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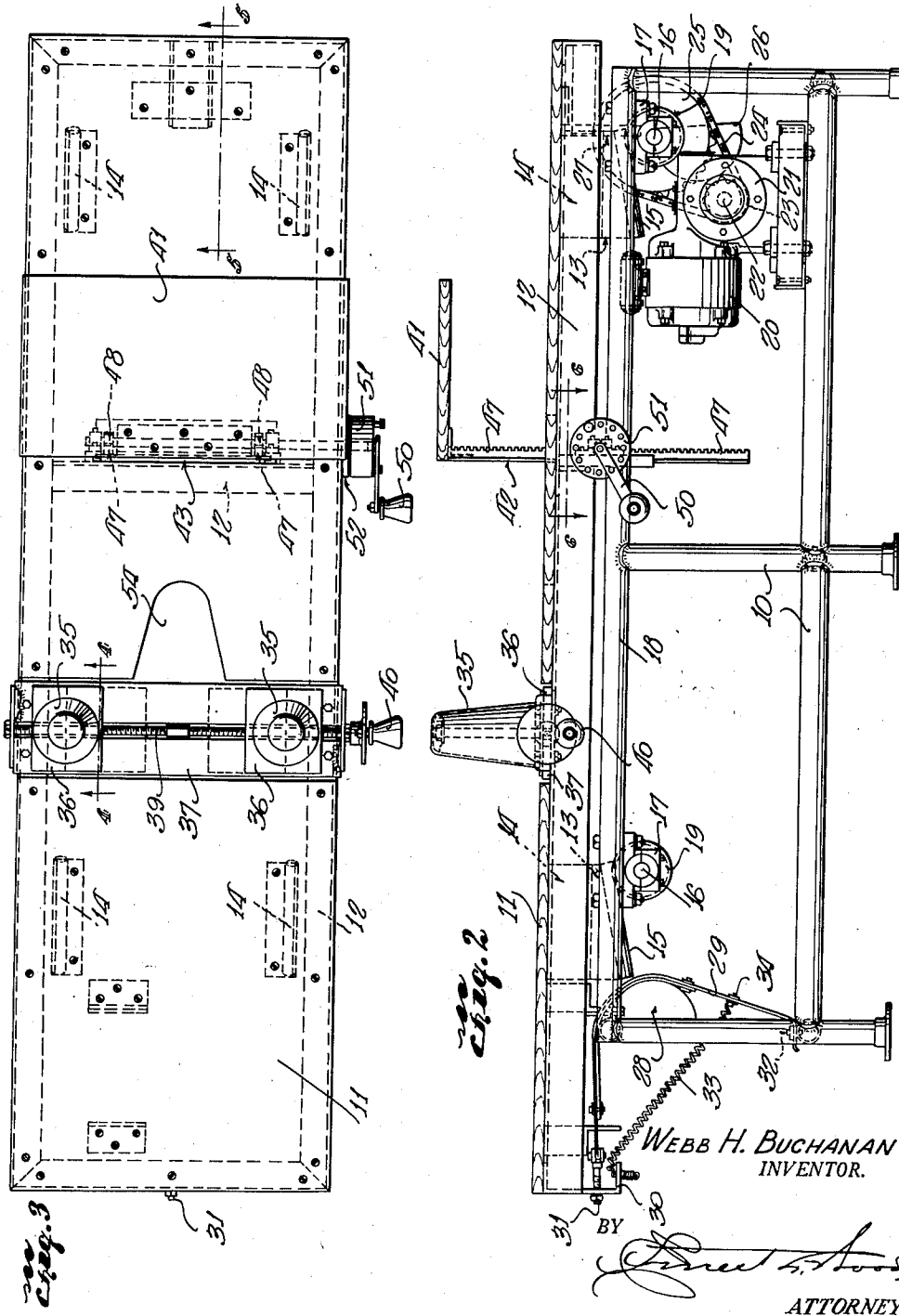
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SACROILIAC SPINAL AND VISCERAL ADJUSTING TABLE

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2 Sheets-Sheet 1



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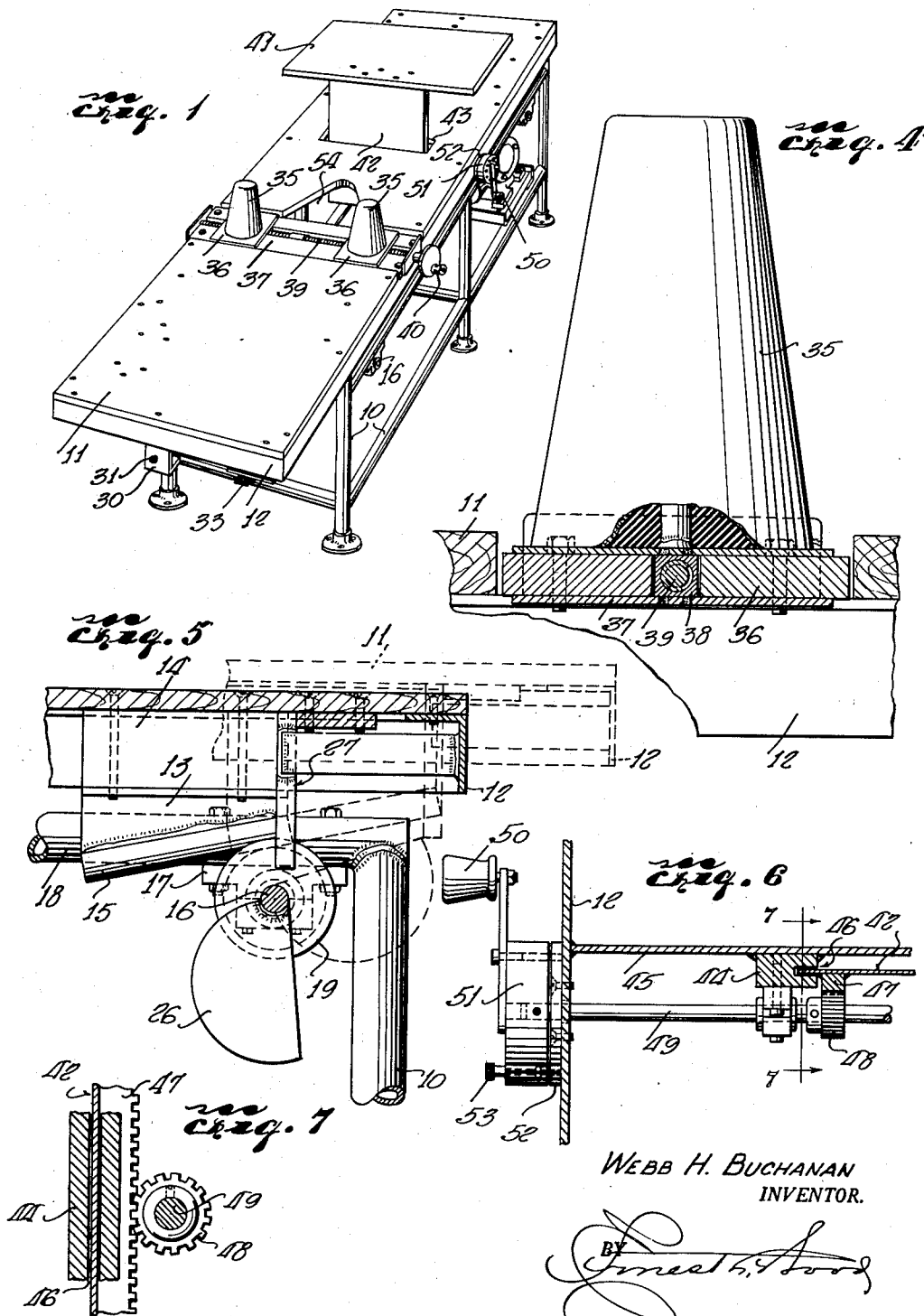
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SACROILIAC SPINAL AND VISCERAL
ADJUSTING TABLE

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4 Claims. (Cl. 128-71)

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This invention relates to physiotherapeutical apparatus and it has particular reference to a machine for restoring to normal relationship the bones of the pelvis and spine.

The principal object of the invention is to provide a table adapted to support a patient in a reclining position, combined with suitable mechanism effective to propel the table longitudinally while at the same time elevating the same as it moves in a footwardly direction, without deviating from the horizontal plane. Following a short pause, the table is caused to reverse its direction of travel, during which it recedes to its starting level and is stopped more or less suddenly by suitable brakes or snubbers.

Another object of the invention is to provide a sacro-iliac, spinal and visceral adjusting table on which are adjustably positioned opposed cushions, which are adapted to bear against the reclining patient's body above the hips and thus stabilize the lower position of the body. Thus, as the table is interrupted in its headwardly and downwardly course, the inertia carries the sacrum to the posterior and superior, elongating the spine and raising the viscera, due to the fact that they are in motion while the hips are stopped with the movement of the table. By correcting the position of the pelvis and spine, nerve pressure occasioned by these incorrect positions is alleviated, thus restoring normal function of the affected organs. By adjusting the entire spine and all viscera simultaneously, a greater degree of correction is attained.

Still another object of the invention is to provide a method of restoring to normal function the spinal nerves by subjection the relaxed body of a patient to longitudinal reciprocal motion and interrupting the motion suddenly in a headwardly direction while yielding the sacrum to inertia to effect elongation of the spine.

Other objects will become manifest as the description proceeds, taken in connection with the annexed drawing wherein

Figure 1 is a top perspective view of a machine constructed according to the invention.

Figure 2 is a side elevational view.

Figure 3 is a top plan view.

Figure 4 is a fragmentary view, partly in section, showing one of the hip retaining cushions.

Figure 5 is a fragmentary view, partly in section, taken on line 5-5 of Fig. 3, showing one of the table supporting ramps and an actuating cam.

Figure 6 is a detail view of the leg support

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adjusting means, taken on line 6-6 of Fig. 2, and

Figure 7 is a fragmentary sectional view, taken on line 7-7 of Fig. 6, and showing the rack and pinion for raising and lowering the leg support through the medium of the adjusting means shown in Fig. 6.

Continuing with a more detailed description of the drawing, reference numeral 10, denotes generally the supporting framework for the adjusting table 11, which latter is reinforced preferably by an angle iron frame 12 on its underside.

Depending from the underside of the table and in spaced apart relationship at each end thereof is a series of plates 13 which are in fixed perpendicularity to the table surface through the medium of brackets 14 (Fig. 5). The lower edges of these plates are each deflected at an angle of approximately 13° and these edges are welded or otherwise suitably secured to rods 15 which are coextensive with the plates.

Immediately below the pair of plates 13 at each end of the machine is a transverse shaft 16 whose ends are journaled in bearings 17 affixed to the underside of the upper horizontal rails 18 of the machine frame 10. The shafts 16 each carry a pair of loosely mounted peripherally grooved rollers 19 and in the grooves of these rollers rest the rods 15 of the plates 13. Thus, the table 11 is supported on its framework in such manner that during longitudinal displacement thereof, effected in a manner to be presently described, the table will be raised as it travels footward and lowered as it travels headward without deviating from the horizontal plane.

To actuate the table 11 in the manner set forth, an electric motor 20 is mounted in the frame at the rear end thereof and, through a speed reducer 21, drives a shaft 22. The shaft 22 carries a sprocket wheel 23 on which is a chain 24, engaging a sprocket 25, mounted on the shaft 16 at the rear of the machine.

In Fig. 5 is shown a semi-circular cam 26 which is secured, as by welding, to the rear shaft 16 and thus is rotated as the shaft revolves. The lobe of the cam is brought successively against a plate 27, affixed to and depending from the underside of the table 11. In this manner, the table is moved in a footward direction, being elevated simultaneously through the inclined supporting plates 13.

As the tip of the cam 26 rides off the lower end of the depending plate 27, the table is released to the action of gravity and the direction of

travel is reversed. Forward or headward movement of the table is stopped more or less suddenly by means of a snubber consisting of a semi-circular shoe 28 at the forward end of the machine and which is affixed to the frame 10 with its curved surface directed rearwardly. A flexible strap 29 is adjustably attached to a plate 30, depending from the forward end of the table 11, through the medium of a threaded eye-bolt 31. The strap 29 is passed over the curved surface of the shoe and its opposite end is secured therebelow to the machine frame at 32.

As the table 11 travels in a forwardly direction, the strap 29 frictionally engages the shoe but to minimize the shock of impact, a coil spring 33 is attached at one end to the strap at 34 below the shoe 28 and at its opposite end to the depending plate 30. This spring also is effective to remove slack in the strap.

Mounted forwardly of the midsection of the table 11 is a pair of spaced apart hip retaining pads or cushions 35. These pads are adjustable transversely of the table by virtue of separate mountings 36, slidable in a transverse space provided in the table therefor. The mountings are supported for sliding movement on a transverse plate 37, and each mounting is recessed to retain a block 38 (Fig. 4). The blocks are each bored and threaded to receive a screw rod 39 which latter has left and right hand threads. A crank 40 is provided on one end of the screw rod 39 and at one side of the machine for rotating the rod to thus move the pads 35 relative to each other and to adjust the same to the hips of a patient reposing on the table top.

To support the legs of a patient in an elevated position, when required, a platform 41 is disposed for vertical adjustment with respect to the table at an appropriate point spaced rearwardly from the hip pads 35. A vertical plate 42 supports the platform 41 at its upper end and extends through a transverse slot 43 in the table top. Opposed guide blocks 44, affixed to a cross-member 45 (Fig. 6) under the table, have confronting grooves 46 in which slide the vertical edges of the supporting plate 42.

To each vertical edge of the supporting plate 42 is affixed a rack bar 47, the teeth of which are engaged by pinions 48, mounted in spaced relationship on a transverse shaft 49, the latter being extended at one side of the table 11 to carry a crank 50. A circular housing 51 is affixed to the shaft 49 and has thereon a series of annularly spaced bores, which are adapted to register with recesses in a mounting plate 52. A lock pin 53 is disposed in one of the bores of the circular housing 51 and is movable perpendicularly to the mounting plate and receivable selectively in the recesses of the latter to lock the shaft 49 against rotation and thus hold the leg rest 41 in vertically adjusted positions.

It is clearly evident from the foregoing that when a patient is lying prone on the table with the hips in contiguity with the pads 35, the sacrum will be disposed over the U-shaped opening 54 in the table top at the midsection of the transverse space accommodating the pad mountings 36. It is preferred that the legs of the patient be elevated by raising the support 41 so that more freedom is allowed the upper portion of the body and for greater relaxation.

The motor 20 is energized to effect rotation of the shaft 16 carrying the cam 26, thus causing the table to reciprocate as explained. Since the hips are held by the pads 35, sudden stoppage of the table in its forward movement will, through

inertia, cause the sacrum to be carried to the posterior and superior and elongation of the vertebral column. Due to the fact that the viscera are in forward motion when the table is stopped, they are raised towards a more normal position. As a consequence, the nerve strain and stress occasioned by incorrect position of the pelvis and spine are relieved, making possible more ready restoration of normal function thereof.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claims is also considered to be within the spirit and intent of the invention.

What is claimed is:

1. A sacro-iliac spinal and visceral adjusting apparatus including a frame, a transverse shaft at each end of said frame, a pair of peripherally grooved rollers on each of said shafts, a table on which a patient is adapted to recline, inclined rails affixed to the underside of said table at each end to support the same on said rollers on a horizontal plane, a semi-circular cam affixed to one of said shafts at one end of said frame, a plate depending from said table in the path of said cam and engaged periodically thereby to propel said table in a footward direction to elevate the same by said inclined rails, said table being released to the influence of gravity at its point of highest elevation when said cam rides off said depending plate, braking means carried jointly by said table and said frame to suddenly interrupt headward travel of said table and adjustable means on said table for restraining forward motion of that portion of the body of a patient reclining on said table below the hips, to yield the upper body portion to inertia.

2. A physiotherapeutical apparatus comprising a frame, a table mounted on said frame for reciprocation on a horizontal plane and adapted to support a patient in a reclining position, peripherally grooved rollers arranged in said frame, inclined rails carried by said table and engaged with said rollers to support said table for footward movement to a higher level without deviating from the horizontal plane, a plate affixed to and depending from said table, a cam rotatably mounted on said frame and adapted to periodically engage said plate for propelling said table and for releasing the table to the influence of gravity at its highest point of travel, a semi-circular shoe affixed to an end of said frame, a flexible strap joined at an end to an end of said table and at its opposite end to said frame below said shoe and adapted to engage the latter to define a brake for suddenly interrupting downward travel of said table and means adjustably mounted on said table for restraining the hips of the patient on said table without yielding the spine to the elongating effects of inertia.

3. A machine for elongating the spine through influence of inertia, comprising a frame, a table supported horizontally on said frame for endwise and vertical displacement and on which a patient is adapted to recline, means mounted on and extending upwardly from said table and engageable with the patient's body above the hips to free the upper portion of the body for inertia movement independently of the table, a plate attached to and depending from the underside of said table, a shaft disposed transversely of said frame at each end thereof, means for rotating said shaft, a pair of grooved rollers freely mount-

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ed on each of said transverse shaft, inclined rails affixed to the underside of said table and disposed in the grooves of said rollers to support said table for endwise displacement on said frame, a semi-circular cam mounted on and operated by said transverse shaft for alternate engagement with and disengagement from said depending plate for respectively moving the table in the direction of the feet of the patient and for releasing the table to the influence of gravity at its highest level, a shoe affixed to said frame at one end and means attached to said table and frame and engaging said shoe to suddenly interrupt travel of the table in the opposite direction.

4. Apparatus for elongating the spine, comprising a frame, a horizontal table on said frame for supporting the body of a patient in a reclining position, inclined rails affixed to the underside of said table adjacent each corner thereof, a transverse shaft rotatably mounted at each end of said frame, rollers carried loosely by each of said shafts on which said rails are disposed to support said table for longitudinal displacement, a semi-circular cam affixed to each of said shafts and engageable with said table for moving the table in the direction of the feet of the patient to ele-

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vate said table by said inclined rails, said cam being adapted to release said table during elevation thereof to the influence of gravity, a semi-circular shoe affixed to said frame and a strap attached at its ends to said table and frame and frictionally engaging the curved surface of said shoe intermediate its ends for suddenly interrupting movement of the table in its descent, a pair of simultaneously adjustable cushions adapted to bear against the patient's body above the hips for holding the lower portion of the patient's body on the table to free the upper portion of the body to the influence of inertia.

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