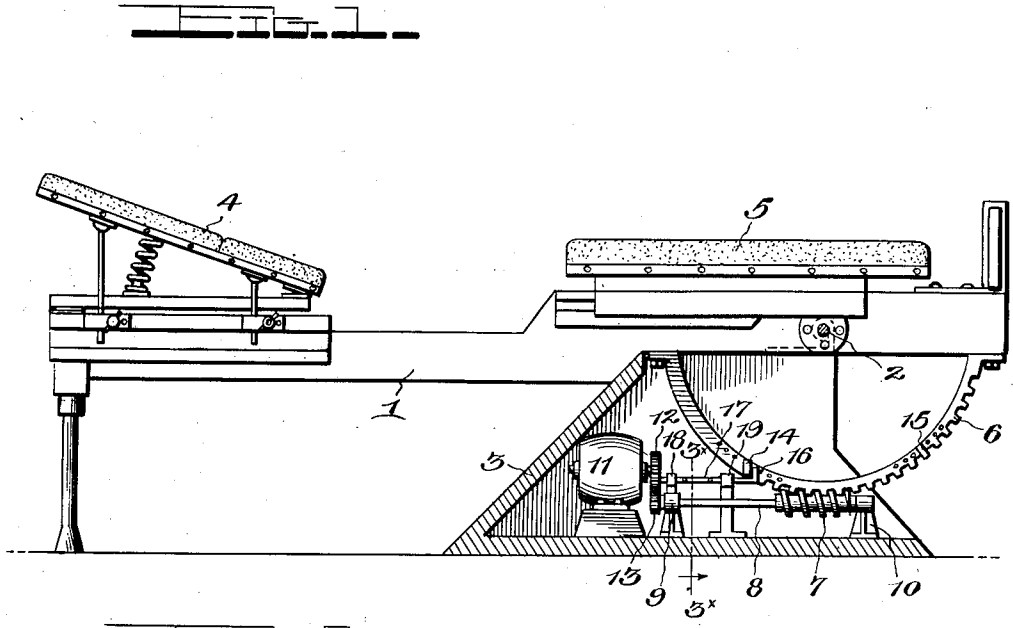
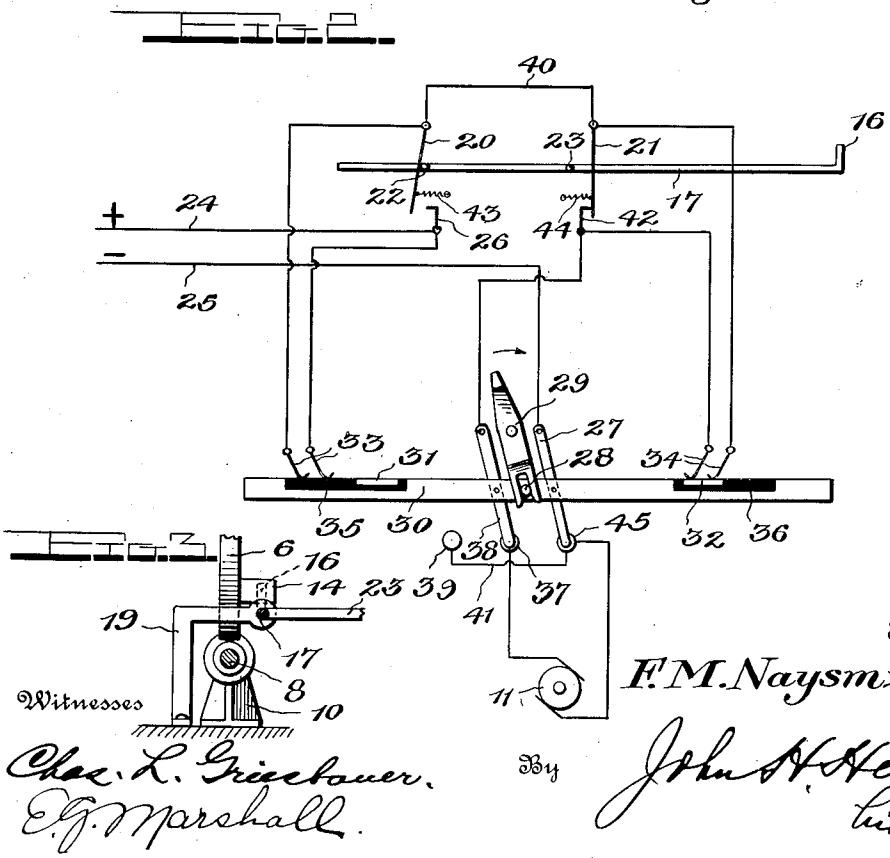
F. M. NAYSMITH.

CHIROPRACTIC TABLE.

APPLICATION FILED DEC. 14, 1914.

1,228,953. Patented June 5, 1917.





Witnesses

Chas. L. Griesbauer.

E. J. Marshall.

Inventor

F. M. Naysmith,

By John H. Holk

Its Attorney

UNITED STATES PATENT OFFICE.

FRANK M. NAYSMITH, OF DAVENPORT, IOWA.

CHIROPRACTIC TABLE.

1,228,953. Specification of Letters Patent. Patented June 5, 1917.

Application filed December 14, 1914. Serial No. 877,229.

To all whom it may concern:

Be it known that I, FRANK M. NAYSMITH, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Chiropractic Tables, of which the following is a specification.

The primary object of this invention is to effect certain improvements in chiropractic tables of the type shown in my U. S. Patent No. 1,079,795, wherein the body of the table is angularly movable in a vertical plane. The purpose of having the body of the table movable in this way is to enable the patient to place himself thereupon in an upright position, after which the body of the table is rotated into a longitudinal position. The patient may get off such tables also in an upright position, by returning the table to the position it occupied when he placed himself upon it. The reason for or advantages of having the patient get on and off the table in an upright position need not be gone into here. It is sufficient to say that in the absence of some means to assist the operator in lowering and raising the table or turning it on its pivot as described, these operations necessitate considerable effort on the part of the operator, especially in cases of heavy patients.

In the specific form of table described in my said patent, means comprising an arrangement of springs are provided with a view to assisting the operator in this respect, but even with that arrangement more or less effort on his part is necessary.

The object of the present invention is to entirely relieve the operator of any effort in raising and lowering the table with a patient on it, and this I may accomplish in several ways, one of which is illustrated in the accompanying drawings to which reference will now be had in order to more particularly describe my present invention; and, wherein,

Figure 1, is a side elevation partly in section of a chiropractic table of the type above referred to provided with one form of my improved lifting means;

Fig. 2, a diagram illustrating the arrangement of electric circuits and switching apparatus employed therein;

Fig. 3, a detail sectional elevation on line 3×—3× Fig. 1.

The form of table which I have shown in the accompanying drawings is substantially the same as that shown in my patent above mentioned, comprising, among other parts, a beam 1 pivotally mounted as at 2 upon a hollow base 3, and provided with adjustable body supports 4 and 5.

My invention consists in providing power means for turning the beam 1, on its pivot 2, in a vertical plane so as to raise the table into an upright position, or lower it into a horizontal position as desired. In the form of my invention shown, this means comprises, among other parts, a sector gear 6 bolted or otherwise made rigid to the beam 1, and adapted to travel within the base 3 as shown. Meshing with this gear is a worm 7, the shaft 8 of which is journaled in suitable supports 9 and 10 mounted in said base. Also mounted within this base is an electric motor 11 which is connected through a gear 12 and a pinion 13 to drive worm shaft 8. From this construction it will be readily seen that when the motor operates in one direction, the beam 1 would be rotated on its pivot 2 so as to be brought into an upright position, and when the motor is operated in the opposite direction, the beam will be brought into a horizontal position. In connection with this mechanism, I provide means for automatically stopping the motor at the end of the travel of the beam in both of said directions, and provide manually operated means whereby the motor may be started from either of its stopping positions and each time in a reverse direction. This mechanism comprises, in the form shown in Fig. 1, among other parts, two lugs or other obstacles 14 and 15 fast to gear 6 and adapted at times to engage with an offset or lip 16 on a shifting rod 17 horizontally movable in supports 18 and 19. The lugs 14 and 15 and offset 16 are so disposed relatively to each other that just before the beam 1 reaches a horizontal position, lug 14 will engage offset 16 and shift rod 17 to the right Fig. 1, and just before beam 1 reaches the end of its travel in a direction to bring it into an upright position, lug 15 will engage offset 16 and shift rod 17 to the left Fig. 1. The purpose of this is to cut off the current to the motor each time the beam 1 reaches the limit of its travel in either direction, and this is effected by the operation of two switches 20 and 21 by arms 22 and 23, respectively, carried by the shift rod 17.

The switches 20 and 21 and their mode

of operation in conjunction with the manual switching means, above referred to, are clearly shown in diagram in Fig. 2. It is believed to be unnecessary for a clear understanding of the more purely electrical parts of this invention, to show and describe their mechanical details.

In the form of my invention, as diagrammatically illustrated in Fig. 2, current from a suitable source is supplied to conductors 24 and 25, which connect, respectively, to fixed contact 26 of switch 20 and movable switch arm 27 of a double pole reversing switch which controls the direction of the flow of current to motor 11, as hereinafter described. This reversing switch is manually operated by lever 29, which may be placed in such a position as to be operated by foot. This lever 29 also operates a switch comprising a movable switch member 30, provided with two insulated contact plates 31 and 32 which coöperate with switch contacts 33 and 34 to complete circuits around switches 20 and 21, as hereinafter described. The insulation for contacts 31 and 32 extends to one side of each of said contacts, as shown at 35 and 36, sufficiently to break the electrical connection between the contacts constituting the pairs 33 and 34, also as hereinafter described.

The parts shown in Fig. 2 are indicated in the positions which they occupy when the table has traveled to the limit of its upward movement, or into an upright position; in which case, rod 17 is so shifted as to break contact between switch members 20 and 26. At this time switch contacts 33 will rest upon insulation 35, and switch contacts 34 will both rest upon the conducting plate 32. If the circuit be traced from the positive supply conductor 24, it will be seen that this circuit is broken at contact 20 and 26, and also at contacts 33.

To lower the table into a horizontal position, switch lever 29 is operated in the direction indicated by the arrow in Fig. 2, to such an extent as to bring movable switch arm 27 into engagement with switch contact 37, and movable switch arm 38 into engagement with switch contact 39. When this is done, contact plate 31 will be brought into engagement with both contacts 33, while contact plate 32 will be shifted out of engagement with contacts 34 and the latter brought into engagement with insulation 36. Tracing the circuit from positive conductor 24, we find that current may pass from this conductor through switch contacts 33—31, conductor 40, switch 21 which is now closed, switch arm 38, and contact 39, conductor 41 to the motor, and thence back through contact 37 and switch arm 27 to the negative supply main 25. The motor receiving current in this direction will rotate worm 7 in such a direction as to lower the table. The movable contacts of switches 20 and 21, however, are always pulled in the direction of their stationary contacts 26 and 42 by springs 43 and 44, respectively so that as soon as shifting rod 17 is released by lug 15, which will happen directly after the table starts in its downward movement, the movable contact of switch 20 will engage its fixed contact 26. The current from conductor 24 may now pass through switch 20, as well as contacts 33. When the table reaches the limit of its travel downward, lug 14 will engage offset 16 and cause shifting rod 17, acting through its arm 23, to open switch 21, which breaks the circuit of the current to the motor and therefore stops it. It will be observed at this time that contacts 34 will be resting upon insulation 36 so that opening the contacts of switch 21 cuts off the current from the motor. We now have switch 20 closed and switch 21 open, switch contacts 33 closed through contact 31, and contacts 34 open through insulation 36.

To raise the table, switch lever 29 is shifted to the full line position shown in Fig. 2, in which case the motor will receive current in the opposite direction from that in which it received it in lowering the table, the current to the motor passing at first over a circuit leading from conductor 24 through switch 20, conductor 40, switch contacts 34, and contact plate 32, switch arm 38, and contact 37 to the motor, and thence back through switch contact 45 and switch arm 27 to the negative conductor 25. Directly after the motor starts in this direction, lug 14 releases shifting rod 17 and thus allows switch 21 to close, when the current to the motor will pass through switch 21, as well as contacts 34. When the table reaches the limit of its travel in this direction, lug 15 will shift rod 17 so as to cause arm 22 to open switch contact 20 and thus break the circuit conveying current to the motor. It will thus be seen that the operation of closing the circuit to the motor around either of the switches 20—21 opened automatically, and the operation of reversing the current to the motor is effected by a single operation of one lever 29.

The various parts of this switching mechanism may be mounted in any desired way in the base of the table.

Having thus described an embodiment of my invention, it should be understood that the same may be modified without departing from the spirit thereof.

What I claim is:

1. A chiropractic table having a body mounted for angular movement in a vertical plane, an electric motor operatively connected thereto to effect said movement, two limit switches, and means operable by said body for actuating said switches alternately

to stop said motor, said body when moved in one direction causing said means to operate one of the switches and hold it in open position until the body is moved in an opposite direction, when the body will again operate said means and cause the other switch to be operated.

2. A chiropractic table having a body mounted for angular movement in a vertical plane, an electric motor operatively connected thereto to effect said movement, two limit switches, means operable by said body for alternately actuating said switches, an electric circuit associated with said motor and limit switches, and a manually operated starting and reversing switch in circuit with said motor for completing the circuit with said limit switches.

3. A chiropractic table having a body mounted for angular movement in a vertical plane, an electric motor operatively connected thereto to effect said movement, two limit switches, means movable with said body to alternately operate said switches to stop said motor, and a manually operated starting switch connected in circuit with said motor.

4. A chiropractic table having a body mounted for angular movement in a vertical plane, an electric motor operatively connected thereto to effect said movement, two limit switches, a shiftable rod for operating said switches, means movable with said body to reciprocate the said shiftable rod to alternately operate the limit switches to stop said motor, and a manually operated starting and reversing switch connected in circuit with said motor.

5. A chiropractic table having a body mounted for angular movement in a vertical plane, an electric motor operatively connected thereto to effect said movement, two limit switches, a shiftable member for opening and closing said switches alternatively, means movable with said body to operate said shiftable member to stop said motor, and a manually operated reversing switch connected in circuit with said motor to start the same.

6. A chiropractic table having a body pivoted for movement in a vertical plane, a sector gear fixed to said body, a worm meshing with said gear, an electric motor connected to drive said worm, switch controlling means movable with said gear, a shiftable rod adapted to be reciprocated by said controlling means, and limit switches controlled by said shiftable rod for stopping said motor.

7. A chiropractic table having a body mounted for angular movement in a vertical plane, an electric motor operatively connected thereto to effect said movement, means operated on the movement of the body for alternately actuating the limit switches, an electric circuit associated with said motor, auxiliary circuits associated with said main circuit, limit switches associated with said main and auxiliary circuits for making and breaking the circuit between said circuits, and a manually operated switch associated with said auxiliary circuits adapted to be operated for bringing one of the auxiliary circuits into circuit for completing the circuit that the table may be operated, and breaking the other auxiliary circuit.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK M. NAYSMITH.

Witnesses:
MINNIE HARTKOP,
W. M. WELCH.