

No. 654,832.

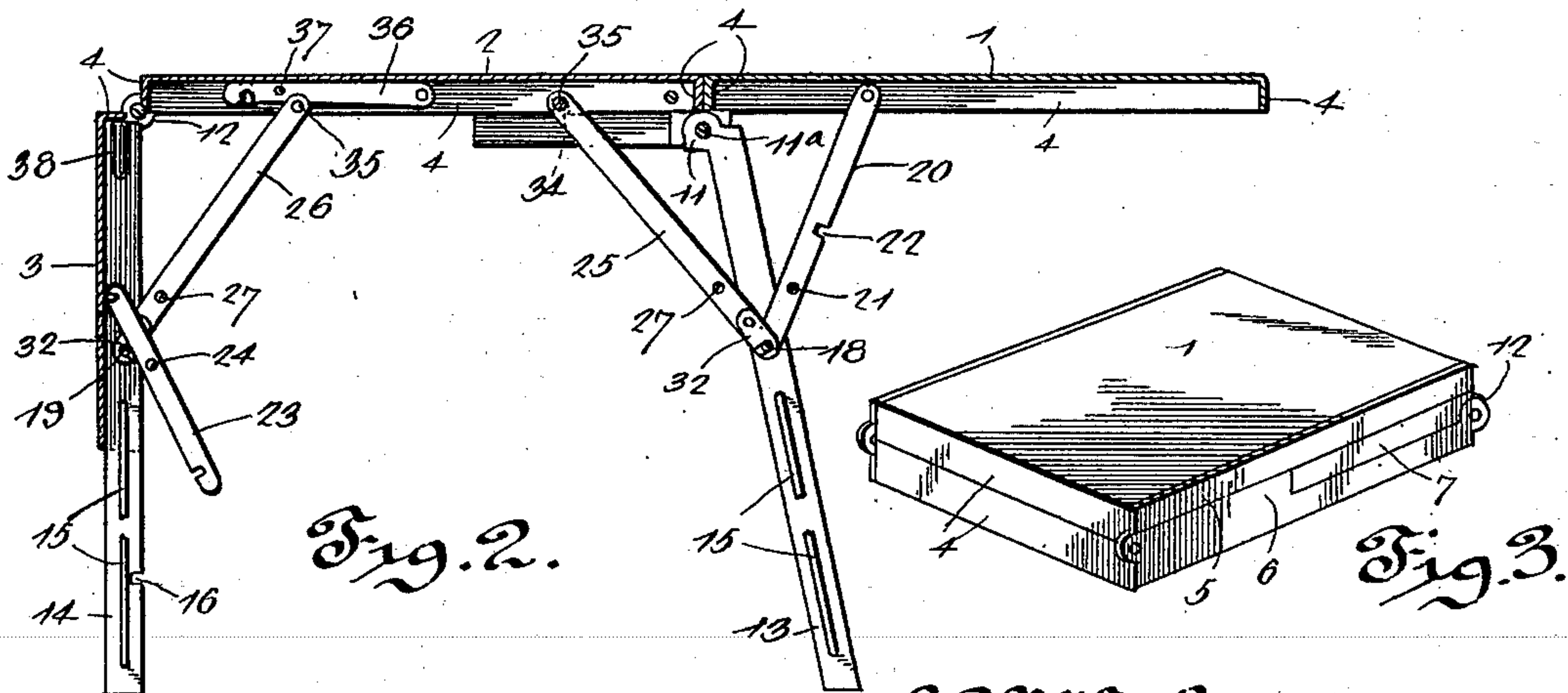
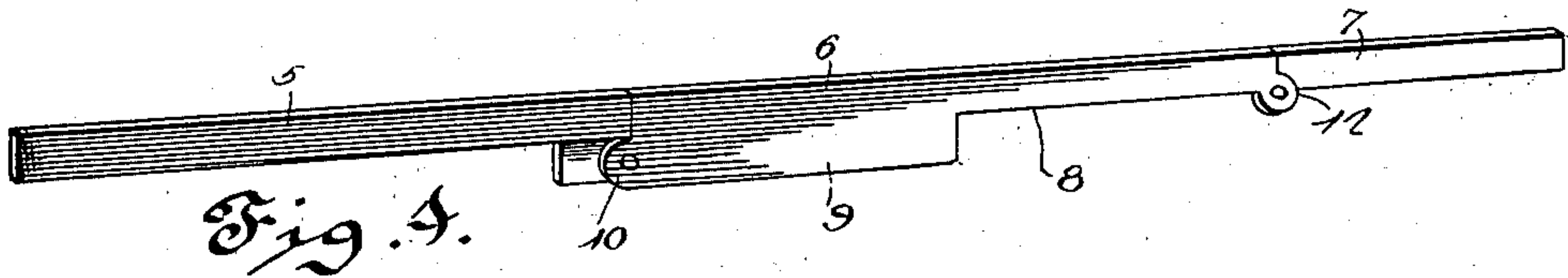
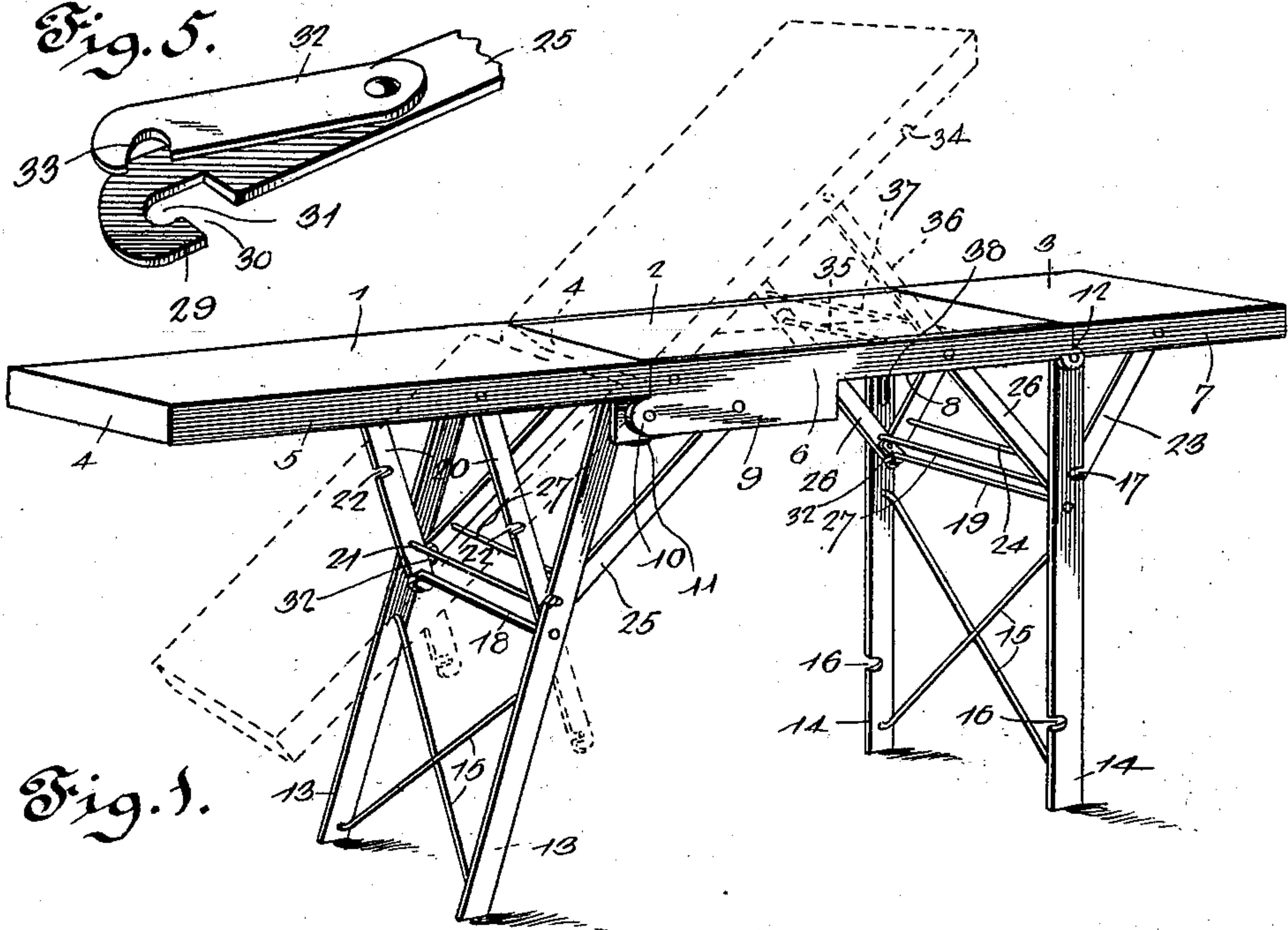
Patented July 31, 1900.

G. W. HATHAWAY.  
SURGICAL OPERATING TABLE.

(Application filed Aug. 24, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
J. Frank Bulwerwell. By his Attorneys.  
Chas. S. Hyer

G. W. Hathaway, Inventor.  
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2 Sheets—Sheet 2.

Fig. 6.

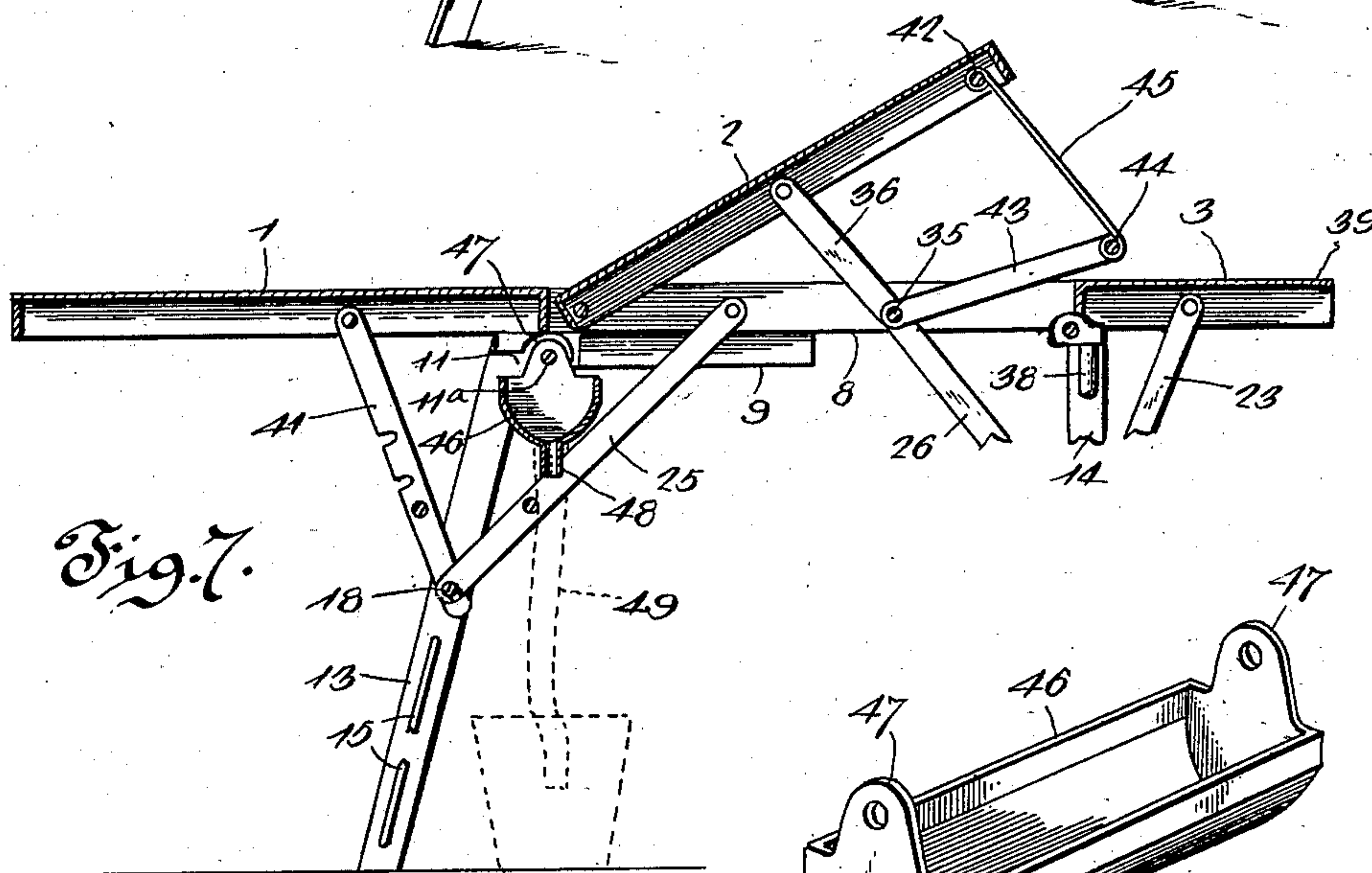
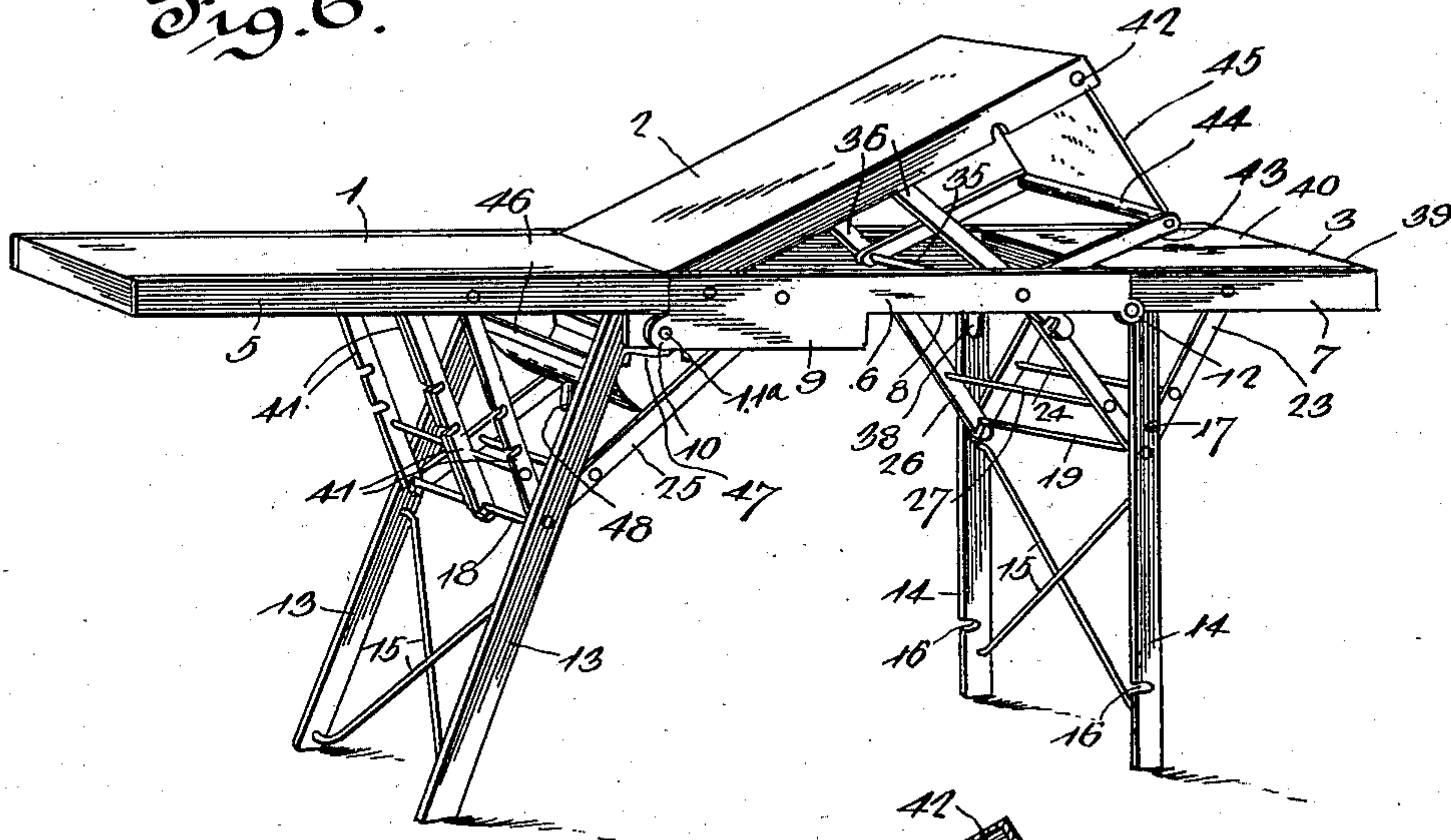


Fig. 7.

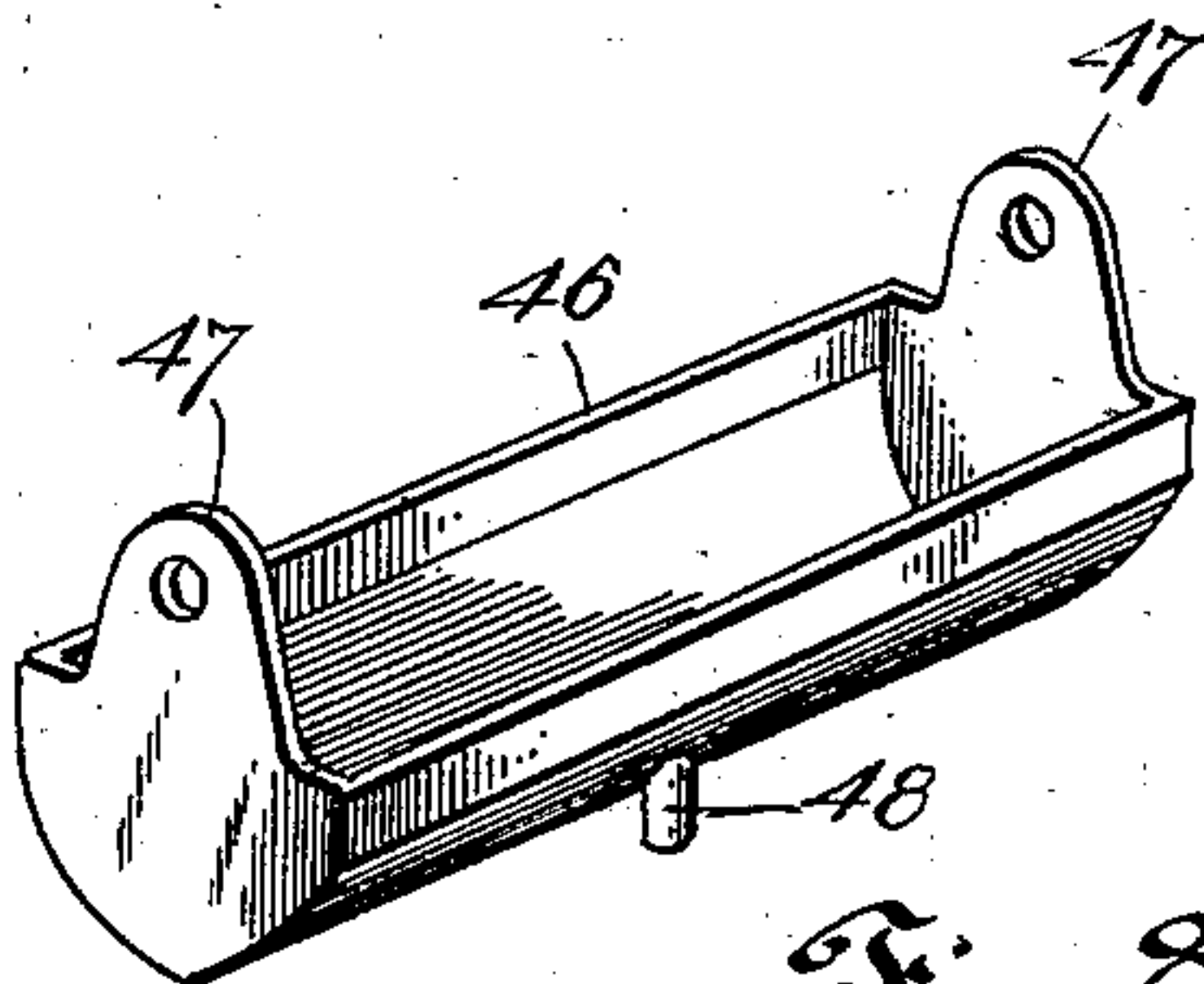


Fig. 8.

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# UNITED STATES PATENT OFFICE.

GEORGE W. HATHAWAY, OF LAPEER, MICHIGAN.

## SURGICAL OPERATING-TABLE.

SPECIFICATION forming part of Letters Patent No. 654,832, dated July 31, 1900.

Application filed August 24, 1899. Serial No. 728,340. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. HATHAWAY, a citizen of the United States, residing at Lapeer, in the county of Lapeer and State of Michigan, have invented a new and useful Surgical Operating-Table, of which the following is a specification.

This invention relates to a physician's and surgeon's aseptic operating-table which by the adjustment of certain parts can be easily arranged in various positions to accommodate the performance of the several different operations.

The invention consists, essentially, of a series of folding sections connected by oppositely-positioned inclosing hinge-bars, the several parts having legs, adjustable braces, and supporting-rods to arrange the sections at varying angles and all adapted to be collapsed or folded within said sections.

The invention further consists of the details of construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

It has been found difficult to provide an operating-table for surgeons that could be easily reduced to compact form and readily transported from one place to another and wherein particular features of strength were included to accommodate the weight of different patients, which is a paramount matter in consideration. It is also necessary in operating-tables to have them constructed of such material that they can be readily sterilized or otherwise aseptically treated to avoid injurious results arising from poisonous transmissions. It has also been heretofore a difficult matter to arrange a table for use for gynecological lithotomy and rectal surgery and also to combine in the same device means for accommodating the Trendelenberg position, as used in abdominal surgery, and also the necessary position for chloroform narcosis, as well as other operations, and adapt such device to receive the stirrups of different forms without employing a cumbersome construction of an expensive and inconvenient nature.

It is the purpose of the present invention to overcome the previous difficulties in devices of this character and produce an operating-table capable of adjustment to accommodate any one of the foregoing operations and hav-

ing strength sufficient to withstand varying weights of different patients or subjects and preferably to utilize aluminium in the make-up of the several parts, as it can be thoroughly sterilized by boiling or otherwise treated without injuring the several members of the table and to render it aseptic.

In the accompanying drawings, Figure 1 is a perspective view of the table arranged for ordinary operating purposes in full lines and showing different positions in dotted lines for special operations. Fig. 2 is a longitudinal vertical section of parts of the table, illustrating another arrangement for a different operation. Fig. 3 is a detail perspective view of the table shown folded in compact form. Fig. 4 is a perspective view of one of the side inclosing bars or frames. Fig. 5 is a detail view illustrating a portion of one of the braces and a lock therefor. Fig. 6 is a perspective view of the table embodying additional features of construction. Fig. 7 is a longitudinal vertical sectional view of a part of the table shown by Fig. 6. Fig. 8 is a detail perspective view of a drip-pan attachment.

Similar numerals of reference are employed to indicate corresponding parts in all the figures of the drawings.

The numerals 1, 2, and 3, respectively, designate a head-section, a central section, and a foot-section of the table, the head and foot sections 1 and 3 being movably attached by a hinged connection, which will be presently described, to the opposite ends of the central section 2 or to parts intimately connected with the latter. Each of the sections 1, 2, and 3 is formed of thin material and surrounded in part by side and end bends 4, which depend when the several sections are horizontally disposed and form means for inclosing connected devices. The foot-section 3 has its outer end open, but is provided with the side bends of the several sections are attached to hinge-bars 5, 6, and 7, the bars 5 and 7 being against the outer surfaces of the side bends of the sections 1 and 3 and the central hinge-bar 6 on the exterior of each side of the section 2 and having a recess 8 extending longitudinally of the lower portion thereof and forming a widened plate 9 at the opposite end which has a lower end offset or ear 10, to which is piv-



otally connected a depending end projection 11, arranged at an angle to the inner end of the hinge-bar 5, the said projection 11 providing means for permitting the two sections at this point to be arranged in horizontal relation and also afford a convenient hinging construction. These parts are connected by a pivot-rod 11<sup>a</sup>, and projection 11 permits the section 1 to be swung around the ear 10 in folding the several sections in a manner which will be presently set forth, and the bend 4 and bar 7 of the section 3 snugly fit within the recess 8 when the parts are folded, and these last-mentioned parts are preferably attached to the end of the bar 6 and side bend 4 of section 2 thereagainst by what is commonly known as a "rule-joint" 12. Though the preferred form of connection of these hinge-bars has been disclosed, it will be understood that they may be otherwise applied, and any form of movable attachment may be interposed between the contiguous ends of the sections without detracting from the functions of the same as long as they will be permitted to fold and clear each other, and, further, the positions of the bars and side bends may be varied.

Opposite pairs of legs 13 and 14 are movably connected to the inner end of the section 1 and the section 3, respectively. The pair of legs 13 are about equal in length to that of the section 1, and the latter section is of the same length as the central section 2. When the table is arranged in position for operations, as shown by Fig. 1, the pair of legs 13 stand at a slight outward incline, while the legs 14 are disposed vertically or in planes at right angles to the said central section 2. Each pair of legs has diagonal cross tie-rods 15 secured thereto to prevent them from spreading at their lower ends, and at various points in opposite edges of the pair of legs 14 recesses 16 and 17 are formed to accommodate the infolding of the several parts. Above the diagonally-arranged cross tie-rods 15 transverse rods 18 and 19 also respectively connect the pairs of legs 13 and 14.

Secured to the section 1, near the inner end thereof when arranged in horizontal position, are pairs of supporting-braces 20, which are connected by a cross tie-rod 21 and have along their outer edges at regular intervals notches 22. In like manner the section 3 has a pair of supporting-braces 23, movably secured thereto and connected by a cross tie-rod 24, and the central section has pairs of supporting-braces 25 and 26, also movably secured thereto near opposite ends and in like manner held in parallel relation and against separation by cross tie-rods 27. The supporting-braces are movably connected with the transverse tie-rods 18 and 19 at the upper portions of the pairs of legs 13 and 14, and their ends are held in engagement with the tie-rods.

The several sections 1, 2, and 3 are supported in horizontal position and adapted for use in ordinary operations, and it will be observed by reference to the drawings that the

parts are all so united that they will be balanced when a patient is lying on the table, and tilting or rocking is thereby prevented. In addition to the tie-rods mentioned in connection with the several places it will be understood that they may be disposed at other points and, if necessary, at close intervals, the object in view being to hold the braces of each pair in constant parallel relation, so that they will not become easily detached from the rods in the legs 13 and 14, which receive the same and afford a stable support as desired. Where the opposite pairs of braces come in contact with the rods 18 and 19, the free ends of each of the conjunctive pairs will lie inside of the ends of the adjacent pair, and as a convenient means for locking the braces in connection with the cross tie-rods, particularly the braces 25, the construction illustrated in Fig. 5 has been adopted. The free end of each of the braces 25, as shown by Fig. 7, has an offset 29, which forms at its inner terminal one wall of an entrance-throat 30 to a slot 31. The slot 31 is disposed longitudinally of the brace, and the throat 30 opens out at the bottom edge of said brace or the edge that will be the lowest when the braces are in operative position. On the inner side of each of the braces 25 adjacent the slot 31 a keeper 32 is pivotally mounted and has its lower free end provided with a transverse slot 33, opening outward from the edge thereof adjacent the offset 29, so that when it is brought down over the said slot 31 or in a plane parallel with the direction of the brace to which it is applied it crosses the entrance-throat 30 to the said slot 31 and prevents disengagement of the connected parts or cross tie-rod 18. By having the offset 29 formed on the said braces the latter can be dropped down on the rod 18 and said rod guided into the throats 30 and then into the slot 31, the inner terminals of the said offsets being at such a distance from the pivotal point of the braces 25 as to about accommodate the distance of the pair of legs 13 to incline outwardly, the said legs having an excess inclination equal to the distance from the inner terminals of the offset to the lower curved boundary walls of the slots 31. While it is preferred that this locking construction be applied to the braces 25, because they have an outward force exerted thereagainst by the pair of legs 13, it will be understood that the other pairs of braces might also be supplied with similar locks.

The end of the central section 2 adjacent the pivotal point of the inner end of the section 1 is also pivotally attached to the upper outer end portion of the central hinged bar 6, and the other end of the section 2 is free to be raised. The lower edges of the side bar of the said section 2 have recesses 34 formed therein which fit down over said pivot for the braces 26, in this instance being a cross-rod 35. Also pivotally attached to the section 2 are a pair of braces 36, connected by the tie-rod 37 adjacent their lower end, the said ends



of the braces 36 being adapted to removably engage the pivotal rod 35 and support the section 2 at the angle shown by dotted lines in Fig. 1. The section 2 is prevented from being depressed below a horizontal plane by bearing upon the pivot-rod 35, the notches 34 registering with the latter. In Fig. 1 the section is also shown arranged at a downward oblique angle, and to hold the said section in this position the notches 22 are fitted to the transverse tie-rod 18. On the inner sides of the upper portions of the legs 14, or on one of the same alone, a post or socket 38 may be applied for attaching or connecting gynecological stirrups or other extraneous devices used in different surgical operations.

The table, as shown arranged in full lines by Fig. 1 and as before indicated, is for general use or in operations not requiring special support. When the central section 2 is elevated, as shown by dotted lines in Fig. 1, and at an obtuse angle to the head-section 1, the table is in a Trendelenberg position, as used in abdominal surgery. When both the head and central sections are at an inclination and in the same plane, a position for chloroform narcosis is provided, and the arrangement illustrated in Fig. 2 shows the table ready for use in gynecological, lithotomy, and rectal surgery. Other positions can be quickly derived from the movable connections of the several sections and their braces.

In the form of table shown by Fig. 6 additional features are supplied for further adjustment of the table to accommodate particular operations. In this instance the section 3 is longitudinally divided to form separate leg-sections 39 and 40, each of which has attached thereto a pair of adjusting-braces 41, similar to the braces 20 heretofore referred to, and operating in conjunction with the rod 18, held by the pair of legs 14. The purpose of this arrangement is to afford a support for one leg of the patient in the event that such operation is necessary, while the other leg may rest against the adjacent downfolded part of said section. In this instance the angle of the section 3 may be changed or a variation in the angle of the separate parts composing the same may be had by adjusting the braces 41. Attached to the free end of the section 2 is a rod 42, which extends transversely thereof, and on the rod 35 are also movably mounted a pair of braces 43, which are located inside of the braces 36 and connected at their outer ends by a cross-rod 44, to which and the rod 42 a leg-rest 45 is secured by having its opposite ends rolled around or otherwise connected, respectively, to the rods 42 and 44. This attachment is readily foldable within the section 2, and provides a leg-rest in certain operations. A drip-cup 46 is also applied to the table in any form, as shown by Figs. 6, 7, and 8. Said cup is of such dimension and shape as to permit an infolding of the same and inclosure by the sections when collapsed. This cup

has opposite end ears 47, through which loosely extends the transverse pivot-rod 11<sup>a</sup>. The cup has sloping sides, and attached to the lower converging portion about midway of the opposing sides is a short tube, to which may be attached a small rubber hose 49, as shown by dotted lines in Fig. 7, to convey the washings from the cup directly to a pail or bucket resting on the floor underneath the table. This drip-cup may be used on the table in any form, and the additions shown by Figs. 6 and 7, aside from the said cup, will render the simple form of the table shown by Figs. 1 and 2 of considerably more value and provide superior means of conveniently carrying on the several operations.

There are several modes of folding the parts of the table, but the simplest consists in first releasing the braces 23 and 26 and folding the former into the section 3. The pair of legs 14 are then partially inclosed by the said section 3, and the braces 26 are next folded into the section 2. The braces 20 and 25 are now released, and the former is turned in the section 1, which next receives and incloses the pair of legs 13. The braces 25 are then folded in the section 2, and the section 3 is next folded in the section 2, and finally the section 1 is folded over all. The parts may thus be compactly reduced for ready transportation, and after being folded in the manner specified the reduced table can be placed in a papier-mâché case or any other suitable inclosure for convenience in carrying the same.

As before indicated, at any time after use the entire table may be easily sterilized by boiling without injury to any of the parts, and it may be desirable at times to slightly vary the details of construction, as well as the size and proportions, and such changes can be made without departing from the spirit of the invention or sacrificing any of the advantages incident thereto.

Having thus described the invention, what is claimed as new is—

1. In a table of the character set forth, the combination of a series of sections having a hinged mounting and adapted to be arranged in horizontal alinement, and comprising a head, intermediate and foot sections, the head and intermediate sections being of precisely the same length and adapted when folded to completely inclose the foot-section which is shorter, the head-section being hinged at such a point relatively to the top surface of the intermediate section as to extend completely under the lower edge of the folded foot-section when the parts are in folded condition, opposite pairs of foldable legs attached to parts of the sections and of a length equal to the said head and intermediate sections and inclosable by the latter, and pairs of braces attached to the sections at points distant from the location of the means of applying the legs, the said braces having an adjustable attachment with each pair of legs and converged in pairs toward the latter to prevent



movement of the legs when the table is set up, the said braces being also foldable within the sections.

2. In a table of the character set forth, the combination of a series of sections adapted to be arranged in horizontal alinement and comprising a head, intermediate and foot sections, the head and intermediate sections being of the same length to completely inclose the foot-section which is shorter, the one end of the intermediate section being unattached and freely movable to and from a horizontal plane, the head-section also being adjustable below a horizontal plane and to continue in the same oblique angle of the intermediate section, opposite pairs of legs attached to parts of the sections and of a length to permit folding into the sections, braces attached to the intermediate section for supporting the latter above a horizontal plane, and other pairs of braces attached to all of the sections and adjustably and removably connectable to the pairs of legs, the legs being converged toward the latter from adjacent portions of the contiguous extremities of the sections.

3. A foldable table constructed of metal and comprising a head, intermediate and foot sections movably connected in adjacent relation, the head and intermediate sections being the same length and adapted to inclose the shorter foot-sections, hinged bars attached to the opposite sides of said sections, the bars of the intermediate section being formed with under recesses to receive the bars of the foot-section, the bars of the head-section being equal in length and adapted to cover the un-

der edges of the folded bars of the intermediate and foot sections, the said central section being also free at one end for adjustment above a horizontal plane, legs and braces connected to the several sections and substantially of the same length as the head and central sections, the foot-section being centrally divided into two parts in a longitudinal direction and having independent pairs of braces for supporting the same, the separation of the said foot-section ceasing at the contiguous end of the intermediate section, braces for adjustably holding the intermediate section at an angle above the horizontal plane, and a leg-rest connected to the unattached end of the intermediate section.

4. A table comprising a series of sections adapted to be arranged in different angular positions and having foldable adjustable supports, the several sections being foldable inwardly toward each other and completely inclosing all of the parts of the device when in folded condition, and a transversely-arranged drip-cup movably suspended under contiguous ends of the sections to receive the washings and also adapted to be retained in connection with and inclosed by the folded sections.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE W. HATHAWAY.

Witnesses:

J. R. JOHNSON,  
KIRK WHITE.