

[54] **ADJUSTABLE CHIROPRACTIC TABLE**

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[51] Int. Cl. **A61f 5/00**

[58] Field of Search **128/70-74; 269/322-326**

[56] **References Cited**

UNITED STATES PATENTS

2,702,733	2/1955	Lorang.....	128/70
2,707,137	4/1955	Hollstein.....	269/323

FOREIGN PATENTS OR APPLICATIONS

1,040,400	5/1953	France	311/5
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Primary Examiner—Lawrence W. Trapp

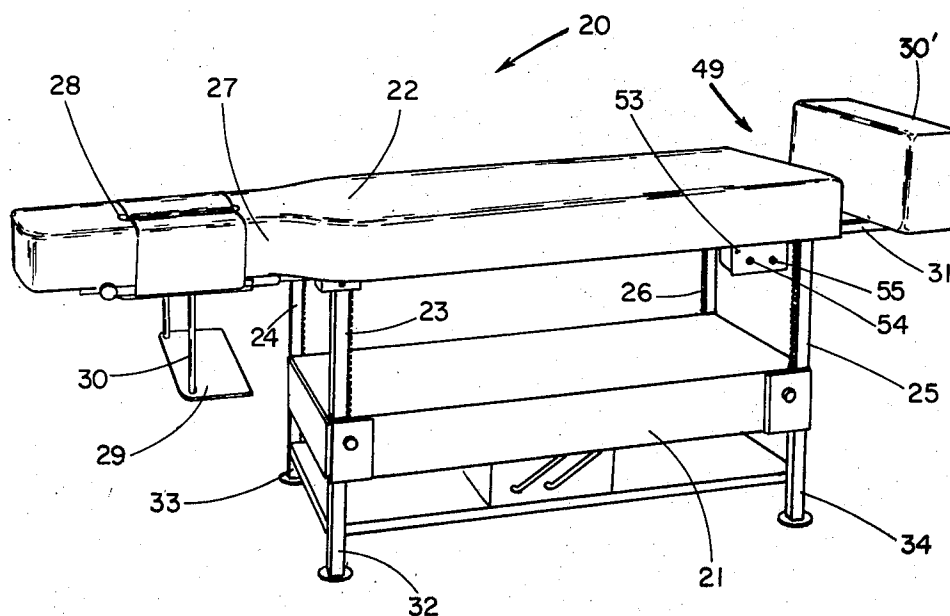
Attorney, Agent, or Firm—Woodard, Weikart, Emhardt & Naughton

[57]

ABSTRACT

A chiropractic table which will position the patient at the desired height. A cushion is mounted atop four racks which are slidably received by the table frame. In one embodiment, a pair of independent electric motors mounted to the frame have output shafts with gears thereon in meshing engagement with the racks. The motors may be independently operated to raise and lower the opposite ends of the cushion. In the same embodiment, the top ends of the racks are pivotally mounted to the cushion base. In another embodiment, the cushion is fixedly mounted to the top ends of the rack with a single electrical motor being provided to simultaneously raise or lower both ends of the cushion. Control means are provided to allow the operator to raise and lower the ends of the cushion.

4 Claims, 5 Drawing Figures



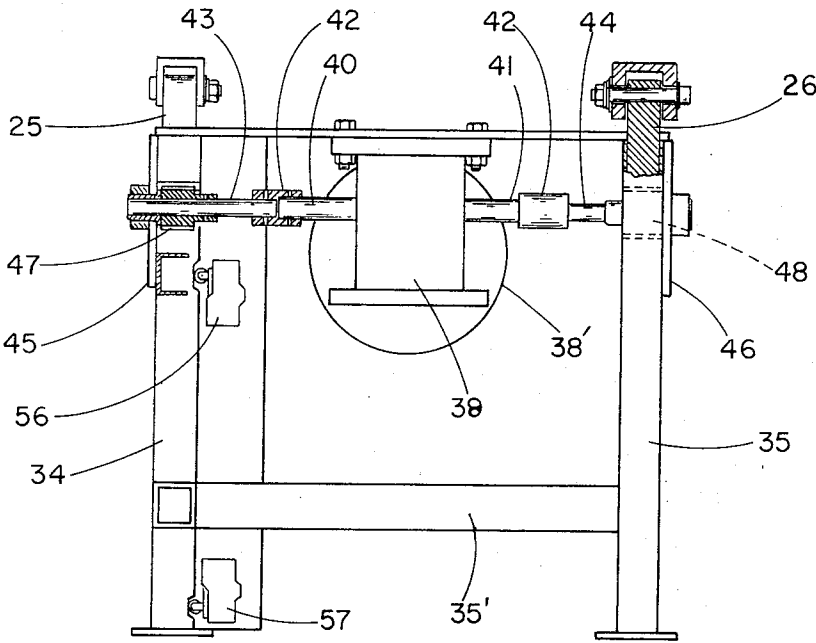


FIG. 3

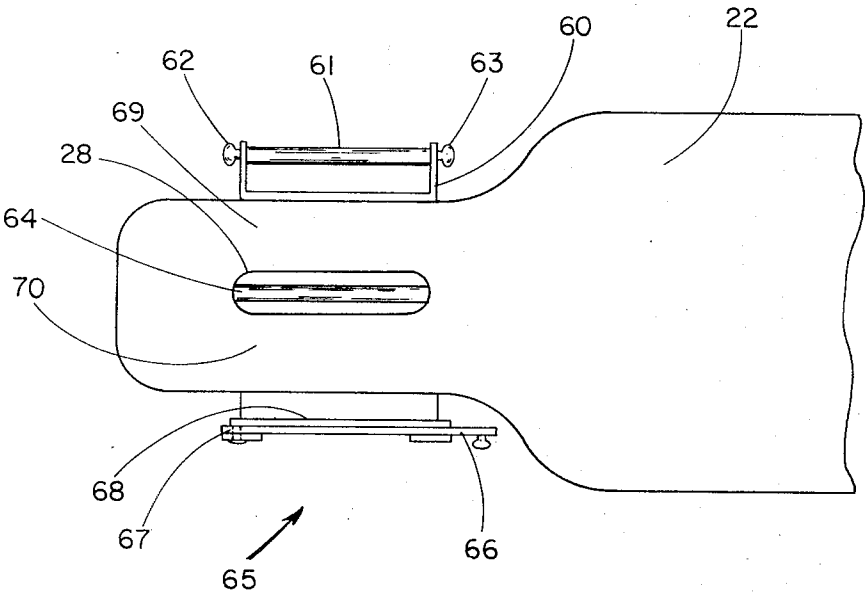


FIG. 4

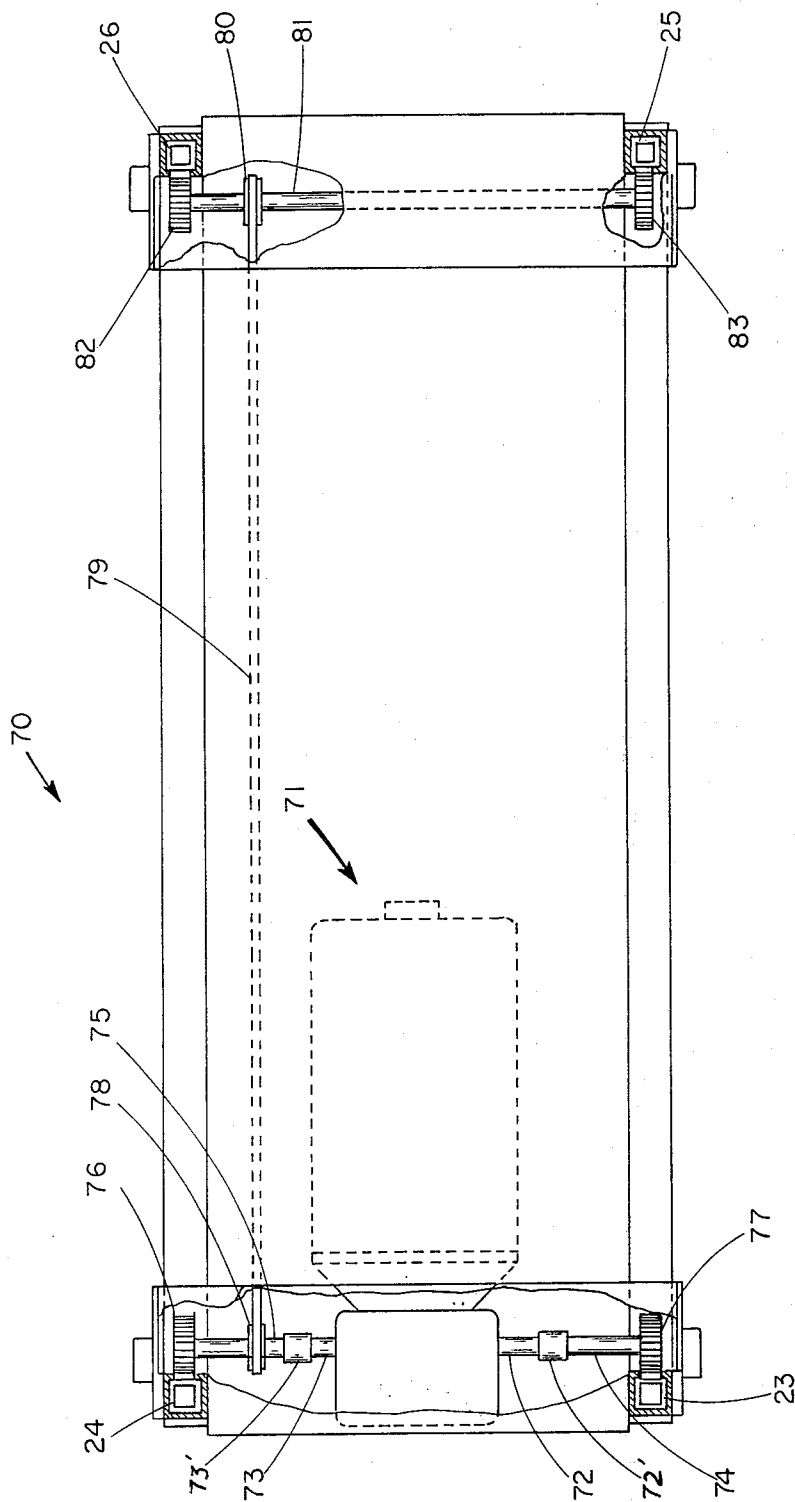


FIG. 5

ADJUSTABLE CHIROPRACTIC TABLE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention is in the field of chiropractic tables.

2. Description of the Prior Art

Until now, the height of all chiropractic adjusting tables was more or less standard and could not be changed. There has been a need for a chiropractic table which could be raised and lowered to accommodate the physique of both the doctor and the patient. Disclosed herein is a table which will place the patient at the proper height for manipulation regardless of the person's height or weight. A variety of positions can be obtained with the patient on the table. This helps both the doctor and the patient. Most important, it saves the doctor's back by reducing his having to bend over the patient. In one embodiment, one end of the table may be raised while the other end of the table remains stationary.

Various patents have been granted on different types of tables. For example, the U.S. Pat. No. 3,640,520 issued to Wieland discloses a therapy tilt table. The U.S. Pat. No. 3,351,051 issued to Jennings shows a table structure which may be tilted in both directions. Two other similar tables are shown in the U.S. Pat. Nos. 3,420,229 issued to Miller and 3,590,812 issued to Larson.

SUMMARY OF THE INVENTION

One embodiment of the present invention includes an adjustable chiropractic table comprising a main frame, a cushion for supporting a person lying thereon being movably mounted on the frame, a first pair of posts with top ends pivotally connected to the cushion and bottom ends received by the frame; a second pair of posts with top ends pivotally connected to the cushion and the bottom ends received by the frame; and, first means connected to the frame and first and second pair of posts operable to cause relative vertical motion between the frame and the first pair of posts for raising and lowering one end of the cushion and also operable to cause relative vertical motion between the frame and the second pair of posts for raising and lowering an opposite end of the cushion.

It is an object of the present invention to provide an adjustable chiropractic table.

Yet another object of the present invention is to provide a new and improved chiropractic table.

A further object of the present invention is to provide a chiropractic table which will allow raising or lowering of one end of the table or both ends of the table.

Related objects and advantages of the present invention will be apparent from the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a table incorporating the present invention.

FIG. 2 is an enlarged side view of the table of FIG. 1 with the cushion removed therefrom.

FIG. 3 is an enlarged fragmentary end view of the table of FIG. 1 with the cushion removed therefrom.

FIG. 4 is an enlarged fragmentary view of the left portion of the cushion shown in FIG. 1 with the disposable paper removed therefrom.

FIG. 5 is a fragmentary top view of an alternate embodiment of the table with the cushion removed therefrom.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiments illustrated in the drawings and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated device, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

Referring now more particularly to FIG. 1, there is shown an adjustable chiropractic table 20 having a main frame 21. Cushion 22 supports a person lying thereon and is movably mounted to frame 21 by four racks 23 through 26. The top ends of racks 23 and 24 are pivotally mounted to cushion 22. Likewise, the top ends of racks 25 and 26 are pivotally mounted and are also slidably mounted to cushion 22. A pair of electrical motors are mounted to frame 21 and are operable to cause relative vertical motion between the posts and the frame for the raising and lowering of cushion 22. The output shaft of the electrical motors are provided with gears which are in meshing engagement with racks 23 through 26.

Cushion 22 is produced by mounting a resilient material such as a solid foam material atop a rigid base. The resilient material is then covered with a suitable fabric. End 27 has a reduced width as compared with the remaining portion of the cushion. Thus, a person's arms may extend downwardly in a relatively easy manner at end 27 when the person is lying face down. End 27 is provided with a slot 28 which receives the person's face. Shelf 29 is mounted to the base of cushion 22 by rods 30. The shelf is positioned beneath slot 28 to receive the hands of a person lying face down on the cushion. A second cushion 30' is slidably mounted to cushion 22 and is extendable therefrom to increase the length of the table. Cushion 30' receives the legs of the person lying on the table. In the embodiment shown in FIG. 1, cushion 30' is fixedly mounted to a rod 31 or a pair of rods which are slidably received by channels mounted to and beneath the base of cushion 22. Thus, cushion 30' may be moved toward or away from cushion 22, depending upon the size of the person lying on the table.

Frame 21 includes four hollow corner legs 32 through 35. Each hollow leg slidably receives a corresponding rack. A plurality of cross braces 35' and 36 (FIG. 2) connect the hollow legs 32 through 35 together to provide for a rigid frame. A pair of electrical motors 37 and 38 are mounted to brace 36. Each motor has an output shaft which extends into a gear reducer having a pair of oppositely directed output shafts. Motor 38 will now be described it being understood that a similar description applies to motor 37. Motor 38 includes a gear reducer 38 with a pair of oppositely extending output shafts 40 and 41 coupled respectively by couplings 42 to drive shafts 43 and 44. The outer ends of shafts 43 and 44 are rotatably mounted in plates 45 and 46 mounted respectively to legs 34 and

35. A pair of spur gears 47 and 48 are pinned to shafts 43 and 44 and project into legs 34 and 35 so as to be in meshing engagement respectively with racks 25 and 26. Thus, in order to raise end 49 (FIG. 1) of the cushion, motor 38 is actuated so as to rotate spur gears 47 and 48 in an appropriate direction to raise racks 25 and 26. Likewise, to raise the opposite end of the cushion, motor 37 is activated so as to rotate in the appropriate direction the spur gears in meshing engagement with racks 23 and 24. Legs 34 and 35 have a portion thereof removed so that the spur gears mounted to shafts 44 and 43 can project therein to engage the racks slidably mounted within the legs. Each motor has separate control switches thereby providing for the independent operation of the motors. Both motors may be operated so as to simultaneously raise both ends of the cushion or alternatively, only a single end of the cushion may be raised. Brackets 50 and 51 are fixedly mounted to the base of the cushion and are also pivotally connected to the top ends of the racks. Brackets 51 are provided with slots 52 which slidably receive the top end of racks 25 and 26. As a result, one end of the cushion may be raised with the opposite cushion end remaining stationary due to the slidable mounting of racks 25 and 26 to brackets 51.

Control box 53 is mounted on one side of cushion 22 and has a pair of toggle switches 54 and 55 which control respectively electrical motors 37 and 38. Switches 54 and 55 each have three positions with the center position disconnecting the corresponding motor from the source of electrical energy. A second position of each toggle switch 54 and 55 allows for the actuation of the appropriate motor to raise the cushion whereas the third position of each switch 54 and 55 allows for the actuation of the appropriate motor in the opposite direction for the lowering of the cushion. A set of controls identical to control box 53 is mounted to the opposite side of the cushion thereby allowing the operator to control the raising and lowering of the cushion from both sides of the table. A pair of limit switches 56 and 57 are mounted to the frame with the movable arms thereof positioned near the top and bottom ends of leg 34. The movable arms of the limit switches project into leg 34 and are movable by suitable projections on rack 25. When rack 25 reaches the most upward position, limit switch 56 will be activated so as to disconnect the electrical motors from the source of electrical energy. Likewise, when rack 25 is in the most downward position, the movable arm of limit switch 57 will be actuated thereby disconnecting the electrical motors from the source of electrical energy. Thus, an automatic cut-off capability is provided.

FIG. 4 is an enlarged fragmentary view of the left end of cushion 22 shown in FIG. 1 with the disposable paper removed. Bracket 60 is mounted to the cushion 22 with rod 61 extending through the opposite ends of bracket 60 being threadedly received by balls 62 and 63. By untightening balls 62 and 63, rod 61 may be removed from the bracket so as to allow for the insertion of a new roll of disposable paper. Rod 64 is mounted to the bottom of the cushion whereas clamp 65 is mounted to the opposite side of the cushion. Clamp 65 has a bar 66 pivotally mounted at location 67. By pivoting bar 66 upwardly, the free end of the disposable paper may pass beneath bar 66 atop plate 68. Bar 66 may then be pivoted downward with the paper then secured in place and allowing for the excess paper to be

torn off adjacent to bar 66. The paper will therefore extend across portion 69 of cushion 22 and then down into slot 28 around rod 64 and then across the remaining portion 70 of the cushion to clamp 65.

An alternate embodiment of the table is shown in FIG. 5. FIG. 5 is a top view of the table with the cushion removed therefrom. Frame 70 is identical with frame 21 with the exception that only a single electrical motor 71 is utilized in lieu of a pair of motors 37 and 38 for the embodiment shown in FIGS. 1 through 4. Motor 71 is provided with a gear reducer having a pair of oppositely directed output shafts 72 and 73 which are respectively coupled to drive shafts 74 and 75 by coupling 72' and 73'. Spur gears 76 and 77 are fixedly mounted respectively to shafts 75 and 74 and are in meshing engagement respectively with rods 24 and 23. Sprocket 78 is fixedly mounted to shaft 75 and is in meshing engagement with a continuous roller chain 79 which extends across the frame so as to be in meshing engagement with sprocket 80 fixedly mounted to axle 81. The opposite ends of axle 81 are rotatably mounted to the frame. Spur gears 82 and 83 are fixedly mounted to axle 81 and are in meshing engagement with racks 26 and 25. The embodiment shown in FIG. 5 does not allow for the raising and lowering of only a single end of the cushion. Instead, both ends of the cushion are simultaneously raised or lowered by actuating motor 71.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiments have been shown and described and that all changes and modifications that come within the spirit of the invention are desired to be protected.

The invention claimed is:

1. An adjustable chiropractic table comprising:

- a main frame;
- a cushion for supporting a person lying thereon being movably mounted on said frame;
- a first pair of posts with top ends pivotally connected to said cushion and bottom ends received by said frame;
- a second pair of posts with top ends pivotally connected to said cushion and the bottom ends received by said frame; and,
- first means connected to said frame and first and second pair of posts operable to cause relative vertical motion between said frame and said first pair of posts for raising and lowering one end of said cushion and also operable to cause relative vertical motion between said frame and said second pair of posts for raising and lowering an opposite end of said cushion;
- a leg support slidably mounted to said cushion being extendable therefrom to increase the length of said table; and wherein:
- an end of said table opposite said leg support includes a face slot into which the face of said person may project and further comprising:
- second means mounted to said table to receive a roll of disposable paper extending across said cushion at said face slot, said second means includes a holder on one side of said cushion to rotatably hold said roll, a guide mounted at the bottom of said slot for said paper to extend from said holder across a

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portion of said cushion and then down into said slot through said guide and upwardly out of said slot and across said cushion to a side opposite said holder, said second means further includes a clamp mounted to a side of said table opposite said holder to receive a free end of said paper. 5

2. The adjustable chiropractic table of claim 1 and further comprising:

a shelf mounted to said cushion beneath said face slot to receive the hands of said person; and wherein: 10

said second pair of racks have top ends slidably mounted to said cushion.

3. A chiropractic adjusting table comprising:

a main frame; 15

a cushion for supporting a person lying thereon being movably mounted on said frame;

a first pair of posts with top ends connected to said cushion and bottom ends received by said frame;

a second pair of posts with top ends connected to said cushion and bottom ends received by said frame; 20 and

first means connected to said frame and said first pair of posts operable to cause relative vertical motion between said frame and said first pair of posts and said second pair of posts for raising and lowering said cushion; 25

said first pair of posts are a pair of first racks slidably mounted to said frame and said second pair of posts are a second pair of racks slidably mounted to said frame; 30

said means includes an electric motor with output shaft means including gears mounted thereon in meshing engagement with said first pair of racks;

said frame includes four hollow corner legs slidably receiving the first and second pair of racks, said frame further includes cross braces connecting said 35

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legs together with said motor mounted on said braces;

said motor has a pair of output shafts extending in opposite directions with gears mounted thereon extending into two of said legs to engage said first pair of racks, one of said output shafts has a sprocket mounted thereto which is in meshing engagement with a continuous roller chain extending across said frame and in meshing engagement with a second sprocket mounted to an axle rotatably mounted on said frame, said axle includes a pair of gears mounted thereon which are in meshing engagement with said second pair of racks;

a leg support slidably mounted to said cushion being extendable therefrom to increase the length of said table; and wherein:

an end of said table opposite said leg support includes a face slot into which the face of said person may project and further comprising:

second means mounted to said table to receive a roll of disposable paper extending across said cushion at said face slot, said second means includes a holder on one side of said cushion to rotatably hold said roll, a guide mounted at the bottom of said slot for said paper to extend from said holder across a portion of said cushion and then down into said slot through said guide and upwardly out of said slot and across said cushion to a side opposite said holder, said second means further includes a clamp mounted to a side of said table opposite said holder to receive a free end of said paper.

4. The chiropractic adjusting table of claim 3 and further comprising:

a shelf mounted to said cushion beneath said face slot to receive the hands of said person.

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