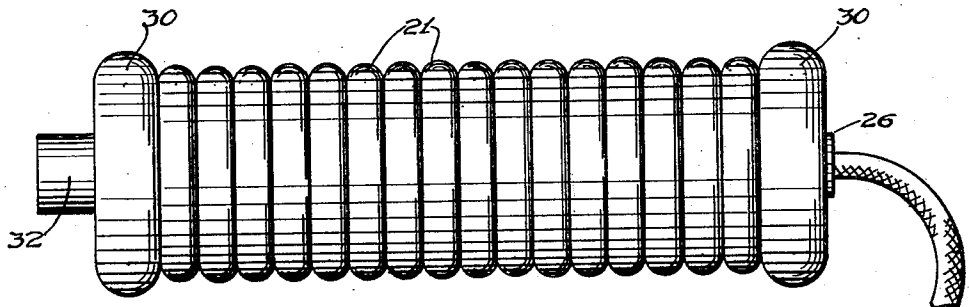
April 20, 1954 F. V. VOORHEES ET AL 2,675,800

MECHANICAL VIBRATOR

Filed Oct. 17, 1952

Fig. 1



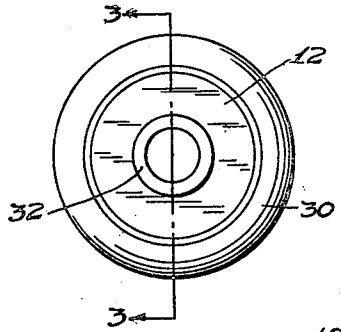
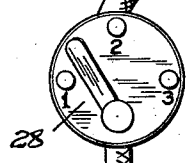


Fig. 2



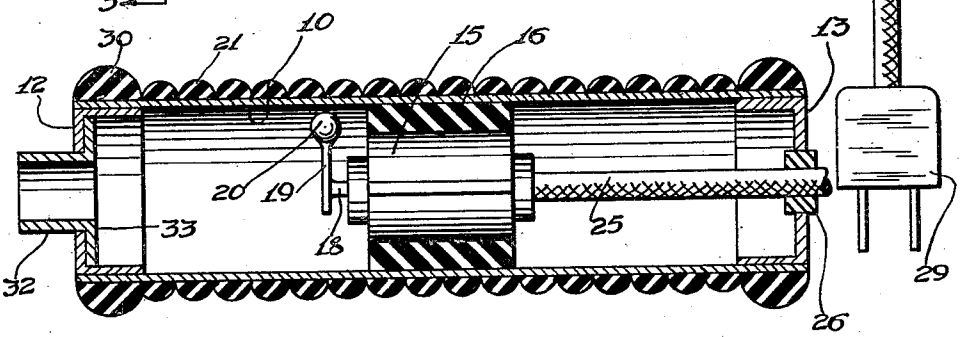


Fig. 3

INVENTORS:
Frederic V. Voorhees
Wilbert J. Dutton
By Mills B. Stevens & Co.
Attorneys.

Patented Apr. 20, 1954 2,675,800

UNITED STATES PATENT OFFICE

2,675,800

MECHANICAL VIBRATOR

Fredric V. Voorhees and Wilbert J. Dutton,
Rushville, Ill.

Application October 17, 1952, Serial No. 315,342

1 Claim. (Cl. 128—36)

1

Our invention relates to mechanical vibrators, and more particularly to the type employed for therapeutic purposes, such as for the treatment of spastic and traumatic conditions, muscular aches, tension and fatigue, headaches, etc. While various appliances for the above purposes are elaborate in structure and more or less complicated, it is one object of the present invention to provide a vibrator which is in the form of a small unit which may be carried about, applied or handled in any desired manner.

A further object is to design the novel vibrator essentially as a foot stimulator or invigorator and in a form facilitating application and contact with different parts of the feet.

Another object is to construct the novel vibrator in the form of a cylinder, in order to facilitate its rolled application to various body members or parts and render it compact for transportation or storage.

An additional object is to provide the vibrator with an extension designed to transmit vibrational movement to other instruments or remote appliances for a therapeutic function.

With the above objects in view, a better understanding of the invention may be had by reference to the accompanying drawing, in which—

Fig. 1 is a side elevation of the improved vibrator;

Fig. 2 is a view from the left-hand side of the showing in Fig. 1; and

Fig. 3 is a section on the line 3—3 of Fig. 2.

In accordance with the foregoing, specific reference to the drawing indicates the housing of the vibrator at 10, the same being in the form of a metallic cylinder. A front end closure for the cylinder is shown at 12, and a rear end closure therefor at 13. These closures are in the nature of cups which are tightly driven into the respective ends of the cylinder.

The center portion of the cylinder 10 is occupied by an electric motor 15 which is spaced from the side walls of the cylinder by a thick rubber bushing 16. The motor shaft is shown at 18, and the front end thereof carries a crank 19 terminating with a weight 20. Since this weight unbalances the rotation of the motor shaft 18, it follows that the motor 15 will undergo a vibrational movement during its operation.

The vibrational movement of the motor 15 is cushioned by the rubber bushing 16, but nevertheless transmitted to the cylinder 10; and the latter is covered with a longitudinal series of rubber rings 21 in order that the application of the cylinder to any other object may also be cushioned. The effect of the cushion elements 16 and 21 is also noise-reducing.

2

The current supply cord 25 for the motor 15 extends rearwardly through a grommet 26 centered in the end closure 13, as shown in Fig. 3, then continuing to a manual control unit 28, and finally to a conventional plug 29 which may be applied to a suitable electrical outlet.

The vibrator constructed as described is in the nature of a roller. When it is placed on the floor, the foot may be made to ride over over it back and forth or at an angle, whereby to be subjected to the vibrations of the cylinder and receive the stimulating, invigorating and relaxing benefits attributed to therapeutic vibrators. It is noted that the end rings 30 of the vibrator are of greater size and diameter than the intermediate ones, so that they serve to raise the vibrator off the floor for easier rolling movement and also to keep the intermediate rings from becoming soiled from contact with the floor. The vibrator can therefore be kept clean and picked up whenever it is desired to apply it to some other body part or member.

Fig. 3 shows that a nipple 32 extends from the frontal closure 12, having a base 33 which is fitted inside the closure. This nipple permits the application of an extension, such as a tube or rod designed to reach some remote part of the body or to carry some therapeutic instrument for internal application.

It will now be apparent that the novel vibrator is an appliance of handy size and compact in form, so that it may be easily carried around and occupies a small amount of room when stored or shipped. Further, being almost entirely rubber jacketed, the vibrator is soft to the touch and will not injure any objects with which it comes in contact. Further, the vibration of the motor at high speed is partly absorbed by the cushioning elements on the inside and outside of the vibrator, whereby to be transmitted gently to parts to which the vibrator is applied. Further, the vibrator is in the form of a roller which may be easily moved over a floor or other surface, whereby to apply to different parts of a foot or other body member resting thereon. Further, the vibrator may be handled as readily as any other hand implement, for application to the back, neck or other portions of the body which are usually difficult to reach. Further, the motor of the vibrator is fully contained within the same and in a deep location, so that its shaft or weight is too far inside the vibrator to be contacted by anyone with resultant injury. Further, the vi-

brator has the extension nipple for application to a remotely functional appliance. Finally, the vibrator is composed of parts which are few and simple, favoring its production at a reasonable cost.

While we have described the invention along specific lines, various minor changes or refinements may be made therein without departing from its principle, and we reserve the right to employ all such changes and refinements as may come within the scope and spirit of the appended claim.

We claim:

A mechanical vibrator comprising a tubular housing, a motor inside the housing and having a shaft, an unbalancing element carried by the shaft and inducing vibration on the part of the motor and housing, a series of rings of cushioning material mounted in longitudinal sequence on the outside of the housing short of the ends thereof, and a pair of larger rings of similar material around the end portions of the housing, the material of said rings being of semi-circular cross-section with the flat side against the housing.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,688,891	Spreen	Oct. 23, 1928
2,221,785	Douglas	Nov. 19, 1940
2,307,554	Wettlaufer	Jan. 5, 1943
2,425,655	Tompkins	Aug. 12, 1947