Nov. 16, 1954 R. MILLER 2,694,394

MECHANICAL VIBRATOR FOR THERAPEUTIC USE

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Fig. 1.

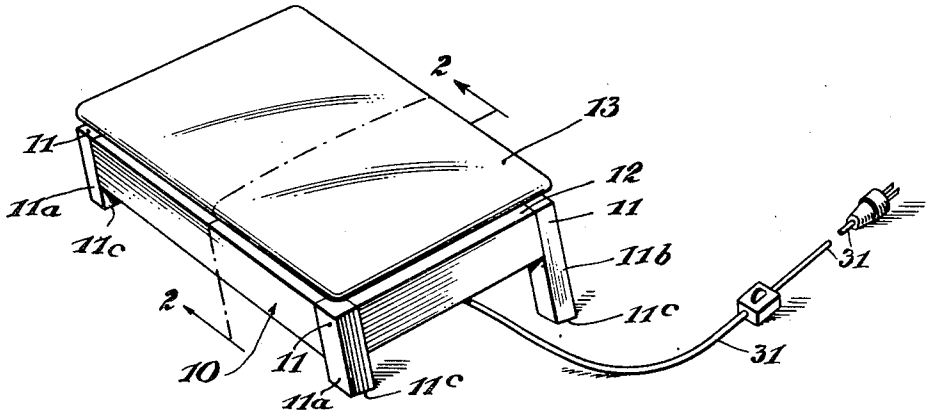
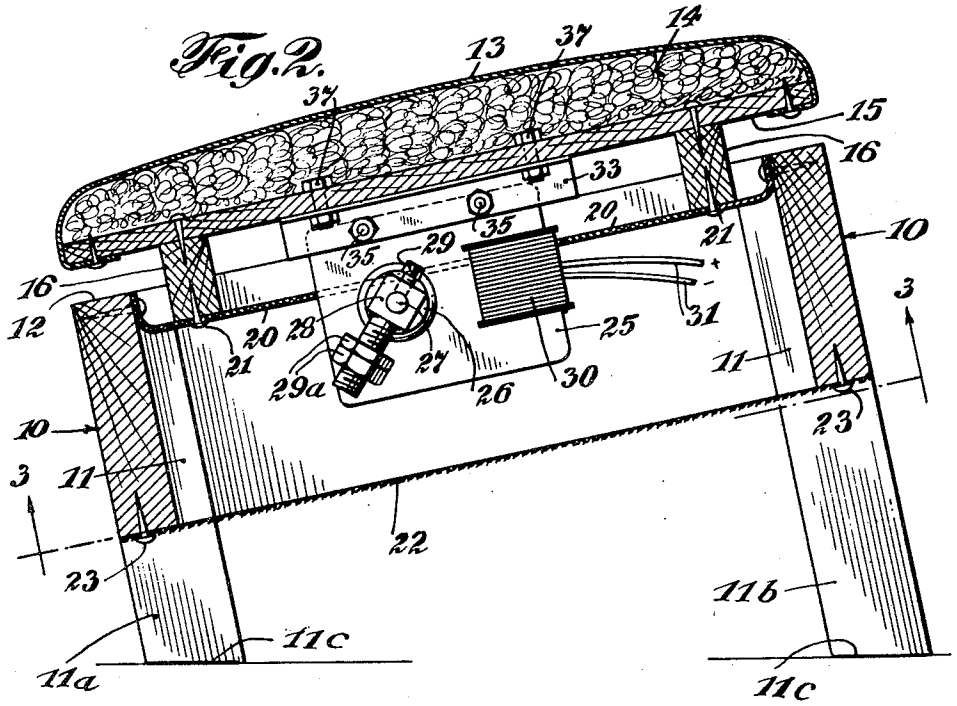


Fig. 2.



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Fig. 3.

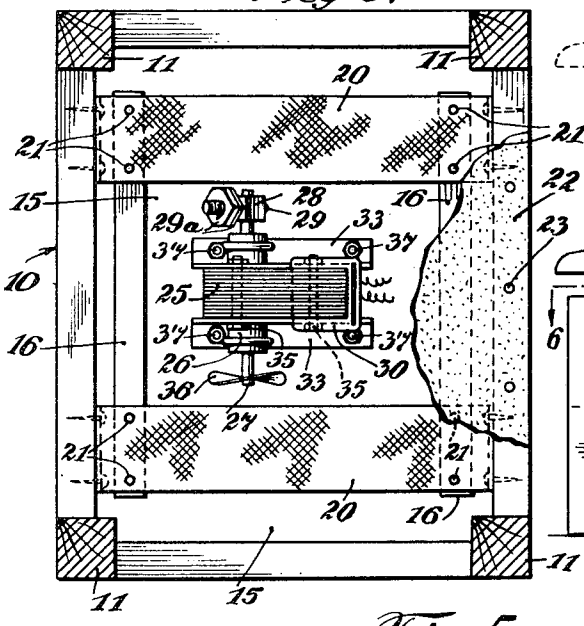


Fig. 4.

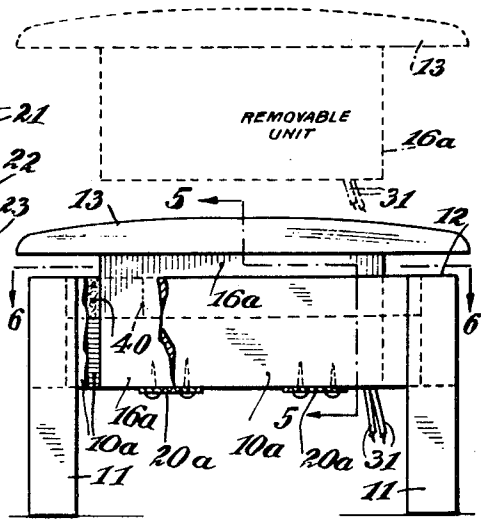
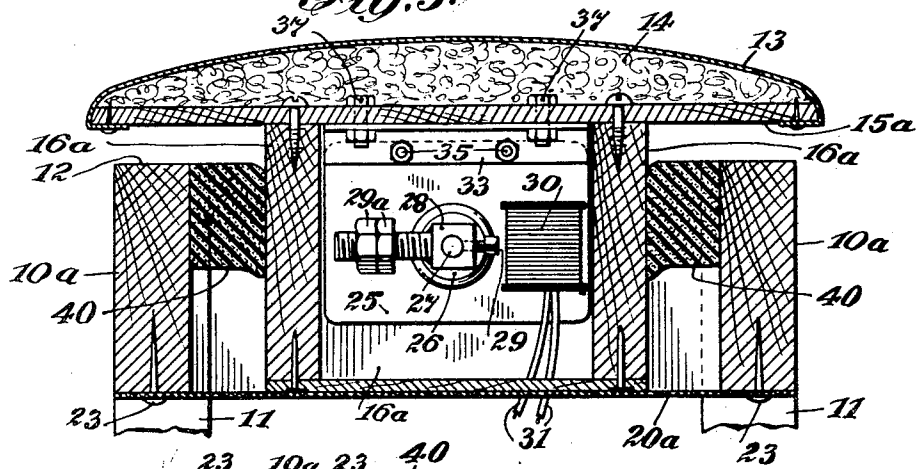


Fig. 5.



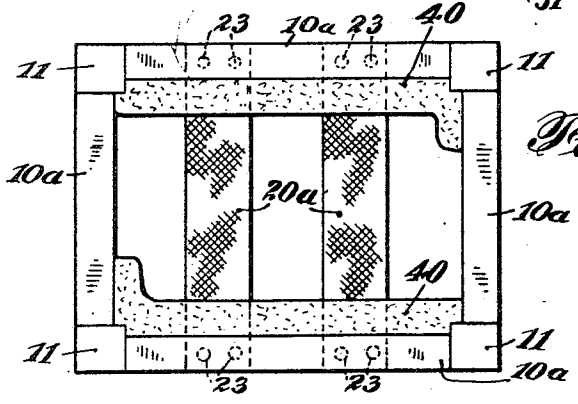


Fig. 6.

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MECHANICAL VIBRATOR FOR THERAPEUTIC USE

Robert Miller, New York, N. Y.

Application October 2, 1953, Serial No. 383,831

3 Claims. (Cl. 128- 33)

This invention relates to a mechanical vibrator for therapeutic use, to be used primarily for the imparting of vibrations to the human body, for the purpose of stimulating the flow of blood in a certain area and for the purpose of relaxing tired muscles.

The invention consists in the provision of means for supporting the motor mechanism of the vibrator, to which has been applied certain means for causing vibration of the motor and its supporting parts. This motor construction with its vibrating mechanism is, in accordance with the invention, supported by a webbing which is elastic in all directions such as the webbing used in the upholstery of chairs to support the springs and padding of the seat of a chair. In the embodiment of the invention, the seat to which the feet of the user are applied has supporting structural members secured thereto at the underface thereof, and these structural members rest upon the elastic webbing referred to.

To emphasize and increase the amplitude of the vibration, the extension member on the motor is made adjustable so that relatively fine or relatively coarse vibrations may be obtained, depending upon the particular treatment to be applied.

The invention will be further described, embodiments shown in the drawings and the invention will be finally pointed out in the claims.

In the accompanying drawings,

Figure 1 is a perspective view of the improved vibrator showing the same as being readily connectible with a wall socket;

Figure 2 is a vertical transverse section taken on line 2—2 of Figure 1;

Figure 3 is a sectional view taken on line 3—3 of Figure 2;

Figure 4 is a front view of a modified form of structure.

Figure 5 is a section taken on line 5—5 of Figure 4, and

Figure 6 is a top view taken on line 6—6 of Figure 4, showing the top view of the housing.

Similar characters of reference indicate corresponding parts throughout the various views.

Referring to the drawings, and more particularly to Figure 1, a main body or support **10** has legs **11**, and spaced from the upper surface **12** of the main body there is a freely movable seat **13** covered with leather or the like and suitably upholstered with soft material as a suitable padding **14**, thus resembling an ordinary chair seat. The seat **13** has a baseboard **15** of wood or plastic, or the like, and has depending therefrom two parallel members **16** each secured to the lower surface **15**. To the main body **10** within the space enclosed by the main body is attached a webbing **20** of the kind generally used in the upholstering of chairs which is elastic in all directions. A suitable rubber band, also elastic in all directions, may be used. The depending portions **16** are secured to the webbing **20** by nails **21** or the like. At the lowest portion or end of the body member **10** a suitable porous material **22**, as a cloth similar to the kind used in the upholstery of chairs, is applied to the body portion **10** by nails **23**. Preferably the legs at the front of the article are shorter than those at the rear, and have bottom surfaces inclined to the horizontal. For instance, the legs **11***a* at the front of the vibrator are shorter than the legs **11***b* at the rear of the vibrator, and both have inclined surfaces **11***c*. Fastened to the baseboard **15** is a laminated core member **25** upon which a motor **26** is

supported, having a block like member **28** fixed to the axis **27** by a set screw **29**, screw-threaded as shown, and has two nuts **29***a* forming a locknut on the screw-threaded bolt to adjust the weight of the locknut thereon and thereby vary the amplitude of the vibrations. Within the core **25**, a field coil **30** being part of the motor takes the current entering at the positive and negative poles of the conductors **31**. The core **25** is secured to a pair of angleirons **33** secured to the core by bolts **35**. The angleirons **33** are secured to the baseboard **15** by the bolts **37**. A small fan (**36**, Fig. 3) is secured to the motor shaft at the end, other than that which is connected with the adjustable weight, in order to give smoothness to the rotation and to cool the motor.

In the modified form, the baseboard **15***a* has dependent members **16***a*, the lower ends of which are secured to the webbing **20***a*. In the space between the body member **10***a* and the dependent members **16***a*, rubber packing **40** is provided which is somewhat compressed in order that the vibrator seat **13** will have in addition to its vibration due to the motor, the adjustable weight and the webbing, a smooth and fixed quality of vibration.

Thus three principles in relation to this device appear:

1. The vibratory motor is supported on webbing or some other resilient substance and it will not only give an up and down movement but will also impart a horizontal and an angular movement to the seat.

2. The threaded shank which is solidly attached to the shaft of the motor by a set-screw has a weight held by two lock nuts. The further the weight is moved from the motor the harder the vibration; the closer the weight is moved to the motor, the milder the vibration. (This eliminates the use of a rheostat.) The fan circulates the air around the motor for cooling it.

3. Figure 5 provides that the entire top piece can be removed from the base or holder and used upon any part of the body.

The improvements differ from the prior art which provides a change of vibrations with a rheostat or by changing the R. P. M., in that the vibrations are changed by the weight of the adjusting nut. When the nut is near the axis of rotation the vibrations are fine, and when distant, the vibrations are coarse.

By placing the motor and adjusting nut on the web, an angular motion in addition to the vertical and horizontal movement is produced by the motor and the adjusting nut giving the seat this unique form of vibration. The known prior art has only a vertical vibration movement, the two additional movements, horizontal and angular are important for certain forms of treatment.

By the use of the above methods the vibrators can be produced with less parts whereby maintenance and repair costs are substantially reduced.

By the use of the webbing about 80% of the motor noises of the old devices are eliminated. If a heavy webbing or heavy rubber is used, then such noises are almost entirely eliminated, the efficiency of the vibrations remaining.

I have described some preferred embodiments of the invention, but changes may be made therein without departing from the spirit of the invention as set forth in the appended claims.

I claim:

1. In a vibrator, the combination of a support, an elastic webbing across said support, a seat supported by said webbing, and a vibrator motor means for said seat.

2. In a vibrator the structure of claim 1, in which said motor means includes an eccentrically disposed member adjustable to and fro to the axis of rotation of said motor.

3. In a vibrator, the structure of claim 1, in which a rubber resilient pad is disposed between said support and said seat.

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