Jan. 19, 1937. F. H. NEWTON 2,067,979

THERAPEUTIC VIBRATOR

Filed Oct. 3, 1935

FIG. 1.

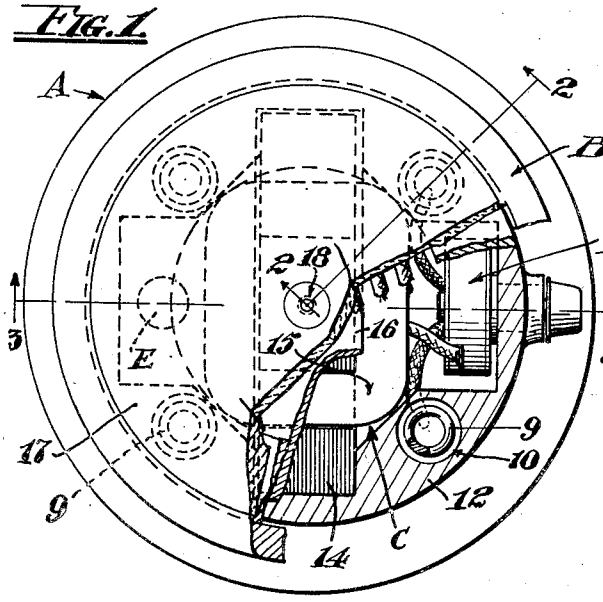


FIG. 2.

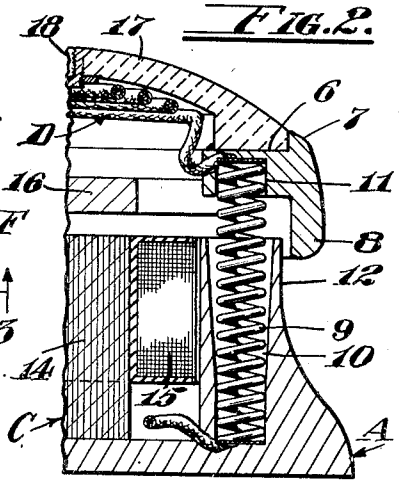


FIG. 5.

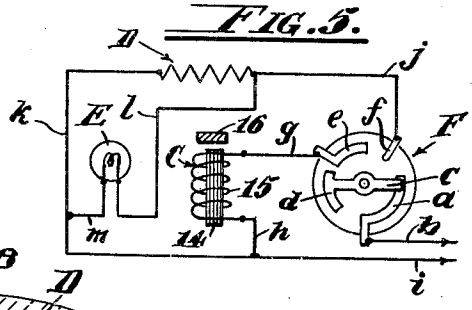


FIG. 3.

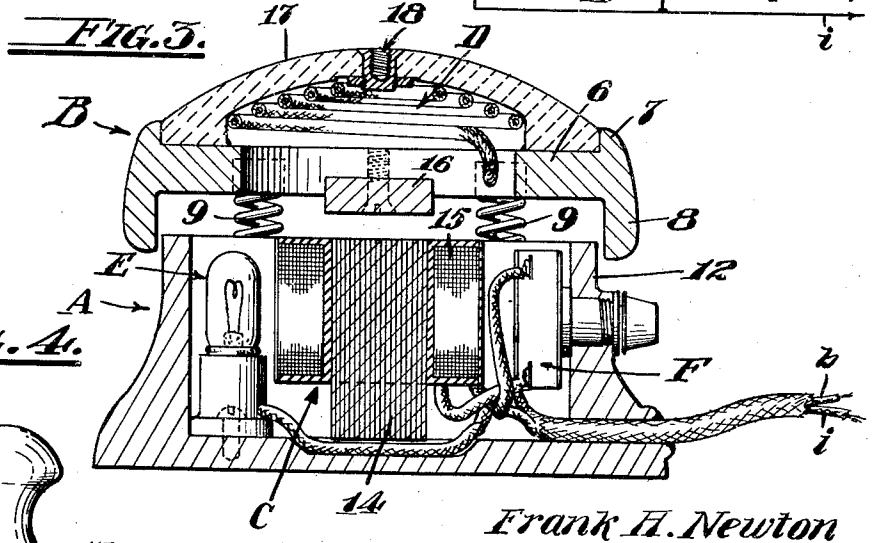
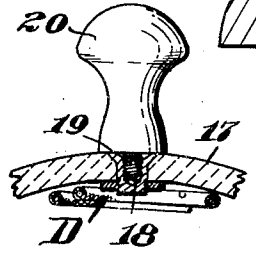


FIG. 4.



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THERAPEUTIC VIBRATOR

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Application October 3, 1935, Serial No. 43,345

2 Claims. (Cl. 128—41)

This invention relates to a vibrator of the character employed for therapeutic purposes and more particularly pertains to a vibrator embodying a movable applicator element and electrically operated means for effecting vibration of said element.

An object of the invention is to provide a therapeutic vibrator of the above character in which the vibrating element is resiliently supported for limited movement in all directions relative to its support whereby its application to surfaces of the body will be cushioned in all directions.

Another object is to provide a vibrator which is so formed as to render it especially applicable for use in treatment of the feet and for this purpose having its parts so formed and arranged that the device may be supported on a floor with the vibrating element so positioned that the soles of the feet may be readily and comfortably seated thereon.

Another object is to provide a construction in the vibrator whereby it may be utilized in effecting application of heat either in conjunction with or independent of the vibrating action.

A further object is to provide a construction in the vibrator whereby its parts may be economically formed and readily assembled.

With the foregoing objects in view together with such other objects and advantages as may subsequently appear the invention resides in the parts and in the combination, construction and arrangement of parts hereinafter described and claimed and illustrated by way of example in the accompanying drawing in which:

Fig. 1 is a plan view of the vibrator with portions broken away to show internal portions thereof in plan and section:

Fig. 2 is a detail in vertical section and elevation taken on the line 2—2 of Fig. 1:

Fig. 3 is a view in transverse section as seen on the line 3—3 of Fig. 1:

Fig. 4 is a detail in section and elevation illustrating the manner of fitting the vibrator element with an applicator attachment:

Fig. 5 is a diagram of the electric and electromechanical element of the vibrator.

Referring to the drawing more specifically A indicates generally the vibrator base, and B designates the vibrating element carried by the base which element embodies an annulus 6 formed on its outer periphery with upwardly and downwardly extending flanges 7 and 8. Interposed between the base A and annulus 6 is a series of coil springs 9, here shown as four in number and arranged at the four corners of a square. The lower end portions of the springs 9 are seated in recesses 10 formed in the base A, and the upper ends thereof seat in recesses 11 formed in the annulus 6.

The base A includes an upstanding annular side wall 12 the upper edge of which terminates on a plane spaced from the under side of the annulus 6 and the outer peripheral marginal portion of the upper end of said wall extends into the space encircled by the flange 8 and spaced a short distance inwardly therefrom whereby the vibrating element B may have a limited movement on its supporting springs 9 in all directions relative to the base A.

Arranged within the space bounded by the annular wall 12 of the base A is a solenoid magnet C including the usual core 14 and electrical windings 15, arranged with the core extending vertically diametrically of the base.

Mounted on the under side of the annulus 6 and extending diametrically thereof above the core 14 is an armature bar 16 which is spaced from the core 14 and is adapted to be attracted by the latter on energization of the core to move the annulus 6 toward the base A in opposition to the springs 9, as will presently be described.

Carried on the annulus 6 is a transparent dome shaped applicator 17 preferably formed of red glass, and arranged interiorly of the applicator 17 is an electrical resistance element D constituting a heater for applying heat to the applicator 17. Arranged in the space surrounded by the wall of the base A is an electric lamp E for the purpose of directing rays through the applicator 17 and to act as an indicator of electrical current flow through the heating element.

As shown in Fig. 5, the device is wired with the solenoid C in parallel with the heating element D and which is controlled by a conventional selective switch F so that massaging vibration or heat or both actions simultaneously may be obtained by manual rotative adjustment of the switch handle. The indicator lamp E is wired in shunt to the terminals of the heating element D. As here shown the switch F is mounted on the base A and includes a stationary contact member *a* to which is connected an electrical conductor *b* constituting one of a pair of electrical conductors leading from any suitable source of alternating current supply. The switch F also embodies a terminal switch arm *c* which is maintained in electrical connection with the contact member *a*, and connecting with the switch arm *c* is a segment *d* adapted to be positioned to make

or break electrical connection with either or both of a pair of spaced contact members *e* and *f* embodied in the switch F.

Leading from the contact member *e* is a conductor *g* connecting with a terminal of the magnetic coil C the other terminal of which connects with a conductor *h* leading to a conductor *i* constituting the companion conductor *b* of the source of alternating current supply.

Leading from the contact *f* is a conductor *j* connecting with one terminal of the heating element D the other terminal of which element connects with a conductor *k* leading to the conductor *i*. Leading from the conductor *j* is a conductor *l* connecting with one terminal of the lamp E the other terminal of which lamp connects with a conductor *m* leading to the conductor *k*.

The applicator 17 is fitted with an internally threaded socket 18 centrally thereof to receive a threaded stem 19 on a supplemental applicator 20 as shown in Fig. 4; it being found desirable to employ supplemental applicators of various shapes and contours adapted for treatment of various portions of the anatomy as is common in vibrator appliances.

In the operation of the invention when it is desired to actuate the vibrator element B the switch F is rotated to direct alternating electrical current through the magnet C intermittently energize the core 14 so as to cause the annulus 6 to reciprocate with a series of rapid impulses in one direction under the urge of the magnet C on on the armature 16 in opposition to the springs 9 and in the opposite or outward direction under the urge of the springs 9 in the intervals between impulses of the magnet. A rapid vibration of the applicator is thus effected which vibration is transmitted to any portion of the body against which the applicator is applied. In the treatment of the feet the device is placed on the floor and the soles of the feet rested on the applicator.

By mounting the supplemental applicator 20 formed as shown in Fig. 4 on the vibrator, massaging action may be effected between the toes by positioning the toes astride the supplemental applicator.

When it is desired to effect the application of heat the switch F is positioned to direct electrical current through the heating element D and through the lamp E.

When it is desired to also effect vibration of the applicator together with heat and light treatment the switch is positioned to direct current through the magnet C as well as though the element D and lamp E.

While I have shown and described a specific embodiment of the invention I do not limit myself to the exact details of construction and arrangement shown but may employ such changes and modifications as occasion may require coming within the meaning and scope of the appended claims.

I claim:

1. A therapeutic vibrator comprising a base including an upstanding annular side wall formed with a series of recesses, coil springs seating in said recesses and extending above said wall, an annulus formed with recesses in which the upper ends of said springs are seated, said annulus being supported on said springs in spaced relation to said wall, an applicator carried by said annulus, an armature carried by said annulus, and an electro-magnet carried by said base adapted to act in co-operation with said springs to effect vibration of said annulus through said armature, and means for directing alternating electrical current to said electro-magnet.

2. The structure called for in claim 1 together with a heating element carried by the annulus and arranged adjacent the under side of said applicator for electrically heating the latter.

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