

July 19, 1932.

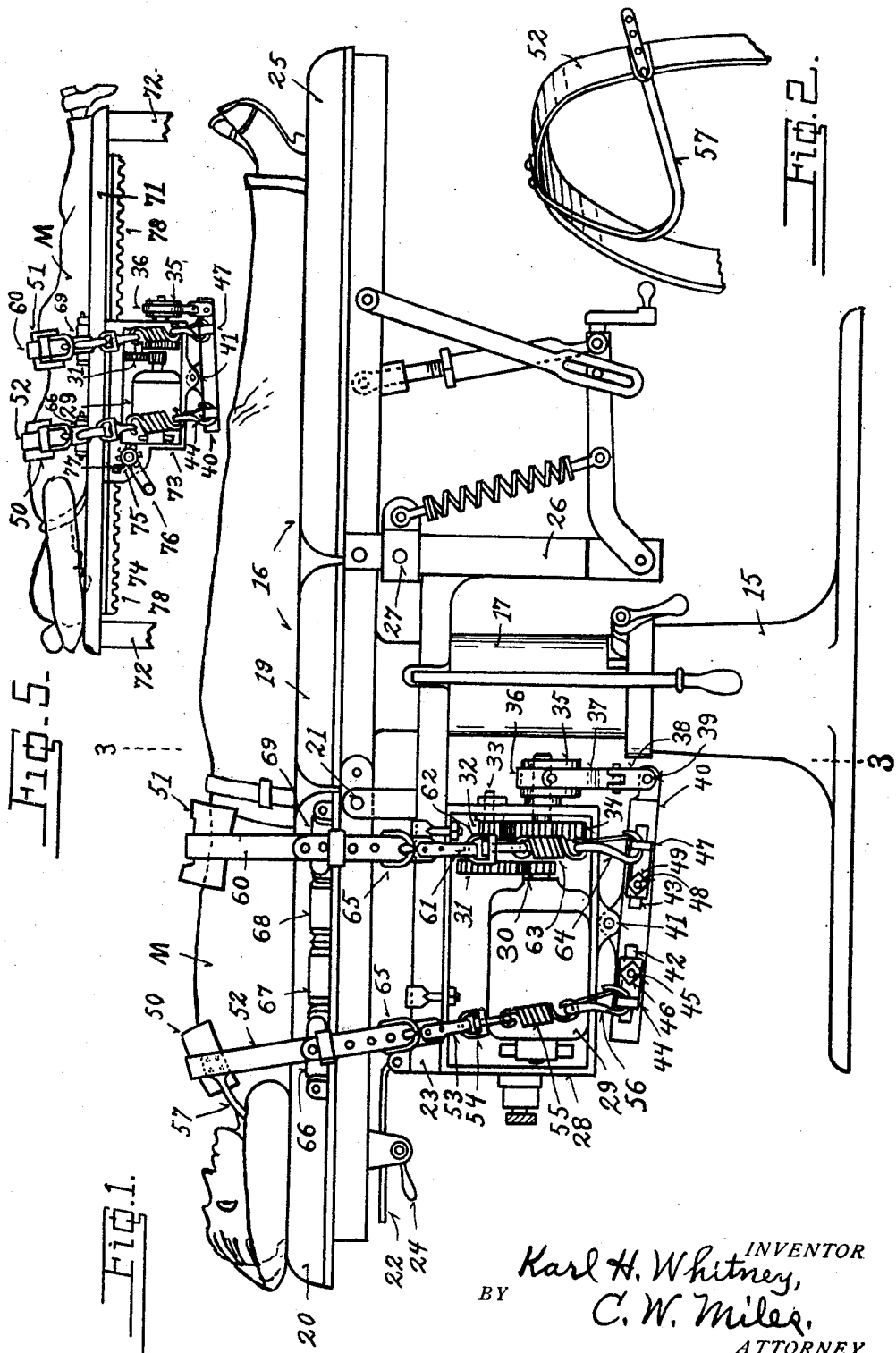
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VIBRATORY APPARATUS

Filed Aug. 20, 1929

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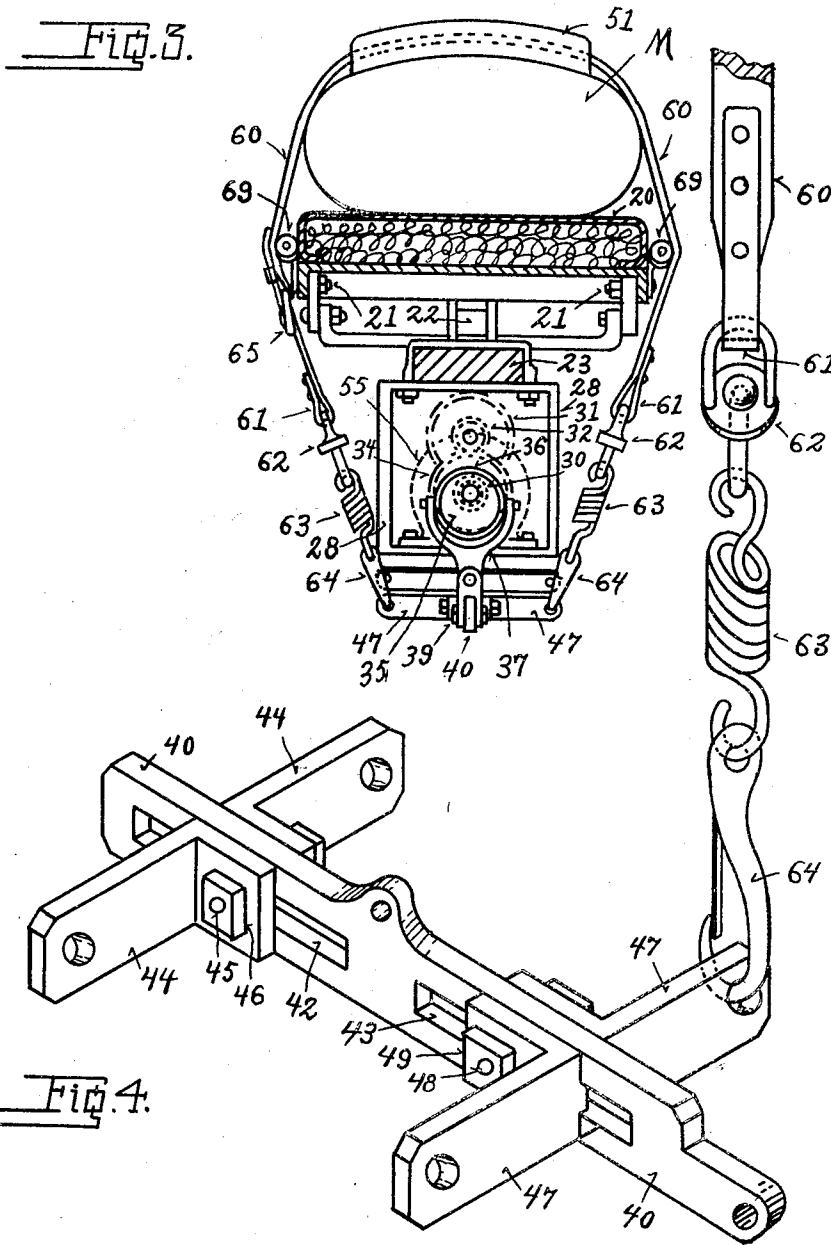
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INVENTOR  
Karl H. Whitney,  
BY C. W. Miles,  
ATTORNEY

# UNITED STATES PATENT OFFICE

KARL H. WHITNEY, OF KIRKSVILLE, MISSOURI, ASSIGNOR TO WHITMANIS MANUFACTURING COMPANY, INC., OF KIRKSVILLE, MISSOURI, A CORPORATION OF MISSOURI

## VIBRATORY APPARATUS

Application filed August 20, 1929. Serial No. 387,168.

My invention relates to improvements in mechanical vibratory apparatus for massage and similar treatments designed for instance to stimulate lymphatic circulation. One of its objects is to provide improved vibratory apparatus for such purposes. Another object is to provide for the application of vibratory motion simultaneously at two different localities, and in different phases of movement, whereby there is a movement or displacement of tissue away from one of said localities and toward the other of said localities, with alternations in the opposite direction, thereby providing for deep seated vibratory or massage operations and results. Another object is to provide improved and reliable apparatus for applying such vibratory movement to a patient. Another object is to provide adjustable means whereby the degree of vibratory movement may be increased or decreased and suited to the particular case in hand. My invention also comprises certain details of form and arrangement and combination of components, all of which will be fully set forth in the description of the accompanying drawings, in which:

Fig. 1 is a side elevation of a vibratory apparatus embodying my improvements.

Fig. 2 is a detail of one of the harness members with means to retain it in place while in operation.

Fig. 3 is a vertical section taken on line 3-3 of Fig. 1.

Fig. 4 is a detail in perspective of a portion of the vibratory apparatus detached.

Fig. 5 shows a modification of Fig. 1.

The accompanying drawings illustrate embodiments of my invention in Figs. 1 to 4 of which 15 represents the base of a vertically adjustable surgical or osteopathic table 16. The table is mounted upon a hydraulic plunger 17 seated in a cylinder in the base, and thereby adapted to adjust the table top 16 to any desired height. The table top as shown comprises a central top section 19, a head supporting section 20, adjustable upon a horizontal axle 21 relative to the section 19, and adapted to be locked to its adjusted positions by means of a bar 22

hinged to an arm 23 rigidly carried by the top section 19, and adapted to be clamped to the head section 20 by means of a clamping lever 24 to hold the head section 20 to any adjusted position. A foot supporting table top section 25 is also adjustable relative to the top section 19 upon a vertical axis 26, and also upon a horizontal axis 27. These table adjustments under certain conditions contribute to the results and facilitate operation of the vibratory apparatus to attain superior results.

The arm 23 is carried rigidly by and relative to the plunger 17 and table top section 19. A frame or casing 28 is attached adjustably and latched rigidly to the arm 23 and depends therefrom. Within the casing 28 is rigidly mounted a motor 29, preferably an electric motor. The shaft of the motor is provided with a pinion 30, which drives a spur gear 31 and pinion 32 connected together by a sleeve and journaled upon a stud shaft 33 mounted rigidly upon the casing 28. The pinion 32 meshes with and drives a gear 34, the shaft of which gear 34 is journaled to the casing 28, and is provided with an eccentric 35. A ring 36 is mounted loosely upon the exterior of the eccentric. A forked link or connecting bar 37 is attached pivotally at its forked end to the ring 36, and at its opposite end the bar 37 is pivotally attached to one forked end of a connecting member 38. The opposite forked end of the connecting member 38 is pivotally attached by a bolt 39 to one end of a rocker bar 40.

The rocker bar 40 is pivotally attached by a bolt 41 to an ear projecting downwardly from the casing 28. When the motor is in operation the rocker bar 40 rocks or reciprocates in a substantially vertical plane. The rocker bar 40 is slotted endwise thereof at 42 and 43. Cross arms 44 are adjustable along the slot 42 and clamped to their adjusted position by means of a bolt 45 and nut 46. Cross arms 47 are adjustable along the slot 43 and clamped to their adjusted position by means of a bolt 48 and nut 49. The ends of the cross arms 44 and 47 are perforated for the attachment of the ends of the vibratory harness. By adjusting the cross bars 44 and 47

to and from each other the amount of vibration imparted to the patient may be adjusted and varied as may be required, and one harness receive a longer vibratory movement than the other.

5 A patient M is mounted upon the table top in any one of several positions, and pads 50 and 51 are adjusted to positions upon and relative to the patient. A harness member 10 52 comprising a strap having eyes 53 in opposite ends thereof, swivel blocks 54 attached to the respective eyes 53, coiled springs 55 attached to the respective swivel blocks 54, and snap hooks 56 attached to the opposite ends 15 of the respective springs 55. The snap hooks are detachably attached to the perforations in the free ends of the cross arms 44. A yoke or loop 57 is preferably attached to the strap 52 to encircle the neck of the patient to prevent displacement of the straps 52 and pad 20 50 during operation.

A harness member 60 similar to the harness member 52 comprising a strap having eyes 25 61 in opposite ends thereof, swivel blocks 62 attached to the eyes 61, springs 63 attached to the swivel blocks 62, and snap hooks 64 attached to the springs 63 at one end and to the perforations in the free ends of the cross arms 47 at their opposite ends, the middle section 30 of the harness member 60 rests upon the pad 51. The harness members 52 and 60 are adapted to be shortened or lengthened by means of buckles 65. A series of rollers 66, 67, 68, and 69 are mounted pivotally at the 35 opposite sides of the table top in position to be engaged by the harness members 52 and 60, so that said rollers may rotate with the vibratory movement of said harness members and hold said harness out of contact with the edges of the table top. The end rollers 66 40 and 69 are preferably set in an inclined position relative to the table top, so as to tend to hold the harness members in the desired position.

45 It will be noted that the head supporting section of the table top may be inclined to a position where the harness member 52 tends best to retain its position relative to the patient. Also that as tension is applied by the 50 rocker bar to the harness member 52, strain is correspondingly released upon the harness member 60, which tends to effect a deep seated as well as surface movement of the tissues toward the pad 51, and away from 55 the pad 50, and that when strain is applied by the rocker arm to the harness member 60, a deep seated as well as surface movement of the tissue occurs in a reverse direction. Such movements are adapted to stimulate a 60 flow or circulation in the lymphatic system of the patient, and also an improved blood circulation. Either of the harness members may be used alone if desired. When used together, the strains are applied and released 65 in a manner to obviate vibration or noise in

the apparatus, and to secure a pleasing and restful result. When both are employed together a minimum of power is required. The position of the patient upon the table may be reversed to treat the lower extremities of 70 the patient.

In the modification illustrated in Fig. 5, the table top 71 is supported upon four legs 72. A casing or housing 73 corresponding to the housing 28 of Fig. 1 is mounted on ways 75 or guides 74 extending lengthwise of the table so as to be adjustable to substantially any desired position lengthwise of the table to treat the upper, middle, or lower extremities 80 of the patient. A pinion 75 journaled to the housing 73 and operable by means of a hand crank 76, enables the housing 73 to be adjusted along a rack bar 78 to any desired position relative to the table top. A latch bar 77 engaging the rack bar 78 is operable to 85 latch the housing rigidly to any desired position of adjustment. The motor driven vibratory apparatus and harness of Fig. 5 are substantially the same as shown in Figs. 1 to 4, and as heretofore described. 90

The apparatus herein shown and described is capable of considerable modification within the scope of the claims without departing from the spirit of my invention. 95

What I claim is:

1. Vibratory apparatus comprising a support for the body of a patient, a motor driven centrally pivotally mounted rocker arm, lateral arms in pairs mounted upon opposite ends of said rocker arm and adjustable to 100 and from the center of said rocker arm, a pair of pads engaging different portions of a patient, a harness member looped over one of said pads and connected at opposite ends to the pair of lateral arms at one end 105 of said rocker arm, and a harness member looped over the other of said pads and connected at opposite ends to the pair of lateral arms at the opposite end of said rocker arm, said harness members being adapted to alternately apply pressure to one of said pads while the opposite harness member is reducing pressure upon the opposite of said pads. 110

2. Vibratory apparatus comprising a support for the body of a patient, a motor driven 115 centrally pivotally mounted rocker arm, lateral arms in pairs mounted upon opposite ends of said rocker arm and adjustable to and from the center of said rocker arm, a pair of pads engaging different portions of a 120 patient, a harness member looped over one of said pads and connected at opposite ends to the pair of lateral arms at one end of said rocker arm, and a harness member looped over the other of said pads and connected at 125 opposite ends to the pair of lateral arms at the opposite end of said rocker arm, and resilient members interposed between said respective pads and said rocker arm, said harness members being adapted to alternatively 130

resiliently apply pressure to one of said pads while the opposite harness member is reducing pressure upon the opposite of said pads.

5 3. Vibratory apparatus comprising a base, a support for the body of a patient adjustable relative to said base, a motor driven rocker arm pivotally mounted upon a support carried rigidly relative to said base and relative to which said support for the patient is adjustable, a pair of pads engaging different portions of a patient, a harness member having a resilient section looped over one of said pads and attached at one end to one end of said rocker arm, a harness member having  
10 a resilient section looped over the opposite pad and attached at one end to the opposite end of said rocker arm.

4. Vibratory apparatus comprising a support for the body of a patient, rollers mounted  
20 upon opposite edges of said support, a motor driven rocker arm pivotally mounted relative to and beneath said support for the patient, a pad engaging the patient, a harness member looped over the body of the patient and  
25 over and in engagement with said pad and in engagement with said rollers, said harness member being attached at opposite ends to said rocker arm.

In testimony whereof I have affixed my  
30 signature.

KARL H. WHITNEY.

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