Jan. 12, 1926. 1,569,350

W. L. BELL

OPERATING TABLE

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Fig. 1.

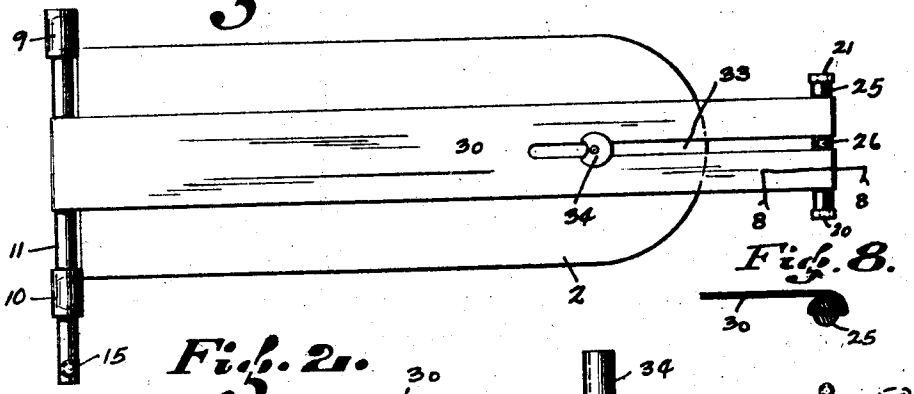


Fig. 8.

Fig. 2.

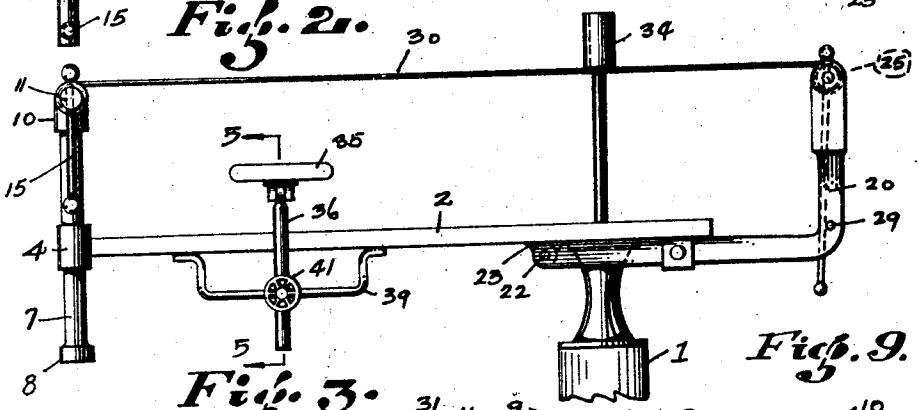


Fig. 9.

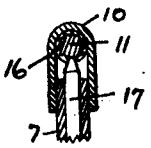
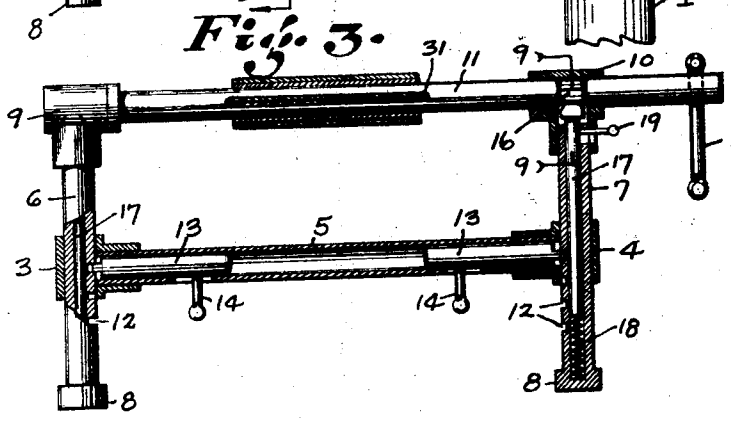


Fig. 3.



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OPERATING TABLE

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Fig. 4.

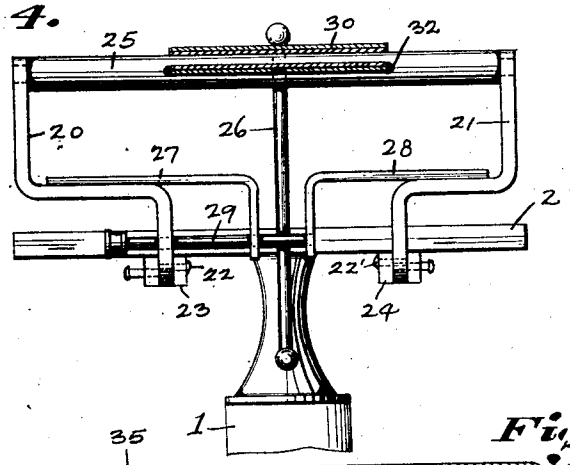


Fig. 5.

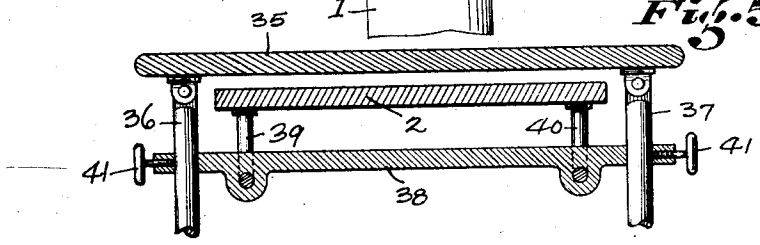


Fig. 6.

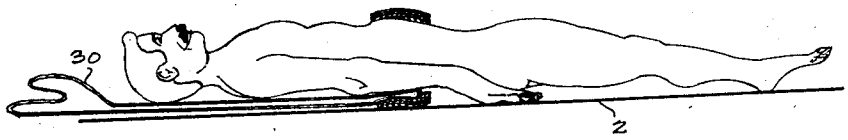
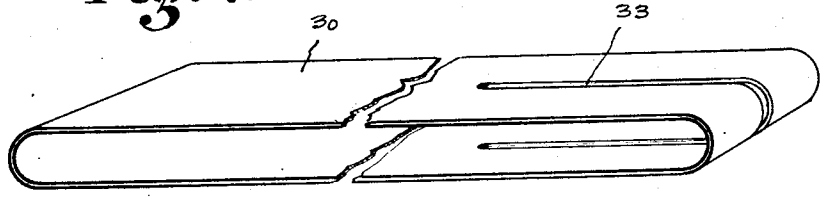


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM L. BELL, OF OAKLAND, CALIFORNIA.

OPERATING TABLE.

Application filed October 27, 1923. Serial No. 671,226.

To all whom it may concern:

Be it known that I, WILLIAM L. BELL, a citizen of the United States, and a resident of the city of Oakland, county of Alameda, State of California, have made a new and useful invention—to wit, Improvements in Operating Tables; and I do hereby declare the following to be a full, clear, concise, and exact description of the same.

This invention relates particularly to improvements in operating tables.

An object of the invention is to provide an operating table having a range of adjustability to meet all anatomical positions of a patient in whose body broken or fractured bones are to be set and bandaged.

A further object of the invention is to provide a table on which a patient may be placed in any desired position by the operator.

A still further object of the invention is to provide an operating table having a fabric strip suspended between supports and on which a patient may repose, which strip might be raised or lowered according to the desires of the operator; and a strip which can be bandaged to the patient's body when in the suspended position, and said strip withdrawn from between the patient and bandage when the patient is lowered onto a planar surface.

Other objects of the invention are to provide an operating table of the character described, that will be superior in point of simplicity and inexpensiveness of construction, positiveness of operation, facility and convenience in use and general efficiency, as contrasted with devices and mechanisms of a similar character. Other objects and advantages will appear as this description progresses.

In this specification and the annexed drawings, the invention is illustrated in the form considered to be the best, but it is to be understood that the invention is not limited to such form, because it may be embodied in other forms, and it is also to be understood that in and by the claims following the description, it is desired to cover the invention in whatsoever form it may be embodied.

In the accompanying two sheets of drawings,

Fig. 1 represents a plan view of a table constructed in accordance with my invention.

Fig. 2 is a side elevation of Fig. 1.

Fig. 3 is an enlarged end elevation, partly broken away, of Fig. 1.

Fig. 4 is an end elevation of the opposite end of Fig. 1.

Fig. 5 is an enlarged cross-section taken through Fig. 3 on the line 5—5.

Fig. 6 is a diagrammatic view illustrating a patient lying on my table and showing the fabric supporting strip being withdrawn from between the patient's body and a bandage passed around said body.

Fig. 7 is an enlarged view of the fabric supporting strip.

Fig. 8 is a cross-section taken through Fig. 1 on the line 8—8.

Fig. 9 is a cross-section taken through Fig. 3 on the line 9—9.

In detail, the construction illustrated in the drawings comprises an operating table consisting of a supporting base 1 having a planar or table surface 2 fixedly secured on its upper end. The table base 1 would be mounted on rollers (not shown) or any other equivalent rolling device whereby the position of the table might be easily changed as desired.

Across the head end of the table 2 I have provided a pair of T fittings 3 and 4, rigidly connected to the said table and connected to each other by the hollow, and transversely positioned brace 5. A pair of tubular shafts 6 and 7 are slidably confined to movement in a vertical direction in the respective fittings 3 and 4. The upward movement of the hollow shafts 6 and 7 is limited by the caps or abutments 8, on the lower ends of said shafts. T fittings 9 and 10 are mounted on the upper ends of the shafts 6 and 7 and a roller shaft 11 is journaled in the separated bearings 9 and 10 and adapted to lie on a substantially horizontal plane. The fittings 9 and 10, when moved into contact with the fittings 3 and 4, thus limit and control the downward movement of the shafts 6 and 7.

A plurality of notches 12 are cut in the outer faces of the shafts 6 and 7 with which the ends of the latch pins 13, slidably confined in the hollow brace member 5, are adapted to be detachably engaged. The latch pins 13 have handles 14 thereon which project through slots cut in the hollow braces 5, whereby said latches may be manually moved into or from engagement with the notched peripheries of the shafts 6 and 7. By disengaging the latches described, from the shafts 6 and 7, it is possible to manually raise or lower the horizontal shaft 11 relative to the planar surface 2.

One end of the horizontal shaft 11 is journaled within the fitting 9, while the other end of said shaft projects through and beyond the fitting 10 and has a handle 15 mounted therein. The handle 15 is adapted to be used for rotating the shaft 11, as will be hereinafter described in detail. The entire circumference of the shaft 11, within the fitting 10 is cut, or milled, to provide a ratchet face 16, with which a latch 17, slidably confined in the shafts 6 and 7, is maintained in constant contact, by an expansion spring 18. The ratchet face of the shaft 11 is formed so that said shaft 11 may be freely rotated in one direction. In order to permit the shaft 11 to be revolved or turned in the opposite direction, I provide a projecting handle 19 on the latch 17 which would be manually depressed, against the depression springs 18, to disengage said latch 17 from the ratchet face 16.

At the foot end of the table surface 2, a pair of brackets 20 and 21 are pivoted at 22 and 22′ to the projections 23 and 24 mounted on the underside of said table. The outer ends of the brackets 20 and 21, have a foot roller shaft 25 revolubly journaled therein and a handle 26 slidably mounted in and through the center of said shaft for the purpose of manually rotating the same. Frame members 27 and 28 are secured to the brackets 20 and 21 and are positioned on opposite sides of the vertical path through which the handle 26 will swing in its rotation. A locking pin 29 is slidably confined in the frame member 27 and 28 so as to intersect the vertical path of movement through which the handle 26 will swing and to act as a stop to swinging movement of said shaft, as will be more fully hereinafter explained in detail.

An endless fabric strip 30, preferably formed from canvas, is adapted to extend between and be supported at its opposite ends on respectively the head roller 11 and foot roller 25. The strip 30 would be stretched between the opposite supporting rollers in a doubled or folded condition. The doubled, head end of the strip would be inserted through a slot 31 in the head roller 11 and partially lapped around the circumference of said roller to permit one or more full turns of the strip to be wrapped around the end thereof, for the purpose of binding the end against the roller and preventing said end from slipping out. The opposite folded end of the strip 30 would be inserted through a slot 32 provided in the foot roller 25 and lapped around the circumference of said roller to permit one or more full turns of the strip to be wrapped around said lapped end and preventing it from pulling loose.

The foot end of the strip 30 is split partway up the middle as at 33, to allow the handle 26 on the foot roller 25 being turned therethrough, during the operation of winding the strip 30 on the foot roller. The foot end of the strip 33 is slotted primarily, for the purpose of allowing an upright 34 being positioned in substantially a vertical position on the table 2. The upright 34 projects above the surface of the strip 30 and is adapted to be positioned in the crotch of a patient, resting on the strip 30, and for holding said patient in a relatively fixed position. As a matter of practice, a patient would lie on the strip 30 and each of the legs would be pulled or so held, as to keep the crotch of the individual firmly in contact with the upright 34. When a patient is lying on the strip 30, the tension of said strip between its respective roller supports may be tightened or slacked, according to the position of comfort most satisfying to the patient. The strip can be slacked or tightened by rotating in either direction, either the head or foot rollers.

At about the place on the strip where a patient's shoulders would lie, I have arranged a solid support 35 across the table surface 2. The support 35 is adjustable, vertically relative to the table surface and also longitudinally relative to said surface. The support 35 is pivotally connected on its under-face to opposite vertical shafts 36 and 37 adjustably confined in the opposite ends of a slide bar 38 slidably mounted in the hangers 39 and 40, secured to the opposite sides of the underface of the table 2. Set screws 41 are fixed in the bar 38 for movement into and from frictional engagement with the shafts 36 and 37 for holding the shaft supports 35 in any desired position above the table surface.

A patient lying on the suspended strip 30 can be operated or worked upon with a greater degree of freeness to the operator and with materially less discomfort to the patient than in the case where a conventional type of operating table would be utilized. More particularly can the trunk of a patient be bandaged or a plaster cast taken, when supported on the fabric strip, with the positive assurance of perfect re-

sults, both to the patient and operator, than by the use of any other known operating table. The operator would wrap the trunk of the patient with bandages or place a cast thereon, while the trunk of the patient would lie in a perfectly normal position. After the elapse of a predetermined period of time, the patient would be lowered onto the table surface by slacking up on the ends of the supporting strip. The strip would then be withdrawn by gently pulling the top layer of the supporting strip out from beneath the patient's body, which said top layer would advance out with a rolling effect, somewhat similar to the movement of the endless belt on a track laying or "caterpillar" tractor. My experiments have determined that the supporting strip, when removed from between the patient's body and the bandage or cast, in the manner described, will not harm the injured portion of the patient's body nor disturb the placement of the bandage or cast. As a usual thing, a bandage or cast is not placed around the body so tightly as to interfere with the normal functioning of any portion of the anatomy as it is always desired to keep the body in a natural position.

Having thus described this invention, what I claim and desire to secure by Letters Patent is:

1. An operating table including a support having a planar surface; a flexible strip adapted to be suspended above said surface and to support a body in a substantially horizontal position; means for stretching said strip to raise or lower it relative to said surface; and vertical means on said surface extending through said strip for locating a body in a predetermined position on said strip.

2. An operating table including a support having a planar surface; a flexible strip adapted to be suspended above said surface and to support a body in a substantially horizontal position; and means on said surface extending through said strip for locating a body in a predetermined position on said strip and to allow uninterrupted removal of said strip from between said surface and body.

In testimony whereof, I have hereunto set my hand at San Francisco, California, this 10th day of October, 1923.

WILLIAM L. BELL.