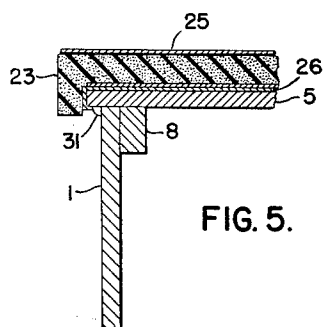
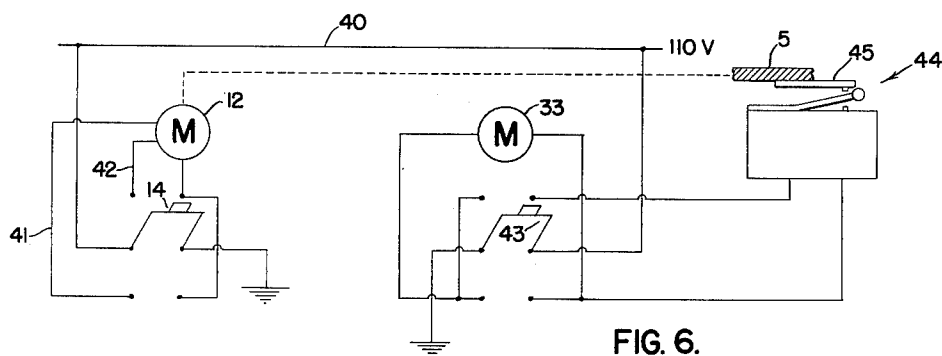
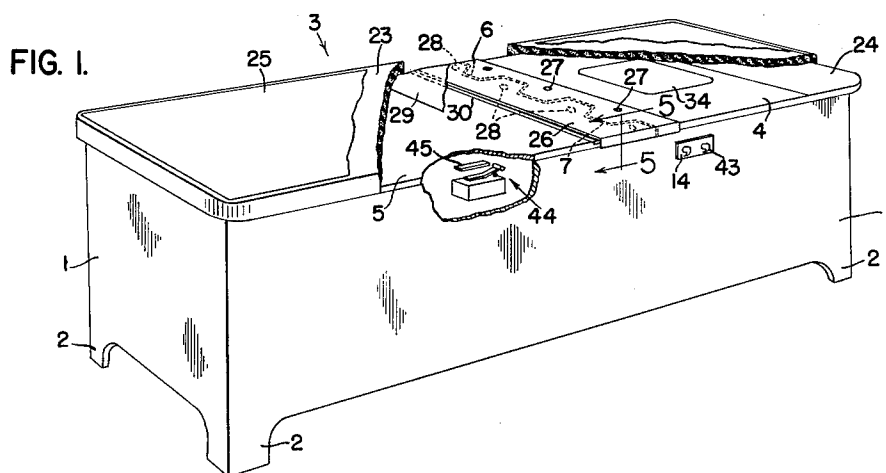


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TRACTION-PERCUSSION TABLE

2 Sheets-Sheet 1



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TRACTION-PERCUSSION TABLE

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2 Sheets-Sheet 2

FIG. 2.

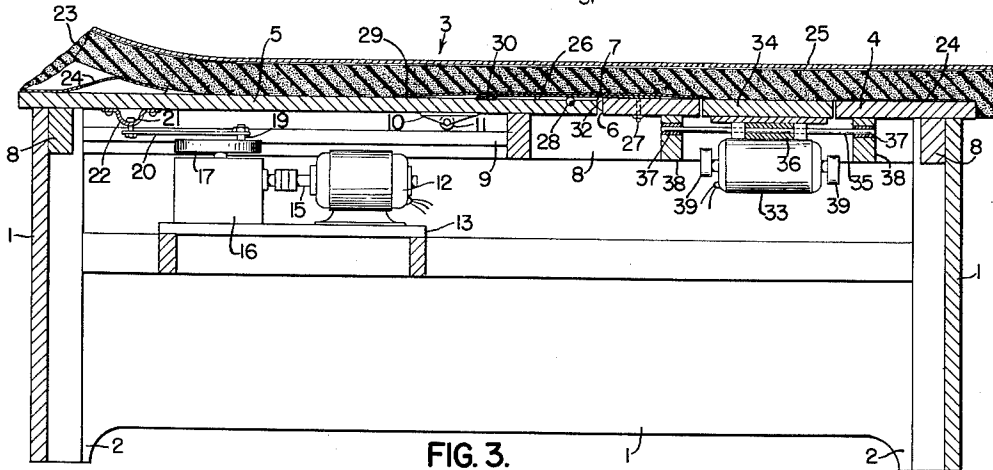
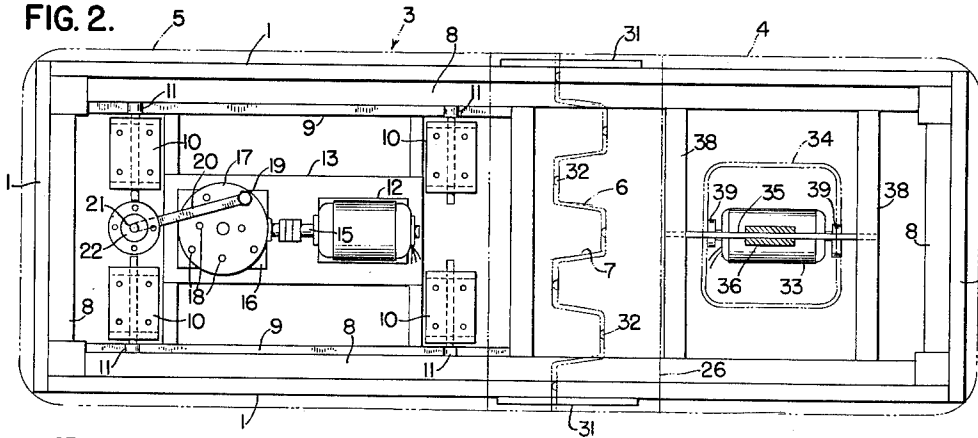


FIG. 3.

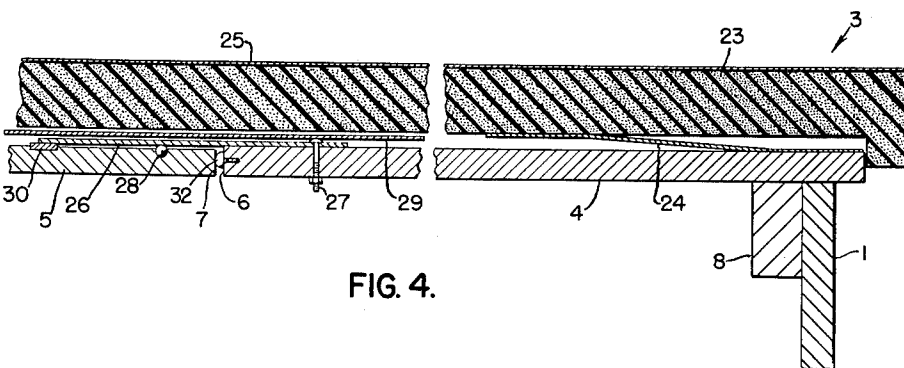


FIG. 4.

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TRACTION-PERCUSSION TABLE
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11 Claims. (Cl. 128—33)

This invention relates to a traction-percussion table, and more particularly to an improved table for applying tension and vibrating forces to the human body.

Heretofore the use of traction tables has generally had to be limited to a doctor's office. The patient was strapped to the table and was under constant surveillance by a trained operator to insure that dangerous excessive stretching did not occur. Home use of such a table was therefore not feasible.

Some previous traction tables have included a top support surface having a fixed portion and a horizontally reciprocable portion which put the patient under tension. These tables have been subject to the disadvantage that the patient was occasionally pinched when the reciprocating top portion closed against the fixed portion. To the present inventor's knowledge, no means has been previously developed to successfully prevent pinching.

The present invention solves the above-mentioned problems and provides a traction table capable of safe use both in a doctor's office and at home. No straps or harnesses are used, but the tension action remains effective in view of the cooperation between the patient's weight and the table top structure.

Pinching is eliminated by a special joint structure disposed between the top portions.

The table also includes a novel percussion means adapted to selectively apply vertical forces to the patient's body in harmony with the tensioning action of the table.

The accompanying drawings illustrate the best mode presently contemplated by the inventor for carrying out the invention.

FIGURE 1 is a perspective view of an apparatus constructed in accordance with the invention, with parts broken away;

FIG. 2 is a top plan view of the apparatus with the top thereof in phantom for purposes of greater clarity;

FIG. 3 is a vertical section of the apparatus taken generally along the central longitudinal axis thereof;

FIG. 4 is an enlarged fragmentary section of the table top showing the pinch relieving means and connecting strips;

FIG. 5 is an enlarged vertical section taken on line 5—5 of FIG. 1, and

FIG. 6 is a schematic showing of the electrical control circuit for the apparatus.

As shown in the drawings, the table comprises a plurality of vertical side walls 1 which are provided with leg portions 2 for support on the floor, and which form a rectangular enclosure. Walls 1 support a suitable top, indicated generally at 3, of proper dimensions for supporting a human body in reclining position.

The table is shown as made of wood, but may be made of any other material suitable for the purpose.

Top 3 comprises a fixed portion 4 nailed or otherwise anchored to walls 1, and a longitudinally slidable portion 5 of greater length than portion 4 and adapted to reciprocate away from and into contact with the edge 6 of portion 4. Edge 6 is shown as serrated or tongued in configuration, and is adapted to receive in mating engagement the tongued edge 7 of slidable portion 5, for purposes to be described.

As best seen in FIGS. 2 and 3, the upper inner edges of walls 1 are provided with horizontal braces 8. To facilitate controlled sliding of top portion 5, a longitudinal guide track 9 is secured to the inner face of op-

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posed braces 8 adjacent portion 5. A plurality of suitable brackets 10 are secured to the lower side of portion 5, with each bracket having a rotatable roller 11 mounted thereon and received for guiding movement within tracks 9.

The slidable top portion is adapted for timed reciprocating movement to alternately stretch and return a patient's body. To this end a traction motor 12 is mounted on a suitable support 13 within the table enclosure. Motor 12 may have a plurality of speeds, that shown having two speeds and being connected to an on-off two-speed control switch 14 on a side wall 1. The output shaft 15 is drivingly connected to a suitable speed reducing gear unit 16, with the output of the latter being shown as a horizontal disc or turntable 17. Turntable 17 is provided with a plurality of openings 18 spaced varying distances from the axis of rotation thereof. Each opening 18 is adapted to selectively receive the lower end of a vertical pin 19, which is connected through a crank arm 20 to a vertical drive pin 21. The upper end of pin 21 is mounted for rotation in a cup-like bearing 22 mounted beneath the lower face of the movable top.

Energizing motor 12 from a suitable electric source will cause rotation of turntable 17 which in turn will drive pin 21 through arm 20 to reciprocate portion 5 on tracks 9. The limits of reciprocation of portion 5 may be adjusted by placing pin 19 in the desired opening 18. A moving range of from one to five inches is desirable, with $2\frac{1}{4}$ " having been found most acceptable.

Since the patient cannot comfortably lie on the hard table top, a cover is provided which takes the form of a one-piece sponge-like pad 23 placed over the entire top and extending down over the sides thereof. Pad 23 is stretchable longitudinally and is preferably placed under tension and secured via connecting leather strips 24 to portions 4 and 5, when the latter are closed. If desired, an additional cover 25 of thin but elastic material may be secured to the top of pad 23.

When the patient reclines on the pad 23 and the table is reciprocated, the weight of the body upon the treating surface provides a sufficient anchor for purposes of traction treatment. Shifting of the body upon the table can vary the amount of traction obtained. There is little if any possibility of over-treating since the body will slide on the pad if the stretching forces become too great.

As the joint between edges 6 and 7 opens and closes, pad 23 and cover 25 will stretch longitudinally and then return to the initial position, thus keeping the joint covered at all times. However, it has been found that pad 23 in itself may not prevent pinching of the patient as the joint closes.

Pinching is positively prevented by structure including a lateral glide plate 26 which is secured adjacent one lateral edge to fixed top portion 4, as by bolts 27. The width of plate 26 is sufficient to overlap portion 5 and completely cover the opening formed when the maximum limit of travel of the latter has been reached. Portion 5 is disposed in a horizontal plane slightly lower than that of portion 4, thereby permitting gliding contact of the lower face of plate 26 with a plurality of laterally spaced anti-friction rollers 28 which are mounted on portion 5. A leather sheet 29 is secured to pad 23 directly above plate 26 to prevent wear of the pad during use. In addition, pad wear during return stroke of top portion 5 is reduced by a thin lateral elevator strip 30 secured to portion 5 and spaced slightly from plate 26 when the joint is closed to elevate pad 23 above the free edge of plate 26.

As best shown in FIG. 5, the ends of glide plate 26 extend down over the edge of the top and wrap under the top to prevent any danger of finger pinching during

reciprocation. In addition, a short rib 31 is secured between the end of plate 26 and wall 1 to completely cover the under side of the joint.

If desired, shock absorbing means may be provided to substantially reduce any jar effect upon closing of the top. This means is shown as a plurality of rubber bumper buttons 32 secured between the serrated portions of edges 6 and 7.

The construction just described prevents pad 23 from ever being over any opening during operation of the table, thus eliminating pinching. The tongued nature of the top edges provides a spaced longitudinal cross-brace support for plate 26 at all times in contrast to lack of such support if the edges were straight.

It is often desirable to perform other operations on the body during the traction treatment. One such operation is that of vibration of portions of the body. The table of the invention is therefor also provided with apparatus to apply vertical percussive forces to the torso, in contrast to gradual rolling forces previously utilized.

The percussion apparatus comprises an electric motor 33 fixedly secured to the underside of a rectangular cut-out portion 34 of fixed top portion 4. Cut-out 34 is generally maintained in position by a rod 35 which extends longitudinally between motor 33 and the cut-out and passes through a bushing 36 secured to the latter. The ends of rod 35 are mounted for rotation in bearings 37 disposed in suitable spaced cross-braces 38 secured to braces 8. Motor 33 and cut-out 34 are thus pivotable on rod 35 which is disposed closely adjacent or on a central longitudinal axis of the table.

The percussive effect is produced by placing eccentric weights 39 on each end of the motor shaft. When motor 33 is energized, eccentrics 39 will produce an unbalance of forces on cut-out 34, causing the latter to rapidly oscillate or rock on rod 35 whereby the two longitudinal edges thereof, which are spaced from the central axis of the apparatus, will alternately move vertically upwardly to percussively vibrate pad 23 and the patient at points spaced from the spine. Pad 23 not only serves to transmit the percussive forces to each side of the spine in succession, but also together with the weight of motor 33, acts as a retainer to restrict the extent of the rocking action and prevent full circular revolving of cut-out 34 when no one is lying on the table.

The electrical circuit for the apparatus is shown in FIG. 6. Motor 12 is connected through switch 14 to a line 40 of suitable voltage. When switch 14 is in the down position the low speed line 41 of motor 12 is connected in circuit, and when switch 14 is in the up position the high speed line 42 of motor 12 is connected in circuit.

Operation of motor 33 is controlled by a suitable switch 43 located adjacent switch 14 on wall 1. When it is desired to operate motor 33 continuously and independently of reciprocation of the table top, switch 43 is placed in the down position which connects motor 33 directly in circuit.

However, it is often desirable to intermittently operate motor 33 in response to a particular reciprocated position of top portion 5. In this instance a suitable spring biased switch 44 is secured beneath portion 5 within the table bore and is adapted to be closed when contacted by a finger 45 extending from portion 5. In the drawings, if switch 43 is placed in the up or intermittent position, motor 33 will not be energized as long as portion 5 is substantially removed from portion 4 and switch 44 is therefore open. However, when the joint between the top portions approaches the closed position, switch 44 will be closed to thereby energize motor 33. Cut-out 34 will therefore vibrate intermittently when portion 5 is adjacent the return end of its full stroke.

The invention provides an improved traction-percussion table which has a uniformly flat top supporting surface capable of use for examination purposes. The top pad

stretches longitudinally only to put the body under non-sliding tension and is incapable of pinching the patient. The percussion apparatus is confined by the support pad during unbalance vibration, and operates in response to the tractioning operation of the table.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. In a table for treating the human body and having a fixed top portion and a movable top portion, a horizontally and longitudinally stretchable support pad secured above said portions, means to reciprocate said movable portion relative to said fixed portion to stretch said support pad to produce traction treatment of the human body, and means forming part of said fixed portion to apply vertical percussive forces through said pad to the said body, said pad providing at least a partial restrainer for said last-named means.

2. The apparatus of claim 1 which includes means to selectively operate said last-named means in response to the reciprocative position of the movable top portion.

3. In a table for treating the human body and having a fixed top portion and a movable top portion, a horizontally and longitudinally stretchable support pad secured above said portions and covering the joint therebetween, means to reciprocate said movable portion relative to said fixed portion to stretch said support pad to produce traction treatment of the said body, means disposed beneath said pad and adjacent said joint to prevent pinching of the said body as the joint closes during reciprocation, said fixed top portion having a cut-out section therein, means mounting said cut-out section for pivotal movement on a longitudinal axis, and unbalancing means selectively actuatable to rock said cut-out on said axis and provide percussive body treatment, said pad partially restraining the cut-out to prevent revolving motion thereof during actuation of the said unbalancing means.

4. In a table for treating the human body and having a fixed top portion and a movable top portion, a horizontally and longitudinally stretchable support pad secured above said portions, means to reciprocate said movable portion relative to said fixed portion to stretch said support pad to produce traction treatment of the said body, said fixed top portion having a cut-out section therein, means mounting said cut-out section for pivotal movement on a longitudinal axis, and unbalancing means selectively actuatable to rock said cut-out on said axis and provide percussive body treatment, said pad restraining the cut-out to at least partially prevent revolving motion thereof during actuation of the said unbalancing means.

5. The apparatus of claim 4 which includes means to selectively operate said unbalancing means intermittently in response to a reciprocative position of the said movable top portion.

6. In a table for treating the human body and having a fixed top portion and a movable top portion, a horizontally and longitudinally stretchable support pad secured above said portions and covering the joint therebetween, means to reciprocate said movable portion relative to said fixed portion to stretch said support pad to produce traction treatment of the said body; means disposed beneath said pad and adjacent said joint to prevent pinching of the said body as the joint closes during reciprocation, said pinching preventing means comprising, a glide plate secured to said fixed top portion and extending over said joint beneath said pad, means secured to said movable top portion and engaging said plate to assist in reducing friction therebetween during reciprocation of said movable portion, and elevator means secured to the movable portion adjacent the said joint to maintain said pad above the free edge of said

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glide plate; and means forming a part of said fixed top portion and partially restrained by said pad to apply vertical percussive forces to the said body.

7. The apparatus of claim 6 which includes means to selectively operate said last-named means in response to the reciprocative position of the movable top portion.

8. In a table for treating the human body and having a fixed top portion and a movable top portion, a horizontally and longitudinally stretchable support pad secured to said portions and covering the joint therebetween, means to reciprocate said movable portion relative to said fixed portion to stretch said support pad to produce traction treatment of a body reclining thereon, a thin horizontal glide plate secured to said fixed top portion and extending over said joint beneath said pad, means secured to said movable top portion and engaging said plate to assist in reducing friction therebetween during reciprocation of said movable portion, and elevator means secured to the movable portion adjacent the said joint to maintain said pad above the free edge of said glide plate.

9. The apparatus of claim 8 in which the adjacent edges of said fixed and movable portions are tongued to provide spaced longitudinal cross-braces for said glide plate regardless of the reciprocated position of said movable portion.

10. The apparatus of claim 8 in which said friction-

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reducing means comprises a plurality of laterally spaced rollers, and in which said elevator means comprises a thin strip of material disposed beneath said pad and extending laterally of the table.

11. In a table for treating the human body and having a fixed top portion and a movable top portion, a horizontally and longitudinally stretchable support pad secured to said portions and covering the joint therebetween, means to reciprocate said movable portion relative to said fixed portion to stretch said support pad to produce traction treatment of a body reclining thereon, means disposed beneath said pad and adjacent said joint to prevent pinching of the said body as the joint closes during reciprocation, and means disposed beneath said pad to apply vertical percussive forces through said pad to a body disposed on the latter.

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