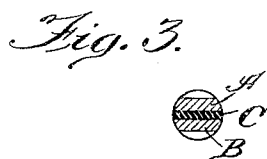
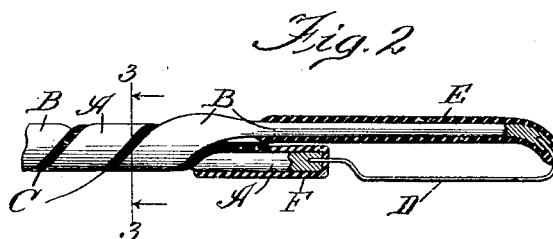


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ELECTRIC CAUTERY.
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958,753.

Patented May 24, 1910.



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UNITED STATES PATENT OFFICE.

WILLIAM MEYER, OF CHICAGO, ILLINOIS.

ELECTRIC CAUTERY.

958,753.

Specification of Letters Patent.

Patented May 24, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM MEYER, 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 Electric Cauteries, of which the following is a specification.

In an old form of electric cautery the two wire leads, of different lengths, were laid side by side with insulating material between, and wrapped in silk, the wrapping on the longer lead being continued beyond the end of the shorter lead to the end of the longer, to form a shield, and the ends of the two being then connected by a fine cauterizing wire of iridium or platinum. This was, and is much used, particularly because the extended winding on the longer lead, being a poor heat-conductor, or in other words a good heat-resistant, guards against accidental burning of tissues not intended to be cauterized, but it has certain drawbacks, one of which is that the silk covering becomes speedily slimed with mucus and blood, and is not readily susceptible of being sterilized, and another, that this same silk wrapping wears out very quickly and puts the surgeon or physician to the frequent expense of purchasing new instruments. For such reasons as these physicians and surgeons often prefer a more recent form of cautery in which the two wire leads are of practically the same length and the ends connected by a loop-shaped, flattened cauterizing wire, the shanks of these two leads being separated by insulating material, as a strip of fiber, and the instrument completed by twisting the leads together. This is a very durable device and can be quickly sterilized by plunging into an aseptic, or otherwise, but it presents a comparatively broad cauterizing surface, owing to the flattening of the conductor, and does not shield or protect surfaces that are not intended to be treated.

In my present invention, designed to remedy the objections above noted, I discard the silk wrapping, preferably retain the leads of unequal length, so that one projects beyond the other, and provide this projecting part or extension with a hard, non-absorbent coating which is a slow conductor of heat but capable of sterilization by any of the methods ordinarily employed, without injury or detracton from its durability; the leads themselves are separated by insulating

material which may be in the form of an interlying strip, and they may be secured together in a rigid structure by any suitable means, for instance by twisting them down upon said strip in the manner of the second device above referred to.

In the drawings: Figure 1 is an elevation of an instrument embodying my invention, shown upon a somewhat enlarged scale; Fig. 2, a longitudinal section through sterilizable coating upon the terminals of both leads, including also a part of the twisted shank, much enlarged in scale; and Fig. 3, a cross section upon the correspondingly numbered line in the preceding figure.

Now referring to said drawings, in which, for the purposes of the present description, I have shown the leads as of unequal length and twisted together upon an insulating strip into a rigid shank, A is the shorter lead, B the longer lead, and C the insulating strip, of fiber or other material easily kept clean and sterilized without damage. The unequal ends of the leads are connected by the cauterizing conductor D of iridium or platinum or other approved metal in the shape of a fine wire of such small diameter as to be raised to incandescence by the current passing through the leads, and of appropriate outline for its purpose. In order that the overheating of the longer lead or wire from the iridium conductor may not cause unintentional burning of healthy tissue, I propose to coat it where it reaches past and connects with the latter, with hard, non-absorbent material E, capable of ready and efficient sterilization but a bad conductor of heat. The best material for this purpose now known to me is japan lacquer baked, welded, or fused upon the extension of said lead, by a heat of about 500° F., to a suitable thickness. As thus constructed the cauterizing conductor can be made to present but a mere burning line to the part to be cauterized or burned off, while the coating of japan will effectually shield tissue opposite, and the whole instrument will readily be sterilized without injury and will possess a maximum of durability. A similar heat resistant, sterilizable coating F, may be applied to the terminal of the second lead A, whatever its relative length, immediately adjacent to the cauterizing conductor as a matter of precaution, to prevent it from also exposing a heated surface.

Having thus described my invention and

the manner in which it is to be carried out, what I claim and desire to secure by Letters Patent of the United States is:

1. An electric cautery comprising two leads insulated from each other but rigidly united together, a conductor of suitable metal and of incandescing diameter connecting the terminals of these leads, and a coating of hard, non-absorbent and readily sterilizable heat-resistant material applied to the ends of said leads immediately adjacent to said conductor.

2. An electric cautery comprising two leads of unequal length separated by an insulating layer but rigidly united together, a cauterizing conductor of suitable metal connecting the unequal ends of these leads, and a coating of hard, non-absorbent and readily sterilizable heat-resistant material applied to the reach of the longer lead extending opposite said conductor.

3. An electric cautery comprising two leads of unequal length separated by an insulating strip and twisted down on said strip into a rigid shank, a cauterizing conductor connecting the unequal ends of these leads, and a coating of hard, non-absorbent and readily sterilizable material, a heat resistant, applied to the reach of the longer lead extending opposite said conductor, beyond the twisted shank.

4. An electric cautery comprising two leads of unequal length separated by an insulating strip and twisted down on said strip into a rigid shank, a cauterizing conductor connecting the unequal ends of these leads, and a coating of hard, non-absorbent and readily sterilizable heat-resistant material applied to the reaches of both leads im-

mediately adjacent to said conductor, beyond the twisted shank.

5. An electric cautery comprising two leads of unequal length, insulated from each other but rigidly united together, a cauterizing conductor connecting the unequal ends of these leads, and a hard coating of japan, of suitable thickness applied to the reach of the longer lead opposite said conductor.

6. An electric cautery comprising two leads of unequal length, insulated from each other but rigidly united together, a cauterizing conductor connecting the unequal ends of these leads, and a hard coating of japan, baked, fused or welded upon the reach of the longer lead extending opposite said conductor, at a temperature of about 500 degrees.

7. An electric cautery comprising two leads of unequal length, insulated from each other but rigidly united together, a cauterizing conductor connecting the unequal ends of these leads, and a hard coating of japan, baked, fused or welded at a temperature of about 500° upon the reaches of both leads immediately adjacent said conductor.

8. An electric cautery comprising two wire leads of unequal length, separated by an insulating strip but united together in a rigid shank by twisting down upon said strip, a cauterizing conductor connecting the unequal ends of these leads, and a hard coating of japan, baked, fused or welded at a temperature of about 500° upon the reach of the longer lead extending from the twisted shank out opposite said conductor.

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