May 10, 1927. 1,628,272

A. F. REITZ

DILATOR

Filed Nov. 23, 1925

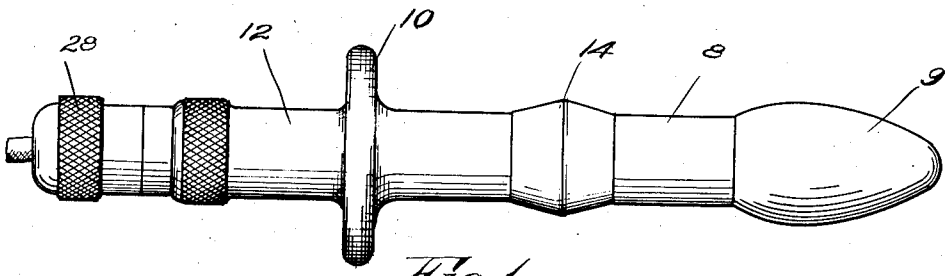


Fig. 1

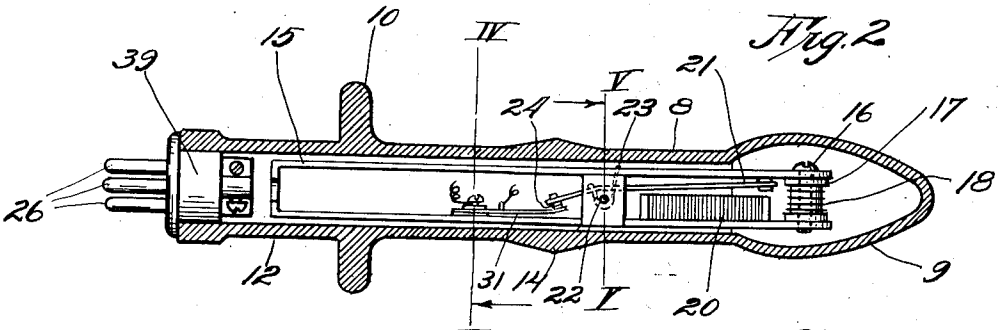


Fig. 2

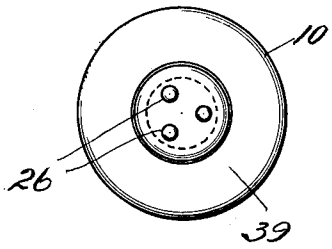


Fig. 3

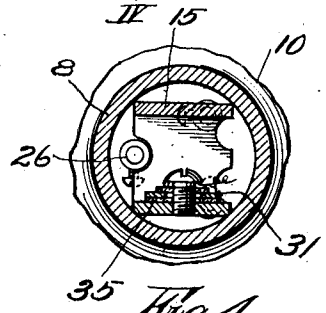


Fig. 4

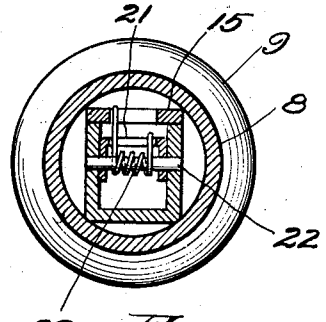


Fig. 5

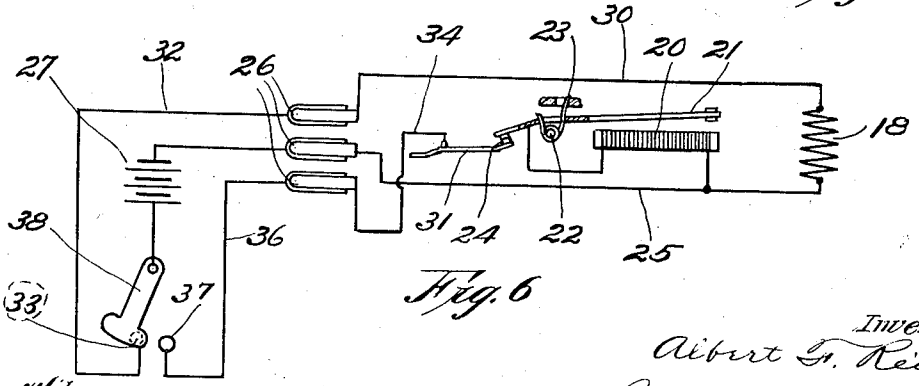


Fig. 6

Witness:
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Inventor,
Albert F. Reitz,
By: Thorpe & Grund,
his Attorneys.

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UNITED STATES PATENT OFFICE.

ALBERT F. REITZ, OF KANSAS CITY, MISSOURI.

DILATOR.

Application filed November 23, 1925. Serial No. 70,797.

The present invention relates to dilators, and more especially to devices of this character which are designed to exert a therapeutic effect either by the action of or by a massaging or vibrating action, for which purpose the device is provided with internal heating means or with internal vibrating mechanism, or both.

Accordingly, one of the objects of this invention is to provide a dilator device within the treating end of which is provided both a heating element and also a vibrator mechanism, either one or both of which may be rendered operative, at the will of the person using the device. Preferably, the heating action is effected by means of an electric heating coil, and the vibrator mechanism is also of an electrically operated design, whereby suitable external switch means may be operated for controlling the circuit through either or both of the circuits containing the heating element and the vibrator mechanism.

It is a further object of the invention to provide a dilator casing of the character described, and having its open end, by which it is manually operated, so extended as to provide a handle portion of sufficient length to facilitate the manipulation of the device, as in effecting massaging movements.

With these general objects in view, the invention will now be described by reference to the accompanying drawing illustrating one form of construction which I have devised for embodying the proposed improvements, after which those features deemed to be novel will be particularly set forth and claimed.

In the drawing—

Figure 1 is a plan view of a dilator construction embodying the proposed features of improvement;

Figure 2 is a central longitudinal sectional view of the same, the electric socket member being omitted;

Figure 3 is a view of that end of the device to which connection is made to the electric socket;

Figures 4 and 5 are transverse sections, taken on the lines IV—IV and V—V, respectively, of Figure 2, but on an enlarged scale; and

Figure 6 is a wiring diagram, showing the electric circuit to the electric heating element and the vibrator mechanism.

Referring now to the drawing in detail, this illustrates a hollow dilator casing 8 having a slightly enlarged oval portion 9 at its closed end, and a suitable annular flange 10 at some distance from the opposite or closed end of the casing, for limiting the application of the device into operative position, and leaving a handle portion 12 between said flange and the open end of the casing of a length sufficient for facilitating the manipulation of the device by the operator, as in massaging operations. Between the external flange 10 and closed end 9 of the casing, the latter is formed with an external enlarged portion 14 tapering in opposite directions, and also serving to facilitate the application of the device into operative position as well as tending to oppose any casual withdrawal of the dilator from its position of use.

Within the interior of the casing 8 is designed to be inserted a heating coil and vibrator assembly comprising a frame member 15 somewhat rectangular in cross section and adapted to fit snugly within the casing, one end of this frame member being provided with a screw 16 carrying a spool 17 on which is mounted the heating coil 18, which is thus brought within the closed enlarged end 9 of the casing, as shown clearly in Figure 2.

Within the frame member 15 is also mounted a vibrator coil 20 adjacent to the heating coil 18, with one end of the coil in position for attracting a vibrator element 21 which is mounted upon a pivot pin 22 and actuated by a coil spring 23 on said pin 22 in a direction for retracting the vibrator 21 from the coil 20, as shown in Figure 2. In this retracted position, the vibrator element 21 closes the vibrator switch contacts 24, as shown in Figures 2 and 6, whereby the circuit is closed thru coil 20.

As shown by the circuit diagram in Figure 6, both the vibrator coil 20 and the heating coil 18 are connected with a conductor 25 leading to one of a set of posts 26 which is adapted to be connected with a suitable source (as a battery 27) of electric current supply, through the medium of the socket member 28 shown in Figure 1. The heating coil 18 is also provided with a conductor 30 leading to a second post 26, from which a conductor 32 leads to a switch contact 33; similarly, one of the vibrator switch contacts 24 (which is carried by a spring element 31 insulated from the frame 15 as indicated at

35 in Figure 4) is also provided with a conductor 34 leading to the third post 26 which is connected by a conductor 36 to a second switch contact 37, as shown in Figure 6. As will be readily understood, by the operation of the switch element 38 shown in Figure 6, the circuit may be closed through either the heating coil 18 by moving the switch 38 into the position shown, or through the vibrator coil 20 by moving the switch 38 into its opposite position, or in engagement with only the switch contact 37; whereas, by leaving the switch 38 in central position, that is, engaged with both the contacts 33 and 37 the circuit is thus closed through both the coil 18 and the coil 20 for the simultaneous operation of both the heating coil and the vibrator mechanism. The several posts 26 are carried by a single plug element 39 inserted in the open end of the casing 8, as shown in Figure 2.

It will thus be apparent that I have devised a practical and efficient device for carrying out the several objects of the invention as mentioned, including the convenient operation of a single switch element for either energizing the heating coil 18, or for actuating the vibrator mechanism, or for effecting the simultaneous operation of both coils, as may be desired for exerting the particular therapeutic effect desired. This vibratory action of the vibrator device, in addition to the heating effect of the coil 18, exerts a stimulative action upon the glands in the vicinity of the dilator casing when in operative position, and the usefulness of the device is further increased by the provision of the extension 12 between the flange 10 and the open end of the casing 8, whereby the dilator may be more effectively manipulated by the operator in the exercise of massaging movements.

The construction shown and described is of a comparatively simple character, comprising relatively few parts of a nature not likely to get out of order, and which may be readily removed for repair if necessary and the construction as a whole is of a character adapted to be manufactured at small expense.

While I have illustrated and described what I now regard as the preferred form of construction for embodying the proposed improvements, I desire to reserve the right to make all such changes or modifications as may fairly fall within the scope of the appended claims.

What I claim is:

1. A dilator comprising a hollow casing closed at one end and open at its other end, an electric vibrator mechanism within the closed end of the casing and comprising a frame member mounted within said casing, an electric vibrator coil mounted in said frame, a vibrator element associated with said coil and operating by impact alternately against one end of said coil and the adjacent portion of said frame, and an external switch for controlling the circuit through said mechanism.

2. A dilator for internal application, comprising a hollow casing closed at one end and open at its other end, a frame member comprising a pair of parallel arms extending into the casing, an electrical heating coil carried by the extremities of said arms, a vibrator coil carried by one arm vibrator mechanism for cooperation with said vibrator coil, and a single switch arranged for separately or simultaneously controlling said heating and vibrator coils.

In witness whereof I hereunto affix my signature.

ALBERT F. REITZ.