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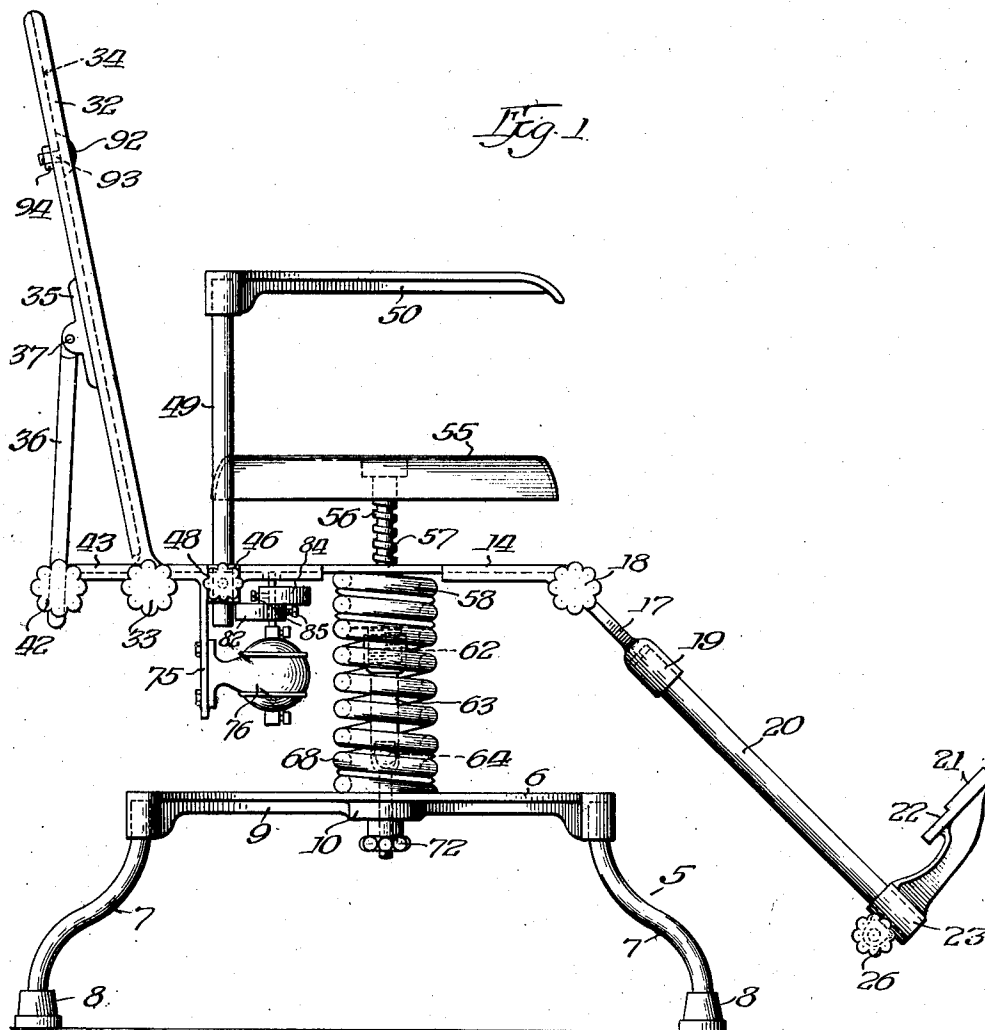
M. P. CANNON ET AL

1,615,615

VIBRATING CHAIR

Filed March 10, 1924

2 Sheets-Sheet 1



Witness:
Geo. C. Cannon

Inventors
Michael P. Cannon
Orville Markel
By *Brown, Bortek, Dunn*
Attys

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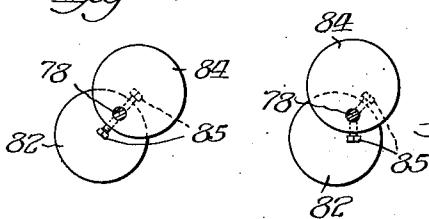
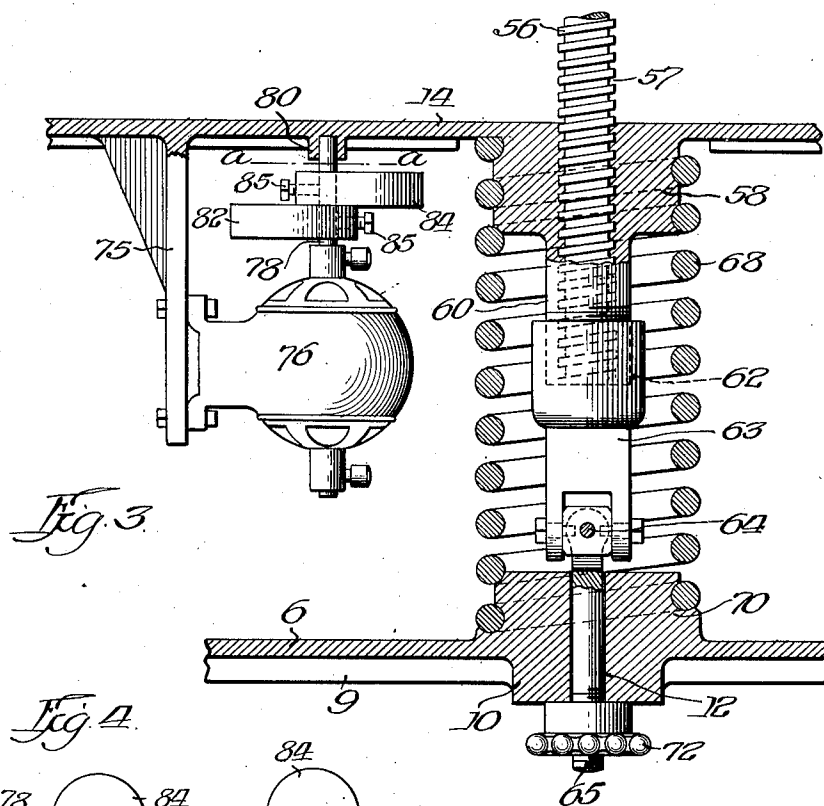
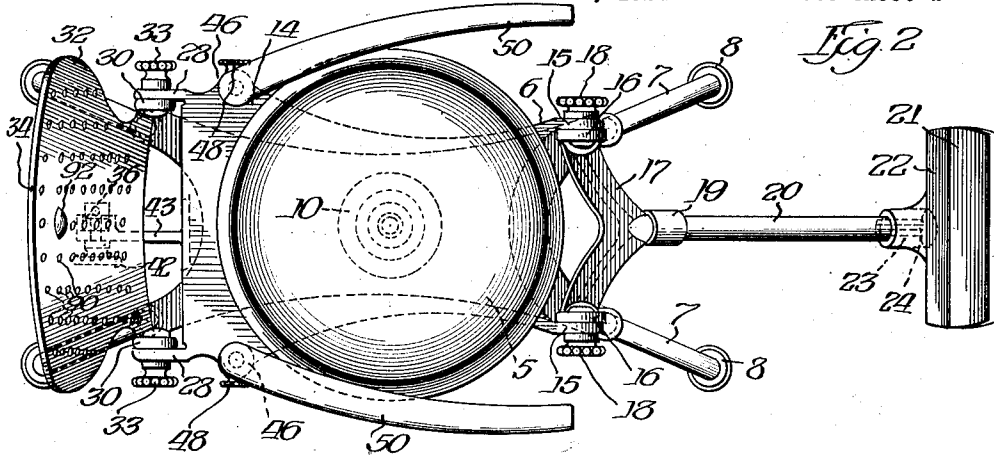
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VIBRATING CHAIR

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2 Sheets-Sheet 2



Witness
Ed. Johnson

Inventors
Michael P. Cannon
Orville Markel
By Brown Brothers & Co. Attys

UNITED STATES PATENT OFFICE.

MICHAEL P. CANNON AND ORVILLE MARKEL, OF CHICAGO, ILLINOIS.

VIBRATING CHAIR.

Application filed March 10, 1924. Serial No. 698,009.

This invention relates to vibratory treatment apparatus, and more particularly to an improved vibrating chair for the treatment of various ailments, diseases and conditions, such as rheumatism, nervousness, poor circulation, etc., and for producing or creating exertion and stimulating circulation.

While we shall describe the invention as embodied in a chair, it is to be understood that it is not limited to a particular embodiment, but may be embodied in other forms, and it may be used wherever and for any purpose to which it is found adaptable.

The primary object of the invention is to provide a device which will create exertion, stimulate circulation and which is adapted to shake and vibrate the entire body of the patient and to augment the general shaking or vibrating with localized vibrations or treatments selectively at various regions of the anatomy.

Further objects are the provision of a novel, simple and improved device for accomplishing the foregoing in a simple and effective manner and without discomfort to the patient and the provision of a generally improved, simplified, compact and sturdy structure that may be economically produced, and easily operated.

To acquaint those skilled in the art with the manner of constructing and practicing the invention, we shall now describe, in connection with the accompanying drawings, a specific embodiment of the invention.

In the drawings:

Fig. 1 is a side elevational view of a chair embodying the invention;

Fig. 2 is a top plan view of the same;

Fig. 3 is an enlarged detail section through the seat mounting post and its common yieldable support with the back, foot rest and motor carrying frame; and

Figs. 4 and 5 are detail sections on line *a-a* of Fig. 3 showing different positions of adjustment of the vibration producing weights.

In the drawings, 5 designates the supporting base or pedestal in its entirety. It comprises a base member 6, cast or otherwise suitably formed and having secured in its four corners four legs 7 provided at their lower ends with feet 8, which rest upon the floor or other supporting surface. The underside of base member 6 has strengthening

ribs 9 and a central hub 10, which is bored vertically at 12.

Yieldably supported above base 5, is a foot rest, back, seat, and arm rest supporting member 14 cast or formed in any other suitable manner. Member 14 has at opposite sides of its forward end projecting ears 15—15 to which lugs 16—16 at opposite ends of a yoke 17 are secured as by means of thumb nuts 18—18. Yoke 17 has a hub or socketed projection 19 in which the upper end of a tube or other suitable foot rest supporting arm 20 is secured. Slidably mounted upon the arm or tube 20 is an adjustable foot rest 21 disposed transversely or normal to tube 20 to receive and comfortably support the feet of the patient. Foot rest 21 is preferably recessed or offset at 22 to receive the heels of the feet and has an integral sleeve 23 which embraces tube 20. Sleeve 23 is preferably split longitudinally at 24 to permit tightly clamping the foot rest in any desired position along arm 20 as by means of a thumb screw 26. By loosening thumb screw 26, the foot rest 21 may be moved along arm 20 to any desired position and secured in place there by again tightening thumb screw 26. By loosening thumb nuts 18—18, the arm 20 and foot rest may be swung or tilted to any desired angular position and secured in place by again tightening said thumb nuts 18—18.

At opposite sides of the rear end of member 14 are a pair of projecting ears 28—28 to which ears or lugs 30—30, formed integral and struck out normal to an adjustable back 32, are secured as by means of thumb nuts 33—33. Back 32 is preferably curved at 34 and is shaped to conform comfortably to the back of the patient. Secured to the back 32 is a bracket 35 to which the upper end of a back bracing arm 36 is pivoted at 37. Arm 36 is preferably of tubular stock flattened at its upper end. The lower end of said arm 36 extends through an opening in the head of a threaded pin 36', the shank of which extends through an opening in the rear end of an arm 43 formed integral and projecting rearwardly from member 14, so that by tightening up the thumb nut 42 the arm 36 is drawn tightly against the face of arm 43 which surrounds the opening through which pin 36' extends and secures or binds the back brace firmly in adjusted position. Loosening of thumb nut 42 per-

mits arm 36 to be lowered or raised with an accompanying swinging or adjustment of back 32 about the screws which cooperate with thumb nuts 33 into any desired angular position and secured firmly there by again tightening nuts 33. This permits conveniently adapting back 32 to the back of the particular patient, also to any sitting position assumed and to the particular treatment to be given.

Formed integral and depending from each of the opposite sides of member 14 are a pair of hubs 46—46, in each of which hubs is adjustably secured by a thumb screw 48 an upright post 49 having at its upper end an arm rest 50. By loosening thumb screws 48, posts 49 and arm rests 50 may be quickly adjusted up or down to any desired position and secured in place by again tightening said thumb screws 48. Arm rests 50 are preferably curved, as shown, to afford maximum comfort, and they are preferably sleeved upon the upper ends of posts 49 to facilitate manufacture and assembly.

The seat 55 is preferably in the form of a circular stool mounted upon the upper end of a post 56. Post 56 has an external thread 57 preferably of the square type, as shown, for strength, and this thread 57 threads through and has threaded engagement with a corresponding internal thread in a central hub 58 formed integral with and depending substantially centrally from the under side of member 14. By threading post 56 up or down through depending hub 58, the vertical position of seat 55 may be adjusted to any desired position. At its lower end, hub 58 has a reduced extension 60 which is externally threaded for threaded engagement with a correspondingly internally threaded socket 62 at the upper end of a coupling member 63. Coupling 63 has universal connection at 64 with the upper end of a pin 65, which pin extends down through the vertical bore 12 through hub 10. A relatively strong coiled spring 68 is interposed between frame member 14 and base member 6 and yieldingly supports the foot rest, back and arm rest carrying frame 14 above the supporting base. Spring 68 preferably has threaded engagement at its upper and lower ends with spiral grooves in hub 58 and in an upright hub 70 on base 5. Threaded upon the lower projecting end of stem 65 is a thumb nut 72, by means of which the tension of spring 68 and thereby the vibratory action of the device may be varied or adjusted at will. By simply removing the nut 72, the entire back and foot and arm rest frame may be removed from the supporting base. This facilitates manufacture and assembly, as well as disassembly for shipment, repair and replacement.

Preferably formed integral with and depending vertically from the under side of frame member 14 is a bracket 75, and mount-

ed upon this bracket 75 is an electric motor 76 which is preferably of the universal type for operating on direct or alternating current, whichever is available. This may, however, of course, be varied. Motor 76 is supplied preferably through a flexible conductor (not shown) having a switch (not shown) for controlling the flow of current to the motor. The motor 76 drives a shaft 78 which projects vertically from the motor and is rotatably journaled at its opposite end in a boss or hub 80 depending from member 14. Mounted upon motor shaft 78 are a pair of weights 82 and 84, each off centered or eccentrically disposed with reference to the axis of rotation of the shaft. Obviously, when weights 82 and 84 are in the relation shown in Fig. 4, the eccentricity of one balances the eccentricity of the other and a balanced condition of the motor shaft exists. By loosening the set screw 85, securing one of said weights in place and turning said weight into the position shown in Fig. 5, for example, an unbalanced condition of the motor shaft is established, so that upon starting the motor the entire frame 14 and back, seat, arm rests and foot rests carried thereby are vibrated about the yielding support on base 5. While only one weight need be adjustable, both may be adjustably mounted upon the motor shaft by set screws 85, as shown. When said weights are adjusted with the eccentricity of one directly over and aligned vertically with that of the other, a maximum vibrating or shaking of the entire body of the patient will result. By adjusting the relation of the weights 82 and 84 from this maximum position to the balanced condition of Fig. 4, any desired period or degree of vibration may be established to suit the physical condition of the patient or the vibratory effect desired for the particular treatment being given.

We have found that by seating the patient in the chair and subjecting him to the vibrating action thereof for a few minutes creates exertion which would otherwise require a much longer period of violent exercise. This exertion is, as well known in the art, highly beneficial for certain ailments. Treatment in the chair stimulates poor circulation and quickly relieves exhaustion. The treatment is beneficial for rheumatism, various other ailments, conditions and diseases, and we do not intend to be in anywise limited in its use and intend to include any other beneficial results that may be secured.

It should be noted in Fig. 2 that the back 32 has a great number of closely spaced perforations or apertures 90. The pad 92 may be secured in place in either of these apertures and thereby in any desired position on back 32. The apertures 90 may be threaded for threaded engagement with the shank 93

of the pad 92, or a nut 94 may be provided, as shown, for securing the pad in any desired position. Where local application is desired in the small of the back or in any other desired place, the pad 92 is mounted in position on back 32 to cooperate with said region so that when motor 76 is started, in addition to the general shaking or vibratory action set up through the entire body of the patient, a local vibratory action is set up at the desired region of the patient's back, for example. Pads of this sort may obviously be provided for augmenting the general shaking with local vibrations in any other desired region than the back.

While we have described the invention in connection with the details of a particular embodiment, modifications and changes are contemplated within the scope of the appended claims.

We claim:

1. In a device of the class described, a supporting base, a patient support, means yieldably supporting same on said base, a motor, a shaft driven by said motor, and means for unbalancing said shaft to vibrate the patient support, said shaft lying at right angles to the patient support.

2. In a device of the class described, a patient support, means yieldably supporting same, means for vibrating the patient support, said support including a perforated supporting member, and a pad adapted for mounting selectively in the perforations of said member for producing localized vibrations.

3. In a device of the class described, a supporting pedestal, a frame member thereabout, a universal coupling connecting said pedestal and said frame member, a spring interposed between and yieldingly supporting the frame member above the pedestal, an adjustable foot rest, back, seat and arm rests carried by said frame, a motor, a shaft driven thereby, and means on said

shaft for producing an unbalanced condition of the shaft to vibrate the frame member, foot rest, back, seat and arm rests upon said yieldable support.

4. In a device of the class described, a supporting pedestal, a patient support thereabove, a universal coupling connecting the patient support and pedestal, and a spring interposed between and yieldingly supporting the patient support above the pedestal.

5. In a device of the class described, a supporting pedestal, a patient support thereabove, a universal coupling connecting the patient support and pedestal, and a spring interposed between and yieldingly supporting the patient support above the pedestal, said coupling being adjustable to adjust the tension of said spring.

6. In a device of the class described, a supporting pedestal, a chair frame, means yieldably supporting said frame on said pedestal, a universal coupling between said frame and said pedestal, a seat on said frame, a bracket depending from said frame, a motor mounted on said bracket, a shaft driven by said motor and journaled at its free end in said frame, and means on said shaft between the motor and said journal for unbalancing the shaft and vibrating the chair frame on said yieldable support.

7. In a device of the class described, a supporting base, a chair frame, a boss projecting from the chair frame, a coupling member adapted for attachment to said boss, said coupling having universal connection with a pin extending through the supporting base, a nut on the free end of said pin, a spring interposed between the base and chair frame and yieldably supporting the chair frame upon the base, and means for vibrating the chair frame upon said yieldable support.

In witness whereof, we hereunto subscribe our names this 5th day of March, 1924.

MICHAEL P. CANNON.
ORVILLE MARKEL.