March 5, 1929. H. F. HERWIG ET AL 1,704,000

RECTAL AND VAGINAL ELECTRODE

Filed Sept. 16, 1927

FIG. 1

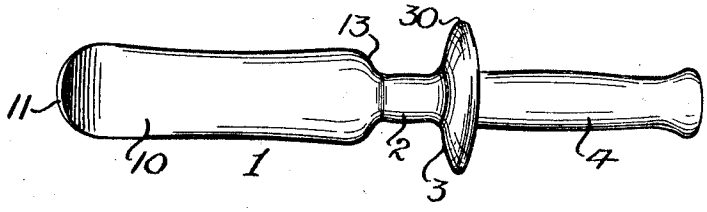



FIG. 2

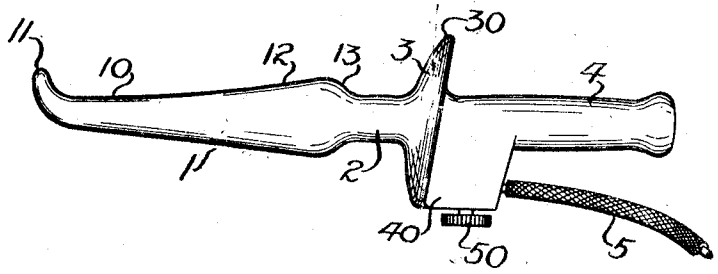
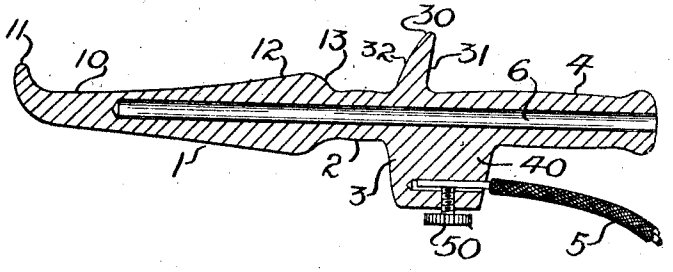



FIG. 3




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# UNITED STATES PATENT OFFICE.

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## RECTAL AND VAGINAL ELECTRODE.

Application filed September 16, 1927. Serial No. 219,951.

Our invention relates to instruments intended for use with electricity for the treatment of diseased or disturbed conditions in the human body, which treatment is known as diathermal treatment.

The particular instrument which is the subject of this invention is generally referred to as a vaginal electrode, although it is designed for use also in the rectal opening. It may more correctly be called an instrument for diathermal treatment by insertion in the rectum or vagina.

The object of our invention is to provide an instrument for such uses which is of such improved construction as to better adapt it for its purpose, and which will enable it to secure new results and better secure old results. The novel features of the invention will first be described as applied to the particular embodiment thereof illustrated in the accompanying drawings, and then particularly pointed out in the claims.

Figures 1 and 2 are side views of our instrument taken from view points which are separated by 90°.

Figure 3 is a central longitudinal section.

Our device has a major section, generically indicated by 1, which we have referred to as a tongue-like body, and which constitutes the portion which is inserted in the body opening. This tongue towards its inner end, as at 10, is flattened so as to be much broader than thick, and has an upturned tip or lip 11, smoothly rounded on its edges. Towards the base or outer end of the tongue, it becomes more rounded in cross-section, this section 12 then reducing sharply in size to form a restricted neck 2 and a retaining shoulder 13. At the outer end of the neck 2 is a surrounding flange 3 which preferably occupies a plane slightly inclined to right angularity with the major axis of the instrument.

The inner surface of this flange is slightly curved or rounded, and at its outer edge is rounded over so as to present a rounded corner merging into the edge of the flange. The outer face of this flange may be a plane, or such other shape as may be desired.

Extending outwardly from the flange 3 is a central stem 4, which serves as a convenient handle with which to manipulate the instrument. A lead wire 5 is to be attached to the instrument when in use. This may be secured in any suitable way, as by entering a hole in a lug 40 where it is held by a set screw 50. We prefer to provide a central bore 6 which acts as a heat-equalizing means.

It is of course contemplated that with this is employed a second electrode, which is attached to a complementary lead wire.

In use, the tongue of the electrode is inserted in either the rectum or the vagina, as indicated by circumstances, and an electric current passed through the portions of the body between the two electrodes.

When inserted in the rectum, the restricted neck 2 is gripped by the sphincter muscles to securely hold it in place.

We consider rounding of the surface at 30 as of importance, as it prevents concentration of the electric discharge at this point, and consequent overheating with possible burning effects, as would otherwise happen, due to the tendency of electric discharges from conducting bodies to concentrate at points and sharp edges. A preferred material for our instrument is a commercial aluminum, both because of its conductivity of both heat and electricity, and because of its resistance to tarnishing and chemical action.

The detailed manner of use of the instrument will be understood by physicians and those for whom it is intended, and need not be herein set forth.

What we claim as our invention is:

1. An instrument for diathermic treatment of internal organs of the human body, comprising an elongated tongue terminating in an upwardly turned tip, which has a transversely flat upper surface, which tongue is adapted for insertion in the natural openings of the human body, said tongue having an enlarged section of rounded cross section at its base followed outwardly in order by a restricted neck and by a radially extending surrounding flange.

2. An instrument for diathermic treatment of internal organs of the human body, comprising an elongated tongue terminating in an upwardly turned tip, which has a transversely flat upper surface, which tongue is adapted for insertion in the natural openings of the human body, said tongue having an enlarged section of rounded cross

section at its base followed outwardly in order by a restricted neck and by a radically extending surrounding flange, and having a heat-equalizing bore extending lengthwise of the said parts.

3. An instrument for diathermic treatment of internal organs of the human body, comprising an elongated tongue terminating in an upwardly turned tip, which has a transversely flat upper surface, which tongue is adapted for insertion in the natural openings of the human body, said tongue having an enlarged section of rounded cross section at its base followed outwardly in order by a restricted neck and by a radially extending surrounding flange, the plane of said flange being inclined to the axis of the tongue.

4. An instrument for diathermic treatment of internal organs having a tongue-like body having at its base a radially extending flange having its inner face adjacent to its outer periphery rounded over and smoothly merging into its peripheral edge.

Signed at Seattle, King County, Washington, and at Spokane, Spokane County, Washington, respectively, this 7th and 9th day of September, 1927.

HENRY F. HERWIG.
MATTIE M. LYNCH.