United States Patent

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[33] **Italy**
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[54] **MAGNETICALLY ACTUATED VIBRATOR**
5 Claims, 2 Drawing Figs.

[52] **U.S. Cl.** **128/41,** 128/1.5
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[50] **Field of Search** 128/1.5, 32, 41, 43, 64, 362, 363, 329, 384

[56] **References Cited**
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ABSTRACT: An apparatus for generating a pulsating magnetic field integrated by magnetic vibrations, particularly for the physical treatment of the human organism, comprises a body of magnetic material. Each of the two ends of said body is provided with an extension to which is attached a metal lamina. A plurality of windings embrace said body. Rigidly connected to the free end of each metal lamina is an armature so that upon energization of the windings by electric energy the windings generate a pulsating magnetic field, whereas the armatures generate vibrations.

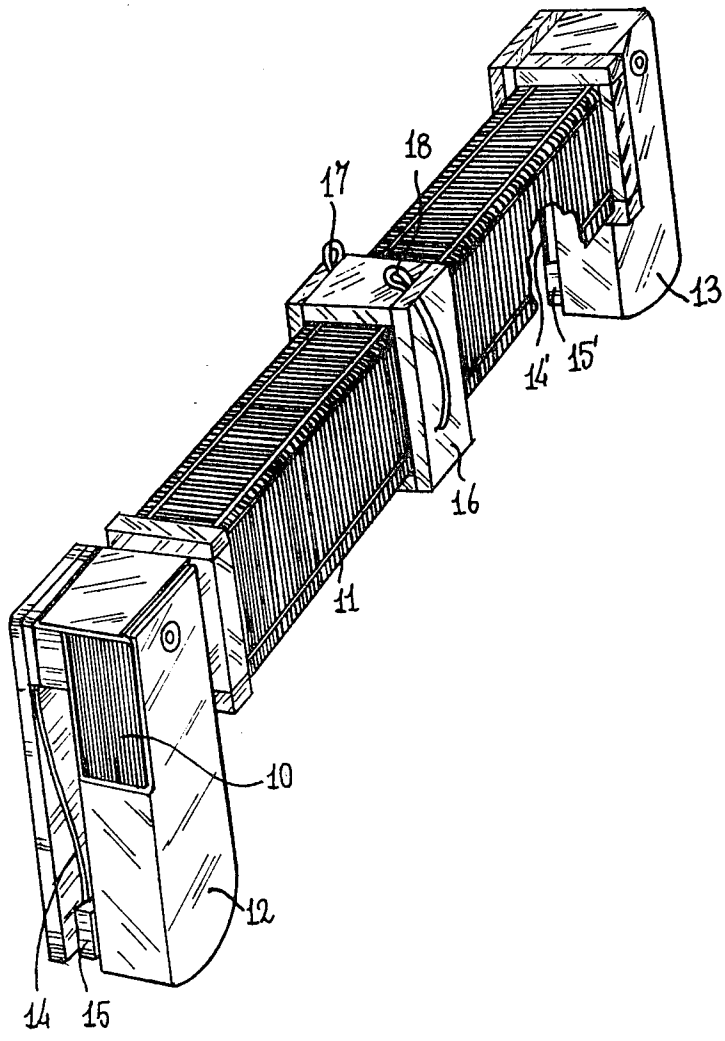


Fig. 1

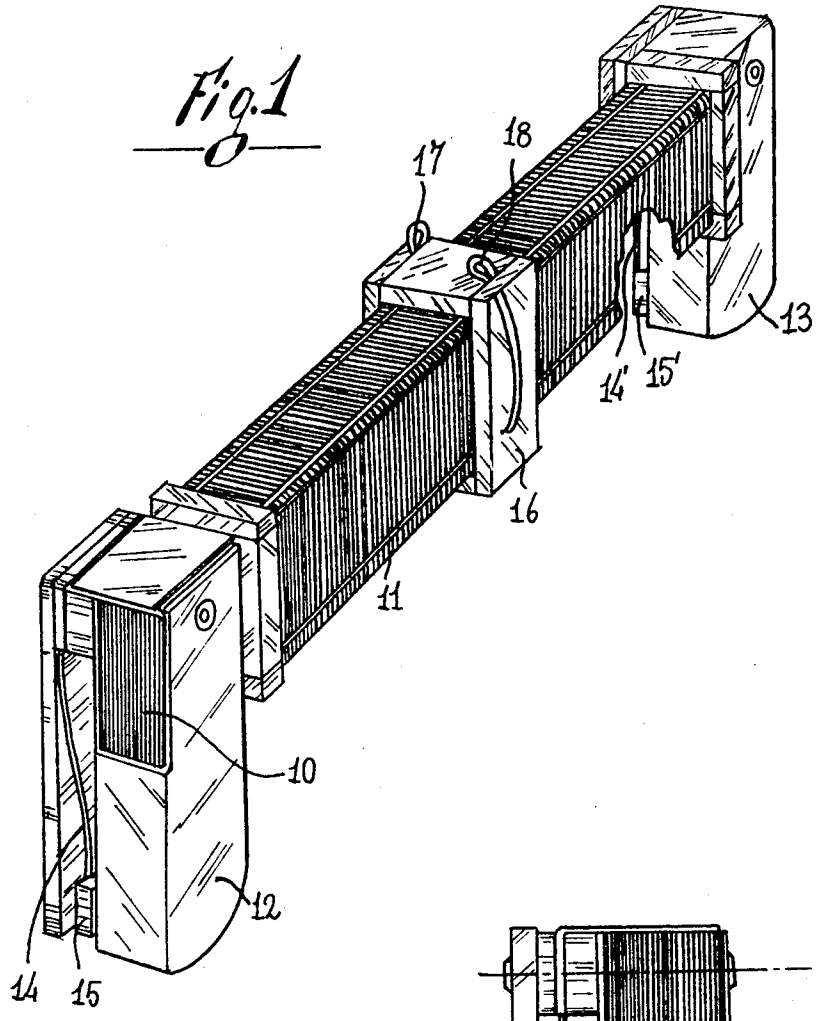
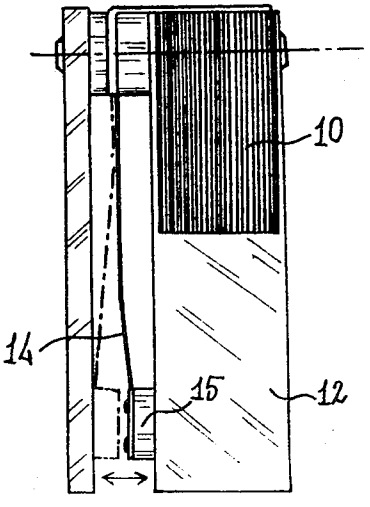


Fig. 2



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MAGNETICALLY ACTUATED VIBRATOR

BACKGROUND OF THE INVENTION

This invention relates to an apparatus for generating a pulsating magnetic field integrated by magnetic vibrations.

A thorough theoretical study of magnetic fields in combination with practical tests concerning the nature of certain parts of the alive animal organism, particularly of the human organism, resulted in the conviction that in practice such magnetic fields have proved to provided a curative effect on the treated portions such as muscles, membranes, blood vessels, various tissues and other parts, if said fields are given a favorable shape, size and intensity and if they are favorably integrated by magnetic vibrations introduced into them. The reason for the establishment of that phenomenon in its full complexity, which is assumed to be a synthesis of small single phenomenons partly cooperating and partly subsequently joining each other while always depending upon each other, cannot be explained with certainty, because it is often necessary additionally to dispense chemicopharmaceutical media at a dosage and sequence determined by the medical experts.

SUMMARY OF THE INVENTION

It is the object of the present invention to provide an apparatus for generating a pulsating magnetic field integrated by magnetic vibrations, which apparatus is adapted practically to bring about the aforementioned results, for example for dissolving coagula or hematomas often giving rise to subsequent complications of cancerous character as well as for treating the polyuria and for reactivating muscular organs or for the like purposes.

To attain this object, the invention provides an apparatus for generating a pulsating magnetic field integrated by magnetic vibrations, particularly for the physical treatment of the human organism, which comprises a body of magnetic material; an extension on each of the two ends of said body; a plurality of insulated windings embracing said body; a resilient metal lamina attached to each extension; an armature rigidly connected to the free end of each metal lamina so that upon energization of the windings by electric energy the windings generate a pulsating magnetic field, whereas the armatures generate vibrations.

By feeding the current through a voltage regulator into the windings, a combined field of forces is established and this field is composed of a pulsating magnetic field generated by the core and of magnetic vibrations generated by the armatures. The extensions preferably are shaped to conform with the body region to which he apparatus is to be applied.

DESCRIPTION OF THE DRAWING

A preferred embodiment of this invention will now be described by way of example and with reference to the accompanying drawing, in which:

FIG. **1** is a perspective view of the apparatus proposed by the invention, and

FIG. **2** is an end view of the apparatus shown in FIG. **1**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawing, the apparatus proposed by the invention comprises a body **10** of magnetic material, which may consist of laminated silicium or the like and which is provided with a coating of insulating material, said coating serving as a carrier for a plurality of windings **11** of insulated copper wire. The actual number of windings depends upon the characteristic values of the electric current, which preferably is a low-voltage current and which is conducted into the windings to generate a magnetic field of predetermined intensity. Said

magnetic field appears in the area of two extension **12** and **13** which are provided at the ends of the laminated package and which, in the particular embodiment shown and described, are intended for application to the inguinal region.

Each of the extensions **12** and **13** is provided with a resilient metal lamina **14**, **14'**, respectively, to which an armature **15** or **15'** of magnetic material is rigidly secured. A ring **16** of insulating material embraces the central portion of the laminated package and is provided with terminals **17** and **18** through which the windings **11** are supplied with electric current. Since alternating current is applied, both a magnetic field of predetermined intensity will be generated in the region of the extensions **12** and **13**, and the respective armatures **15** and **15'**will be alternately attracted by the magnetic forces and repelled by the action of the respective resilient laminae **14** and **14'**. Thus, a vibratory field will be established which interferes with the magnetic field to integrate the latter and thereby to provide a combined effect which, according to the experience made by now, is particularly favorable for reaching the desired aims, such as the dissolution of coagula, hemotomas or the like.

It is obvious that the external shape of the apparatus proposed by the invention corresponds to the region of the body which suffers from a disease to be treated and to which the apparatus is intended to be applied so as to provide the most expedient arrangement with regard to the space taken up and the locating of the extensions **12** and **13** as near to the region of the body to be treated as possible thus providing an optimal curative effect by maximum utilization of the output.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The embodiment described and shown is therefore to be considered in all respects as illustrative and not restrictive.

What is claimed is:

1. A therapeutic apparatus, particularly for the physical treatment of portions of the human body, comprising, a body having opposite ends and being formed of magnetic material; a pair of extensions respectively provided on said opposite ends of said body and extending transversely to the latter, said extensions having free ends arranged to be applied to the portions of the human body to be treated; a plurality of insulated windings wound about said body of magnetic material; means connected to said windings for applying an alternating current thereto; an armature located adjacent each extension; and a resilient metal lamina attached at one end to each extension and carrying at the other end thereof the respective armature, said metal lamina yieldably holding the respective armature spaced from the respective extension so that upon energizing said windings by an alternating current the armatures will be alternatively magnetically attracted into engagement with the respective extension and repelled by the action of the lamina to thus vibrate the extensions, whereby upon application of the apparatus to portions of the human body, the latter will be subjected to the alternating field extending between the free ends of said extensions and the vibrations of the latter.

2. An apparatus as defined in claim **1**, wherein said extensions have at the free ends thereof curved end faces.

3. An apparatus as defined in claim **1**, wherein each of said extensions has a side face, and wherein the armatures are arranged adjacent to the free ends of said extensions laterally of the respective side face to move toward and away from the latter.

4. An apparatus as defined in claim **1**, wherein said body of magnetic material is elongated, and wherein said extensions extend transversely to the elongated body to on side of the latter from said opposite ends.

5. An apparatus as claimed in in claim **1**, wherein the alternating current is of low voltage.

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