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HIGH FREQUENCY DEVICE FOR ELECTROMEDICAL OBJECTS

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Fig. 1

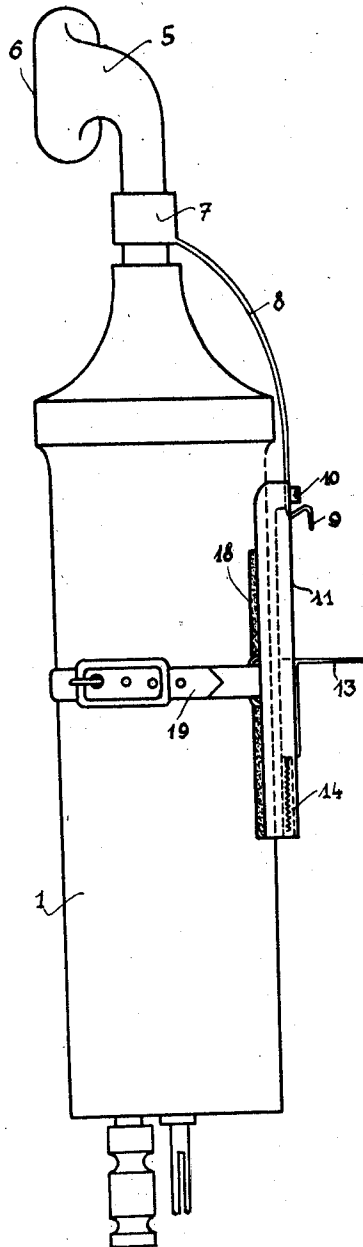
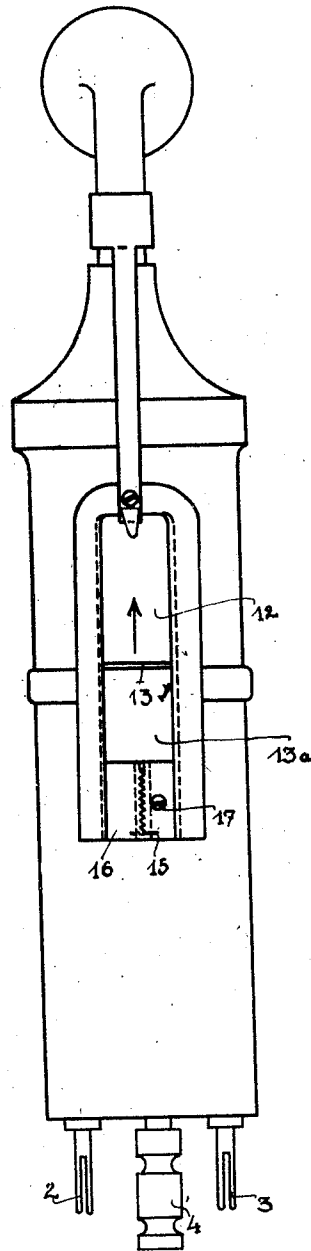


Fig. 2



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HIGH-FREQUENCY DEVICE FOR ELECTROMEDICAL OBJECTS.

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High-frequency devices for therapeutic objects are already in use, in which a primary current of comparatively low tension is transformed with the aid of an interrupter and a condenser in a secondary of Tesla coil into a high-frequency current of considerable tension, which is discharged in a metallic electrode or in a glass electrode (under the effect of light, violet rays). This discharge acts on the part of the body to be subjected to treatment. In case the primary current is switched on and in the event the electrode is placed onto or removed from the part of the body under treatment, sparks will be formed which cause a painful sensation or burning.

In order to obviate this drawback it has been proposed already to furnish the device with a change-over switch, which renders possible the short-circuiting of the primary coil in case the electrode is put on or removed. These and similar arrangements however resulted in damages to the condenser and in other defects in consequence of high intensities of current caused by the cutting out of the primary winding.

The drawbacks above mentioned are obviated by means of the arrangement according to the present invention and moreover a considerable range of regulating the high-frequency discharge is rendered possible by means of the present invention.

One mode of carrying out the present invention is shown by way of example on the accompanying sheet of drawings in which—

Figs. 1 and 2 illustrate the regulating arrangement mounted on the apparatus in side view and front view respectively.

A cylindrical casing 1, consisting for instance of ebonite, encloses an arrangement for producing the high-frequency current and is provided with two contact pins 2 and 3 for the connection of the primary tension and with a switch 4 for putting in circuit the primary tension.

The discharge member 5, consisting in the present case of an evacuated glass electrode, is placed with its surface 6 onto the place of the body to be treated.

The neck of the electrode is mounted in a metallic sleeve 7, which is secured to the upper end of a metallic support 8, the bottom end of the latter terminating in a contact member 9. The metallic support 8 is secured to an insulating member 11 by means

of a small screw 10, the said member forming a guide 12 for the movable contact member. As shown in Fig. 1, the latter consists of an angle bar, furnished with a horizontally disposed arm or branch 13 and a vertically located arm or branch 13^a, a tension spring 14 being attached to the lower end of the vertically located branch 13^a. The other end of this spring is hooked into a small pin 15, clamped in a strip 16. By means of a screw 17, the latter is removably connected with the insulating member 11 and provided with a hole of semi-circular cross-section which, by means of a corresponding hole in the insulating member 11, completes itself to form a channel surrounding the tension spring 14.

The face of the insulating member 11, resting against the casing 1, is covered with felt pad 18 and by means of a belt 19 may be secured to the cylindrical casing 1.

The arrangement is used in the following manner:—

If the desired discharge current strength is reached after switching-on the primary current, the thumb of the hand holding the arrangement is placed onto the underside of the horizontally disposed arm or branch 13, which is formed with a protective face against the sparking current, and the movable contact is moved in the direction of the arrow (Fig. 2), against the action of the spring 14, until it contacts with the fixed contact 9, the contact being kept up for some time, so that the greatest part of the high-frequency current from the electrode 5 passes over the metallic sleeve 7, the support 8, the contact member 9 and the movable contact branch 13 into the hand or body of the person holding the arrangement.

By varying the distance between the contacts 9 and 13, greater or smaller portions of the high-frequency current can be taken off and thus the quantity of current employed for the treatment can be adjusted according to requirement, whereby the tensioned spring 14 continuously has the tendency to return the contact 13 into the position of rest shown in the drawing.

Now if it is desired to lift away the electrode from the place under treatment, the contacts 9 and 13 are placed in connection, so that the greatest part of the high-frequency current will be led off.

Now the electrode can be lifted away from

the place under treatment, without any undesirable spark-formation.

The essential advantage of the regulating arrangement according to the present invention consists in that alterations of connection are neither required in the primary circuit nor in the secondary circuit. The primary current always acts with its full force, while the entire high-frequency current is turned aside. Destruction by the current or short circuit in the arrangement, owing to interruptions or defects, is rendered quite impossible.

I claim—

15 1. In a high-frequency device for electro-medical objects, a discharge electrode, and a contact arrangement provided on the device, the said arrangement comprising a metallic conductor, one end of the latter surrounding the said electrode and the other
20 end thereof forming a pole of the said arrangement.

2. In a high-frequency device for electro-medical objects, a discharge electrode, and
25 a contact arrangement provided on the device, the said arrangement comprising a metallic conductor, one end of the latter surrounding the said electrode and the other end thereof forming a pole of the said ar-

30 rangement, and an adjustable pole adapted to cooperate with the pole first mentioned.

3. In a high-frequency device for electro-medical objects, a discharge electrode, and a contact arrangement provided on the device, the said arrangement comprising a metallic
35 conductor, one end of the latter surrounding the said electrode and the other end thereof forming a pole of the said arrangement an adjustable pole adapted to cooperate with the pole first mentioned, and a
40 spring secured to the adjustable pole and adapted to return the latter into the initial position.

4. In a high-frequency device for electro-medical objects, a discharge electrode, and
45 a contact arrangement provided on the device, the said arrangement comprising a metallic conductor, one end of the latter surrounding the said electrode and the other end thereof forming a pole of the said arrangement, an adjustable pole adapted to
50 cooperate with the pole first-mentioned, an insulating surface secured to the adjustable pole, and a spring secured to the latter and having the tendency to return the adjustable pole into the initial position.
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