

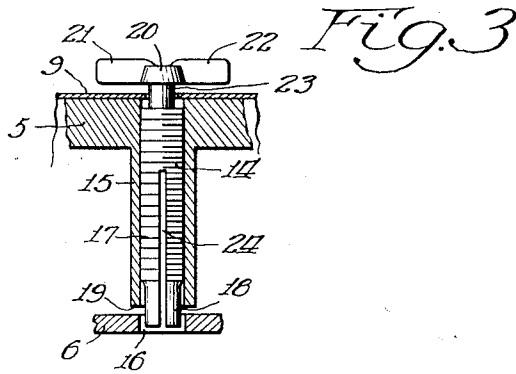
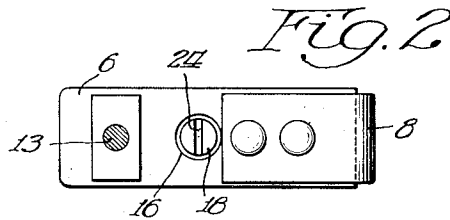
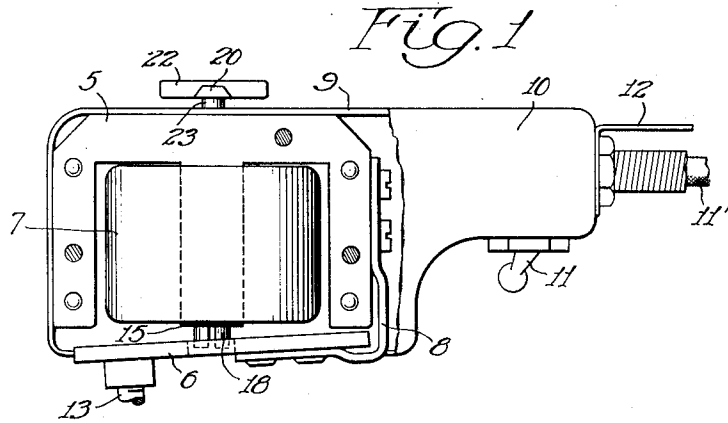
April 25, 1933.

L. J. WAHL

1,906,027

VIBRATOR CONTROL DEVICE

Filed Feb. 1, 1932



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UNITED STATES PATENT OFFICE

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VIBRATOR CONTROL DEVICE

Application filed February 1, 1932. Serial No. 590,181.

My invention relates to electro-magnetic vibrators and particularly to vibrators for massage implements such as is disclosed in my Patent No. 1,832,437.

5 It is the principal purpose of this invention to provide means whereby to control the stroke efforts of the vibrator so that the force communicated to the massage implement may be varied to make it most effective for the particular purposes or for the particular tool employed.

10 It is also a purpose of this invention to provide a device of this character with means to prevent the rattling of the control elements. In electro-magnetic vibrators operating on alternating current as this one does, the rate of vibration is extremely high being for a 60 cycle current 120 complete vibrations per second. It is essential, therefore, that the parts be properly constructed to prevent rattling if the instrument is to be of any value.

15 It is also a purpose of the invention to provide in conjunction with the control device a simple means to limit the scope of the control.

I will describe the preferred form of my invention by reference to the accompanying drawing wherein—

20 Fig. 1 is a side view of the vibrator with one wall of the casing broken away and with only the stem of the massage implement included;

Fig. 2 is a bottom plan view of the vibrator armature; and

25 Fig. 3 is a longitudinal sectional view centrally through a portion of the vibrator illustrating the control device.

Referring now in detail to the drawing, the vibrator consists essentially of a core 5, an armature 6, and a coil 7, the armature being 30 spring mounted on the core as indicated by the spring 8. The parts thus far described are housed in a casing 9 which has the extension 10 preferably housing the switch, the handle of which is indicated at 11. The conductors to the coil 7 enter the casing through the extension 10 and are shown roughly at 11'. The member 12 is simply a means for hanging the vibrator up. The armature 6 as shown carries a stem 13 of a massage implement. The implement itself is not shown

since it forms no part of the present invention.

The construction thus far described is substantially that disclosed in my patent referred to above and is merely given as an illustration of the structures to which my invention may apply.

My invention consists in the provision of a means indicated generally by the numeral 14 by which the attractive force of the electro-magnet consisting of the coil 7 and core 5 on the armature 6 may be varied.

In the central lug 15 of the core, I preferably provide a screw-threaded bore extending from the front to the back, and in the armature aligning with this bore I provide an opening 16. The screw-threaded pin 17 has an extension 18 which by screwing the pin 17 down or up in the bore of the member 15 may be made to advance into or retract from the opening 16 in the armature. The extent to which the portion 18 extends into the armature opening governs somewhat the attractive force of the electro-magnet for the armature. This is due to the fact that, the portion 18 being a part of the electro-magnet core, the lines of force from it, that is to say that portion of it which is within the aperture 16, go directly laterally into the armature and therefore exert no pull tending to pull the armature toward the core face indicated at 19. (See Fig. 3.)

It is evident, therefore, that the effort exerted by the electro-magnet can be varied within limits by varying the extent to which the portion 18 projects into the opening 16 in the armature.

In order to control the position of the member 17, I provide the cap 20 preferably formed integral therewith with the hand holds 21 and 22 so that it may be readily turned. The housing 9 fits on the reduced neck 23 of the member 17 and provides a means whereby the extent to which the member 17 may be screwed into the member 15 is limited. This is necessary in order to prevent improper positioning of the member 17 as for instance withdrawing it too far into the member 15 and creating such a gap as to render the member 15 substantially ineffec-

tive so far as attractive effort on the armature is concerned. Also it prevents screwing the member 18 so far down that it would pass through and beyond the armature 6.

5 In order to prevent rattling of the parts, I preferably split the member 17 as indicated by the slot 24 through a substantial part of its length and spread the two legs apart so that they have to be sprung together to insert it in the bore of the member 15. This
10 tension then prevents any rattling of the member 17 even under the high vibration to which this device is subjected.

From the above description, it is believed
15 that the construction and advantages of the device will be clear to those skilled in this art.

Having thus described one specific form of my invention, what I claim as new and desire to secure by Letters Patent is:

20 1. An alternating current vibrator having a body portion which is made up of a core, a coil wound on said core and having means to connect said coil to an alternating current source and a housing for said core and
25 coil, said vibrator having an armature extending across the face of said core and yieldingly mounted on the body portion to vibrate in response to the current flow in said coil, said core having a small core section thereof
30 movable outwardly into the plane of said armature whereby to adjust the power imparted to the armature.

2. An alternating current vibrator having a body portion which is made up of a core,
35 a coil wound on said core and having means to connect said coil to an alternating current source and a housing for said core and coil, said vibrator having an armature extending across the face of said core and yieldingly
40 mounted on the body portion to vibrate in response to the current flow in said coil, said core having a small core section thereof movable outwardly into the plane of said armature whereby to adjust the power imparted
45 to the armature, said armature being cut away to provide passage for said core section and said core section comprising an elongated plug having an adjusting handle at the
50 back of the main core.

3. An alternating current vibrator having a body portion which is made up of a core,
55 a coil wound on said core and having means to connect said coil to an alternating current source and a housing for said core and coil, said vibrator having an armature extending across the face of said core and yieldingly
60 mounted on the body portion to vibrate in response to the current flow in said coil, said core having a small core section thereof movable outwardly into the plane of said armature whereby to adjust the power imparted to the armature, said small core section being
65 mounted in a bore provided in the core and being split longitudinally through at least a

portion of its length and compressed in said bore.

4. An alternating current vibrator having a body portion which is made up of a core, a coil wound on said core and having means to connect said coil to an alternating current
70 source and a housing for said core and coil, said vibrator having an armature extending across the face of said core and yieldingly mounted on the body portion to vibrate in response to the current flow in said coil, said
75 core having a small core section thereof movable outwardly into the plane of said armature whereby to adjust the power imparted to the armature, said housing and said core section having cooperating means to limit the
80 extent of movement of the core section.

In witness whereof, I hereunto subscribe my name this 15th day of January A. D., 1932.

LEO J. WAHL.

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