

Jan. 30, 1934.

W. B. MORSE

1,945,327

COMBINED TONGUE DEPRESSOR AND ELECTRODE FOR ELECTROCOAGULATION OF TONSILS

Filed June 30, 1932

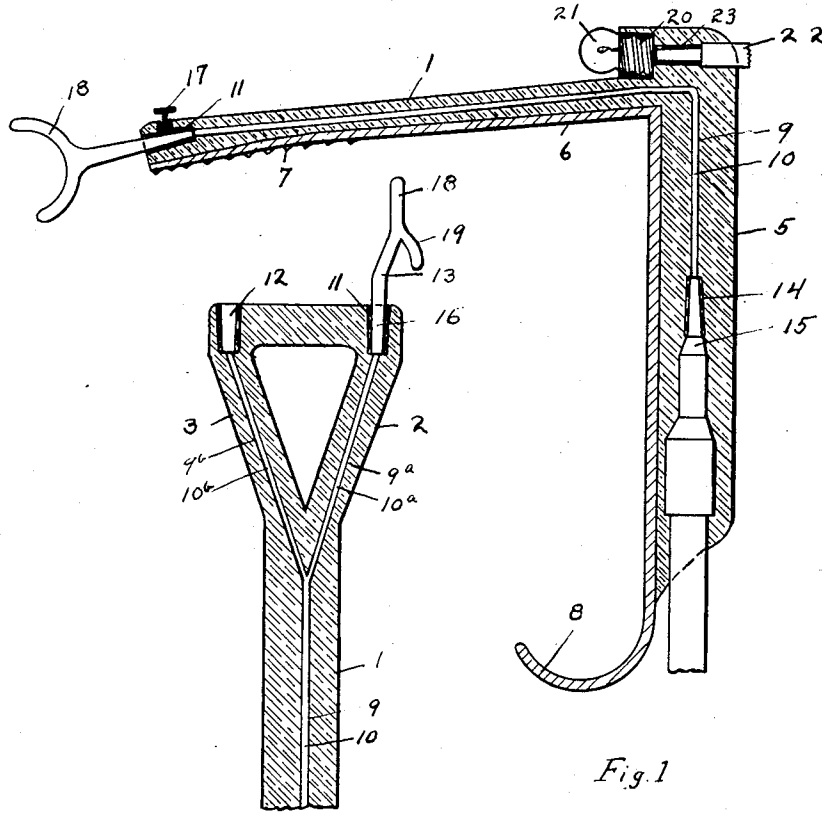


Fig. 1

Fig. 2.

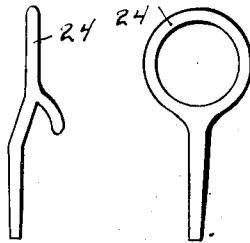


Fig. 3.

Fig. 4.

Willis B. Morse

Inventor

By *Paul Davis Mann & Edwards*
Attorney

UNITED STATES PATENT OFFICE

1,945,327

COMBINED TONGUE DEPRESSOR AND ELECTRODE FOR ELECTROCOAGULATION OF TONSILS

Willis B. Morse, Washington, D. C.

Application June 30, 1932. Serial No. 620,259

12 Claims. (Cl. 174—89)

This invention relates to a combined tongue depressor and electrode for use in the removal of tonsils by the electro-coagulation method.

At the present time the long-used method of removing the tonsils by cutting them out, with its attendant inconvenience to the patient and danger from loss of blood, is being superseded by an electrical method of removing them. According to this method the tonsil tissue is gradually destroyed with an electrical current of high frequency. When it is desired to remove the tonsils by this method, an electrical apparatus is used through which flows a current of high frequency but very low voltage. One end of this circuit terminates in an electrode which is adapted to be secured to, or held against a part of the patient's body, and may comprise an electrode which is clamped to the person's neck or leg, or an electrode which is inserted into the patient's mouth and is pressed against the inside thereof adjacent the tonsil which it is desired to remove. The use of the latter type of electrode is preferable because the moist condition of the mouth and throat enable a better contact to be made and as the contact is close to the tonsil to be operated upon, a smaller amount of current may be used with less inconvenience to the patient. The other end of the circuit terminates in an electrical needle which is adapted to be contacted with or penetrate the tonsil. When this is done an electrical circuit is established through the electrode which is pressed against the inside of the mouth or throat, the electrical needle, and the tonsil which is being operated upon. The high frequency electric current causes a portion of the tonsil tissue to coagulate. This coagulated tissue in the course of a few days or a week will slough off, and when that has taken place the patient is given another such treatment, and so on until the entire tonsil has been destroyed. This is usually accomplished in three or four treatments. This method of removing the tonsils has many advantages over the former method of placing the patient under anæsthetic and cutting out the tonsils, as there is no danger of hemorrhages and the patient is not incapacitated for several days as is the case where the tonsils are cut out. After a sitting for the removal of a portion of a tonsil according to this method, the patient's throat or tonsil is only slightly sore and he may go about his business as before and it is not necessary for him to mass a single meal.

As the tongue has to be depressed while the tonsil is being operated upon, the use of the electrode which is inserted inside the mouth of the

patient has the disadvantage that an assistant has to be present to assist the doctor in the removal of the tonsil, as the doctor cannot both depress the tongue and hold the electrode against the inside of the mouth or throat of the patient with one hand, while operating the electrical needle against the tonsil with the other hand.

The present invention aims to overcome the disadvantages in connection with the use of an electrode which is held against the inside of the mouth and to enable the doctor to properly perform the operation without assistance. To this end the invention comprises an electrode for use in the electro-coagulation method of removing tonsils which is combined with a tongue depressor. With such a combined tongue depressor and electrode the doctor may maintain the tongue depressed and the electrode in contact with the inside of the patient's mouth with one hand while operating the electrical needle to coagulate the tonsil tissue with the other. The combined tongue depressor and electrode also preferably has secured thereto an electrical bulb which may be lighted to illuminate the inside of a patient's mouth so that the doctor will have a well lighted field in which to work.

More specifically, my invention comprises a combined tongue depressor and electrode with a suitable handle which may be grasped by the doctor and through which high frequency coagulating current passes. To this handle is secured a tongue depressor which is preferably made of some insulating material, such as bakelite, hard rubber, or the like, and has projecting from the inner end thereof an electrode which is adapted to be pressed against the inside of the throat or mouth of the patient, preferably around the tonsil to be operated upon. Passages are provided through the tongue depressor so that a suitable electrical conductor may pass from the diathermy plug in the handle to electrode sockets in the end of the tongue depressor, so that a complete circuit may be established to the electrode.

Preferably, the end of the tongue depressor is provided with two sockets into which the electrode may be inserted, one at the left side and the other at the right side so that the electrode may be placed in either socket depending upon whether it is desired to remove the right or left tonsil. The electrodes are provided with a hook-like portion so that the anterior pillar adjacent the tonsil may be held retracted at the same time that the tongue is held depressed, thereby enabling the doctor to have free access to the tonsil upon which he is operating.

The invention will be further described in connection with the accompanying drawing, but it is to be understood that this further disclosure is to be taken as an exemplification of the invention and that the same is not limited thereto.

In the drawing, Fig. 1 is a vertical sectional view through the combined tongue depressor and electrode,

Fig. 2 is a horizontal sectional view through the outer end of the tongue depressor showing the sockets on each side for the electrodes, and an electrode inserted in one of the sockets, and

Figs. 3 and 4 are elevational views of a modified form of electrode.

In the drawing, the numeral 1 designates a tongue depressor which is formed of insulating material such as bakelite, hard rubber, gutta percha, or the like. The inner end of the tongue depressor comprises a pair of arms 2 and 3 which diverge to a distance approximating the width of a person's tongue and which are connected at their ends by the cross-piece 4. In order that the tongue depressor may be readily grasped and manipulated in the patient's mouth by the doctor, the outer end portion thereof has integrally formed therewith a depending handle 5.

Both the tongue depressor 1 and the handle 5 are reinforced by a strip of metal 6 which is secured to the under side of the tongue depressor and the inner side of the handle portion. The under side of the metal which underlies the tongue depressor is serrated as at 7, so as to better maintain its position on the tongue, while the lower portion of the reinforcing metal adjacent the handle is curved inwardly and upwardly as at 8 to provide a rest for the doctor's hand.

Both the tongue depressor and the handle have formed therein a passage 9 through which extends an electrical conductor 10. The inner portion of the passage 9 in the tongue depressor communicates with a pair of passages 9a and 9b which extend through the diverging arms 2 and 3 and terminate in electrode sockets 11 and 12, formed in the inner end portion of the tongue depressor. One of these electrode sockets is located on the right side of the tongue depressor and the other on the left side thereof, so that an electrode 13 may be inserted into either one depending upon whether the right or left tonsil is to be operated upon. The electrical conductor 10 which extends through the passage 9 likewise connects with diverging electrical conductors 10a and 10b located in the passages 9a and 9b.

The outer end of the passage 9 terminates in a socket 14 into which a diathermy plug 15 may be removably inserted. The diathermy plug extends from a common form of diathermy machine which is not shown and to which no claim is made in this application. However, it might be stated that the diathermy machine is such as to furnish a current of high frequency but very low voltage, a current of a very few hundred milliamperes being sufficient.

The electrode 13 shown in Figs. 1 and 2 comprises a tapered end portion 16 which is adapted to be removably retained in the sockets 11 and 12 by means of a set screw 17, and an outer arcuate portion 18 which may be placed around the tonsil and thereby make electrical contact with the body of the patient whose tonsils are to be removed. The electrode has formed on one side thereof a hook-shaped pillar-retractor 19 so that the anterior pillar may be held retracted by the electrode, thereby giving the doctor better access to the tonsil which is being operated upon. The outer por-

tion of the tongue depressor has an electric socket 20 therein, into which may be screwed a small electric bulb 21 which will properly illuminate the interior of the mouth and thereby give the doctor a well illuminated field in which to work. Current from a dry cell or a transformer-rheostat (not shown) may be supplied to the electric bulb by means of the conductor 22 which is inserted into the socket 23. For convenience in manufacturing, the sockets 11, 12, 14 and 23 are preferably made of the same size.

The electrode shown in Figs. 3 and 4 is substantially the same as the electrode shown in Figs. 1 and 2, except that the outer end portion 24 is made circular instead of arcuate, so that it may extend completely around the tonsil.

When it is desired to remove a person's tonsils by the electro-coagulation method, the tonsil is first anesthetized with a suitable local anesthetic, and the tongue depressor having the electrode in the end thereof is then inserted into the patient's mouth and the electrode pressed against the patient's throat adjacent the tonsil which is to be operated upon. This operation, and also the depression of the patient's tongue, can be simultaneously performed by the doctor with one hand, while his other hand is left free to manipulate the electrical needle which extends from the diathermy machine and is in circuit with the electrode.

In the actual operation, the electrical needle is touched upon or inserted into the tonsil at different points for a sufficient length of time to coagulate a portion of the tonsil tissue. After a period of several days or a week, when the coagulated tissue will have sloughed off, the patient returns for another such treatment, and this is continued until each tonsil has been completely removed. Ordinarily three or four such treatments for each tonsil are sufficient.

From the foregoing it will be apparent that the present invention provides a very compact and effective means for simultaneously maintaining the patient's tongue depressed and for forming an electrical contact of the electrode with the inside of the patient's mouth adjacent the tonsil, whereby the doctor may perform the operation without an assistant and without the necessity of clamping the electrode to the neck or leg of the patient as has heretofore been done.

I claim:

1. A tongue depressor for use in the electro-coagulation method of removing tonsils having an inactive electrode secured thereto and means carried by the tongue depressor for conducting electrical current to said electrode.

2. A tongue depressor for use in the electro-coagulation method of removing tonsils having an inactive electrode secured to the inner end portion thereof and means carried by the tongue depressor for conducting electrical current to said electrode.

3. A tongue non-conducting depressor for use in the electro-coagulation method of removing tonsils having an inactive electrode secured to the inner end portion thereof and means for conducting an electrical current through the tongue depressor to the electrode.

4. A tongue depressor for use in the electro-coagulation method of removing tonsils having an inactive electrode removably secured thereto and means carried by the tongue depressor for conducting electrical current to said electrode.

5. A tongue depressor for use in the electro-

coagulation method of removing tonsils having an inactive electrode removably secured to the inner end portion thereof and means carried by the tongue depressor for conducting electrical current to said electrode.

6. A tongue depressor for use in the electro-coagulation method of removing tonsils having a pair of electrode sockets formed in its inner end portion whereby an electrode may be placed in either socket depending upon whether the right or left tonsil is to be operated upon and means carried by the tongue depressor for conducting electrical current to said sockets.

7. A non-conducting tongue depressor for use in the electro-coagulation method of removing tonsils having a passage for an electrical conductor extending longitudinally therethrough, said passage communicating with a pair of passages which terminate in electrode sockets at the distal end of the tongue depressor.

8. A non-conducting tongue depressor for use in the electro-coagulation method of removing tonsils having an enlarged inner end portion, said inner end portion having a pair of electrode sockets formed in the distal end, one on the right

side thereof and the other on the left side thereof.

9. A non-conducting tongue depressor for use in the electro-coagulation method of removing tonsils, the inner end of said tongue depressor being enlarged, and having formed therein a pair of electrode sockets, a handle secured to the outer end of said tongue depressor, and a diathermy current conductor extending through said handle and tongue depressor and having its inner end branched and the branches thereof connected to said electrode sockets.

10. An electrode for use in the electro-coagulation method of removing tonsils having a pillar retractor carried at one side thereof.

11. An electrode for use in the electro-coagulation method of removing tonsils having a hook-shaped pillar retractor at one side thereof.

12. An electrode for use in the electro-coagulation method of removing tonsils, comprising a portion adapted to fit within an electrode socket, and an outer arcuate portion, said electrode having formed at one side thereof a hook-shaped pillar retractor.

WILLIS B. MORSE.

100

105

110

115

120

125

130

135

140

145

150