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FOOT VIBRATOR

Filed April 24, 1964

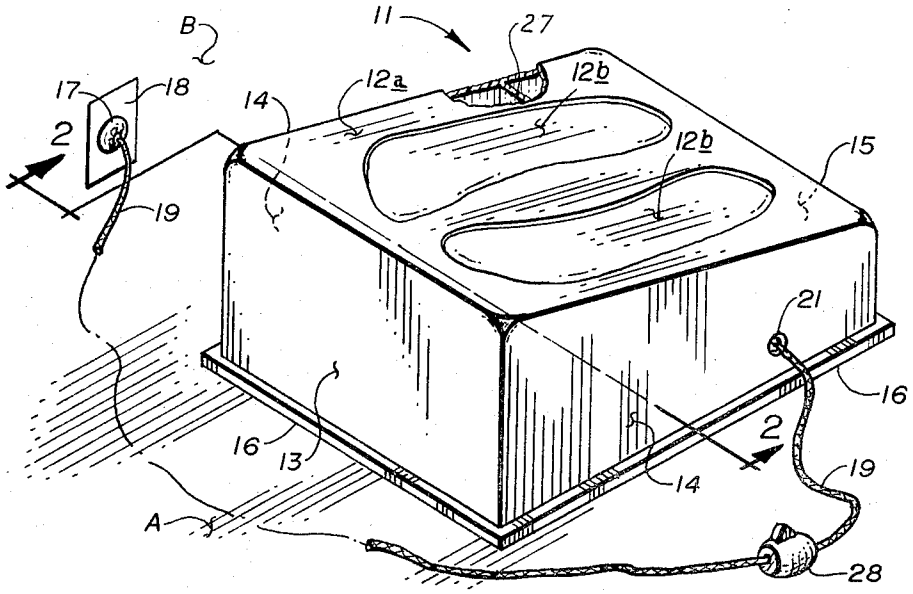


FIG. 1

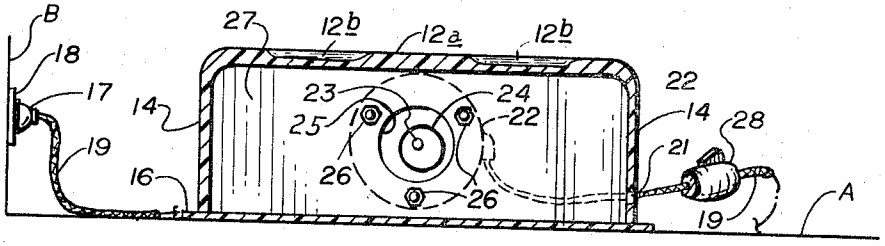


FIG. 2

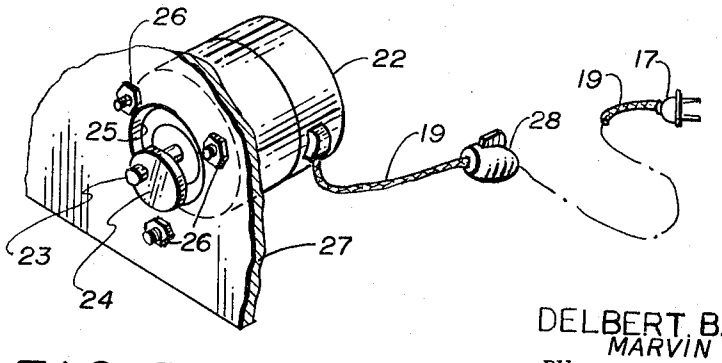


FIG. 3

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FOOT VIBRATOR

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1 Claim. (Cl. 128—33)

This invention relates to a foot vibrating device and more particularly to a unitary and portable foot vibrating support which may be operated from conventional electrical energy sources.

It has long been recognized that after a day's activity inducing body fatigue and general lassitude, devices which stimulate blood circulation in the human body, and particularly in the extremities such as the hands and feet, are of assistance in restoring the body to a condition of comfort. Various devices for carrying out the aforementioned have found acceptance in such places as hotels, motels, department stores, as well as in private residences where a weary traveler or shopper may engage the operation and partake of the beneficial results offered by such mechanisms.

The various therapeutic machines available for inducing circulation of the blood in the user and with which we are familiar involve relatively complex arrangements of interconnected vibrating elements.

It is an object of the present invention to provide a simple unitary foot support or stool capable of imparting rapid, small amplitude vibrations to the feet and legs of the user.

A feature and an advantage of such a device is that by the intense and rapid low amplitude vibrations circulation is induced in the user's limbs and body.

Another object of this invention is to provide an apparatus for stimulating circulation as mentioned above comprising a housing consisting of a unitary integral structure of substantially rigid and elastic material having a top plate of size sufficient to support the feet of an adult human being. The top plate, supported by four side walls of rectangular configuration, is sloped with respect to the horizontal bottom surface of the box which rests upon a floor surface. Within the box there is provided a brace extending between a pair of opposite side walls integral therewith and with the top plate. Mounted on the aforementioned brace are means for vibratively driving the housing.

A feature and an advantage of this type of construction is that the total number of mechanical parts required for the device is reduced to a very small number whereby initial costs and sustaining maintenance is kept to an absolute minimum.

Another feature of this invention is the unitary construction of the foot support device which further simplifies production and minimizes the problem of upkeep.

Another object is to provide a simple vibrating mechanism comprising the combination of a flange mounted motor attached to the internal bridge or skirt portion of the vibrating box and which has a uniform weighted disc attached eccentrically to the end of one of its rotating shafts. Such a vibrating source has no direct connection to the box itself other than the flange mounting of the motor.

Another feature of this invention is the unit construction of the sides, top plate and interior bridge which have no pivotally interconnected or relatively movable parts and which therefore lend themselves to a unitary molding of fiber reinforced plastic resinous material or the like.

Another object of this invention is to provide the top plate with a pair of concavities shaped to receive therein the feet of the human being where such top plate is a part of an integral box construction as described above.

Other numerous objects with various features and advantages will become apparent upon the reading of the following detailed specification and accompanying drawings in which similar characters of reference refer to corresponding parts in the various figures.

Turning now to the drawings:

FIGURE 1 is a perspective view of the entire device wih a portion broken away to show interior details.

FIGURE 2 is a sectional elevation taken along line 2—2 of FIGURE 1.

FIGURE 3 is a fragmentary closeup perspective showing the mounting of the motor in our improved vibrator.

This invention embodies a box-like foot support which in a preferred version is formed from a unitary plastic molding. Interiorly at right angles and integral with the sides and top of the foot vibrator, is a cross member preferably of the same material as the sides or top. At the center of this cross member or bridge, there is secured a small flange mounted motor whose shaft extends through an opening in the bridge and has eccentrically attached to one end a small weighted disc. When the motor is connected to a power source, such as 110 volt 60 cycle A.C. outlet plug, the shaft rotates at a speed determined by the characteristics of the motor and the intensity of power supplied through the conductor cable and switch. Due to the eccentrically mounted disc at the extremity of the rotating shaft, rapid, intense, and limited amplitude vibrations are set up in the bridge to which the motor is flange connected. Due to the integral construction of the bridge or skirt portion with the remainder of the foot support vibrator, and because of the resilient physical qualities of the material from which the entire unit is fabricated, the aforementioned vibrations drive the entire device. This causes vibrations to be transmitted to the user's limbs that are in contact with the apparatus to obtain the benefits of such vibrational treatment.

The invention may best be understood by referring first to FIGURE 1 wherein the entire foot vibrator or box is indicated generally at **11** resting on a floor surface indicated by A near an adjacent wall B. In horizontal projection, top plate **12***a* forms a rectangular shape and has depending from its edges side walls comprising front side **13**, lateral sides **14** and a rear vertical face **15**. Top **12***a* is sloped about 10° to 12° in a downward direction from the front side to the rear vertical face, and the top edges of sides **14** attached thereto are shaped to conform to said slope. In addition, cross piece or bridge **27** is integrally attached between the inside box surfaces of side **14** and top **12***a* and spaced rearwardly of the box nearer to face **15** than side **13**.

The entire vibrator **11** is provided with a separate enclosing bottom surface **16** which protects the flooring upon which the device may rest from the combined effects of the user's limbs and the vibrations induced in the box. The bottom of the surface is of a nonskid nature, a known expedient in the art and not specifically shown in the drawing.

When an individual wishes to partake of the beneficial effects available from the vibrator, a position is assumed with the bottoms of the user's feet placed in the foot-like impressions **12***b* on top surface 12*a* of the vibrator; the impressions or pair of concavities are shaped to receive the feet of a human being. Motor power is next supplied by placing manual plug **17** into an output terminal **18** of a conventional type normally found in various premises; electrical power is then conducted through cord **19** shown in interrupted form in the drawing. A selector switch or rheostat **28** for turning on and off the power from source **18** and for adjusting the amount of electrical energy transmitted, and hence, the rate and amplitude

of the vibrations as explained more fully below, is available to the user. Cord **19** passes through aperture **21** to the motor described below.

Referring now to FIGURES 2 and 3, the power supply from wall source **18** to plug **17**, cord **19**, and switch **28** is conducted interiorly of the box to motor **22** which then commences to rotate at a speed dependent upon the motor's characteristics and the user's setting of variable switch **28**. Motor shaft **23** projects through opening **25** in bridge **27**. Connected to the end of the motor shaft is disc or weighted member **24** mounted at a point displaced from its center so that as shaft **23** rotates, disc **24** is dynamically unbalanced and creates intense, rapid, small amplitude vibrations in the motor frame itself. Motor **22** is of the flange mounted type and secured by means of nuts **26** threadably engaged on the motor's mounting studs which pass through spaced holes in skirt portion or brace **27**. Consequently the small intense vibrations caused by the aforementioned dynamic unbalance are transmitted through bridge **27** to the sides and top of the vibrator box and thence to the limbs of the user in contact therewith. Because of the resilient physical characteristics of the material used to make the body of the vibrator, and because of its integral or unitary construction, the vibrations created as above described are transmitted to the user's feet with a high degree of effectiveness and with little dampening from the structure itself. In the practice of the invention in its present form it has been found that material such as fiberglass, fiber reinforced plastic or other resinous material is preferred although other substances of similar physical characteristics may be substituted.

Although not shown in detail on the accompanying drawing, it is understood that the vibrator could be provided with a standard coin box and switch combination, devices known in the art, so that where the box is installed in motels, hotels, department stores or other places of public accommodation the user could be required to insert a given amount of coin or coins in order to cause the vibrator to operate.

Although we have shown our device in some detail in the drawing with corresponding enumeration in the foregoing specification, for the purposes of illustration and clarity of understanding, it is understood that certain modifications and changes may be made within the scope of this invention and the appended claim.

What is claimed is:

Apparatus for stimulating circulation in the feet and legs of the human being comprising: a housing consisting of, in a unitary integral structure of relatively rigid material, a top plate of size sufficient to support the feet of a human being, four side walls of a rectangular configuration for supporting said top plate in spaced relation to a horizontal floor surface, and a planar brace extending between a pair of opposite side walls beneath said top plate and being formed integral with said opposite walls and said top plate; said brace having a hole therethrough substantially midway between said sidewalls; an electric motor having a casing and a driven shaft extending from said casing to said brace with the shaft projecting through said hole and aligned substantially normal to said brace; and a disc secured to said shaft eccentrically thereof on the side of said brace opposite said motor casing so that on energization of said motor vibratory motion is imparted to said housing.

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