

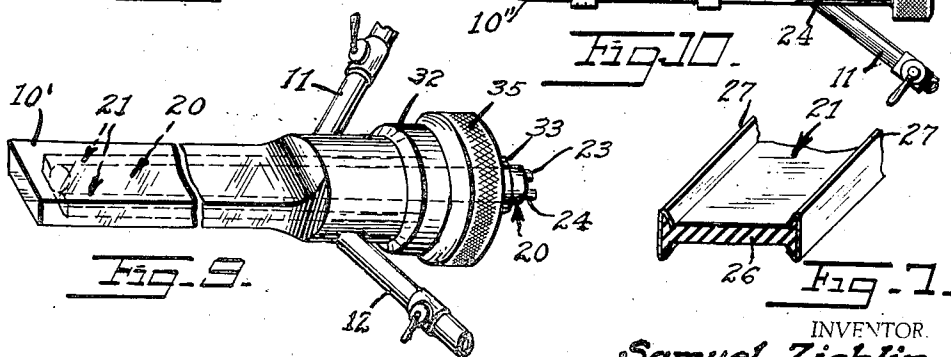
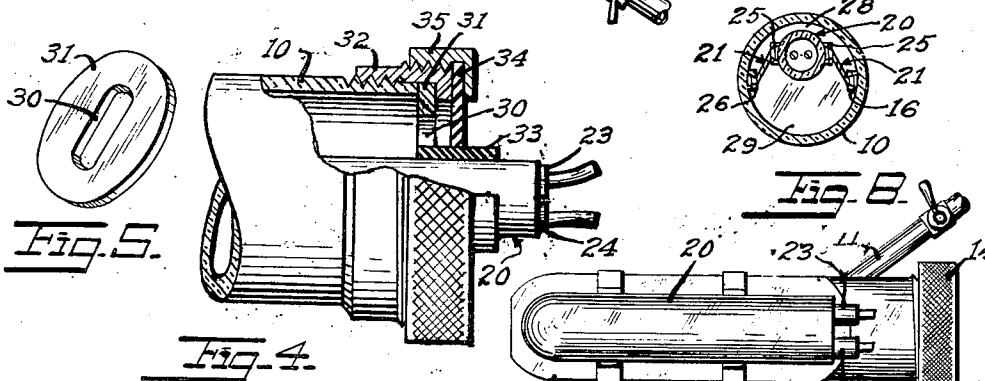
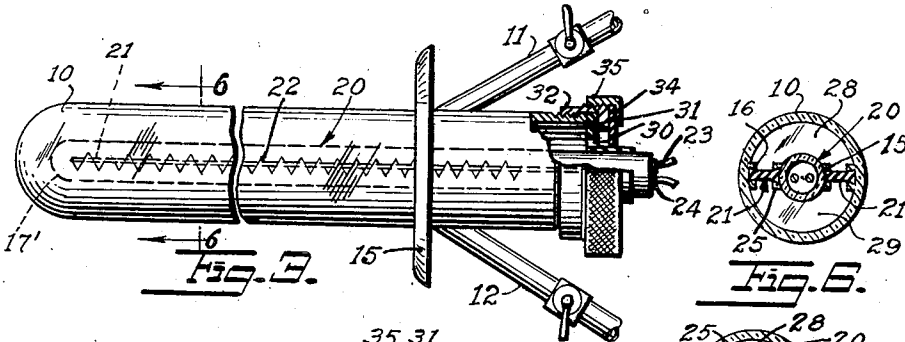
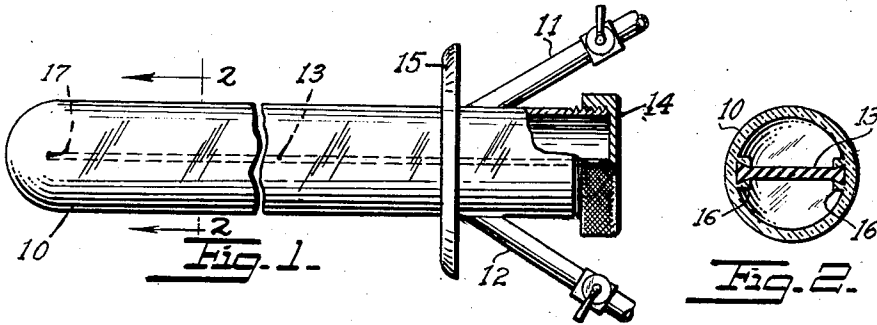
April 11, 1944.

S. ZICHLIN

2,346,245

THERAPEUTIC DEVICE

Filed May 23, 1942



BY

INVENTOR.
Samuel Zichlin
Johann H. Bloch
 ATTORNEY

UNITED STATES PATENT OFFICE

2,346,245

THERAPEUTIC DEVICE

Samuel Zichlin, Brooklyn, N. Y.

Application May 23, 1942, Serial No. 444,232

6 Claims. (Cl. 128-401)

This invention relates to new and useful improvements in a therapeutic device.

More particularly, the invention proposes the construction of a device as mentioned which is adapted to be used in gynecological and proctological conditions, in the ears, and other orifices and cavities of the body, and on parts of the body. Of course, it must be realized that for different purposes the therapeutic device must be of different sizes and contours. For certain orifices and cavities it may be cylindrical. For use on the neck, jaw, abdomen and other regions it should be flat, or flat and curved. It may also be used in other shapes.

More particularly, it is proposed that the therapeutic device be in the nature of a hydro-jacket for engaging in the body orifices and cavities mentioned, or against parts of the body, and be provided with an inlet and outlet for hydraulic fluids, and certain internal guides be provided for forming a continuous passage for the hydraulic fluids. It is proposed that the hydraulic fluids be supplied under pressure, preferably by a pumping system, and be supplied at selected temperatures. In another form of the invention it is proposed that an electrode-unit be mounted within the hydro-jacket for heat control and for the control of certain rays.

The therapeutic device is in the nature of an orificial dilator to dilate, cool, heat, and in other ways enhance the therapeutic effect of infra-red, quartz, short and long wave diathermy, etc., by thermic control of the hydraulic fluid which permits use of higher potentials and therefore permits a greater elaboration of radiations and emanations of electrical elements, and electrodes which otherwise would cause distress due to excessive heat.

It is contemplated the hydro-jacket be made from "Lucite" or other such plastics of transparent or translucent material, or pyrex or other glasses. While the hydraulic fluid circulating system, per se, forms no part of the invention, it may be controlled as to temperature and pressure by a water pump, driven electrically, or manually, and thermostatically controlled. Suitable meters may also be provided for constant reading of changing temperatures during or after treatment.

This new therapeutic device will eliminate or greatly reduce burns now generally experienced by patients using therapeutic devices. The construction of the hydro-jacket of "Lucite" or other plastics will prevent cuts from glass electrodes

due to accidental breakage while under treatment.

For further comprehension of this invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is an elevational view of a therapeutic device constructed in accordance with this invention.

Fig. 2 is a transverse enlarged sectional view taken on the line 2-2 of Fig. 1.

Fig. 3 is a side elevational view of the therapeutic device associated with an electrode in accordance with this invention.

Fig. 4 is a fragmentary enlarged detailed view of a portion of Fig. 3.

Fig. 5 is a perspective view of one of the washers shown in Fig. 4.

Fig. 6 is a sectional view taken on the line 6-6 of Fig. 3.

Fig. 7 is a fragmentary perspective enlarged detailed view of a portion of one of the guide vanes shown in Fig. 6.

Fig. 8 is a sectional view similar to Fig. 6 but showing the parts in a different position.

Fig. 9 is a perspective view of a therapeutic device of a different size and shape but embodying the same invention.

Fig. 10 is an elevational view of a therapeutic device showing a further modification of the invention.

The therapeutic device, in accordance with the form of the invention illustrated in Figs 1 and 2, includes a hydro-jacket 10 preferably made of "Lucite" or other transparent or translucent plastic material, or pyrex or other glasses. This jacket 10 may be made of a size and shape to engage body orifices and cavities or to engage against parts of the body. The jacket 10 is provided with a valve controlled inlet 11 and a valve control discharge 12. A guide vane 13 is located within the jacket 10 forming a continuous passage for hydraulic fluid from the inlet 11 to the outlet 12. The hydro-jacket 10 is shown with an open end closed by a removable cap 14 threadedly mounted in position. A guard 15 is also shown mounted on the jacket 10 immediately to the front of the inlet 11 and outlet 12.

The guide vane 13 is extended diametrically across the jacket 10 and is removably mounted on dove-tailed tracks 16 formed along the inner

sides of the jacket. The guide vane 13 extends from the back of the jacket to a point 17 spaced inwards from the front of the jacket. With this arrangement the hydraulic liquid may enter the inlet 11, pass along one side of the jacket 10 and around the end 17 of the guide vane 13 and back along the other side of the jacket, and finally discharge from the outlet 12. The hydraulic fluid supplied to the jacket 10 may be supplied under preselected speeds, pressures and temperatures for the proper treatment prescribed for a patient.

In Figs. 3-8 inclusive a modified form of the invention has been disclosed which distinguishes from the prior form in the fact that the guide vane 13 has been removed and in its place an electrode unit 20 and guide vanes 21 substituted. The electrode unit 20 is in the nature of a glass vacuum tube through which an electric element 22 passes. This electric element connects with terminals 23 and 24 at the outer end of the electrode unit. The electrode unit 20 is provided with tracks 25 along its sides. The guide vanes 21 are mounted between the tracks 25 and the tracks 16 of the jacket 10. Each guide vane 21 comprises an elastic band 26 having dove-tailed strips 27 mounted along its edges. These dove-tailed strips 27 are adapted to engage complementary grooves formed along the tracks 16 and 25.

The electrode unit 20 extends to a point 17' spaced slightly inwards from the front end of the jacket 10. The guide vanes 21 also extend to said points 17'. The electrode unit 20 is adjustably mounted so that it may be moved towards one side or the other side of the jacket 10. This shift will change the relative sizes of different portions of the continuous passage within the jacket. For example, in Fig. 6 the electrode unit 20 is shown centrally located. Then the passage 28 and 29 to the sides thereof are identical. However, Fig. 8 illustrates the electrode unit 20 in a shifted condition. The passage 28' is then much smaller than the passage 29'. This change will cause the hydraulic fluid to flow rapidly through the passage 28' and slower through the passage 29'. Thus the opposite sides of the jacket 10 are being cooled or heated to different degrees.

The electrode unit 20 extends through an elongated slot 30 formed in a washer 31 which is mounted across the back end of the jacket 10. This washer 31 is held in position by a cap 32 threadedly engaged on the back end of the jacket 10. The back of the electrode unit 20 is provided with a tubular gasket 33 in the nature of a bushing. Another gasket 34 is mounted on the tubular gasket 33 and projects at right angles therefrom. The gaskets 33 and 34 are replaceable. Normally the gasket 34 comes quite large and may be cut down to a proper size so as to support the electrode unit 20 in a selected position in the elongated slot 30. The gasket 34 is clamped in position by a ring 35 threadedly engaged on the cap 32. However, before the ring 35 is placed in position it is necessary that the gaskets be painted with gasket cement to insure a water tight connection.

The operation of this form of the invention is similar to the prior form but distinguishes in the fact that in addition to temperature control caused by the controlled hydraulic fluids passed through the jacket, it is possible to shift the electrode unit for additional temperature control

and ray control. When desired the ring 35 may be unscrewed and the electrode unit 20 removed. The gaskets 33 and 34 may be replaced with new gaskets and the electrode unit replaced in a selected position within the jacket 10. This arrangement permits differential temperatures at the sides of the jacket 10 for certain treatments.

In Fig. 9 still another form of the invention is disclosed which is similar to the form shown in Figs. 3-8 inclusive, distinguishing merely in the fact that the therapeutic device is provided with a jacket 10' having a relatively flat front end. While this particular shape is shown it should be borne in mind that other shapes may be utilized.

In Fig. 10, the electrode unit or element 20 is shown to be externally located from the fluid jacket 10'', so that in certain cases it may be more conveniently used for external applications.

It is to be understood that the shape, size and material used for the fluid jacket 10 may be changed as desired to conform with the contour of the particular anatomical structure treated. The electrode element 20 may be made of any shape or design, of any desired size and strength, and attached internally or externally of the fluid jacket in any convenient manner.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention what I claim as new, and desire to secure by United States Letters Patent is:

1. A therapeutic device comprising a hydro-jacket for engaging in body orifices and cavities and against parts of the body, an electrode unit adjustably mounted in said jacket so as to be capable of being moved closer to or away from one side of said jacket, elastic guide vanes mounted between said electrode unit and the sides of said jacket to form a continuous passage through said jacket, and said jacket having a hydraulic fluid inlet and outlet connected with the ends of said passage, said guide vanes comprising strips of elastic material having dovetailed strips mounted along the edges thereof for engaging complementary tracks upon the sides of the jacket and electrode unit.

2. A therapeutic device having a hydro-jacket with one end closed and its opposite end open and formed with an inlet and an outlet at the sides thereof adjacent the open end, a cap closing the open end of said jacket, a guide vane mounted longitudinally within said jacket and having one end engaging said cap and its other end spaced from the closed end of said jacket forming a continuous passage for hydraulic fluids from said inlet to said outlet, and means removably supporting said vane within said jacket whereby when said cap is removed said vane may be removed through the open end of said jacket, comprising dove-tailed tracks formed along opposite sides of the jacket, and complementary dove-tailed side portions formed on said vane and slidably engaging said dove-tailed tracks.

3. A therapeutic device having a hydro-jacket with one end closed and its opposite end open and formed with an inlet and an outlet at the sides thereof adjacent the open end, a cap closing the

open end of said jacket and formed with an elongated slot, an electrode unit extended longitudinally in said jacket and having one end spaced from the closed end of said jacket and its other end projected through said elongated slot, means removably supporting said electrode unit within said jacket to be movable to various offset positions within said jacket, and means for holding said electrode unit in various offset positions within the limits of the length of the elongated slot in said cap.

4. A therapeutic device having a hydro-jacket with one end closed and its opposite end open and formed with an inlet and an outlet at the sides thereof adjacent the open end, a cap closing the open end of said jacket and formed with an elongated slot, an electrode unit extended longitudinally in said jacket and having one end spaced from the closed end of said jacket and its other end projected through said elongated slot, means removably supporting said electrode unit within said jacket to be movable to various offset positions within said jacket, and means for holding said electrode unit in various offset positions within the limits of the length of the elongated slot in said cap, said first means, comprising elastic vanes disposed on opposite sides of said electrode unit and extended at right angles to said elongated slot, dove-tailed tracks formed on the sides of said electrode unit and said jacket, and dove-tailed strips mounted on the sides of said vanes and slidably engaging said tracks.

5. A therapeutic device having a hydro-jacket with one end closed and its opposite end open and formed with an inlet and an outlet at the sides thereof adjacent the open end, a cap closing the open end of said jacket and formed with an elongated slot, an electrode unit extended longitudinally in said jacket and having one end spaced from the closed end of said jacket and its other end projected through said elongated slot, means removably supporting said electrode unit within

said jacket to be movable to various offset positions within said jacket, and means for holding said electrode unit in various offset positions within the limits of the length of the elongated slot in said cap, said first means, comprising elastic vanes disposed on opposite sides of said electrode unit and extended at right angles to said elongated slot, dove-tailed tracks formed on the sides of said electrode unit and said jacket, and dove-tailed strips mounted on the sides of said vanes and slidably engaging said tracks, said vanes being spaced from the closed end of said jacket and contacting the inside face of said cap dividing the interior of said jacket into a continuous passage for hydraulic fluids from said inlet to said outlet.

6. A therapeutic device having a hydro-jacket with one end closed and its opposite end open and formed with an inlet and an outlet at the sides thereof adjacent the open end, a cap closing the open end of said jacket and formed with an elongated slot, an electrode unit extended longitudinally in said jacket and having one end spaced from the closed end of said jacket and its other end projected through said elongated slot, means removably supporting said electrode unit within said jacket to be movable to various offset positions within said jacket, and means for holding said electrode unit in various offset positions within the limits of the length of the elongated slot in said cap, said latter means, comprising a disc-like gasket of a size greater than said cap and formed with a tubular bushing through which the outer end of said electrode unit water-tightly extends, said gasket being adapted to be pushed laterally of said cap within the length of said slot and be cut to conform with the shape of said cap in a desired shifted position, and a ring engageable over said gasket and threadedly engaging said cap for locking said unit in its desired position.

SAMUEL ZICHLIN.