

Jerome Kidder. Imp^t in Needle Electrodes.

No. 122,031.

Patented Dec. 19, 1871.

Fig.1



Fig.2



Witnesses.

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IMPROVEMENT IN NEEDLE-ELECTRODES FOR ELECTRO-SURGICAL USES.

Specification forming part of Letters Patent No. 122,031, dated December 19, 1871.

To all whom it may concern:

Be it known that I, JEROME KIDDER, of the city, county, and State of New York, have invented a new and useful Improvement in Needle-Electrodes for Electro-Surgical Uses; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a longitudinal exterior view of my improved needle-electrode, with the wire which connects it with the battery or apparatus for producing electricity attached to it. Fig. 2 is a longitudinal section of the same.

Similar letters of reference indicate corresponding parts in both figures.

My improved needle-electrode for the treatment of tumors and other electro-surgical uses has its shank made of less dimensions in its cross-section than the tip or conducting-forward portion of the electrode, whereby the insulating cover on the outside of the body of the shank may be applied, so that it does not project laterally beyond the tip to interfere with the free passage of the insulating portion through the skin and adjacent tissues when entering the electrode within the tumor or part to be treated. This insulation of the shank is made of hard vulcanized India rubber, (vulcanite,) which is preferable to all other insulating materials on account of its hardness and clearness, and of its being capable of a high polish, which will enable it to enter the flesh without producing great pain. Said shank, furthermore, is made with an eye at its outer end, which answers alike as a handle for the electrode and as a convenient means for attaching the wire by which connection is made with the battery or other electrical apparatus. The tip or conducting portion of the electrode also, instead of being made sharp at its point, is of a rounded shape at its outer extremity, which serves to convey the electrical current more positively to the seat of disease or part to be treated, and, by first making the necessary puncture for the entry of the electrode with a suitably-shaped steel needle, also reduces the pain of applying the electrode.

In the accompanying drawing, *b* represents the shank of the electrode, of less dimensions in its transverse section than the tip or forward-conducting portion *c*, which latter is here supposed to be of platinum, and may be made by drilling a piece of platinum wire or forming it of a piece of platinum tube and soldering a point or solid piece in it and applying the tip to the inner end of the shank. Either of these is a convenient mode of making the tip when it is formed separate from the shank. *d* is the insulating-cover, of hard vulcanized India rubber, applied to the reduced shank so that it does not project laterally beyond the tip, as and for the purpose hereinbefore specified. *e* is the eye at the outer end of the shank, serving as a handle for the needle-electrode and as a means for attaching the wire *f* by which connection is made with the battery. The point of the tip *c* is made rounded, as represented in the drawing, for the purposes or reasons hereinbefore assigned.

What is here claimed, and desired to be secured by Letters Patent, is—

1. A needle-electrode having its shank of less transverse dimensions than its tip, and its insulating-cover applied to the shank so as not to project laterally beyond the tip at the junction or approximate position of the tip and cover, substantially as specified.

2. The needle-electrode formed with an eye, *e*, at the outer end of the shank, substantially as and for the purposes herein set forth.

3. A needle-electrode with a rounded point, essentially as described.

4. A needle-electrode for electro-surgical uses composed of a tip, *c*, formed with a rounded point, a reduced shank, *b*, having an eye, *e*, at its outer end, and an insulating-cover, *d*, arranged so as not to project laterally beyond the tip, substantially as shown and described.

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Witnesses:

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