

April 4, 1939.

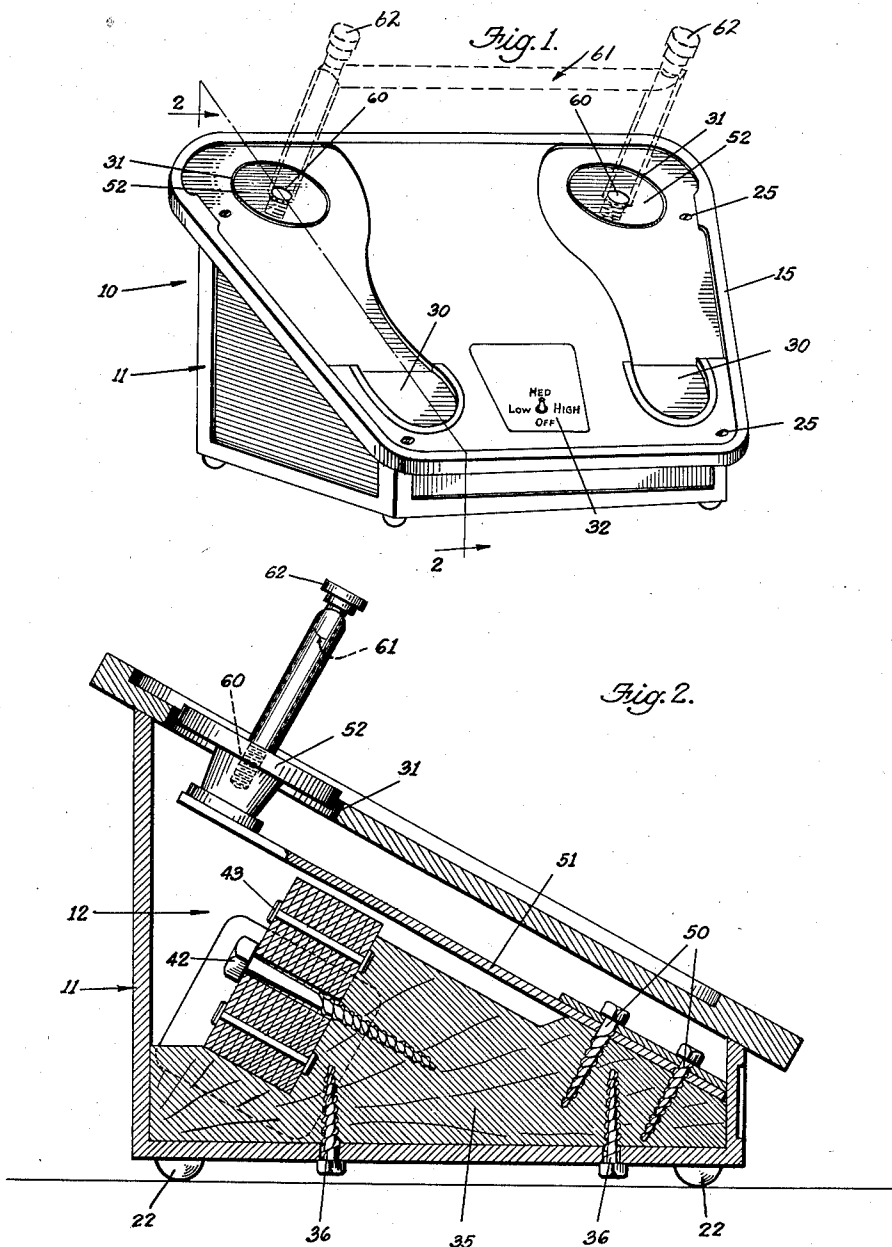
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2,153,230

VIBRATOR

Filed Aug. 4, 1936

2 Sheets-Sheet 1



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Fig. 3.

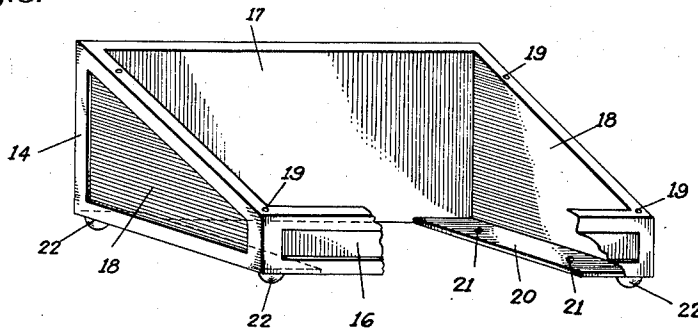


Fig. 4.

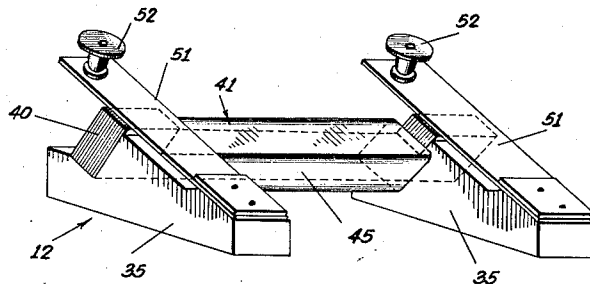
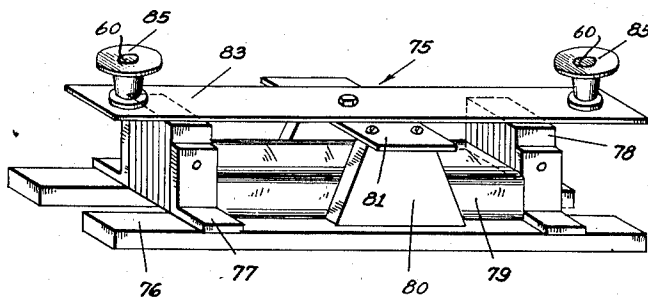


Fig. 5.



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VIBRATOR

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Application August 4, 1936, Serial No. 94,201

6 Claims. (Cl. 128—52)

This invention relates to devices for inducing rest, stimulating circulation, and generally invigorating the human body by the use of vibration.

It is a particular object of this invention to produce a novel vibrator which may be used for vibrating the body through the feet.

It is another object of the invention to provide an inexpensive device of this sort which may be used generally.

It is still further objective of the invention to provide a foot vibrator which may also be used in applying vibration to other portions of the body.

It is yet another object of the invention to provide a vibrator which is compact and which can be used by a person while completely relaxed and without the aid of an attendant.

Yet another object of the invention is to provide a vibrator as aforesaid in which the intensity of the vibration may be varied at will.

A further object of the invention is to provide a method of and apparatus for producing vibration by the use of alternating current.

The manner of accomplishing the foregoing objects, as well as further objects and advantages will be made manifest in the following description taken in connection with the accompanying drawings in which:

Fig. 1 is a perspective view of a preferred form of my invention.

Fig. 2 is an enlarged cross sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a perspective view of the shell of the frame of my invention partially broken away to illustrate the interior thereof.

Fig. 4 is a perspective view of the vibrator unit of my invention.

Fig. 5 is a perspective view of a modified form of vibrator unit which might be used in my invention.

The drawings, which will now be specifically referred to, show a vibrator 10 embodying my invention and including a frame 11 and a vibrator unit 12 mounted therein.

The frame 11 includes a shell 14 and a top plate 15, the shell 14 having front and rear walls 16 and 17 and side walls 18. Provided in the upper edge of these walls are threaded screw holes 19. The shell 14 is preferably a single aluminum casting and has formed integrally therewith vibrator units support shoulders 20 having walls 21. Mounted on the bottom of the shell 14 are hemispherical rubber tips 22 upon

which the vibrator 10 is adapted to be supported on the floor.

The top plate 15 of the vibrator 10 is shaped to fit the upper open end of the shell 14 to be secured thereto by screws 25 which extend downward into the threaded holes 19.

The plate 15 is provided with a pair of foot rests 30 in the upper portions of which are provided openings 31. Also mounted on the plate 15 is an electric switch 32 which is preferably a multiple pole switch.

The vibrator unit 12 includes a pair of wooden blocks 35 which rest upon the shelves 20 and are secured thereto by lag screws 36 which extend upwardly through the holes 21. The upper surface of the blocks 35 are shaped to form a cradle receiving the core 20 of an electro-magnet 41, which core is secured to the blocks 35 by lag screws 42. The core 40 is preferably laminated and assembled together as by rivets 43.

Provided on the magnet 41 is an insulated wire winding 45, which is tapped at several points and connected from these points to the multiple pole switch 32 so that various portions of the winding 45 may be energized as desired by the manipulation of the switch 32.

As shown in the drawings, the entire vibrator 10 slopes downwardly sharply from the rear to the front thereof, this being true of the plate 15, and also the upper faces of blocks 35. Secured to the forward portions of these blocks as by lag screws 50 are spring steel armatures 51 which extend upwardly and rearwardly in close proximity to the end portions of the magnet core 40 as shown in Fig. 2.

Mounted on the rearmost ends of the armatures 51 are foot contacting elements 52 which extend through the holes 31 so that when the feet of an adult person are placed on the foot rests 30, the balls of his feet rest directly on the elements 52.

The operation of the vibrator is accomplished by connecting the switch 32 to a suitable source of power so that when the switch is turned on to low, medium or high, a corresponding portion of the winding 45 will be energized by electricity supplied thereto through said switch.

Each of the foot contacting elements 52 is provided with a hole 60 into which the ends of an inverted U-shaped bar 61 are adapted to be inserted, as indicated in Figs. 1 and 2. When the bar 61 is removed, the vibrator 10 is ready for use in vibrating the body through the feet. The manner in which this is used is to place the vibra-

tor 10 in front of a chair in which a person is sitting and have this person place his feet upon the foot rests 30 so that the balls of his feet repose upon the foot-contacting elements 52.

- 5 In Fig. 5 I have shown a modified form of vibrator unit 75 which includes wooden cross bars 76 which are adapted to be secured to the shelves 20. Brackets 77 mounted on these bars support a laminated core 78 of an electro-magnet 79. 10 Supported on the bars 76 are blocks 80 and a cross plate 81 upon the middle of which is fixed a large spring armature 83, the opposite ends of which extend close to the upturned ends of the magnet core 78. Mounted on the opposite 15 end portions of the armature 83 are foot-contacting elements 85 which are identical with the foot contacting elements 52 in the preferred embodiment previously described.

- The electric current with which the switch 32 20 is supplied and through which transmitted to the magnet coil 45 is alternating current and causes the vibration of the armature springs 51 and the elements 52 mounted thereon by the cyclic reversal of direction of this current. The 25 vibrations of the elements 52 are thus seen to be at the same rate as the current cycles. The rate of this vibration is much higher than that practicable with motor vibrators such as have been hitherto widely used in body vibrators.

- 30 It is to be noted in Fig. 2 that the inverted U-shaped bar 61 is provided with screws 62 which can be readily manipulated by the fingers to screw into the holes 60 in the elements 52, thereby rigidly mounting the U-shaped bar 61 on 35 these elements. When the bar 61 is fixed in place, as shown in Fig. 2, and the vibrators 10 operated, various parts of the body may be subjected to vibration by being brought into contact with the U-shaped bar 61.

- 40 It is to be understood, of course, that while the foot rest 30 may include depressions in the plate 15 to hold the foot in place, such depressions are not an essential part of these foot rests when viewing the invention broadly. In some instances, the upper surface of the plate 15 may be 45 perfectly flat and still be used by placing the feet thereon in a position to be engaged by the vibrating elements 52.

What I claim is:

- 50 1. In a vibrator, the combination of: a frame, a casing provided on said frame including a relatively shallow housing having side walls and a top plate, the latter being inclined from horizontal; a foot rest provided upon said top plate, there being an opening in said foot rest; a leaf 55 spring; means for mounting a portion of said leaf spring on said frame, another portion of said spring being disposed opposite said opening; a foot contacting element mounted on said spring and extending into said opening; and vibrating 60 means for rapidly vibrating said element in said opening.

2. In a vibrator, the combination of: a relatively low shell having vertical walls and an upper face which is inclined relative to the horizontal; vibrator supporting blocks mounted with- 65 in opposite side portions of said shell; an electro-magnet supported at its opposite ends upon said blocks; a foot rest plate covering the upper end of said shell, said plate having areas thereon for resting the feet, there being openings in said 70 plate in said areas; armature means mounted on said blocks and adapted to be vibrated by said

electro-magnet; and foot engaging elements provided on said armature means and extending through said openings into positions to contact and vibrate the feet when the latter are resting on said plate.

3. In a vibrator, the combination of: an electro-magnet winding; a core extending through said winding and from the opposite ends thereof; a pair of armatures yieldably disposed within the magnetic field adjacent extending ends of 10 said core; a housing enclosing said winding, said core and said armatures; an inverted U-shaped member disposed outside said housing and adapted for the purpose of applying vibratory motion originating in said armatures to the human body; and means extending through said 15 housing for removably securing the opposite ends of said member to said armatures, said securing means including foot contacting elements which when said U-shaped member is detached from 20 said vibrator are available for transmitting vibrations to a patient's feet.

4. In a vibrator, the combination of: an electro-magnet winding; a core extending through said winding and from the opposite ends thereof; 25 a pair of armatures yieldably disposed within the magnetic field adjacent extending ends of said core; a housing enclosing said windings, said core and said armatures; an inverted U-shaped member disposed outside said housing and adapted for applying to the human body vibratory motion originating with said armatures, there being openings in said housing to facilitate the 30 attachment of said member to said armatures; screw means capable of manual manipulation for temporarily securing said U-shaped member at its opposite ends to said armatures or to temporarily remove said U-shaped member from said armatures; and foot contacting elements provided on said armatures which when said U- 40 shaped member is removed are available for treating the feet of the patient.

5. In a vibrator, the combination of: a frame, a housing having a pair of openings, an electro-magnet winding mounted in said housing parallel 45 to a line connecting said openings, a core extending through said winding and from the opposite ends thereof; a pair of armatures yieldably mounted in said housing in spaced relation with the extending ends of said core; and a U-shaped vibration transmitting member extending 50 through said openings and secured upon said armatures.

6. In a vibrator for treating the human body, the combination of: a frame; a relatively straight magnet core mounted on said frame, opposite 55 ends of which are spaced apart a substantial distance; an electric winding on said core; armature members spaced apart a substantial distance and juxtaposed relative to opposite end portions of said core which extend beyond said winding so that when said winding is energized with alternating current said armature members are caused to vibrate in parallel directions 60 disposed crosswise to the longitudinal axis of said core; a housing enclosing said frame, said core, said winding and said armature members, said housing having openings opposite said armature members; and foot contacting means provided on said armature members and extending through 65 said openings in position to be engaged by the balls of the feet for treatment of the latter. 70

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