CHIROPRACTIC ADJUSTMENT TABLE

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Fig. 1.
This invention appertains to adjusting tables for use by chiropractors during the course of their profession.

One of the primary objects of my invention is to generally improve the construction of chiropractic adjusting tables, whereby to facilitate the various manipulations on the patient and to render the table comfortable to the patient, and at the same time allow the table itself to be conveniently operated by the chiropractor.

Another salient object of my invention is to provide an adjusting table for the patients of chiropractors of the type which includes a swinging table frame pivotally mounted on a base, whereby the patients can be moved from an upright position to a prone position and vice versa, with a novel spring balance mechanism automatically adjustable to the particular weight of a patient, whereby patients of different weights can be easily raised or lowered without undue effort on the part of the chiropractor and without the manual setting of any parts.

Another object of my invention is the provision of a footboard carried by the swinging frame upon which the patient initially stands, having an operative connection with the spring balancing mechanism for throwing more or less springs into action according to the weight of the patient.

Another further object of my invention is to provide adjustable bumpers on the base to regulate the inclined position of the swinging table frame, when said frame is in its raised position, with means for adjusting the position of the footboard on the frame relative to the floor, when said frame is in its raised position.

A further important object of my invention is to provide an automatic adjustable shin support on the frame, whereby when the frame moves to its lower horizontal position, the support will rise, so that the patient's lower back muscles will be relaxed, which is desirable when giving certain treatments, with a manual adjustable means for regulating the amount of movement of the shin support.

A further object of my invention is to provide novel means for raising and lowering the front end of the leg support to adjust the slope thereof relative to the frame and to the chest and abdominal support in such a manner that the leg support will move forward as the same is raised, so that the patient will not be pulled off the chest support as the leg support is elevated.

A further important object of my invention is the provision of front auxiliary cushions on the leg support, with means for automatically changing the position thereof on the leg support as the leg support is raised to create a downwardly inclined or rolled surface at the front of the leg support to give additional comfort to the patient.

A still further important object of my invention is to provide a resiliently mounted self-conforming abdominal support for the patient, whereby said support will instantly position itself to the particular abdominal structure or build of the patient, with manual means independent of the resilient mounting for initially setting the position of the abdominal support to a desired height.

A still further important object of my invention is to provide means for adjusting the chest support, whereby the table can be made comfortable for full-chested as well as hollow-chested persons.

A still further object of my invention is the provision of a novel shaped headpiece, with means for adjusting the position of the headpiece relative to the chest support, so as to bring the head and neck of the patient in the correct and desired place.

A still further important object of my invention is to provide a novel type of sanitary paper clamp for the headpiece, whereby the paper can be quickly changed with a minimum amount of effort on the part of the operator.

A still further object of my invention is to provide a novel concealed locking mechanism for detachably holding the table frame in its lowered position on the base, said mechanism being so disposed that the top surface of the base will be free from all projections when the table frame is in its raised upright position.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawings, in which drawings:

Figure 1 is a side elevational view of my improved chiropractic adjustment table, showing the table frame in its raised position for receiving a patient.

Figure 2 is an enlarged, fragmentary, vertical, sectional view through the foot end of my table, the table frame being shown in its lowered horizontal position.

Figure 3 is a fragmentary, horizontal, sectional view through the foot end of the table.
Figure 4 is a fragmentary, longitudinal, sectional view through the head end of the table. Figure 5 is a fragmentary, horizontal, sectional view through the head end of the table.

Figure 6 is a horizontal, sectional view through the base of my appliance, the section being taken substantially on the line 8--8 of Figure 1, looking in the direction of the arrows.

Figure 7 is a transverse sectional view through the headrest, taken on the line 7--7 of Figure 4, looking in the direction of the arrows, the view being made at a scale smaller than that Figure 4.

Figure 8 is a top, plan view of the head rest with only a fragment of one cushion shown so as to illustrate the structural details below the cushions, parts of the frame and operating levers being shown broken away and in section.

Figure 9 is an enlarged, detail, horizontal section taken at the base of Figure 4, looking in the direction of the arrows, illustrating the means for setting the position of the abdominal support.

Figure 10 is a transverse sectional view through the base taken on the line 10--10 of Figure 4, looking in the direction of the arrows, illustrating the means employed for locking the front carriage in a selected adjusted position on the table frame.

Figure 11 is a fragmentary, transverse, sectional view taken on the line 11--11 of Figure 2, looking in the direction of the arrows, showing the connection between the rear or foot carriage and the base.

Figure 12 is a fragmentary, longitudinal, sectional view through the base, taken on the line 12--12 of Figure 6, looking in the direction of the arrows, illustrating a part of the foot latch mechanism for holding the table frame in its lowered position on the base.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter T generally indicates my chiropractic adjustment table, and the same includes a base 10 and a swinging table frame 20.

The base 10 includes a head pedestal 16 and a foot pedestal 17, and these pedestals have connected thereto a flat top wall or plate 18. The side rails of the top wall 18 can be lowered downwardly to provide side rails or flanges 19. The head pedestal 16 includes legs 20 having floor-engaging feet 21, and this pedestal can be welded or otherwise secured to the wall 18 and its flanges 19. The foot pedestal 17 also includes legs 22 and outwardly extending flared feet 23. These outwardly extending feet 23 form means for preventing tilting of the base, and the same insure stability of the entire table. The side legs 22 are connected together by an upwardly curved connecting wall or piece 24, and the top wall 18 is welded to said piece or otherwise rigidly connected therewith. The side rails or flanges 18 are also welded or otherwise secured to the pedestal 17.

The table frame 20 is rockably mounted to the pedestal 17 by means of a cross shaft 28, so that the table frame can be swung to a raised or lowered position upon the base 15.

The frame 25 preferably includes a pair of spaced, parallel, longitudinally extending side rails 27. These rails are braced at spaced points by transversely extending crossbars. As illustrated, the forward ends of the side rails 27 are connected by a crossbar 26, which can form a handle for raising and lowering the table frame, and an intermediate crossbar 28.

The shaft 26 has its ends firmly secured to the sides of the pedestal 17, and the shaft extends through the side rails 27 of the table frame to permit the swinging of said frame. At this point, it is to be noted that the end of the shaft 26, at or near the forward end thereof moves forwardly of the shaft 26, for a purpose which will be later set forth. This shaft also has mounted thereon for turning movement side sleeves 30 and an intermediate sleeve 31. The purpose of these sleeves will also be more fully pointed out.

Slightly mounted upon the side rails 27 for longitudinal movement toward and away from one another are the leg carriage 32 and the body carriage 33. These carriages 32 and 33 carry certain cushions for the legs and body.

The leg carriage 32 includes spaced side bars 34, which are rigidly connected together by end cross rods 35 and 36 and an intermediate crossbar 37. The end cross rods 35 and 36 have reduced terminals 38, which engage through the side bars 34 and into longitudinally extending guide grooves 39 formed in the inner faces of the side rails 27 of the table frame. Guide lugs 38 are carried by the outer faces of the bars 34 and are also slidably mounted in the guide grooves 39. As is clearly shown in Figures 3 and 13, the side bars 34 are arranged in facing contact with the side rails 27. This allows movement of the leg carriage back and forth, and the leg carriage is held in a selected position by a rack bar 39, the teeth of which are adapted to engage an upstanding lug 40 formed on the intermediate brace bar 28 of the table frame.

The carriage 32 supports the main leg cushion 41 and auxiliary front leg cushions 42. The cushions 41 and 42 can be mounted upon suitable plates 43 and 44, respectively, and the plates are joined together by hinges 45. The front auxiliary cushions 42 are arranged in spaced relation for comfort and are adapted to swing relative to the main leg cushion during the adjustment of said main leg cushion.

Rockably connected at their upper ends to the plate 43 are depending supporting links 46, and these links are rockably mounted for swinging movement upon the cross rod 36. Depending from the plate 43 adjacent the front end thereof are depending brackets 47, and the lower ends of these brackets are connected by a cross rod 48. This cross rod 48 has rockably mounted thereon forwardly extending links 49, which rock on the cross rod 35. The links 49 are rigidly connected by a cross brace bar 50, and this brace bar, in turn, has formed thereon or secured thereon arms 51, which are also mounted on the shaft 35 for turning movement. These arms rockably carry a feed nut 52 into which is threaded a feed screw 53. The outer end of the feed screw 53 carries a hand crank 54 for permitting the rotation of said screw, and the lower end of the screw is rotatably mounted in a bearing 55 carried by the intermediate brace rod 37 of the carriage. The ends of the brace rod 37 are rockably mounted on the side bars 34 of said carriage.

By this arrangement, upon the turning of the hand crank 54, the main leg cushion can be raised and lowered, and particular attention is directed to the fact that as the cushion is elevated, the front end thereof moves inwardly as cushions carried by the body carriage 33. This is important, as during adjustment of the leg
cushion, the patient will not be pulled off the cushions of the chest support.

Attention is now directed to the forwardly extending links 59, which are pivotally connected to the links 49 adjacent their upper ends. The links 56 extend forwardly toward the body carriage and are pivotally connected, as at 87, to the plates 44 of the auxiliary cushions 42. By this arrangement, as the leg carriage is selectively positioned, the headrest 72 will pull down on the forward ends of the auxiliary cushions 42, which gives a desired inclined or rolled edge effect to the front of the leg support. This materially aids in the comfort of the patient.

Referring back to the lathe rack bar 39, it is to be noted that the said lathe rack bar can be pivotally connected to one of the links 49 or to any other appropriate part of the sliding carriage 32.

The body carriage 32 is constructed somewhat similar to the leg carriage 32, and, hence, includes side bars 58, which are arranged in facing engagement with the inner faces of the side rails 27 of the swinging table frame. The side bars 58 are connected together by front and rear brace bars 59 and 60. The sides of the side bars 58 have formed therein or secured thereto laterally projecting slide lugs or shoes 61, which are slidable received within longitudinal guide grooves or tracks 61 formed on the inner faces of the side frame rails 27. The guide grooves or tracks 61 can extend to the forward ends of said rails, and the handle or crossbar 26 is made removable so as to permit the sliding of the lugs 60 within said grooves or tracks.

The front end of the carriage can carry a supporting board or plate 62, which can be covered with leather or other material which will add to the appearance of the table. The sides of the bars 58 carry laterally disposed hand grips 63 of any desired character, and these grips are adapted to be held by the patient during the raising and lowering of the table frame and while the widening and contracting movements are being made.

The body carriage is adapted to be slid longitudinally of the table frame toward and away from the leg carriage, and the body carriage can be held in a selected position by a slide latch bolt 64. This bolt can be selectively positioned in any one of a plurality of spaced keeper openings 65 formed in one of the side rails 27. To facilitate operation of the latch bolt, the inner end thereof is secured to a thumppiece 66, which is slidably mounted upon the rear crossbar 60. This thumppiece is arranged adjacent a rigid thumppiece 67 secured to said crossbar 60, and a spring 68 is arranged between said thumppiece and thumppiece for normally moving the latch bolt toward a selected keeper opening 65. By grasping the thumppiece and thumppiece, the thumppiece can be slid on the crossbar 60 against the tension of the spring 68 to move the latch bolt away from a keeper opening.

I preferably connect the sliding body carriage 32 to the frame 25 by means of a longitudinally extending spring 69. One end of the coil spring can be secured to the frame handle 28, and the other end of the spring can be secured to the crossbar 60. Consequently, upon release of the latch bolt, the spring 69 functions to automatically move the body carriage toward the front end of the table frame.

The body carriage carries a main cushion 70 upon which the abdomen of the patient rests, a chest cushion 71, and a headrest 72. The headrest 72 includes independent side check cushions 73 and 74, which are normally arranged at an angle to one another. The abdominal cushion 70 can be carried by a suitable plate 74. The chest cushion 71 can also be carried by a plate 75, and the cheek cushions 73 and 74 of the headrests are mounted upon plates 77. All of these cushions and their platforms are carried by or are mounted upon the body carriage in a novel manner, as will be described now.

The support for the abdominal cushion 70 includes a pair of spaced bell crank-shaped side brackets or levers 78, and the upper ends of these levers are pivotally connected, as at 79, to the plate 74 for swinging movement. The side brackets or levers 78 are rigidly connected together for synchronous movement by a crossbar 80. The levers or brackets are connected at their angles by a cross shaft 81. The forward upper ends of the levers 78 are rockably mounted upon a cross shaft 82, the ends of which are carried by upwardly extending standards 83. These standards are firmly secured to or form a part of the side bars 56 of the body carriage. The plate 74, together with its front end, has pivotally connected thereto, as at 84, a link 85, which is, in turn, pivotally connected, as at 86, to a forwardly and downwardly extending lever 87. This lever has its forward end rigidly secured to the cross shaft 81. Hence, both the front and rear ends of the abdominal cushion are rockably supported.

The weight of the person on the cushion 70 is resisted by relatively heavy coil springs 88. The forward ends of the springs are connected to a crossbar 90, which is carried by side arms 91. These side arms 91 are pivotally secured, as at 91', on the side frames or bell crank-shaped levers 78. The rearward ends of the springs are connected to a rear crossbar 92. This crossbar 92 is slidably mounted on guide ribs 93 carried by the inner faces of the side bars 58 of the carriage 32. By adjusting the crossbar 92 back and forth, the angle of the abdominal cushion can be changed, and the cushion can be raised and lowered.

To permit the adjustment of the crossbar 92, the same has formed thereon or secured thereto the forwardly extending rack bar 94. The front end of the rack bar is slidably received in a guide bracket 95 secured to the lower face of the carriage board 92. The guide bracket 95 carries a latch 96 for engaging in a selected tooth of the rack bar.

To facilitate the operation of the latch 96, the same can be pivotally secured to an operating lever 97. The lever, in turn, can be pivotally mounted, as at 98, on the carriage board 92. A light tension spring 99 connects the hand lever 97 with the board, so that the latch 96 will be normally urged toward the rack bar 94.

The raising and lowering and the angular adjustment of the abdominal cushion 70 will be thereby controlled.

The tension of the springs 89 can be adjusted within certain limits, and this is accomplished by raising and lowering the rear swinging crossbar 90. By referring to Figures 4 and 5, it will be noted that the rock shaft 81 has formed thereon an ear 100, and this ear is connected through the medium of a toggle 101 with the shaft 82, which is supported by the standards 83. The toggle 101 includes links 102 and 103. The meeting ends of the links are pivotally con-
4. Connected together, as at 104. The outer ends of the links 102 and 103 are mounted upon the shaft 82 and the ear 100, respectively, for swinging movement. The swinging crossbar 90, which connects the forward ends of the tension springs 88, has pivotally connected thereto a latch crossbar 105, and this latch bar is adapted to be hooked over a latch pin 106 carried by the link 101 of the toggle. By this construction, the crossbar 90 can be raised and lowered and held in any preferred selected position. This changes the angle of the springs 88 and the tension thereof.

Downward movement of the rear portion of the abdominal cushion is resisted by the springs 88, and the front downward swinging movement of this cushion is resisted by springs 107. In this connection, it is to be noted that the cushion 70 is free to rock on the pivots 78, which allows the desired movement of the cushion, so that the cushion can position itself to the particular structure or build of the person.

The forward ends of the springs 107 are connected to the crossbar or shaft 82, and the rear ends of the springs are connected to the upper end of a pivoted finger latch 108. This pivoted finger latch 108 is carried by a slide bracket 109, which is mounted for movement longitudinally of the lever 87. This lever 87 is provided with rack teeth, and the nose of the latch 108 is adapted to engage in any selected tooth of the lever. Consequently, the springs 107 function to normally pull the lever 87 forwardly and to straighten out the toggle connection formed by the link 85 and the lever 87.

When weight is placed on the forward end of the abdominal cushion, the lever 87 is swung downwardly against the tension of the springs 107. These springs also urge the finger latch 108 into its latching position. By sliding the guide bracket 109 along the length of the lever 87, the angle and, consequently, the tension of the springs 107 can be changed.

The lever 87 adjacent the rock shaft 81 has pivotally connected thereto rearwardly extending arms 110, and these arms are, in turn, pivotally connected to a slide bracket 111 carried by the rack bar 84, which is utilized for adjusting the height of the abdominal support. When pressure is placed upon the abdominal support, the swinging bracket, which includes the bell crank-shaped lever 76 and the rock shaft 81, is moved forwardly, and the slide bracket travels along the rack bar 84. When it is desired to hold the back of the cushion against swinging movement, a finger latch 112 carried by the slide bar 92 can be hooked over a keeper plate 113 formed on the slide bracket 111. Consequently, the slide bracket 111 will be secured to the slide crossbar 92, and forward movement of the slide bracket will be prevented. This will effectively prevent the downward swinging movement of the back end of the abdominal cushion.

Referring back to the raising and lowering of the cushion, it can be seen that when the slide bar 92 moves forwardly, the springs 88 will not resist downward swinging movement of the abdominal cushion, and, consequently, the cushion will lower. When the latch 96 is released by the finger lever 97, the abdominal cushion can be raised by an upward pull on the back end thereof, and the slide bar 92 will be pushed rearwardly, due to the connection of this bar with the rock shaft 81 through the medium of the arms 110. From this construction, it can be seen that, in effect, I have provided a free-floating abdominal support.

In order to effectively brace the crossbar 82, I provide a supporting bracket 114, and this bracket is connected at its upper end to said crossbar or shaft 82, and at its lower end to the carriage plate 82.

The chest cushion 71 and its supporting plate 75 are also carried by the standards 83 for swinging movement. The forward end of the plate 75 can be carried through the medium of the arms 76 depending pivot ears 115, and these ears are rockably mounted on the crossbar or shaft 82 carried by the upper ends of said standards. To adjust the angle of the chest cushion, the plate 75 is connected with the bracket 114 by a turnbuckle 117. The outer ends of the screws of the turnbuckle are connected, respectively, with the bracket 114 and pivot ears 115 carried by the lower face of the plate 75. By turning the nut or turnbuckle, the angle of the chest cushion can be raised and lowered, and, thus, full comfort for a broad-chested person can be accommodated and maintained.

In order to limit the downward swinging movement of the abdominal cushion, the same can have a connection with the chest cushion. This connection can consist of a leaf 120 hingedly connected, as at 121, on the forward end of the plate 74 of the abdominal cushion. This leaf 120 is, in turn, pivotally connected to the rear end of a swinging lever 122. The forward end of this lever is, in turn, pivotally connected to the plate 75 of the chest support directly at the point of connection of the turnbuckle therewith.

The headrest 72 includes the cushions 73 and the independent plates 77 and a rectangular-shaped open supporting frame 123. This frame includes spaced parallel side bars 124 and connecting front and rear end bars 125 and 126. The rear end frame bar 126 has formed thereon rearwardly extending pivot ears 127, which are mounted for rocking movement on the crossbar or shaft 116 carried by the upper ends of the standards 83. The cushions 73 and their plates 77 are mounted upon the open frame 123 in a novel manner, as will be later set forth, and the frame itself can be swung on the shaft 116 to vary the inclination of the entire headrest. This means includes the depending yoke 128. This yoke is abdominal support, as well as to ear 130 carried by said frame. The yoke has formed thereon or attached thereto a rack bar 131, which slidably extends through a rigid guide bracket 132. This guide bracket 132 can be attached to the carriage board 62 and the rigid bracket 114. The guide bracket 132 carries a latch pin 133, and the rack bar can be placed over the pin at any desired point. The rack bar 131 is held in its selected adjusted position against accidental movement by means of a spring-pressed lever 134, which is rockably mounted on the guide bracket 132. This lever is normally urged toward the rack bar, as can be clearly seen by referring to Figure 4.

The angle of the cushions 73 and 75 relative to one another can be changed to suit the contour of the patient's face and, therefore, be comfortable for the patient. The end bars 125 and 126 of the frame have secured adjacent thereto similar bars 135, and the end bars with the bars 135 form guide tracks for slide blocks 136. These are two slide blocks for each cushion, and the cushions adjacent thereto are pivotally connected, as at 137, to the inner ends of the slide blocks. The cushions, at points
spaced from their connections with the slide blocks have pivotally connected thereto links 138, and the lower ends of these links are, in turn, pivotally connected, as at 138, to the frame 123 adjacent its opposite sides.

To bring about the adjustment of the cushions, a rock shaft 146 has its ends journaled in the end bars of the frame, and one end of the rock shaft has formed thereon or secured thereto a manipulating hand crank 141. The shaft also has secured thereto, adjacent its opposite ends, double-armed crank levers 142. The lower arms of the crank levers, which are preferably longer than the upper arms, have connection with the slide blocks of the cushions 72' by means of links 143 and arms 143'. These links 143 are pivotally connected to the lower arms of the crank levers 142 and to the lower ends of the arms 143', which are carried by the slide blocks of the cushions 72'. The upper short arms of the cranks are connected to the links 136 of the other cushion by means of links 144. It can be seen that upon turning of the rock shaft 146, the arms of the double cranks will move in opposite directions, which will act, when the shaft is rocked in one direction, to elevate the cushions and thrust the cushions slightly apart. When the rock shaft is moved in the opposite direction, the cushions will be lowered and moved toward one another.

I have provided an exceptionally simple mechanism for permitting the use of a sanitary covering for the cheek or head cushions. This sanitary covering can be paper, and I preferably utilize a roll of paper 146. This roll of paper can be wound upon a mandrel 147, the ends of which can be rotatably carried by depending ears 148 formed on the opposite ends of the frame 123. Any preferred means can be provided for permitting the quick detaching of the mandrel from said ears. One of the paper strip is brought over the top of one head cushion (see Figure 7) and is then brought down between the head cushions under the rock shaft 146 and over the other cushion. A swinging clamp bar 149 is carried by the outer longitudinal edge of the last mentioned cushion, and this clamp bar is normally urged toward the other face of the cushions by tension springs 150. This clamp bar is adapted to engage and hold the end of the paper strip, and, if desired, the clamp bar can carry on its inner face penetrating prongs 151 for firmly gripping the paper.

My table also includes a shelf support 152 and a platform 153 upon which the patient is adapted to stand when the table is in its upright position. The skin support 152 is operated automatically and functions to rise as the frame 25 is swung down. As illustrated, the skin support includes a top cushion 154 mounted upon a supporting plate 155, and this plate has attached thereto adjacent its opposite ends, angle-shaped supporting arms 156. These arms can be firmly secured together and braced in any desired way. The arms extend under the leg carriage, and their forward ends are pivotally connected to the side rails 27 of the table frame by means of pivot pins 157. Depending from the arms 156 adjacent their forward ends is a U-shaped swinging elevating frame 158. This frame is rockably carried by the arms and can be connected to said arms 156 by means of pivot bolts or the like 159. The bottom bar of the swinging U-shaped frame has mounted thereon hard rubber rollers or wheels 160, which are adapted to strike wear plates 161 carried by the upper surface of the base 15.

As the frame 25 is swung down, the rollers 160 will contact the wear plates and will push up on the U-shaped frame 158, which will elevate the arms 156 and the cushion 154. The amount of movement of the cushion 154 can be readily regulated by changing the angle of the U-shaped frame 158 relative to the arms 156. To accomplish this, the swinging U-shaped frame 158 has pivotally mounted on its lower crossbar an arcuate rack bar 162. This rack bar slidesly extends between a pair of guide ears 163 carried by the center sleeve 31 mounted upon the shaft 26, which rockably carries the table frame. The ears 163 carry a latch pin 164, and the arcuate rack bar 162 is adapted to be latched over the latch pin 164 at a selected point.

As brought out in the objects, one of the important features of the invention is the provision of the novel means employed for counterbalancing the weight of the table frame and the weight of the patient carried by said frame, in conjunction with the novel mounting of the footboard or platform on the frame for cooperation with said spring balance to advantageously adjust the balance according to the weight of the person being handled. The footboard or platform 153 is carried by forwardly extending arms 165, which are rockably mounted upon a transversely extending shaft 158 carried by the rearward ends of the side rails 27 of the table frame 25. By referring to Figures 1 and 2, it can be seen that the shaft 166 is arranged a considerable distance beyond the pivot shaft 26 for the table frame. The footboard or platform can be covered by a suitable pad 167 formed from rubber or any other desired material.

Pivoted securely to the footboard or platform 153 is a forwardly extending link 168, and this link is pivotally connected by means of a pin 169 with the crankarm 183 formed on or carried by the center sleeve 31. This sleeve 31, it will be recalled, is rotatably carried by the pivot shaft 26. This sleeve 31 also has formed thereon or secured thereto a depending crankarm 170, and the lower end of the arm 170 carries a bearing roller 171, which is adapted to normally engage the outer surface of a link 172. The upper end of this link is pivotally connected, as at 173, to the rear end of the base 15. Hence, when a person stands upon the platform, the weight of the person will tend to swing the platform down and rock the sleeve 31 and move the roller into thrusting engagement with the link 172. The purpose of this will be set forth later.

At this point, it is to be noted that the supporting link 169 of the platform is adjustably connected to the crankarm 183, so that the height of the platform relative to the floor can be regulated when the table frame is in its raised position. This is accomplished by providing a plurality of openings 174 in the forward end of the link 168, and the pivot pin 169 can be placed in any selected one of these openings.

The shaft 166 carried by the table frame has rockably mounted thereon a pair of spaced bell crank-shaped brackets 175, and these brackets are connected at their angles by a cross shaft 176. This shaft has loosely mounted thereon a sleeve 177 having formed thereon a plurality of forwardly extending arms 178. The upper ends of these arms 178 have connected thereto longitudinally extending side tension springs 179 and 180. These springs 179 and 180 extend longitudinally of the base
under the top wall 18 thereof, and the forward ends of the springs are connected to hooks 181. These hooks 181 are carried by a cross brace bar 182, which is rigidly secured to the side flanges of the top 18 of the base. If desired, the hooks 181 can be adjustably connected to the crossbar 182, so that the tension of these side springs can be regulated. As shown, the hooks 181 are provided with threaded shanks 183, which extend through the crossbar, and these shanks have threaded thereon thumb nuts 184, which bear against said crossbar. Obviously, by turning the nuts, the threaded shanks can be moved back and forth.

From the description so far, it can be seen that the side coil springs 179 and 180 pull back on the shaft 176, and as this shaft is carried by the hanger brackets 175, the springs exert a pull on the rear end of the table and normally tend to move the frame of the table to a raised position. Hence, these springs 179 and 180 tend to counterbalance the weight of the table frame and its accessories to facilitate the manipulation of said table frame. The upper inner ends of these brackets 175 can be rigidly secured to the end sleeves 30, which are loosely mounted upon the cross shaft 26. This gives an additional support for the hanger brackets 175 and insures the correct movement of said brackets during the raising and lowering of the table frame.

It is also to be noted that the arms 176 carried by the sleeve 177, which is loosely mounted on the cross shaft 176, have connected thereto spaced parallel longitudinally extending springs 185, 186, and 187. These springs extend under the base, and these springs are selectively thrown into operation automatically by the weight of the person standing on the platform or footboard 193.

The forward ends of the springs 185, 186, and 187 have secured, respectively, thereto forwardly extending bars 188, 189, and 190. All of these bars slidably extend through guide openings formed in the crossbar 182, and the upper surfaces of said bars have formed therein keeper notches 191. The forward end of the crossbar 182 has pivotally connected thereto swinging latch bars or dogs 192, 193, and 194. The dogs are all normally held in a raised elevated position away from the bars 188, 189, and 190 by means of tension springs 195. These springs can be connected to a brace bar 196 secured to the base.

When the table frame is in its raised position, the shaft 176 swings forwardly and under the base, as is clearly shown in Figure 2 of the drawings, and, consequently, the springs 185, 186, and 187 and their bars are pushed forwardly, and at this time the keeper notches 191 will be positioned under the dogs 192, 193, and 194.

Slidably mounted upon the crossbar 182 is a frame 197. This frame includes side bars 198 and 199 and an intermediate bar 200. The frame also includes crossbars 201, which rigidly connect the side and intermediate bars together. Particular attention is directed to the fact that the side bar 198 projects a greater distance forwardly toward the dogs than the bars 199 and 200, and that the bar 199 projects a greater distance forwardly toward the dogs than the intermediate bar 200. Thus, when the frame 197 is slid forwardly, the dog 193 will be depressed against the tension of its spring into the keeper notch 191 of the spring bar 188. Then, the dog 194 will be depressed into engagement with the walls of the keeper notch 191 of the bar 190, and finally the dog 195 will be depressed into engagement with the walls of the keeper notch 191 in the spring bar 189.

The frame 197 is actuated from the platform or footboard 153 in the following manner. Pivoting the lower end of the link 172, which is engaged by the roller 171, is a forwardly extending thrust rod 202. This thrust rod is, in turn, pivotally connected, as at 203, to a lever 204. The lever 204 is pivotally connected at one end by means of a pin 205 with the base 15. The lever 204 is, in turn, connected with the frame 197 by a link 206. Hence, any movement imparted to the link 172 by the roller 171 will be transmitted to the frame 197.

Movement of the lever 204 is normally prevented by a coil spring 207, which is connected to said lever and to a crossbar 208 carried by the base. The tension of the spring 207 can be adjusted in any preferred way, and, as illustrated, the ends of the spring are selectively hooked over teeth formed in the lever 204 and in the brace crossbar 208. By changing the angle of the spring 207, the length of the spring can be shortened, which will vary the spring throw.

In operation of the table, the table frame is initially moved to an elevated position with the platform 153 off of the floor, so that as a patient steps on the platform, the platform can move down depending upon the weight of the patient. The patient now steps upon the footboard or platform 153 and leans against the cushions of the table. The patient can grasp the handle bars 63. If the patient is comparatively light, the platform 153 will move down a slight distance, which will swing the crankarm 170 forwardly against the link 172 and move the thrust bar 202 forwardly against the tension of the spring 207. The movement of the thrust bar will slide the frame 197 a predetermined distance, and if the person is heavy enough, the side bar 190 of the slide frame will engage the dog 192 and move the same into the keeper notch 191 of the spring bar 188. Consequently, the spring 185 will be connected with the swinging table frame and the base and will resist downward swinging movement of the table frame under the weight of the person. If the person is heavy enough, the slide frame 197 will move forwardly a greater distance, and the side bar 190 of the frame will engage the dog 194 and move the dog into interlocking engagement with the spring bar 189. Thus, the spring 185 will be connected with the base and the table frame. A heavier person will slide the frame 197 forwardly a greater distance, and, consequently, the intermediate frame bar 200 will depress the dog 193 into interlocking engagement with the spring bar 189. This will connect the intermediate spring 188 with the base and swinging table.

Thus, it can be seen that I have provided an effective means for automatically counterbalancing the table according to the weight of a person standing upon the platform or footboard 153.

When the table frame has been swung to its completely lowered position, the pull of the spring bars 188, 189, and 190 will hold the dogs 192, 193, and 194 in engagement with the walls of the keeper notches 191, and these springs will still counterbalance the weight of the person when the table frame is swung to its raised position. After the table frame has been swung to its raised position and the patient steps off the footboard or platform, the slide frame 197 will be pulled forwardly by the spring 207 and all of the dogs will be lifted by their springs.
In order to hold the table frame in its lowered position, I provide novel latch mechanism 280. This latch mechanism includes a keeper hook 210, which is rigidly secured to the forward end of the table frame, and this hook is adapted to extend through an opening 211 in the base when the table frame is lowered. A swinging latch hook 212 is carried by the base below the top wall 18 thereof. This latch hook is adapted to engage the keeper hook, as can be seen by referring to Figure 4.

To facilitate the actuation of the latch hook 212, I provide foot pedals 218, which are arranged on the opposite sides of the base. These foot pedals are keyed or otherwise secured to a rock shaft 214, which is carried by the base. A crank arm 215 is keyed or otherwise secured to the rock shaft, and the upper end of the rock arm is connected to the latch hook by means of a pivoted link connection 216. Consequently, when pressure is placed upon either foot pedal, the latch hook 212 will be swung away from the keeper hook 210. A spring 217 is utilized for normally holding the latch hook in engagement with the keeper hook, then the table frame is in its lowered position. During the downward swinging movement of the table frame, the latch hook will be in the path of the keeper hook, and, consequently, the keeper hook will automatically push the latch hook back out of the way until the latch hook can hook over said keeper hook.

As all of the latch mechanism is disposed below the top wall of the base, the base is left clear, and there are no obstructions on the upper face of the base.

As shown in Figures 2 and 6, the pedestal 17 of the base carries adjustable stops 218, and these stops are arranged in the path of the side rails 27 of the table frame. By adjusting the stops, the angular position of the table frame on the base can be regulated when the table frame is swung to its raised position. If desired, suitable rubber bumpers can be carried by the side rails for engaging said adjustable stops 218.

From the foregoing description it can be seen that I have provided a chiropractic adjustment table which will be extremely comfortable for the patient and which can be adjusted to suit persons of various sizes and structural builds, and one which is provided with automatic means for counterbalancing the weight of a particular person being handled on said table.

Changes in details may be made which do not depart from the spirit and scope of my claims, and what I claim as new is:

1. In a chiropractic adjustment table, a base section, a table section pivoted thereon for movement to a raised elevated position or a lowered horizontal position, counterbalancing spring means operatively connecting the table section to the base section for normally urging the table section to a raised position, means detachably latching the table section in a lowered horizontal position on said base section, a plurality of supplemental counterbalancing springs connected to the table section, a slide frame carried by the base including push bars of different lengths for engaging the dogs one after the other for moving the same into an operative position, and means operatively connecting the platform with said slide frame, a plurality of dogs carried by the base section for operatively connecting the supplemental springs with said base section, means normally holding the dogs in an inoperative position, a slide frame carried by the base including push bars of different lengths for engaging the dogs one after the other for moving the same into an operative position, and means operatively connecting the platform with said slide frame, a plurality of dogs carried by the base section for operatively connecting the supplemental springs with said base section, means normally holding the dogs in an inoperative position, a slide frame carried by the base including push bars of different lengths for engaging the dogs one after the other for moving the same into an operative position, and means operatively connecting the platform with said slide frame.

2. In a chiropractic adjustment table, a base section, a table section pivoted thereon for movement to a raised elevated position or a lowered horizontal position, counterbalancing spring means operatively connecting the table section to the base section for normally urging the table section to a raised position, means detachably latching the table section in a lowered horizontal position on said base section, a plurality of supplemental counterbalancing springs connected to the table section, a platform rockably carried by the table section, a plurality of dogs carried by the base section for operatively connecting the supplemental springs with said base section, means normally holding the dogs in an inoperative position, a slide frame carried by the base including push bars of different lengths for engaging the dogs one after the other for moving the same into an operative position, and means operatively connecting the platform with said slide frame, a plurality of dogs carried by the base section for operatively connecting the supplemental springs with said base section, means normally holding the dogs in an inoperative position, a slide frame carried by the base including push bars of different lengths for engaging the dogs one after the other for moving the same into an operative position, and means operatively connecting the platform with said slide frame.

3. In a chiropractic adjustment table, a base section, a table section pivoted thereon, counterbalancing spring means connecting the table section to the base section for counterbalancing the weight of the table section and for normally urging the table section to a raised position, said table section projecting beyond the base section and its pivotal connection therewith, a platform rockably connected to the extended portion of the table section, bell crank-shaped hanger brackets rockably connected to the extended end of the table section and to the base section at the point of the pivotal connection of the table section with said base section, a crossbar carried by the hanger brackets at their angles, a plurality of supplemental counterbalancing springs connected to said crossbar, spring bars connected to the forward ends of said supplemental counterbalancing springs having keeper notches therein, pivoted dogs carried by the base for engaging the walls of the keeper notches when the spring bars are in certain positions, means normally holding the dogs in a raised inoperative position, a slide frame on the base including bars of different lengths for engaging the dogs one after the other for moving the dogs to an operative position, a push bar operatively connected to the slide frame, a hanger link connecting the push bar with the base, a crank arm carried by the base and table sections at their pivotal connection having a roller for engaging said hanger link, and means operatively connecting the platform with said crank arm.

4. In a chiropractic adjustment table, a base section, a table section pivotally mounted thereon for movement to a lowered horizontal position and to a raised elevated position, torso-supporting elements on the table section, leg-supporting elements on the table section, a platform carried by the table section, and a shin-supporting member arranged between the foot platform and the leg-supporting elements rockably carried by said table section, and means carried by the shin supporting member engaging the base section in an inoperative position, a slide frame carried by the base including push bars of different lengths for engaging the dogs one after the other for moving the same into an operative position, and means operatively connecting the platform with said slide frame.
means being adjustable, whereby to vary the height of movement of the shin supporting member.

5. In a chiropractic adjustment table, a table section, torso-supporting elements on said table section, leg-supporting elements on said table section including a main cushion and front auxiliary cushions hingedly connected therewith, means for simultaneously raising the cushions on the table section and moving said cushions toward the torso-supporting elements, and means for automatically swinging the auxiliary cushions downward to form a rolled edge upon the elevating of said main cushion.

6. In a chiropractic adjustment table, a table section including side rails, torso-supporting elements carried by said side rails, a carriage slidably mounted upon said rails movable toward and away from the torso-supporting elements, releasable means for holding the carriage in a selected position, a main leg cushion, means rockably connecting the front and rear ends of the cushion to the carriage, manual means for raising and lowering the cushion, said last named means moving the cushion automatically toward the torso-supporting elements upon the raising of said cushion, a pair of auxiliary cushions hingedly mounted on the main cushion, and means for automatically swinging said auxiliary cushions upon the raising and lowering of the main cushion.

7. In a chiropractic adjustment table, a table section including upstanding standards and a cross shaft connecting said standards, bell crank-shaped hanger brackets rockably connected at one end to said cross shaft, an abdominal cushion hingedly connected to the opposite end of said hanger brackets for swinging movement, spring means resisting the swinging movement of said hanger brackets, links hingedly connected together and to the forward end of the abdominal cushion and to said hanger brackets, independent spring means for resisting swinging movement of said links, means for manually adjusting the tension of each of said spring means, a chest support adjustably carried by the standards, and links hingedly connecting the forward end of the abdominal cushion to the chest support for limiting the swinging movement of said abdominal cushion.

8. In a chiropractic adjustment table, a table section including upstanding standards and a cross shaft connecting said standards, bell crank-shaped hanger brackets rockably connected at one end to said cross shaft, an abdominal cushion hingedly connected to the opposite end of said hanger brackets for swinging movement, spring means resisting the swinging movement of said hanger brackets, links hingedly connected together and to the forward end of the abdominal cushion and to said hanger brackets, independent spring means for resisting swinging movement of said links, means for manually adjusting the tension of each of said spring means, a chest support adjustably carried by the standards, and links hingedly connecting the forward end of the abdominal cushion to the chest support for limiting the swinging movement of said abdominal cushion.

9. In a chiropractic adjustment table, a table section including upstanding standards and a cross shaft connecting said standards, bell crank-shaped hanger brackets rockably connected at one end to said cross shaft, an abdominal cushion hingedly connected to the opposite end of said hanger brackets for swinging movement, spring means resisting the swinging movement of said hanger brackets, links hingedly connected together and to the forward end of the abdominal cushion and to said hanger brackets, manually adjustable means for raising and lowering the abdominal cushion, and releasable means for preventing swinging movement of said hanger brackets.

10. In a chiropractic adjustment table, a table section including an adjustable head support having independent cushions, means for protecting said cushions including a paper strip, a roll for supporting the strip from the head support, a guide bar on said head support below the cushions, the paper strip being adapted to be threaded over one cushion and under said guide bar and over the other cushion, and a spring-pressed hinge clamp bar carried by said last-mentioned cushion for releasably gripping the free end of the strip.

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