge-joint common to them all and upon which they are adapted to fold, and hinged longitudinal folding braces spanning the legs; substantially as described.

5. An operating-table comprising a stand having inclined legs and a table-top made up of a foot-section and head-section, the said legs and the said sections being connected by a hinge-joint common to them all and upon which they are adapted to fold, and hinged longitudinal folding braces spanning the said legs, said braces being united at their hinge-joints by a connecting cross-rod; substantially as described.

6. An operating-table, comprising a stand having inclined legs and a table-top made up of a foot-section and head-section, the said legs and the said sections being connected by a hinge-joint common to them all and upon

which they are adapted to fold, and hinged longitudinal folding braces spanning the legs, and connected to the table-legs by interlocking loops or eyes; substantially as described.

7. An operating-table comprising a stand having inclined legs hinged together at their upper ends, a table-top made up of a foot-section and a head-section hinged upon the same axis as the said legs, and adjustable braces between the stand and the outer ends of the table-sections; substantially as described.

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

GEORGE ELMER GORHAM.

Witnesses:

J. W. MATTICE,

EDWARD KAESTNER.