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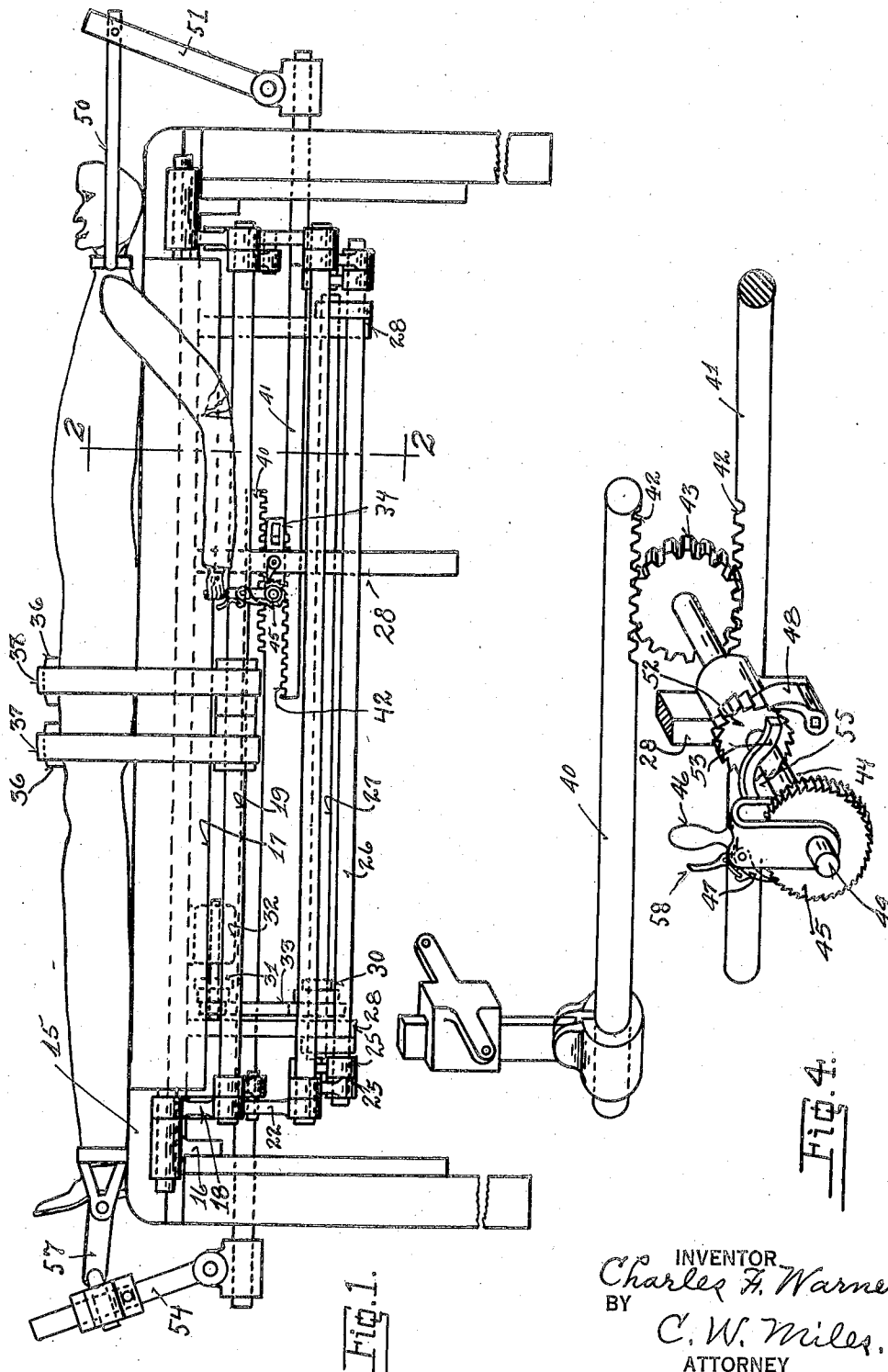
C. F. WARNER

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TREATMENT OR SURGICAL TABLE

Filed Jan. 5, 1931

2 Sheets-Sheet. 1



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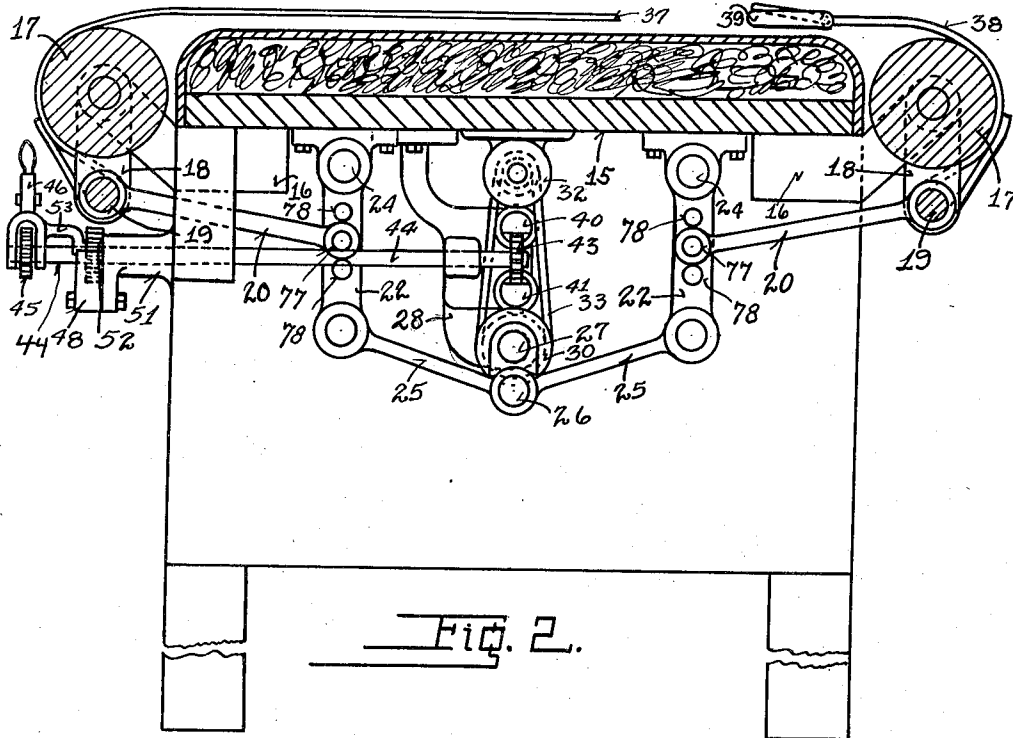
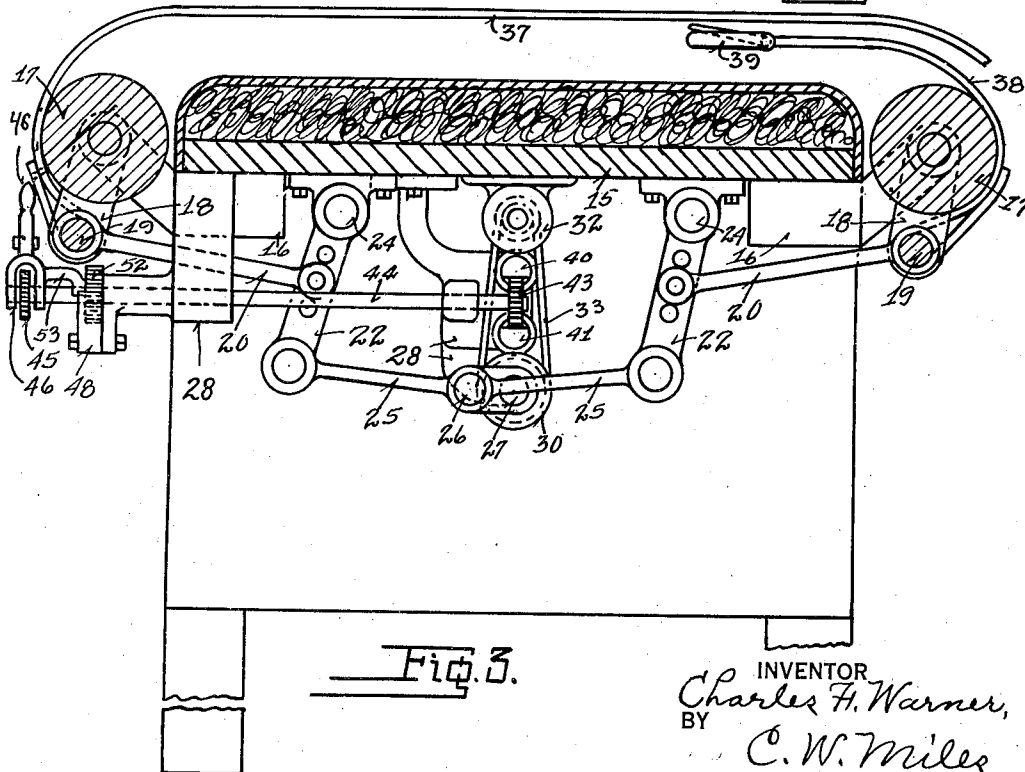
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UNITED STATES PATENT OFFICE

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TREATMENT OR SURGICAL TABLE

Application filed January 5, 1931. Serial No. 506,712.

My invention relates to improvements in vibrating apparatus. One of its objects is to provide improved means to apply a vibratory or massaging movement to various portions of a patient. Another object is to provide improved motor driven vibratory apparatus. Another object is to provide an improved combination of reciprocatory motor driven members mounted with reference to a patient supporting table adapted to impart peculiar vibratory movements to selected portions of a patient supported upon said table. Another object is to provide an improved combination of motor driven vibratory apparatus. Another object is to provide improved vibratory apparatus adjustable and adapted to be applied over practically the entire length of a patient. Another object is to provide in combination with such vibratory apparatus improved means to apply stretching strain to the spinal column of a patient over the entire length or portions thereof. 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 table with my improvements applied thereto.

Fig. 2 is a vertical section taken on line 2-2 of Fig. 1.

Fig. 3 is a view similar to Fig. 2 illustrating a different position of the operative parts.

Fig. 4 is a detail of the spinal tensioning apparatus.

It is desirable to provide motor driven vibratory or massage apparatus for a wide variety of treatments, whereby the flow of blood and lymphatic fluids are stimulated and caused to function to better advantage. Such vibratory movements require peculiar movements and regulation as to speed and intensity to attain the best results and a wide range of adjustability, all of which are attainable with my improved apparatus.

The accompanying drawings illustrate one embodiment of my invention in which 15 represents a patient supporting member or table. Mounted pivotally upon brackets 16 at op-

posite sides of the table are idler rollers 17. Links 18 are pivotally mounted upon opposite ends of the shafts or rollers 17 and depend therefrom. Pendulous shafts or rods 19 are carried by the depending ends of the links 18, and extend along the sides of the table below the rollers 17. Links or pitmen 20 are each pivotally attached at one end to a shaft 19, and at its opposite end to an intermediate portion of a link 22. The links 22 are pivoted to the table 15 at 24 and their depending ends are connected by links or pitmen 25 with cranks 26 at opposite ends of a crank shaft 27. The shaft 27 is journaled in bracket or hanger members 28 attached to the table 15. The shaft 27 is provided with a core pulley 30 and is driven at variable speed from a core pulley 31 carried by the shaft of an electric, or other motor 32, through a driving belt 33. The motor may be started and stopped by the patient, or an operator at a snap switch or switch lever 34. By shifting the pivot point 77 where the pitmen 20 are pivotally connected to the links 22 to centers 78 nearer to or further from the centers 24 of the links 22, the amount of throw or rocking movement of the pendulous rods or shafts 19, may be increased or decreased. It will be noted that as the shaft 19 on one side of the table swings outwardly the other shaft 19 on the opposite side of the table swings inwardly.

One or more pads 36 are adapted to be applied to the chest, abdomen, or legs of a patient, and straps 37 and 38 drawn across the pads and over the idler rollers 17 and attached together by buckles 39, and the opposite ends of said straps 37 and 38 are attached to the shafts 19, after which the motor 32 may be started, which will cause the pendulous rods or shafts 19 to be swung laterally to thereby draw the straps or strap endwise over the patient and over the idler roller 17, and to cause the pad or pads 36 to reciprocate cross-wise of the patient, since there is practically no slippage between the strap and the pad, and the pad moves with the strap. The pad may be adjusted the full length of the patient, and also the straps may be adjusted along the shafts 19, and

along the rollers 17 practically the full length of the patient. The apparatus is simple and practically noiseless, and without objectionable short period vibrations.

5 Shafts 40 and 41 are mounted to have a limited movement endwise of the table. The shafts 40 and 41 have rack teeth 42 cut in one side of their middle section. A driving gear 43 meshes with the teeth of both racks to drive shaft 40 endwise in one direction and shaft 41 endwise in the opposite direction. The gear 43 is mounted upon a shaft 44, which is provided with a ratchet wheel 45. A hand actuated lever 46 is provided with a pawl 47 adapted to rotate the shaft 44 slowly step by step in one direction. A pawl 48 pivoted to the bracket 28 and engaging a ratchet wheel 52 on the shaft 44, holds the shaft 44 against rotation in a reverse direction until released at the end of each period of use. A trip-lever 53 carried by the hand lever 46, when drawn back a sufficient distance releases the pawl 48 from the ratchet wheel 52, and at the same time resiliently applies a brake shoe 55 to the shaft 44, while the lever 58 may be employed to lift the pawl 47 to slowly release the tension on the spinal column of a patient. The patient may be fastened to the table against displacement endwise, and a strap or harness 50 attached to the head of the patient, also attached to an arm 51 extending upwardly from the shaft 41 to stretch the neck and upper portion of the spinal column. A strap or harness 57 attached to the feet of the patient, and also to a member 54 extending upwardly from the shaft 40, provides for stretching the lower portion of the spine. The shafts 40 and 41 are mounted upon the brackets or hangers 28, which carry the driving shaft 27, and without interfering in any way with the operation of the driving shaft or the shafts 17 and 19, or the vibratory apparatus actuated thereby. The stretching apparatus is adapted to be conveniently actuated and released by the patient, and the vibratory apparatus started and stopped by the patient.

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.

What I claim is:

1. Vibratory apparatus comprising a patient supporting member, idler rollers journaled to said patient supporting member near opposite ends thereof and extending along opposite sides thereof, pendulous rods extending along the sides of said patient supporting member below said idler rollers and pivotally suspended from said patient supporting member by means of links near opposite ends of said patient supporting member, brackets depended from said patient supporting member, a crank shaft located beneath said patient supporting member and near

opposite ends journaled to said brackets, a motor operatively connected to said crank shaft to drive said crank shaft, and pitmen each connected at one end to a crank carried at the end of said crank shaft and operatively connected to one of said pendulous rods to reciprocate said pendulous rods in unison, flexible members having end portions connected to said pendulous rods and adjustable endwise of said patient supporting member and adapted to be looped over said idler rollers and over a patient resting upon said patient supporting member with their free ends united together to impart vibratory motion from said pendulous rods to the patient.

2. Vibratory apparatus comprising a patient supporting member, idler rollers journaled to said patient supporting member near opposite ends thereof and extending along opposite sides thereof, pendulous rods extending along the sides of said patient supporting member below said idler rollers and pivotally suspended from said patient supporting member by means of links near opposite ends of said patient supporting member, brackets depended from said patient supporting member, a crank shaft located beneath said patient supporting member and journaled near opposite ends to said brackets, means to drive said crank shaft, pitmen near opposite ends of said patient supporting member operatively connecting said crank shaft in driving relation with said pendulous rods to reciprocate said rods, and flexible members connected at their ends to said pendulous rods and with intermediate portions thereof looped over said idler rollers and over a patient resting upon said patient supporting member to impart vibratory movement to the patient.

3. Vibratory apparatus comprising a patient supporting member, idler rollers journaled to said patient supporting member near opposite ends thereof and extending along opposite sides thereof, rods extending along the sides of said patient supporting member beneath said idler rollers and adjustable in a substantially horizontal direction relative to said patient supporting member, links near opposite ends and on opposite sides of said patient supporting member pivotally connected to and pendulously depending from said patient supporting member, a crank shaft journaled to and beneath said patient supporting member with cranks at opposite ends thereof, pitmen connected at one end to said cranks, and at their opposite ends to said pendulous links to actuate said links and pitmen pivotally connected to said links at one end and to said rods at the other end to reciprocate said rods relative to said patient supporting member, flexible members attached to said rods respectively and united at their free ends to form a loop over said idler rollers and a patient resting upon said

patient supporting member to impart vibratory motion to the patient.

4. Vibratory apparatus comprising a patient supporting member, idler rollers journaled to said patient supporting member near opposite ends thereof and extending along opposite sides thereof, rods extending along the sides of said patient supporting member beneath said idler rollers and adjustable in a substantially horizontal direction relative to said patient supporting member, links near opposite ends and on opposite sides of said patient supporting member pivotally connected to and pendulously depending from said patient supporting member, a crank shaft journaled to and beneath said patient supporting member with cranks at opposite ends thereof, pitmen connected at one end to said cranks, and at their opposite ends to said pendulous links to actuate said links, pitmen connected at one end to said rods, and at their opposite ends adjustably connected to said pendulous links to adjustably vary the throw of said reciprocatory rods relative to said patient supporting member, flexible members attached to said rods respectively and united at their free ends to form a loop over said idler rollers and a patient resting upon said patient supporting member to impart variable vibratory motion to the patient.

5. Vibratory apparatus comprising a patient supporting member, idler rollers journaled to said patient supporting member near opposite ends thereof and extending along opposite sides thereof, rods extending along the sides of said patient supporting member beneath said idler rollers and adjustable in a substantially horizontal direction relative to said patient supporting member, links near opposite ends and on opposite sides of said patient supporting member pivotally connected to and pendulously depending from said patient supporting member, a crank shaft

journaled to and beneath said patient supporting member with cranks at opposite ends thereof, means to drive said crank shaft at variable rates of speed.

6. Vibratory apparatus comprising a patient supporting member, idler rollers journaled to said patient supporting member near opposite ends thereof and extending along opposite sides thereof, rods extending along the sides of said patient supporting member beneath said idler rollers and adjustable in a substantially horizontal direction relative to said patient supporting member, links near opposite ends and on opposite sides of said patient supporting member pivotally connected to and pendulously depending from said patient supporting member, a crank shaft journaled to and beneath said patient supporting member with cranks at opposite ends thereof, pitmen connected at one end to said cranks, and at their opposite ends to said pendulous links to actuate said links, and pitmen pivotally connected to said links at one end and to said rods at the other end to reciprocate said rods relative to said patient supporting member, flexible members attached to said rods respectively and united at their free ends to form a loop over said idler rollers and a patient resting upon said patient supporting member to impart vibratory motion to the patient, and patient stretching means located medially beneath said patient supporting member and vertically between said crank shaft and patient supporting member and located substantially horizontally between said pendulous link members and extending beyond said patient supporting member at opposite ends thereof and provided with harness means adapted to engage either end of the patient and apply a strain thereto.

In testimony whereof I have affixed my signature.

CHARLES F. WARNER.