June 29, 1937. B. J. FERCIOT 2,085,644

RECTAL ELECTRODE

Filed April 29, 1935

Fig. 1

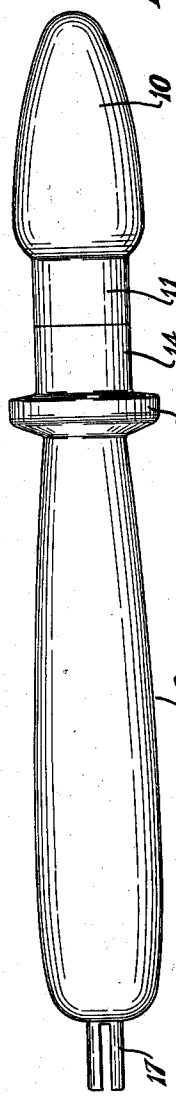


Fig. 2

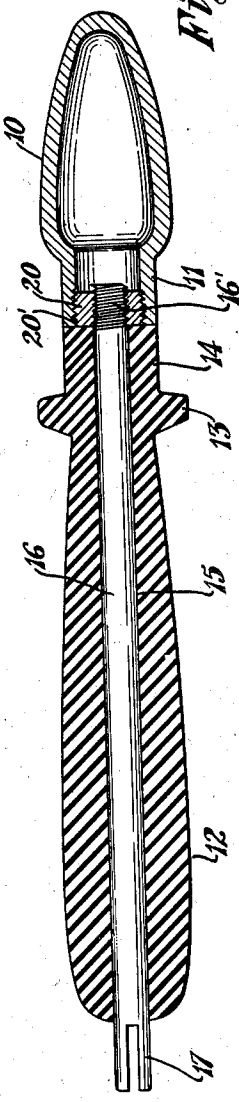
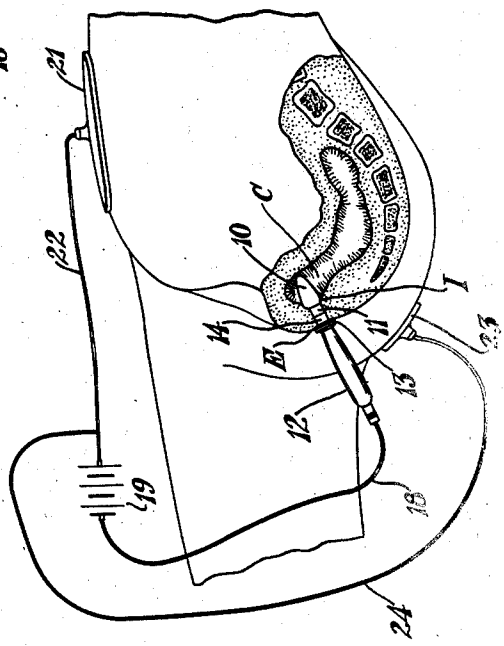


Fig. 3



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Patented June 29, 1937

2,085,644

UNITED STATES PATENT OFFICE

2,085,644

RECTAL ELECTRODE

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Application April 29, 1935, Serial No. 18,795

4 Claims. (Cl. 128—407)

The invention relates to electrotherapeutic instruments and more particularly to an improved rectal electrode.

An object of the invention is to provide a rectal electrode having a bulbous metal head or tip adapted to be inserted into the bowel and to seat against the internal sphincter, and having a reduced neck or stem connected to an insulated handle, there being an annular collar or projection upon the handle at a point spaced from the joint of said neck with the handle, said collar being adapted to seat against the external sphincter of the rectum, the bulbous head of the electrode being thus held firmly against the internal sphincter so as to carry the current to the nerves of the rectal portion of the colon and the internal sphincter, while the insulated handle is held in contact with the external sphincter and the outer portion of the rectum, preventing any harmful electrical action upon these parts.

The above and other objects, readily apparent from an inspection of the drawing and the following description, may be attained by providing an insulation handle having an annular collar or projection spaced from its inner end, a metal rod being located longitudinally through said handle, and a bulbous metal head or tip being fixed to said rod and having a reduced neck adjacent to the handle, the head and the annular collar upon the handle being so spaced that they will seat against the inner and outer sphincters of the rectum, respectively, so as to hold the electrode firmly in the proper position, the collar upon the handle preventing the electrode from being accidentally inserted beyond the proper point.

An embodiment of the invention thus set forth in general terms is illustrated in the accompanying drawing, in which

Figure 1 is a side elevation of a rectal electrode constructed in accordance with the invention;

Fig. 2, a longitudinal sectional view of the same; and

Fig. 3, a view of the electrode placed in the rectum, showing its relation to the internal and external sphincters, and the manner in which it holds itself firmly in the proper position.

Similar numerals refer to similar parts throughout the drawing.

Although, for the purpose of illustration, a medium size of the improved electrode is shown in the accompanying drawing, it should be understood that for various cases for both children and adults, the electrodes are made in different sizes, a complete set for all purposes preferably comprising seven different size electrodes, with heads or tips graduated in diameter from five-eighths of an inch to one and three-eighths inches, increasing in diameter one-eighth inch to each size, and the distance between the bulbous projection of the head or tip and the annular collar or projection upon the insulated handle varying from three-fourths of an inch, in the children's size, to one and one-fourth inches in the large adult size. Otherwise each size of the electrode is as shown in the drawing and hereinafter described.

The improved electrode includes a bulbous metal head or tip **10**, generally tapered toward its free end, which is rounded as shown in Figs. 1 and 2, which may be of brass or other suitable metal, preferably hollow as shown, in order to reduce the weight of the instrument, this head being preferably provided with a relatively short neck **11**, forming a shoulder at the larger end of the head, by means of which the head or tip is attached to the insulation handle shown generally at **12**.

This insulation handle is provided with an annular collar or projection **13**, located at a distance from the inner or forward end of the handle substantially equal to the length of the neck **11**. This inner end portion of the handle, designated at **14**, is also preferably of the same diameter as the neck **11**, so as to form a smooth, substantially cylindric surface from the collar **13** to the head or tip **10**.

The handle may be formed of hard rubber or other suitable insulation material, and is provided with a central bore **15**, within which is located the rod **16**, of brass or other suitable metal, projecting beyond the outer end of the handle, as at **17**, for the connection of a wire **18**, leading to one side of any suitable source of electric current as indicated at **19**.

The inner end of the conductor rod **16** extends beyond the inner end of the handle and is preferably screw threaded as shown at **16'**, to receive the nut or butt plate **20**, which is externally threaded as at **20'**, to receive the internally threaded neck **11** of the head or tip, by means of which the head may be detachably secured upon the handle.

In using the improved electrode for the treatment of constipation and the like, the proper size electrode is selected and connected to the wire **18**. The head or tip of the electrode is then inserted into the rectum, as shown in Fig. 3, being pushed in to the point where the annular collar **13** upon the insulation handle engages the external

sphincter E preventing further inward movement of the electrode.

At this point the head or tip **10** of the electrode will have passed through the rectum and into the colon C, the shoulder at the rear or larger portion of the bulbous head engaging the internal sphincter I and preventing accidental outward movement of the electrode, thus holding the same in proper position so that the head of the electrode is held firmly against the internal sphincter so as to carry the current to the nerves of the rectal portion of the colon and the internal sphincter, while the insulation handle extends inward to a point midway between the external and internal sphincters, thus protecting the external sphincter from any harmful effect of the current.

For the purpose of completing the circuit, an electrode **21**, in the form of a plate or the like, may be connected to the other side of the source of electric current **19**, as by a wire **22**, and may be placed upon any suitable portion of the body of the patient under treatment. Another electrode **23**, also in the form of a plate, is also preferably attached to the same side of the source of current as the electrode **21**, as by the wire **24**, and may be placed in contact with a suitable part of the body as shown in the drawing.

I claim:

1. A rectal electrode including a bulbous metal head generally tapered toward its free end, which is rounded, and insertable through the rectum and into the rectal portion of the colon, an insulation handle upon which said head is mounted, a conductor rod located through said handle and connected to said head, means for connecting said conductor in an electric circuit, and a projection upon said handle at a point so spaced from said head that said projection will engage the external sphincter of the rectum at the same time that the larger portion of the bulbous head engages the internal sphincter so as to hold the electrode in position to carry the current to the nerves of the rectal portion of the colon and the internal sphincter while the external sphincter is protected from the current the electrode having a straight, central, longitudinal axis passing through the insulation projection and handle and through the rounded free end of the head.

2. A rectal electrode including a bulbous metal head generally tapered toward its free end which is rounded, and insertable through the rectum and into the rectal portion of the colon, and having a reduced metal neck forming a shoulder at the larger end of the head, an insulation handle to which said neck is connected, a conductor rod located through said handle and connected to said head, means for connecting said conductor in an electric circuit, and a projection upon said handle at a point so spaced from said head that said projection will engage the external sphincter of the rectum at the same time that the shoulder of the bulbous head engages the internal sphincter so as to hold the electrode in position to carry the current to the nerves of the rectal portion of the colon and the internal sphincter while the external sphincter is protected from the current, the joint between the insulation handle and neck being located between the external and internal sphincters the electrode having a straight, central, longitudinal axis passing through the insulation projection and handle and through the rounded free end of the head.

3. A rectal electrode including a bulbous metal head generally tapered toward its free end which is rounded, and insertable through the rectum and into the rectal portion of the colon, and having a reduced metal neck, forming a shoulder at the larger end of the head, an insulation handle having an inner end portion of the same diameter as said neck and connected thereto, a conductor located through said insulation handle and connected to said head, means for connecting said conductor in an electric circuit, and an insulation projection upon said handle at a point so spaced from the head that said projection will engage the external sphincter of the rectum at the same time that the shoulder of the bulbous head engages the internal sphincter so as to hold the electrode in position to carry the current to the nerves of the rectal portion of the colon and the internal sphincter while the external sphincter is protected from the current, the joint between the insulation handle and neck being spaced substantially the same distance from the bulbous head and insulation projection the electrode having a straight, central, longitudinal axis passing through the insulation projection and handle and through the rounded free end of the head.

4. A rectal electrode including a bulbous metal head generally tapered toward its free end which is rounded, and insertable through the rectum and into the rectal portion of the colon, and having a reduced metal neck forming a shoulder at the larger end of the head, an insulation handle having an inner end portion of the same diameter as said neck and connected thereto, a conductor located through said insulation handle and connected to said head, means for connecting said conductor in an electric circuit, and an insulation projection upon said handle at a point spaced from the shoulder a distance substantially the same as the length of the head so that said projection will engage the external sphincter of the rectum at the same time the shoulder of the bulbous head engages the internal sphincter so as to hold the electrode in position to carry the current to the nerves of the rectal portion of the colon and the internal sphincter while the external sphincter is protected from the current, the joint between the insulation handle and neck being spaced substantially the same distance from the shoulder and insulation projection, the electrode having a straight, central, longitudinal axis passing through the insulation projection and handle and through the rounded free end of the head.

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