A. F. BRAND.

OPERATING TABLE.

APPLICATION FILED DEC. 3, 1914.

1,201,017.

Patented Oct. 10, 1916.

3 SHEETS—SHEET 1.

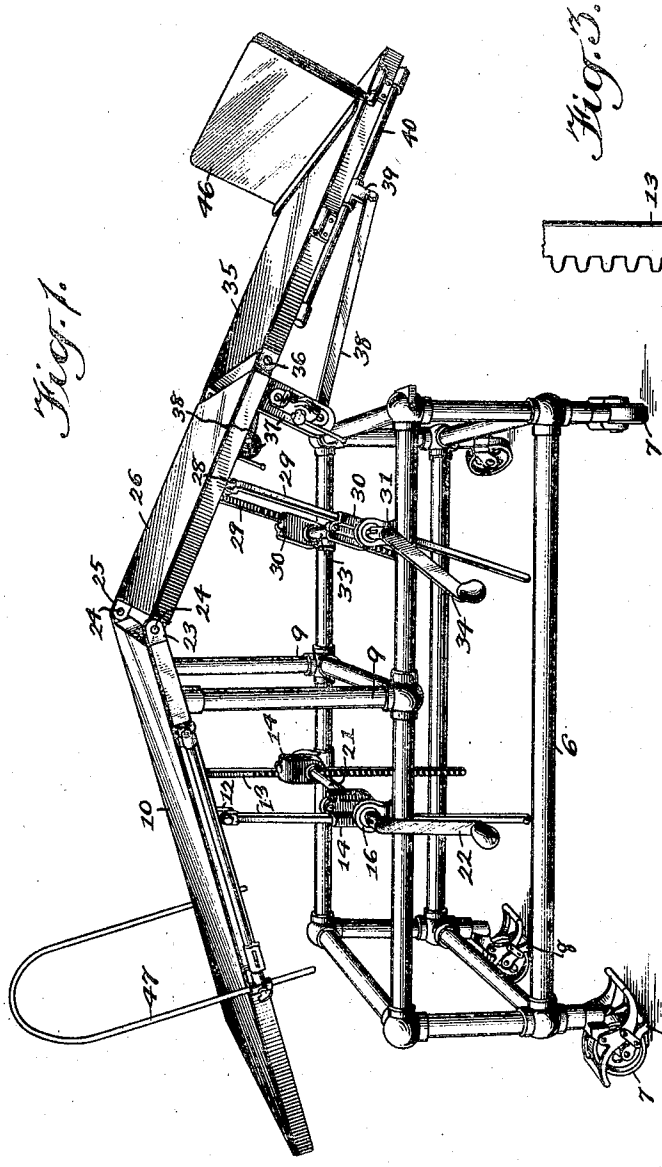


Fig. 1.

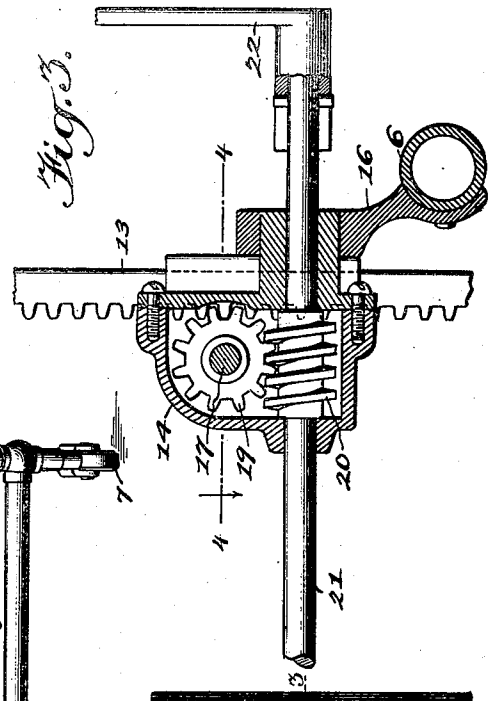


Fig. 3.

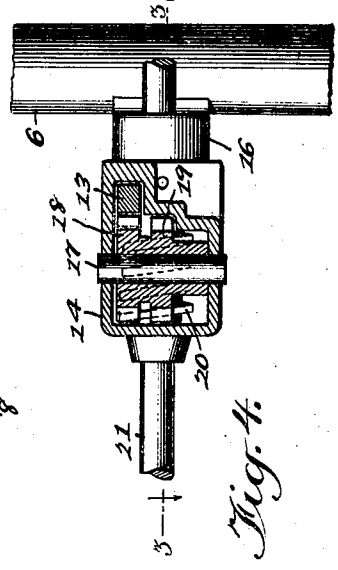


Fig. 4.

WITNESSES:

George Taylor

J. E. Larsen

INVENTOR

Alexander F. Brand

BY Munn & Co

ATTORNEYS

A. F. BRAND.

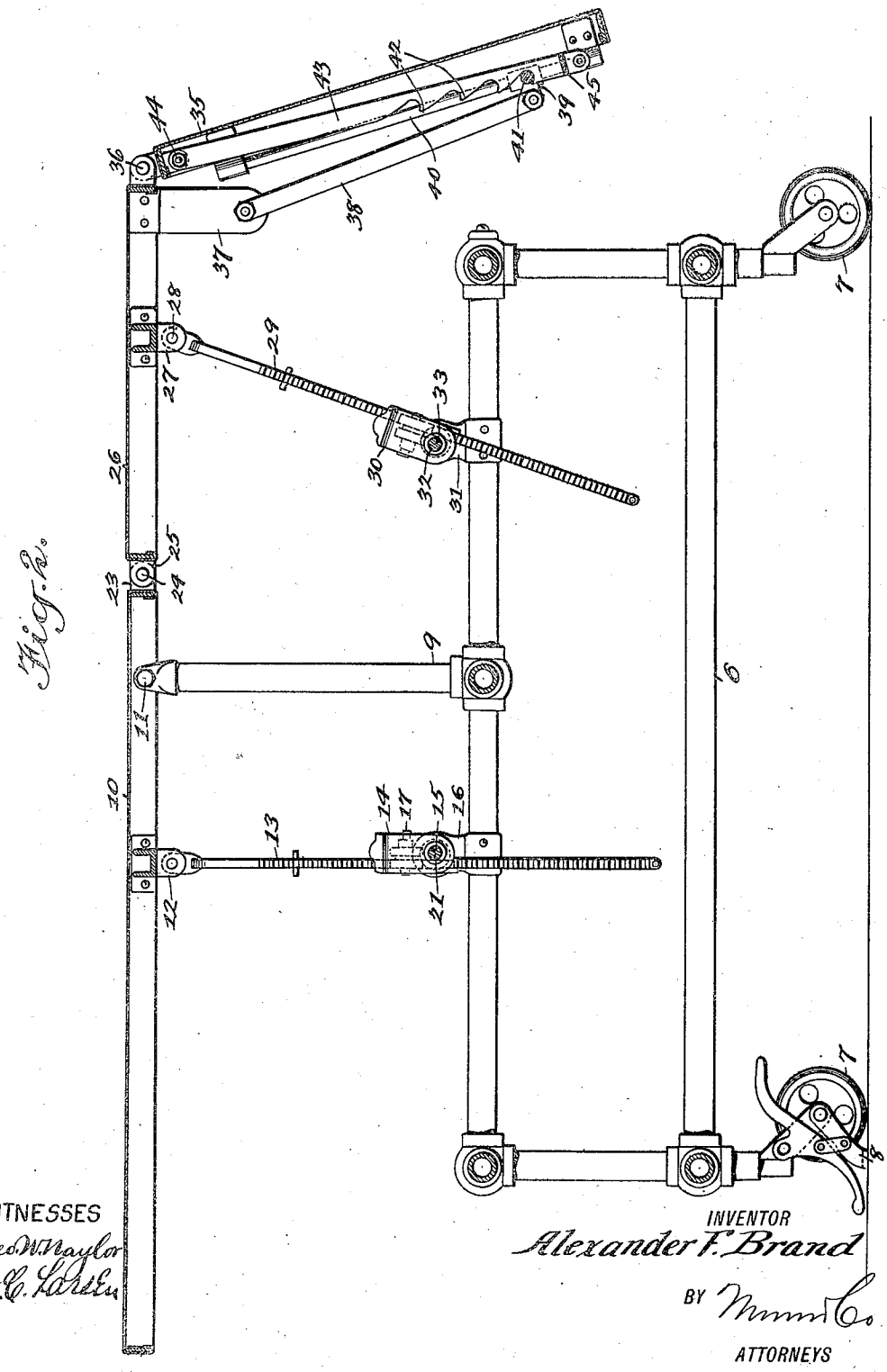
OPERATING TABLE.

APPLICATION FILED DEC. 3, 1914.

1,201,017.

Patented Oct. 10, 1916.

3 SHEETS—SHEET 2.



WITNESSES

Geo. W. Naylor

J. C. Larsen

INVENTOR

Alexander F. Brand

BY Munn & Co.

ATTORNEYS

A. F. BRAND.

OPERATING TABLE.

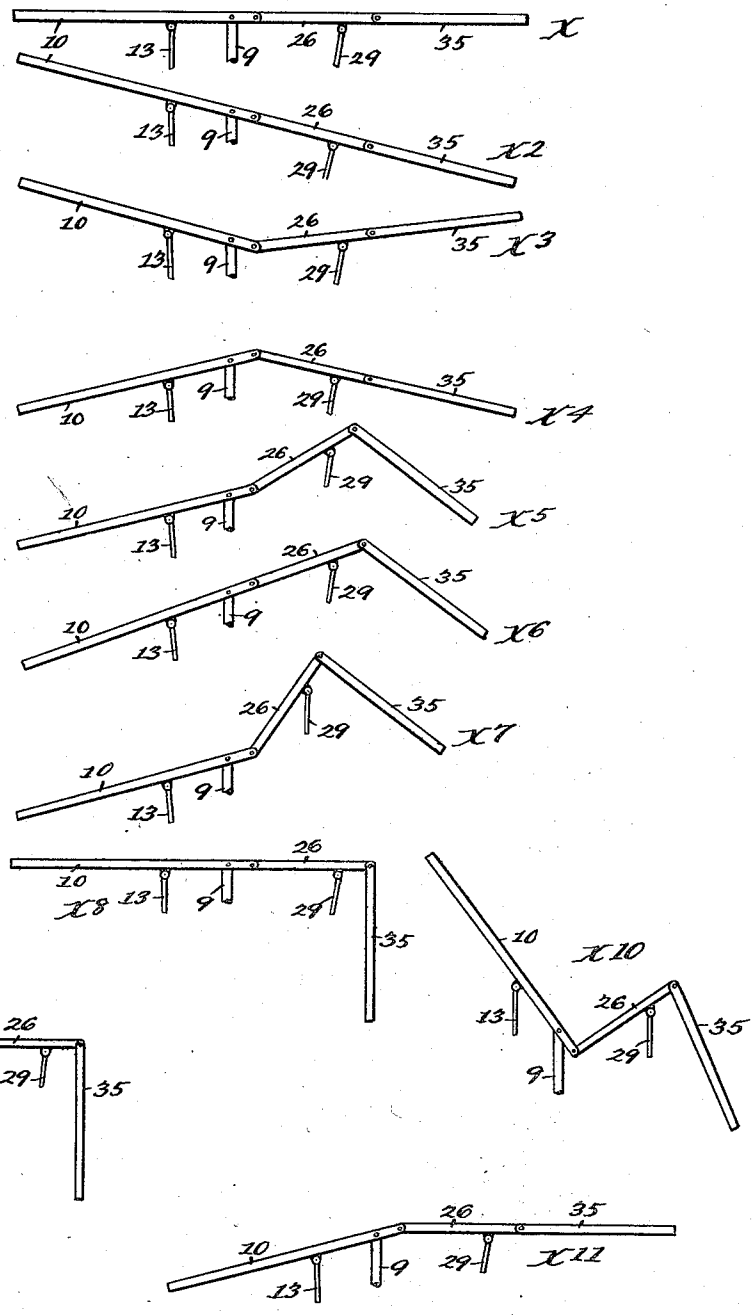
APPLICATION FILED DEC. 3, 1914.

1,201,017.

Patented Oct. 10, 1916.

3 SHEETS—SHEET 3.

Fig. 5.



WITNESSES:

Geo. W. Naylor

J. C. Larsen

INVENTOR

Alexander F. Brand

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

ALEXANDER FARR BRAND, OF NEW YORK, N. Y., ASSIGNOR TO KNY-SCHEERER CO., OF NEW YORK, N. Y.

OPERATING-TABLE.

1,201,017. Specification of Letters Patent. Patented Oct. 10, 1916.

Application filed December 3, 1914. Serial No. 875,251.

To all whom it may concern:

Be it known that I, ALEXANDER F. BRAND, a citizen of the United States, and a resident of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Operating-Tables, of which the following is a specification.

My invention relates to operating tables for the use of surgeons, either in hospitals or in their own offices, and one of the main objects thereof is to provide such tables which are universal in adaptation to any possible demands which may be made thereon, because of the great number of general positions into which it may be set; of the considerable variations possible in any desired degree in any general position; the ease by which such adjustments are made; and the automatic locking of the parts in adjusted positions; thereby adapting the table to examinations and treatments, both G. U. and gynaecologicak; a further object is to provide such tables which are composed of very few parts not likely to get out of order to require repair, which require no instructions for use, and which require no tools for adjustment to or locking the parts in desired positions.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which like reference characters are used to designate like parts in each of the views, and in which:—

Figure 1 is a perspective view of a table constructed in accordance with my invention, with the parts in one surgical position, known as the Mayo posture; Fig. 2 is a longitudinal, central, vertical, section therethrough, on an enlarged scale, in the pelvic posture; Fig. 3 is a sectional view of one of the adjusting means, taken on the line 3—3 of Fig. 4; Fig. 4 is a section taken on the line 4—4 of Fig. 3; and Fig. 5 is a diagrammatic view of one degree of adjustment in each of eleven postures.

In the drawings forming a part of this application I have shown a present preferred form of embodiment of my invention, comprising a rectangular frame 6 mounted upon rollers 7, two of which are adapted to be locked against movement by means of brakes 8, and said frame carries at its top two vertical standards 9 in immovable connection therewith, and of equal lengths.

The standards 9 support a head portion 10 of the table top by means of pivots 11, Fig. 2, only one of which is shown, this pivotal connection being at a point slightly removed from the inner end of said head portion and permitting free movement of said head portion through an arc of a circle exceeding 90 degrees, this method of suspension constituting an important feature of my invention.

The head portion 10 is provided with side hangers 12, directly opposite one another, between the pivotal support 11 and the outer end thereof, and to each of said hangers is pivoted a rack-bar 13, the teeth of which face inwardly of the table; each of said rack-bars is guided through a casing 14 in pivotal connection, at 15, with a corresponding bearing 16 carried by the upper portion of the frame 6, and preferably directly beneath the respective pivots in the hangers 12; although but one is shown in detail in Figs. 3 and 4, each of the casings 14 carries a stub-shaft 17 having a spur-gear 18 and a worm-gear 19 secured thereto, the former of which is enmeshed with its respective rack-bar 13, and each of said worm-gears is enmeshed with a corresponding worm 20, within the respective casing, and both of which worms are secured to a transversely arranged shaft 21 which projects beyond each casing and beyond the frame 6, said projecting shaft ends being adapted to receive, each, a detachable crank-handle 22 whereby the shaft 21 may be rotated. In such rotation, the stub-shafts 17 are both rotated, thereby moving the rack-bars 13 correspondingly, upwardly or downwardly, to move the head portion 10 on its pivots 11, and, because of the worms and worm-gears. the rack-bars and head portion 10 are locked in any desired position.

The inner end of the head portion 10 is provided with ears 23 in pivotal connection, at 24, with similar ears 25 on a seat portion 26 of the table top, relatively short as compared with the head portion 10, and provided with hangers 27, similar to the hangers 12, intermediate its length, said hangers 27 carrying pivots 28 for rack-bars 29 movable in casings 30 pivoted to bearings 31. at 32, said casings containing the same kind of stub-shafts, spur-gears, worm-gears, and worms, as in the casings 14, and which worms are secured to a transverse shaft 33 having a detachable handle 34, all similar

to the parts already described. By means of this construction, it will be seen that the rack-bars 13 may be moved, upwardly or downwardly, independently of the rack-bars 29, and vice versa, so that any desired inclination of the head portion 10 may be obtained, with respect to the frame 6, and any desired inclination of the seat portion 26 may be obtained, by means of the respective crank-handle, with respect to the head portion 10 and to the frame 6, although either or both of said portions may be adjusted in absolute parallelism with said frame, if desired, and it will be seen that both the head and the seat portions are locked automatically in any adjusted position.

The outer end of the seat portion 26 has a foot portion 35 pivoted thereto at 36, and movable in a vertical plane with respect thereto, said seat portion also carrying hangers 37 to which are pivoted links 38 in turn pivoted to slide-blocks 39 movable along corresponding side rods 40 on the foot portion and joined by means of a transverse rod 41 adapted to engage with teeth 42 on the under side of side bars 43 pivoted to said foot portion at 44 and joined by a transverse brace 45, whereby said foot portion may be adjusted with respect to the seat portion 26 and to the frame 6.

It will thus be seen that either the head, the seat, or the foot portions, may be adjusted into any desired relationship with the frame 6, the last in any one of a plurality of definite positions through the teeth on the side-bars 43 by merely lifting said side-bars out of engagement with the transverse rod 41 and again dropping them when the desired position of the foot portion has been accomplished; the head and seat adjustments are, however, gradual and in fine degree, and it will be noted that the seat portion is affected by the adjustment of the head portion, although the head portion is not so affected by the adjustment of the seat portion, and said portions may, therefore, be arranged in any one of a plurality of general postures, 11 as shown in Fig. 5, and in varying degrees in each posture.

In Fig. 5, X is the horizontal posture, X^2 the reverse Trendelenburg, X^3 the reflex abdominal, X^4 the Mayo kidney, X^5 and X^6 modified Trendelenburg, X^7 the reflex thigh, X^8, the pelvic, X^9 the chair, (note the relatively short seat which brings the buttocks to the edge thereof, making instrumentation, particularly cystoscopy, very easy), X^{10} the cystoscopic, and X^{11} the resuscitation, postures, any of which may be modified, upwardly or downwardly, at will, and it will also be observed that the center of the table is always at the same elevation above the floor.

While I have shown one method of accomplishing the gradual adjustment of the head and seat portions, and automatically locking said parts in any adjusted position, I do not desire to limit myself to any specific details, my invention residing in the manner, broadly, of mounting and connecting the parts, particularly the head and seat portions, and means for adjusting the same in minute degree and locking the parts in adjusted positions.

It will be obvious that I may provide any suitable or desired attachments to the device, such as the foot rest 46, Fig. 1, frame 47 for the etherizing curtain, and any desired forms of shoulder supports, knee crutches, leg holders, headrests, goiter attachment, clamps, heel stirrups, etc., etc. not shown, as they form no part of this invention.

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

1. An operating table, comprising an elongated frame having uprights at approximately the center of length thereof, a head portion pivoted a short distance from its inner end to the uprights, a seat portion pivoted to the inner end of the head portion, two pairs of racks, one pair pivoted to the head portion and the other to the seat portions, two pairs of casings pivoted to the frame, one at each side of the uprights, and in which the racks work, a stub shaft mounted in each casing and each carrying a spur-gear and a worm-gear, each spur gear meshing with a rack, and a transverse shaft extending through each pair of casings and provided within the casings with worms meshing with the worm gears, and at one end with a handle.

2. An operating table, comprising a frame having uprights intermediate of its ends, and provided with a pair of pivoted casings on each side of the uprights, a head portion pivoted a short distance from its inner end to the uprights, a seat portion pivoted to the inner end of the head portion, two pairs of racks, one pair pivoted to the head portion, and the other to the seat portion, said racks working in the pivoted casings, a transverse shaft extending through each pair of pivoted casings and provided with a handle at one end, gearing in each casing for operating each pair of racks from a transverse shaft, and an adjustable foot portion hinged to the seat portion.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALEXANDER FARR BRAND.

Witnesses:

J. C. LARSEN,

G. H. EMSLIE.