

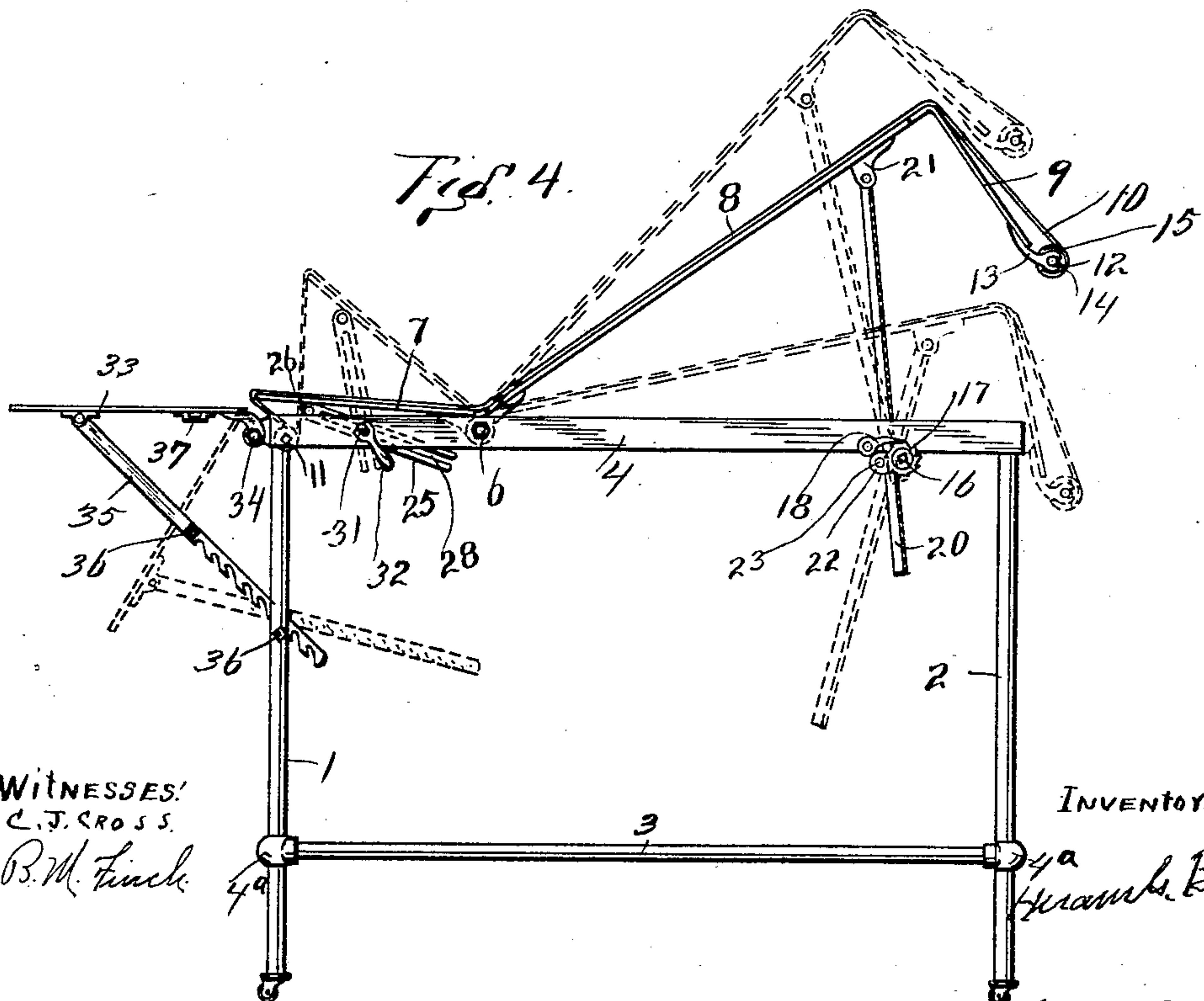
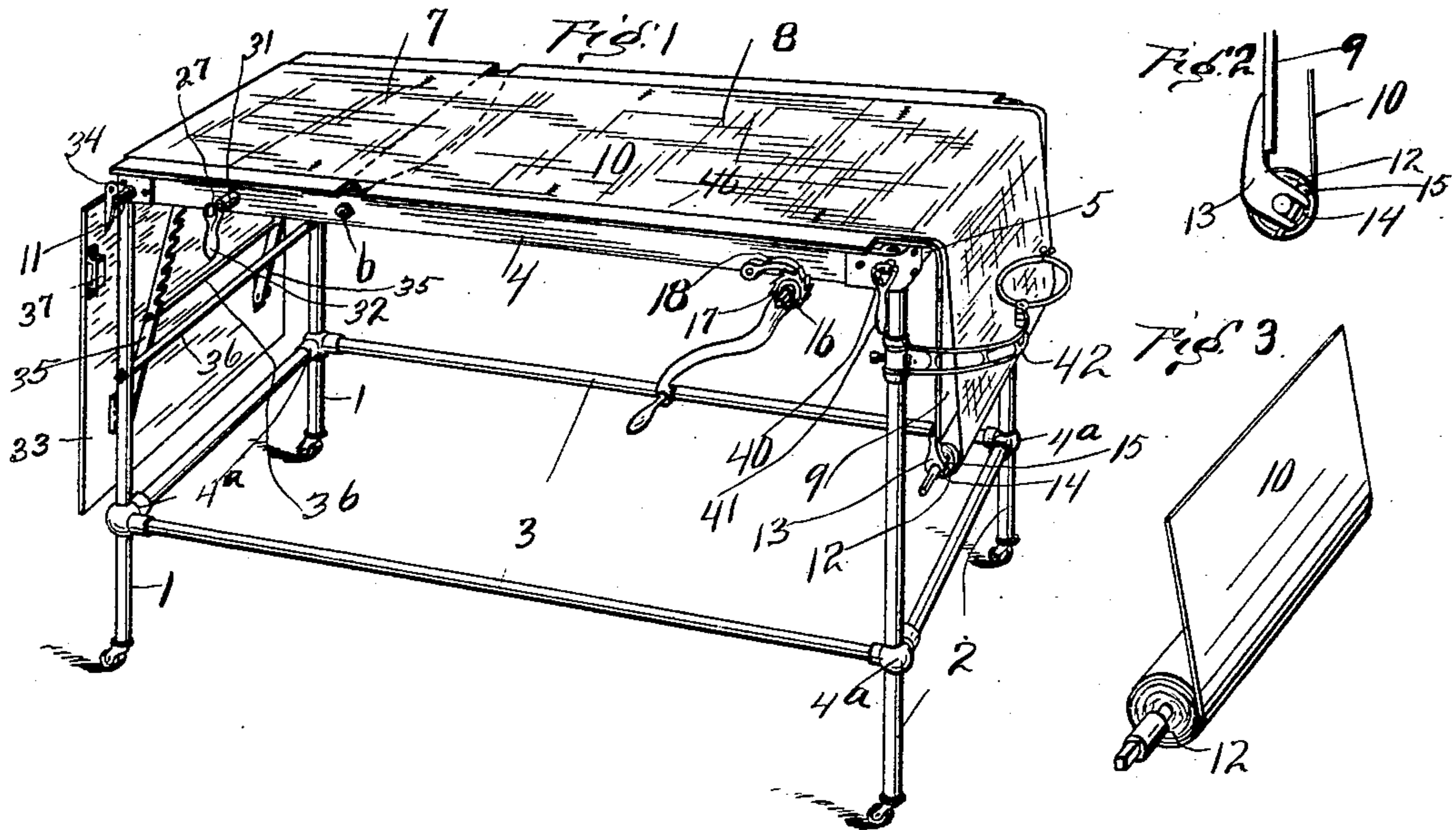
(No Model.)

2 Sheets—Sheet 1.

H. G. BOWERS.  
SURGICAL TABLE.

No. 602,571.

Patented Apr. 19, 1898.



WITNESSES:  
C. J. CROSS.  
B. M. Finch.

INVENTOR.

Hiram Bowers

By Fred W. Bond

ATTY

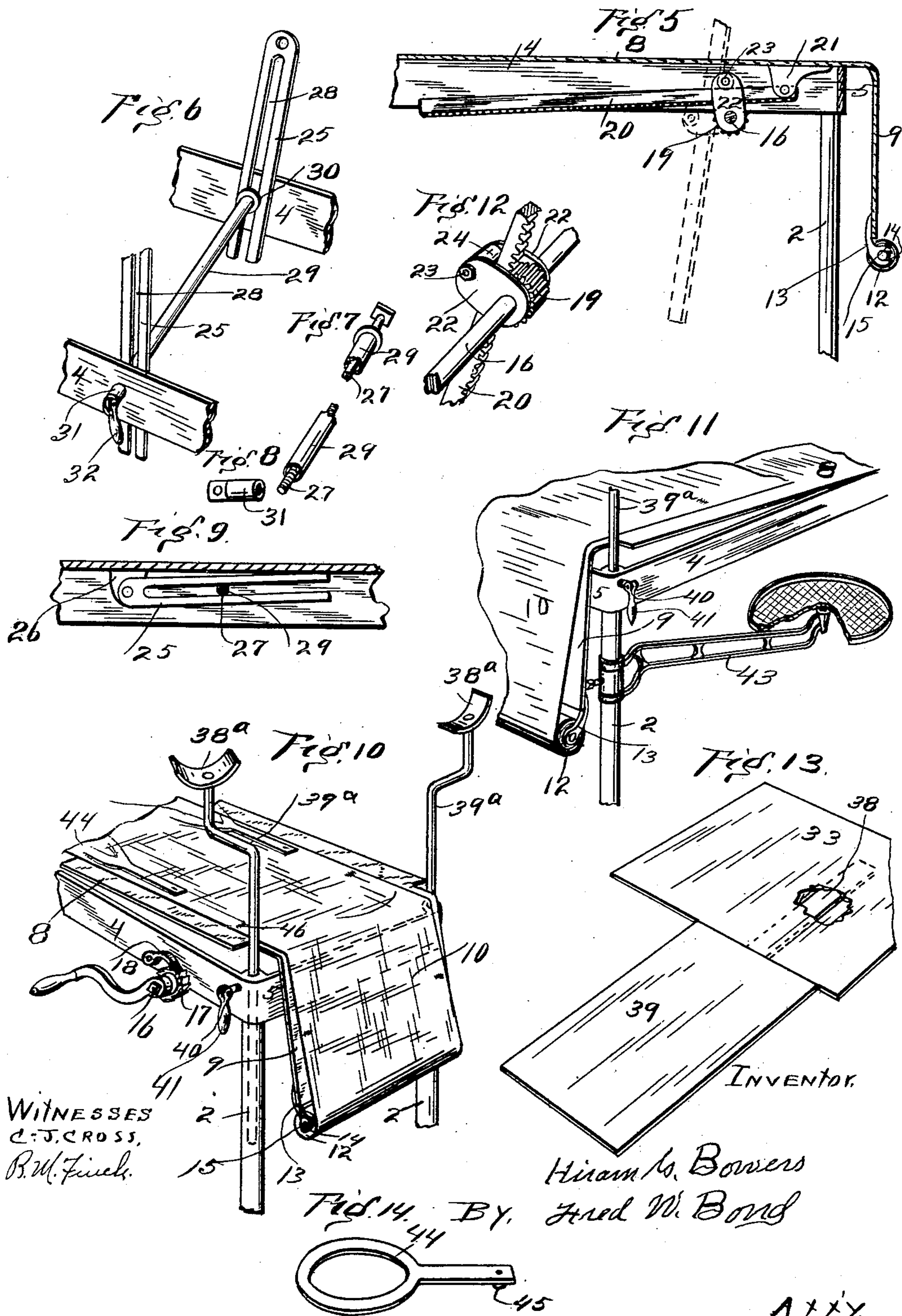
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# UNITED STATES PATENT OFFICE.

HIRAM G. BOWERS, OF CANTON, OHIO.

## SURGICAL TABLE.

SPECIFICATION forming part of Letters Patent No. 602,571, dated April 19, 1898.

Application filed September 13, 1897. Serial No. 651,397. (No model.)

*To all whom it may concern:*

Be it known that I, HIRAM G. BOWERS, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Surgical Tables; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a perspective view showing the extension lowered. Fig. 2 is a view showing a portion of the forward extension, also showing one of the roller-bearings connected thereto, and an end view of the roller. Fig. 3 is a detached view of one of the rollers, showing a portion of the canvas wound upon the roller. Fig. 4 is a side elevation showing different positions of the table in dotted lines, also showing different positions of the extensions. Fig. 5 is a view showing a portion of the frame, also showing one of the table-sections lowered, and illustrating the position of the elevating or rack bar when the section is lowered. Fig. 6 is a view showing portions of the frame, also showing the position of the locking-bar and the relative position of the pivoted slotted bars. Figs. 7 and 8 are views of the locking-bar and its tube. Fig. 9 is a view showing a portion of the table-frame, also showing one of the slotted bars folded. Fig. 10 is a view showing the forward or apron end of the table, also showing the stirrups placed in proper position. Fig. 11 is a similar view showing the opposite side of the table and showing an instrument-bracket connected thereto. Fig. 12 is a view showing a portion of the pinion-shaft and the rack-bar. Fig. 13 is a view showing a portion of the rear extension and illustrating the arm support or rest attached thereto. Fig. 14 is a detached view of one of the loops.

The present invention has relation to surgical tables; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claims.

Similar numbers of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 and 2 represent the legs of the table, which are preferably formed hollow and of metal, which legs are held in proper relative position by means of suitable cross-rods 3, which cross-rods may be connected in any convenient and well-known manner, but preferably by the socket connections 4<sup>a</sup>. To the top or upper ends of the legs 1 and 2 are connected the bars 4 and 5, which bars, when properly connected and arranged, form a rectangular frame. To the parallel bars 4 is connected the cross-rod 6, which cross-rod is located and arranged substantially as shown in Figs. 1 and 4. To the cross-rods 6 are pivotally connected the table plates or sections 7 and 8, which are so arranged that when placed in their normal positions they will produce a flat and plain surface forming the top of the table. The front or forward end of the table-section 8 is bent or curved downward to produce an apron or downward-projecting section 9, and is so arranged to produce what is known as the "Trandelenberg" position, and is preferably formed integral with the table-section 8.

For the purpose of easily moving without jar or shock to the person occupying the table I prefer the movable top or canvas 10, which movable top or canvas 10, when it is in its normal position, rests upon the top of the table and the downward-extended portion 9, as illustrated in Fig. 1. For the purpose of providing a means for moving the top or canvas 10 in either direction I have provided the two rollers 11 and 12, upon which rollers the canvas is wound and unwound as it is moved back and forth over the table. For the purpose of providing a means for easily removing the canvas 10 for any purpose the roller 12 is detachably connected to the slotted arms 13, the roller 12 being held in the slots or bearings 14 by means of the removable pins 15 or their equivalents.

It will be understood that the ends of the rollers 11 and 12 should be angular, so that a handle or crank can be attached to revolve or rotate the roller desired to wind the canvas upon.

It will be understood that by my peculiar arrangement I am enabled to easily and quickly bring the patient to any desired point



upon the top of the table by simply rotating one of the rollers 11 and 12, it being understood that the patient is to be moved toward the roller rotated.

5 For the purpose of providing a means for bringing the table-section 8 at any desired angle, as illustrated by the dotted lines, Fig. 4, I provide a shaft 16, which shaft is jour-  
10 shaft is provided with the ratchet-wheel 17, which ratchet-wheel is for the purpose of preventing backward rotation of the shaft 16 by means of the detent 18. Upon the shaft 16 is located the pinion 19, which pinion is se-  
15 curely attached to the shaft 16 and meshes with the rack-bar 20, which rack-bar is pivotally attached to the bottom or under side of the table-section 8 by means of the bracket 21 or its equivalent. Upon the sides of the pin-  
20 ion are located the guide-plates 22, which guide-plates are loosely mounted upon the shaft 16 and oscillate upon said shaft, as hereinafter described. To the guide-plates 22 is connected the cross bolt or bar 23, upon which  
25 cross bolt or bar is mounted the antifriction-roller 24, which antifriction-roller is so located that it will hold the teeth formed upon the rack-bar 20 in mesh with the pinion 19 and at the same time leave said rack-bar free to move,  
30 as hereinafter described.

It will be understood that as the shaft 16, together with the pinion 19, is rotated in one direction it will lift the table-section 8, carrying with it the different parts connected to  
35 said section, and when rotated in the opposite direction it will lower said table-section until said section is brought into its normal position, as illustrated in Fig. 1.

For the purpose of providing a means for  
40 the rack-bar 20 to change its position as the table-section 8 is elevated or lowered the guide-plates 22 will oscillate upon the shaft 16, which allows the rack-bar 20 to assume the proper angle with reference to the angularity of the  
45 table-section 8, and when said table-section is brought into the position illustrated in Fig. 1 the rack-bar 20 will assume substantially a horizontal position and rest upon the upper side of the pinion 19, as illustrated in Fig. 5.

50 To the table-section 7 are pivotally attached the slotted arms or bars 25 by means of the flanges 26 or their equivalents. The cross bar or bolt 27 is passed through the slots 28, as illustrated in Fig. 6, which bolt is also  
55 passed through apertures formed in the bars 4. Upon the bolt 27 is located the tube 29, which tube is formed of a length to correspond substantially with the distance between the arms 25, except that room should be pro-  
60 vided to place the washers 30 so that they will press or bear against the inner faces of the slotted arms 25, as hereinafter described. One end of the bolt 27 is screw-threaded and is so formed to receive the screw-threaded  
65 head 31, which head is located as illustrated in Fig. 6 and is provided with the pivoted

handle 32. When it is desired to elevate the table-section 7, as illustrated by the dotted lines, Fig. 4, or any other angularity, and when it is elevated to the desired height, the pivot- 70  
ed handle 32 is rotated in the direction to draw or pull the bolt 27 endwise, thereby locking the slotted arms 25 against downward movement and securely holding said table-section at the desired point of elevation. 75

It will be understood that the arms 25 will be locked against the inner faces of the bars 4 and the outer faces of the washers 30 or their equivalents. It will be understood that the washers could be dispensed with and the 80  
bars 25 locked between the bars 4 and the ends of the tube 29; but I prefer to locate the washers as illustrated, so as to provide a greater amount of friction-surface.

The extension-leaf 33 is pivotally attached 85  
to the bars 4 or their equivalents by means of the cross bolt or rod 34 and is held in a horizontal position or at any desired angle by means of the catch-bars 35, which catch-  
bars engage the cross bar or bolt 36, which 90  
cross bar or bolt is securely connected to the legs 1, as illustrated in Fig. 1. For the purpose of causing the catch-bars 35 to move in unison they are connected together by means  
95 of the bolt 36, by which arrangement the disengagement of one bar will disengage the other, thereby leaving the extension-leaf free to assume any desired angle.

For the purpose of providing a lateral ex-  
tension or rest the extension-leaf is provided 100  
with the bracket 37, which bracket receives the bar 38, which bar is preferably formed integral with the lateral extension or rest 39, as illustrated in Fig. 13. The rest 39 is for the purpose of providing a means for extend- 105  
ing and resting the arm of a patient for any desired purpose.

It will be understood that as the table-section 7 is brought into a horizontal position, or, rather, let down upon the top of the bars 4, 110  
the slotted arms 25 will be brought into substantially a horizontal position and be located directly under said table-section, which will bring said arms out of view.

If it is desired to convert the table into a 115  
chair, the extension-leaf 35 is dropped to any desired angle, the table-section 7 brought into substantially a horizontal position, and the table-section 8 elevated to produce the back of the chair. It will be understood that 120  
by this peculiar arrangement I am enabled to convert the table into a chair.

The stirrups or foot-rests 38<sup>a</sup> consist in the convexo-concave plates which are pivotally connected to the shanks 39<sup>a</sup>, which shanks 125  
are connected to the legs 2, said legs being formed hollow to receive said shanks, and the shanks held at any desired height or adjustment by means of the set-screws 40, which set-screws are provided with the pivoted 130  
handles 41. To one of the front or forward legs 2 is pivotally attached the bracket 42,



which bracket is so formed that a vessel or any other object can be connected thereto and carried by said bracket 42.

If desired, the instrument-carrying bracket 5 43 may be pivotally attached to the front or forward legs 2 or any other desired point or place, inasmuch as the instrument-carrying bracket forms no particular part of the present invention.

10 For the purpose of elevating the patient, or, rather, providing a means for carrying the patient with the movable top, the loops 44 are provided, which loops are provided with buttons 45, which buttons are connected to the 15 buttonholes 46, located at intervals upon the edges of the movable top 10. I have described the movable top as a canvas, but it will be understood that any pliable material can be used, inasmuch as I do not desire to 20 be limited to any particular kind of material, as the object designed to be accomplished can be brought about by the use of any material capable of being wound upon or unwound from rollers.

25 For the purpose of producing a surgical table that will not become contaminated the top portion of the table, composed of the sections 7 and 8 and the downwardly-curved portion 9, together with the flexible rolling 30 top, may be sterilized in any well-known manner.

It will be understood that by my peculiar arrangement I am enabled to remove the movable top entirely from the table for the 35 purpose of sterilizing the same or for any other desired purpose.

For the purpose of providing proper drainage the sections 7 and 8 of the table may be slightly concaved or dished upon their upper 40 sides. In the drawings I have illustrated by dotted lines the concavity of sections 7, which will illustrate the manner of forming the section or sections to provide for proper drainage.

When it is desired to remove the canvas 45 for any purpose from the table, the roller 12 is detached from its slotted bearings and the canvas wound around the roller 11 until the roller 12 is brought up to the roller 11, when it may be placed by the side of said roller, 50 thereby bringing it out of the way.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

55 1. In a surgical table, a frame provided with a top, rollers journaled to the frame and to the downwardly-extending portion of the top, the downwardly-extending portion and

a covering connected to the rollers and movable longitudinally upon the top of the table, substantially as and for the purpose specified. 60

2. In a surgical table, the combination of a table-frame, table-sections hinged together, one of said sections provided with a downwardly-extending portion, a roller carried by said downwardly-extended portion, a roller 65 located at the opposite end of the table, and below the hinged section 7, and the movable top connected to the rollers, substantially as and for the purpose specified.

3. In a surgical table, the combination of 70 a hinged top formed in sections, a supporting-frame, rollers journaled to the frame and to one of the hinged top sections, flexible fabric connected to the rollers and resting upon the hinged table-top sections, and movable longitudinal 75 upon the hinged sections, substantially as and for the purpose specified.

4. In a surgical table the combination of a supporting-frame, parallel bars 4, a shaft journaled to said bars and provided with a 80 pinion, guide-bars loosely mounted upon the shaft carrying the pinion, a rack-bar pivotally connected to one of the hinged table-sections and meshing with the pinion, and one of said table-sections provided with a downwardly-extending portion, a flexible cover 85 resting upon the hinged sections and movable longitudinally upon said hinged sections, rollers journaled to the parallel bars 4, and to the downwardly-extending portion, substantially 90 as and for the purpose specified.

5. The combination of a table-frame, table-sections hinged to the frame, a flexible cover located upon hinged sections of the table and following the movements of the hinged sections 95 and movable longitudinally upon said hinged sections and means for moving the hinged sections and the flexible cover, substantially as and for the purpose specified.

6. The combination of a frame, a table-top 100 formed in sections and the sections hinged together, a flexible movable cover located upon the top of the table-sections, and movable longitudinally thereon and provided with the loops 44, substantially as and for the 105 purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HIRAM G. BOWERS.

Witnesses:

J. A. JEFFERS,  
F. W. BOND.