

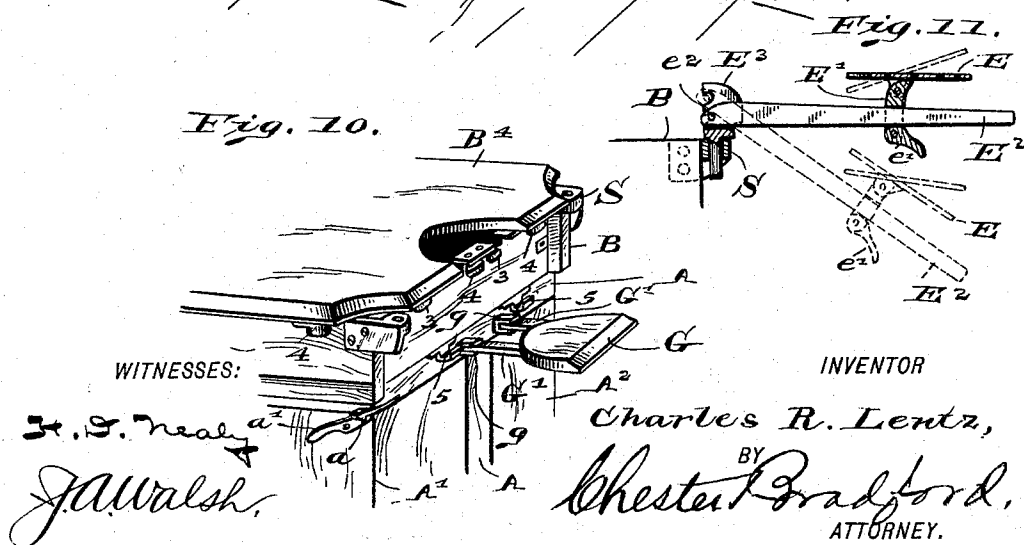
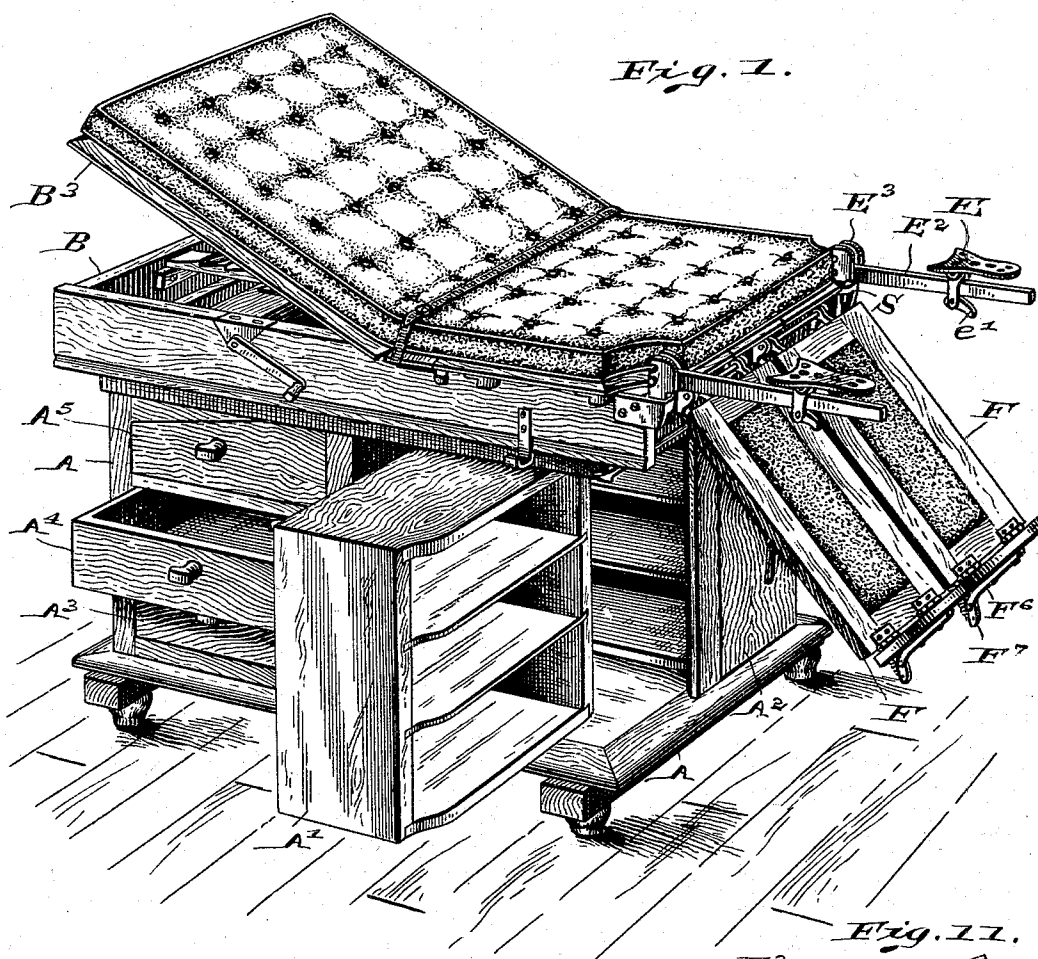
(No Model.)

4 Sheets—Sheet 1.

C. R. LENTZ.
SURGEON'S OPERATING TABLE.

No. 542,060.

Patented July 2, 1895.



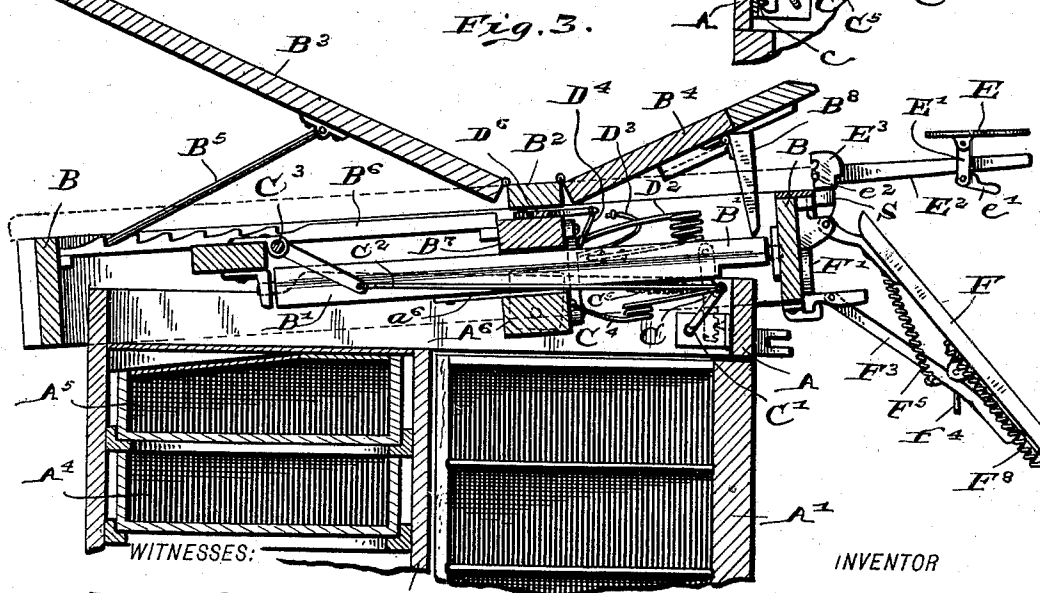
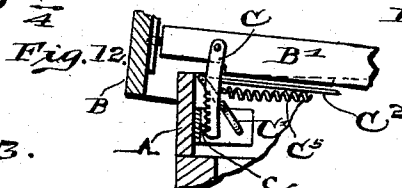
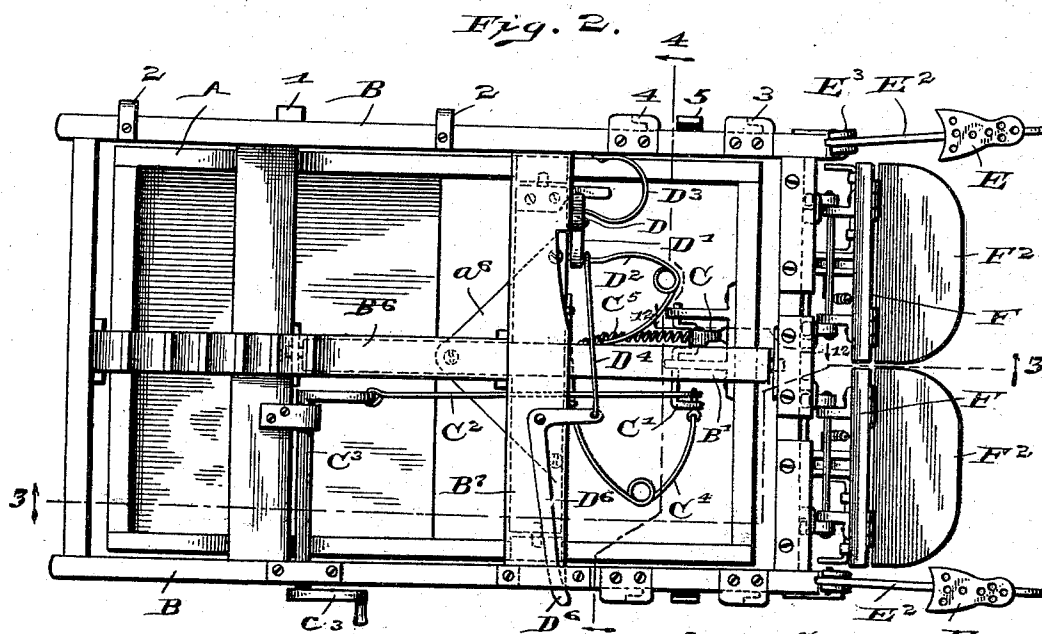
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4 Sheets—Sheet 2.

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No. 542,060.

Patented July 2, 1895.



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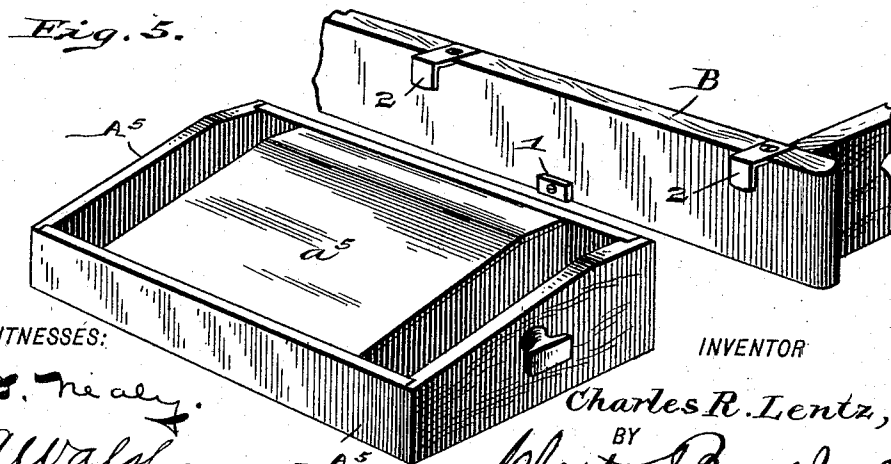
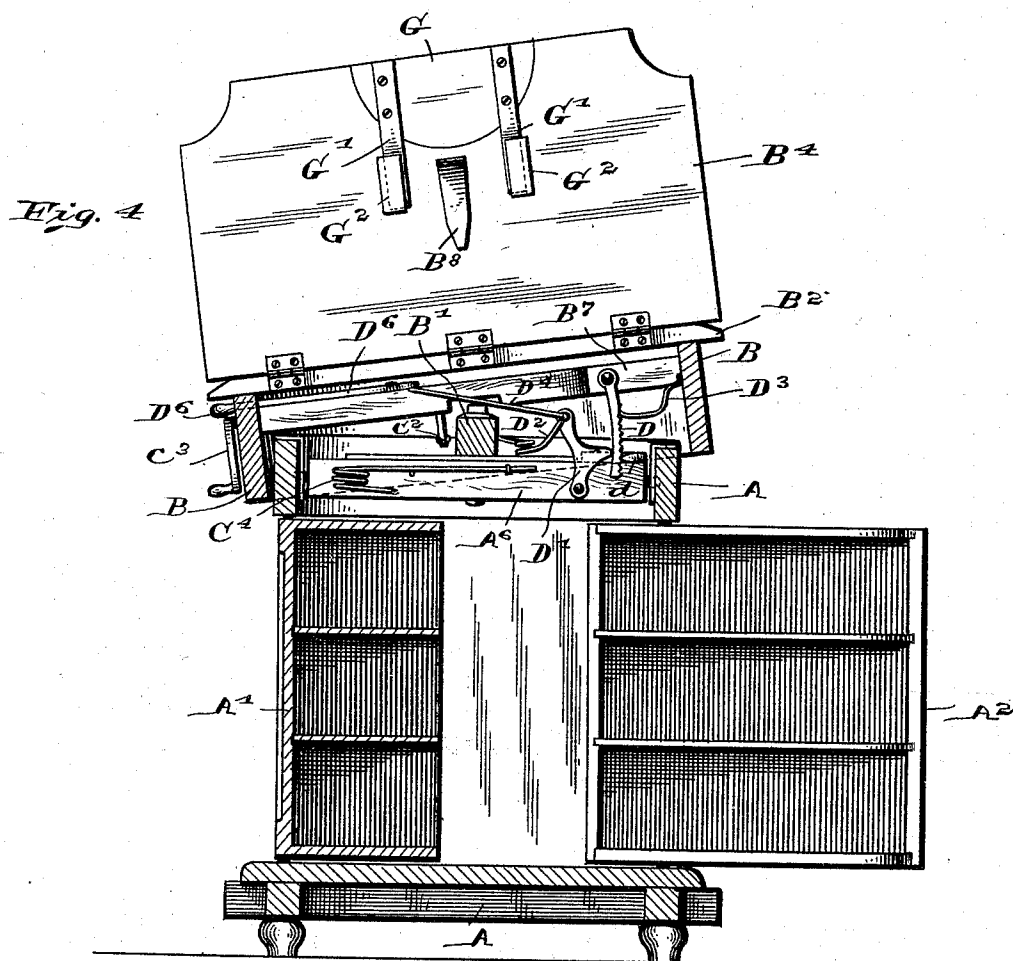
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4 Sheets—Sheet 3.

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Patented July 2, 1895.



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(No Model.)

4 Sheets—Sheet 4.

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Fig. 6.

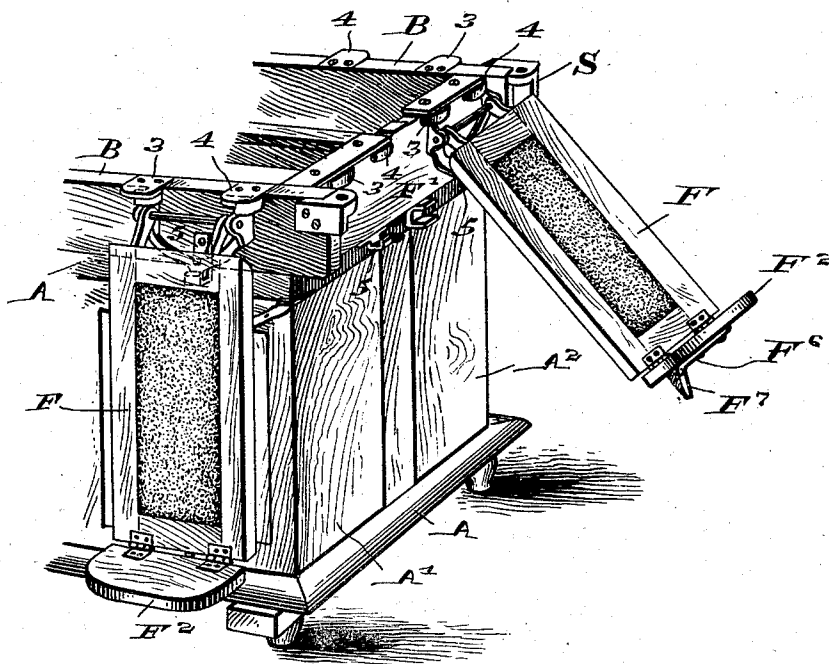


Fig. 8.

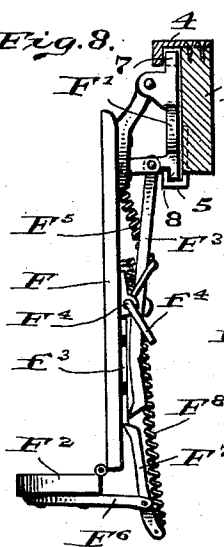


Fig. 7.

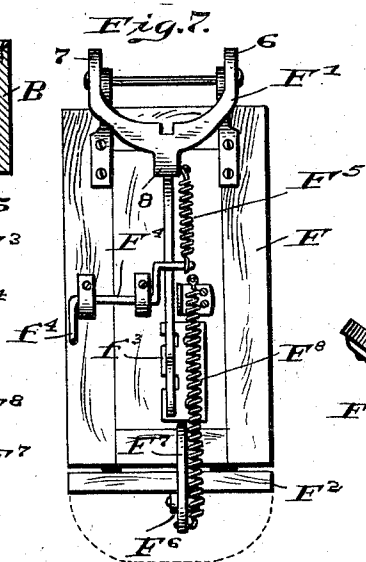
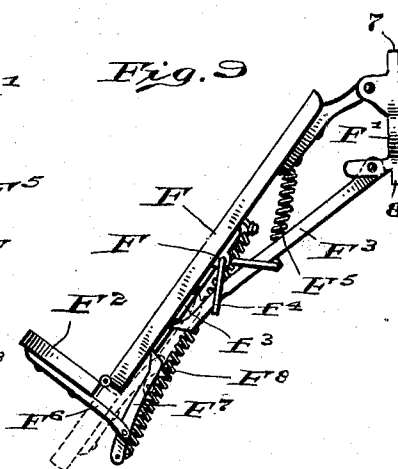


Fig. 9.



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UNITED STATES PATENT OFFICE.

CHARLES R. LENTZ, OF INDIANAPOLIS, INDIANA.

SURGEON'S OPERATING-TABLE.

SPECIFICATION forming part of Letters Patent No. 542,060, dated July 2, 1895.

Application filed March 13, 1895. Serial No. 541,582. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. LENTZ, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Surgeons' Operating-Tables, of which the following is a specification.

The object of my invention is to improve the construction and arrangement of that class of physicians' and surgeons' furniture used by them principally in surgical and gynecological operations.

Said invention is embodied in the structure illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view thereof; Fig. 2, a top or plan view with the top removed; Fig. 3, a central vertical sectional view with the upper portion tilted or inclined backwardly on its pivots and the hinged portions of the top partially raised; Fig. 4, a transverse sectional view with the top and its frame tilted to one side and said top raised; Fig. 5, a fragmentary view of a portion of the frame and the combined desk and drawer adjacent thereto, showing how said desk-drawer may be supported on said frame; Fig. 6, a fragmentary perspective view illustrating various positions of the leg-rests and steps; Fig. 7, a rear or under side view of one of the leg-rests and steps; Figs. 8 and 9, side elevations of the same in different positions; Fig. 10, a fragmentary view showing a shelf in position; Fig. 11, a sectional view of the foot-rest, showing different positions by means of dotted lines; and Fig. 12, a detail sectional view, as seen from the dotted line 12 12 in Fig. 2.

In said drawings the portions marked A represent the main frame of the structure; B, a tilting-top frame mounted thereon; C, a rack-bar, by which, when the top has been tilted longitudinally, its position may be secured; D, a rack-bar, by which, when the top has been tilted transversely, its position may be secured; E, foot-rests; F, leg-rests, and G a shelf.

The frame A serves as a support for the other portions of the structure. It contains the swinging cabinets A' and A², the drawers A³ and A⁴, and the combined desk and drawer A⁵. The cabinets A' and A² contain shelves and are adapted to swing on pivots, as clearly

illustrated in the drawings, so that the shelves of one of them shall be convenient to an operator upon one side of the table and those of the other convenient to an operator upon the other side of the table, and these shelves or cabinets are adapted to carry towels, lint, bandages, and other appliances or devices which are needed in conducting the various operations to be performed on the table. Said cabinets are preferably held closed by swinging latches a' thereon, which are adapted to engage with catches a on the upper member of the frame A, as shown most plainly in Figs. 1 and 10.

The drawers A³ and A⁴ are ordinary drawers, except that they are double-ended, and thus capable of being used from either side of the structure, and are adapted to contain surgical instruments and other appliances.

The combined drawer and desk A⁵ is similar to the drawers A³ and A⁴, except that it has a desk-top, and is thus adapted to be used for a writing-desk. As shown most plainly in Figs. 5 and 2, a support 1 and catches 2 are secured to the frame B, by means of which the desk-drawer A⁵ may be supported in position for use as a desk. This desk-drawer A⁵ is shown as having a box-like compartment at each end, with a central larger compartment covered by a hinged lid a⁵, which is a very convenient arrangement for the purpose.

The top frame B is an open framework supported upon a rocking bar A⁶ of the frame A, which said rocking bar is carried by pivots at the ends, as shown in Fig. 4 and by dotted lines in Fig. 2, and which said bar is strongly connected to a longitudinal bar B' by a triangular (preferably metal) brace-piece a⁶. Said bar B' consequently moves with the rocking bar A⁶, and the frame B is mounted directly thereon by means of pivots, as shown most plainly in Fig. 3 and by dotted lines at one end and by full lines at the other end in Fig. 2, so that the frame B will tilt from side to side thereon. These two bars A⁶ and B' are thus so connected as to form by themselves a rigid cross, and this cross, being provided at all the ends with pivots, renders the structure capable of being rocked or tilted in both directions, as may be desired. The top, which is secured upon the frame B, is preferably divided into a trans-

verse strip or bar B², which is rigidly attached to said frame, and two hinged sections B³ and B⁴, which are adapted to be adjusted to varying positions, as may be required. The section B³ has hinged thereto a brace B⁵, which is adapted to engage in one of several notches on the longitudinal bar B⁶, which bar is secured at one end to the rear end of the frame B and at the other end to a transverse bar B⁷, rigidly secured in said frame, as shown most plainly in Fig. 3. The varying positions of said hinged top section B³ are easily secured by varying the engagement of the brace B⁵ with the notches, as will be readily understood. The hinged top section B⁴ has a brace B⁸ hinged thereto, which may either rest upon the bar B⁷ or upon the top of that portion of the frame B immediately adjacent thereto, as may be desired, thus providing for two raised adjustments of said hinged section B⁴. Both said sections will, of course, when the braces are folded against them, lie flat upon the top of the frame B.

As before explained, the top as a whole, including the frame B and its hinged top sections, may be tilted in either direction. The rack-bar C, hinged to the bar B⁷ at its upper end and adapted to have one of its notches engage with a projection c, secured to the frame A at the other end, is the means whereby the top as a whole is locked in such position as it may be adjusted to. A crank-shaft C¹, a connecting-rod C², crank-shaft C³, and springs C⁴ and C⁵ are, as is shown most plainly in Fig. 2, the means whereby this rack-bar is operated. The crank-shaft C¹ has a bend therein which rests against the rear side of the rack-bar and normally holds it into engagement through the medium of the spring C⁴, which said spring is of considerable strength. When it is desired to disengage this rack-bar and readjust the top, the operator, by means of the crank c³ on the shaft C³, operates this mechanism, rocking the shaft C¹ and compressing the spring C⁴. The lighter spring C⁵, which is attached directly to the rack-bar, then pulls said rack-bar out of engagement, and the frame is free to be tilted as desired. Releasing the pull upon the crank c³ enables the spring C⁴ to force the rack-bar back into engagement with the projection c, and thus the top is locked in its new position.

When it is desired to tilt the top sidewise it may be done in a similar manner. The rack-bar D is pivoted to the cross-bar B⁷ and engages with a projection d on the bar A⁶. A pivoted device D¹, also mounted on the bar A⁶, bears against the rear side of this pivoted rack-bar D, being impelled thereto by the spring D², while a lighter spring D³ acts oppositely thereto, and when said device D¹ is withdrawn operates to throw the rack-bar out of engagement with its catch, a connecting-rod D⁴ and a bell-crank lever D⁵, by which the device D¹ may be pulled away from the rack-bar D, compressing the spring D² and permitting the spring D³ to throw said rack-bar out

of engagement. When this is done, the top may be tilted sidewise, as may be desired, as indicated in Fig. 4, and when tilted to the desired position, releasing the pull on the lever D⁵, will permit a re-engagement of the parts and a locking of the top in the desired position.

By the disposition of the tilting and locking mechanism shown I secure an important advantage. All the space within the lower or rigid portion is left free for the cabinets and drawers, unobstructed by treadles, shafts, or rods, and the capacity of the structure is thus greatly increased and its effectiveness greatly improved.

The foot-rest E is pivoted to a shank E¹, which in turn is secured to a bar E² and is adapted to be locked in position on said bar by a cam e¹. The bar is secured to a swiveling standard E³, mounted in a socket S on the corner of the top frame B. Said standard E³ is bifurcated to receive the end of the bar E², and is provided with two or more notches, with one of which a cross-pin e² on the extreme rear end of said bar E² may engage. Changing the engagement from one of these notches to another of course varies the position of the bar and the foot-rest carried thereby. When it is in the lower notch, as shown most plainly in Fig. 11, it is held out in substantially horizontal position; but when the engagement is in the upper notch, as shown by the dotted lines in said figure, it may incline downwardly. The foot-rest E normally is substantially parallel with the bar E²; but it may be tilted to various positions, as shown by the dotted lines in said Fig. 11.

The leg-rest F and its various positions and operations are illustrated most clearly in Figs. 6, 7, 8, and 9. As shown by Fig. 6, it is capable of attachment either to the end or side of the top frame B, said frame B being provided with two sets of attaching-catches 3 4 5 for that purpose. The engagement and disengagement of these leg-rests as a whole are effected by slipping the structure sidewise, the former being effected by crowding the projecting points 6 7 8 beneath or within the catches 3 4 5, and the disengagement being effected by pulling them out from under said catches. The varying positions illustrated enable the operator to place these rests where desired and to position them for the particular work in hand. These leg-rests are composed of the main part F, hinged to the part F¹ at the top, and are provided with steps F² at the bottom. They may hang vertically or be set at an angle, as shown. This is accomplished by means of the brace F³, hinged to the part F¹ and having an engaging point adapted to engage with one of a series of notches in a plate f³, as shown most plainly in Figs. 7, 8, and 9.

The brace is held into engagement by means of a crank on a rock-shaft F⁴, said crank being held against the back or under side of said brace by a spring F⁵. A crank-arm f⁴ en-

ables the operator to rock the shaft F^4 , dis-
tending the spring and releasing the brace, so
that it may drop out of engagement with the
notches. When this is done, the leg-rest can
5 be swung freely on its pivot to any desired
position. Releasing the force on the crank-
arm f^4 permits the spring F^5 to operate against
the brace, forcing its point into engagement
with that notch in the plate f^3 which has been
10 brought into registry therewith.

The step F^2 is hinged to the bottom of the
leg-rest F and is provided with an arm F^6 , to
which is pivoted a pawl F^7 , to which pawl the
spring F^8 is connected at one end and to the
15 back of the leg-rest F at the other end. The
tendency of this spring, when the pawl is dis-
connected, is to throw the step down in line
with the leg-rest, so as to form a continuation
thereof. Said spring also tends to force the
20 pawl into engagement with the catch formed
by the lower end of the plate F^3 when the
step has been swung on its hinges to the posi-
tion indicated by the drawings, and when the
parts are in this position said step is strongly
25 and rigidly supported and forms a bearing
for the foot of the patient in some cases and
as a step to assist in mounting the table in
other cases. Simply throwing the pawl F^7 out
of engagement with the catch formed by the
30 lower end of the plate f^3 is sufficient to enable
the spring to exert its force and throw the step
into line with the regular rest, as shown by
the dotted lines in Figs. 7 and 9.

The shelf G is, as shown in Fig. 4, when not
35 in use, a fragment of the top section B^4 , to
which, in such cases, it is connected by means
of its arms G' , which enter slides G^2 , secured
to the under side of said top section B^4 . This
shelf is capable of being removed from this
40 position and placed upon the end of the frame
 A , just below the frame B , by inserting the
arms G' in the sockets g , provided for that
purpose. When so placed, it serves as a rest
for a vessel, which may be needed in conduct-
45 ing operations, to contain water or other liquid.
Commonly, when this shelf is in use, the leg-
rests and steps connected thereto are either
removed altogether from the structure or se-
cured upon the sides.

50 Having thus fully described my said inven-
tion, what I claim as new, and desire to secure
by Letters Patent, is—

1. The combination, in a surgeon's operat-
ing table, of the frame-work provided with a
55 support 1 and catches 2, and a combined
drawer and desk A^3 adapted to be either put
in position as a drawer, or removed and used
as a desk, substantially as set forth.

2. The combination, in a surgeon's operat-
60 ing table, of the main or rigid frame-work A ,
and a top or tilting frame-work B , the cross-
like structure composed of the bars A^6 and B'
secured together and having pivots in their
ends, the pivots in the ends of the bar A^6 rest-
65 ing in bearings in the frame A , and the piv-
ots in the ends of the bar B' resting in bear-
ings in the frame B , whereby tilting in both

directions is secured, and mechanism for con-
trolling said tilting, substantially as shown
and described.

3. The combination, in a surgeon's operat-
70 ing table, of the main structure, a rock-bar A^6
pivoted in said structure, a pivoted structure
mounted upon said rock-bar, and mechanism,
consisting of the rack bar C , the rock-shafts
75 C' and C^8 , located in the upper portion of the
table, the connecting rod C^2 , and the springs
 C^4 and C^5 , whereby the tilting of the frame
can be controlled, and its adjusted location
secured, and all arranged and operating sub-
80 stantially as set forth.

4. The combination, in a surgeon's operat-
ing table, of the main structure, a tilting frame
mounted thereon and adapted to tilt in both
85 directions, mechanism whereby the longitudi-
nal tilting can be controlled, and mechanism,
consisting of the rack-bar D , the device D' ,
springs D^2 and D^3 , levers D^6 , and connecting
rod D^4 , for controlling and adjusting the trans-
verse tilting, all said mechanism being located
90 within the upper or tilting portion of the
table, above and free from the cabinets and
drawers below, substantially as shown and de-
scribed.

5. The combination, with a surgeon's oper-
95 ating table, of the foot-rest E pivotally
mounted on a shank E' , said shank, a bar E^2
on which said shank is adjustably mounted,
a cam e' whereby said shank can be locked
in adjusted position, and a bifurcated stand-
100 ard E^3 having two or more notches with which
a cross-pin on the end of the bar may engage,
whereby varying positions of the several parts
may be secured, substantially as shown and
described.

6. The combination, with a surgeon's oper-
ating table, of a leg rest hinged thereto, a
hinged brace interposed between said leg rest
and the structure to which it is connected, a
110 notched plate with which the point of said
brace will engage, a rock-shaft, and a spring
for operating said brace, substantially as and
for the purposes set forth.

7. The combination, in a surgeon's operat-
ing table, of a hinged leg-rest F , a foot-piece
115 or step F^2 hinged thereto, an arm F^6 secured
to said foot-piece or step, a pawl F^7 hinged to
said arm, and the spring F^8 connected to said
pawl at one end and to the leg rest at the
other, substantially as shown and described.

8. The combination, in a surgeon's operat-
ing table, of a shelf G formed of a part of the
top and provided with arms G' and brackets
 g into which said arms may be inserted, said
125 shelf being thus adapted to form both a por-
tion of the table top or a shelf, at will, sub-
stantially as shown and described.

In witness whereof I have hereunto set my
hand and seal, at Indianapolis, Indiana, this
11th day of March, A. D. 1895.

CHARLES R. LENTZ. [L. S.]

Witnesses:

JAMES A. WALSH,
H. D. NEALY.