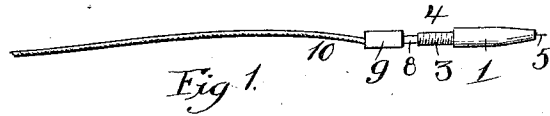
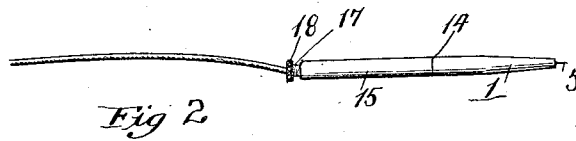
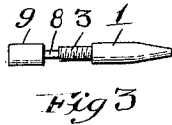
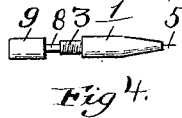
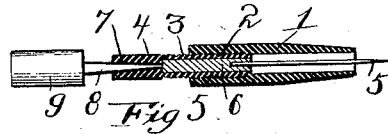
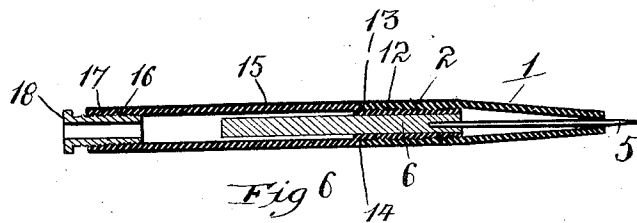


No. 861,159.

PATENTED JULY 23, 1907.

W. R. BURCH.  
SURGICAL NEEDLE.  
APPLICATION FILED MAR. 3, 1906.



Witnesses:  
P. Bond  
Caroline Beckman

Inventor:  
William R. Burch  
By [Signature]  
Att'y.

# UNITED STATES PATENT OFFICE.

WILLIAM R. BURCH, OF CHICAGO, ILLINOIS.

## SURGICAL NEEDLE.

No. 861,159.

Specification of Letters Patent.

Patented July 23, 1907.

Original application filed July 14, 1905, Serial No. 269,651. Divided and this application filed March 3, 1906. Serial No. 304,100.

*To all whom it may concern:*

Be it known that I, WILLIAM R. BURCH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Surgical Needles, of which the following is a specification, the same being a division of application Serial No. 269,651, filed July 14, 1905.

This invention relates to surgical needles for use in connection with electricity for various purposes, such as the removal of superfluous hair or blemishes of other character on the face or body of patients.

The objects of the invention are to construct a needle which can be used without any danger or liability from injuring the skin of flesh by burning from the electric current; to furnish a casing or closure of nonconducting material with a protective tip or guard which can be adjusted so as to entirely protect the point of the needle or allow a greater or less length of point to project for use; and to enable the protective tip or guard to be readily and quickly adjusted without affecting the connection between the needle and the conductor for the electric current.

The invention consists in the features of construction and combinations of parts hereinafter described and claimed.

In the drawings Figure 1 is a side elevation, showing the needle attached to a conductor, with the tip for the casing or closure retracted to expose the point of the needle proper; Fig. 5 a longitudinal section of the casing or closure with the needle in elevation and the plug or socket for the conductor in elevation,—Figs. 2, 3 and 4 illustrating the construction of casing or closure and needle of Fig. 1; and Fig. 6 a longitudinal section of the casing or closure of Fig. 2, with the needle proper in elevation.

The construction of casing or closure for the needle proper in the arrangement of Figs. 1, 3, 4 and 5 consists of a tip or guard 1, formed of any suitable nonconducting material, such as vulcanized rubber, vulcanized fiber, porcelain, wood or other suitable material. The tip or guard 1 at its base end has an interior screw thread 2 which coincides with an exterior screw thread 3 on a tube 4 also made of any suitable nonconducting material. The tip or guard 1 and the tube or socket 4 constitute the casing or closure for the needle proper.

The needle proper 5 is of any usual and well known construction of surgical needles, and its base or non-acting end is entered into a metallic holder 6, incased in the tube or socket 4, so as to furnish a contact for transmitting the electric current to the needle. The rear or base end of the tube or socket 4 has therein a tapered hole 7 to receive the stem 8 of a plug or coupling 9, adapted for the attachment of a current conductor 10, so as to transmit the current to the holder 6, for which purpose the plug or socket 9 and its stem 8 is of metal or other conducting material.

The construction shown in Figs. 2 and 6 employs the same tip or guard 1, with an interior screw thread 2, as in the construction of Figs. 1, 3, 4 and 5. The interior screw thread 2 coincides with an exterior screw thread 12 on a tube 13 formed integral with a shoulder 14 of a tube 15, so that the tube 15 and the tip or guard 1 constitute the casing or closure surrounding the needle proper. The tube 15 has an interior screw thread 16, which coincides with an exterior screw thread 17 of a socket or hollow plug 18, for the attachment of the current conductor, the conductor passing through the hole of the socket or plug 18 for the wire portion thereof to abut against the end of the holder 6 and transmit the current to the needle 5 for use on the patient.

The tip or guard 1 is adjustable endwise on the tube 4 or the section 12 of the tube in the construction of Figs. 2 and 6, so that it can be advanced to entirely cover the point of the needle as shown in Fig. 3 or can be retracted to a greater or less extent, as shown in Figs. 1, 2, 4, 5 and 6 to expose a greater or less length of the needle point as required for use; and this adjustment can be readily and quickly made, it only being necessary for the operator to advance or retract the tip or guard on the retaining tube as may be required, and by reason of the screw thread the adjustment of the tip or guard can be made very accurate.

The operation of the device is as follows: The needle is attached to one end of the cord, the other end being directly connected to a battery on the negative side thereof. In order to complete the circuit, one end of the cord is attached to the positive side of the battery, the other end of the same cord being placed in a bowl of water in which the patient's hand is inserted, or attached to a wet sponge to be held in the hand of the patient so as to make a perfect and complete circuit.

The casing or closure for the needle, made of non-conducting material and formed of an adjustable tip or guard and a tube, enables the operator to use the needle without danger of a shock or burn, and also enables the patient to receive the treatment without any liability or danger of burning or injuring the skin or flesh, when the needle is inserted and in use, as the end of the tip or guard 1 will be the only part that is in contact with the skin or flesh of the patient, and inasmuch as this tip or guard is of insulating or non-conducting material it will be impossible for the electric current to flow thereonto and burn or injure the patient, and in addition the full energy of the electric current employed will pass through the point of the needle without any waste by outflow, as is the case with surgical needles having a holder in which the end is of metal.

The operation is as follows: The tip or guard for the needle proper is adjusted so as to give the required projection for the needle point of the necessary length for insertion and use. The needle is inserted beneath the skin of the patient, or otherwise placed according to the

nature of the treatment desired. The needle point can be inserted to the depth of contact of the end of the tip or guard with the skin, and this without the least apprehension of producing injury by burning or scorching as the tip, owing to its being of insulating or non-conducting material, will prevent the current from touching the skin. The full strength of the electric current is free to pass through the needle and its point without deflecting, thus rendering the operation more effective and reliable than where a portion of the current is deflected. The casing or closure of insulating or non-conducting material enables the operator to insert and withdraw the needle proper without the possibility of receiving some of the current in so manipulating the needle. It will thus be seen that, with the surgical needle of the present invention, the injurious effects to the patient or to the operator are entirely obviated, and the use of the needle rendered harmless so

far as burning or scorching the patient is concerned, and at the same time the full effect of the current is transmitted to the exact spot where required for use.

What I claim as new and desire to secure by Letters Patent is:

1. A surgical needle, consisting of a casing or closure composed of a tubular body portion and an adjustable tip of non-conducting material, and surrounding the needle and its holder, a needle within the tip, and a holder within the casing or closure, substantially as described.
2. A surgical needle, consisting of a tubular casing of insulating material, a tip of insulating material entered onto the casing, a needle surrounded by the tip, a holder in the casing and receiving the needle, and a plug for connecting the casing with the conductor of an electric current, substantially as described.

WILLIAM R. BURCH.

Witnesses:

WALKER BANNING,  
PIERSON W. BANNING.