

[54] **SURGICAL CAUTERIZING TOOL HAVING SUCTION MEANS**

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[51] Int. Cl.² **A61B 17/36; A61M 1/00**

[58] Field of Search 128/275.1, 276, 297, 302, 128/303.17

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[57] **ABSTRACT**

A medical tool which comprises a cauterizing blade mounted in a plastic handle or body, and a manually retractable vacuum tube which can be positioned adjacent the cauterizing tool to evacuate the cauterizing area, or which can be retracted therefrom when no evacuation is necessary.

The cauterizing blade is connected to an electrical conductor by means of a connector which permits quick and easy replacement of the blade. The retractable tube is adapted to be connected to a source of vacuum.

4 Claims, 6 Drawing Figures

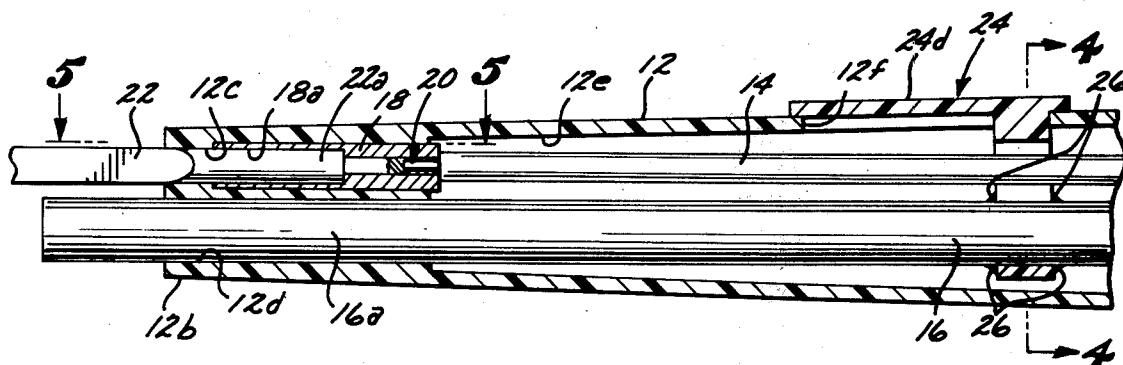


FIG. 1

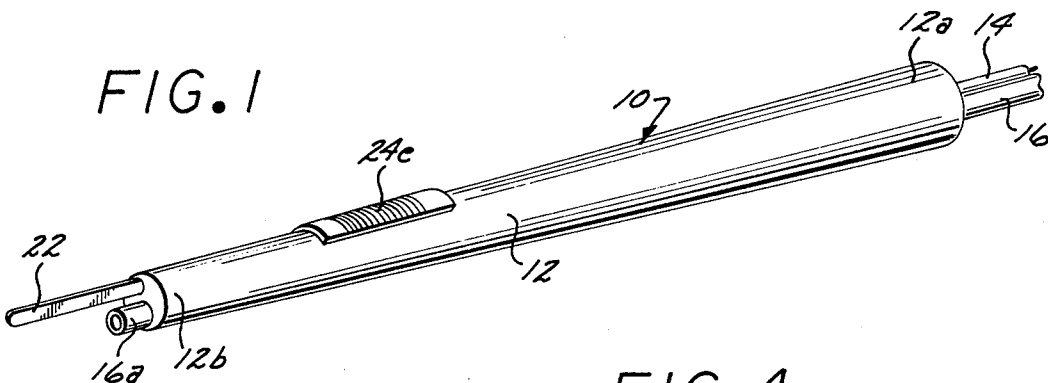


FIG. 2

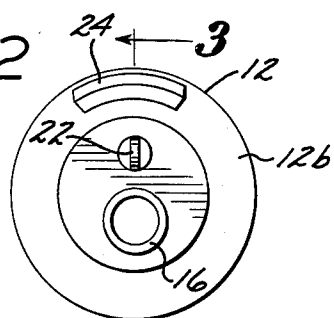


FIG. 4

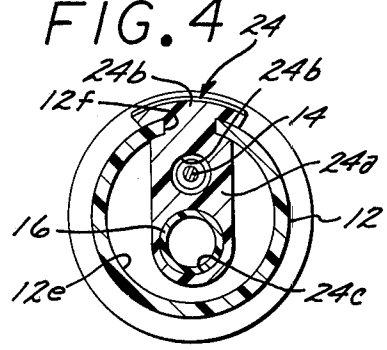


FIG. 3

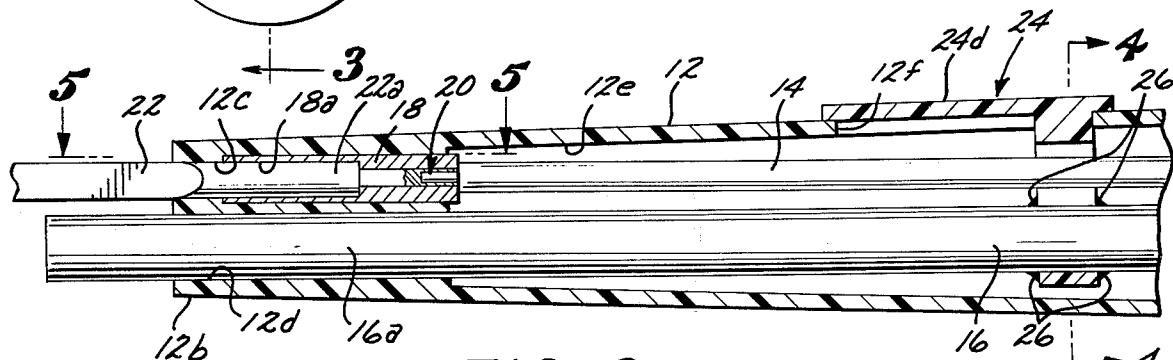


FIG. 5

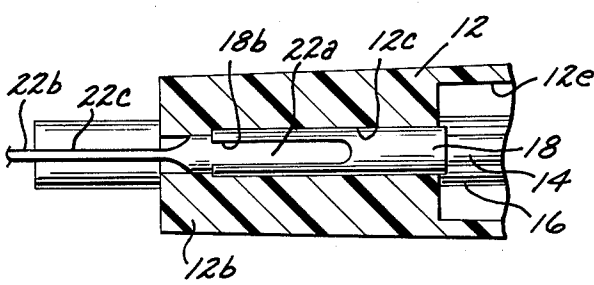
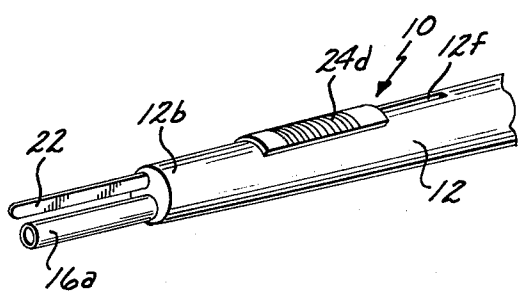


FIG. 6



SURGICAL CAUTERIZING TOOL HAVING SUCTION MEANS

The present invention relates generally to medical tools, and more particularly to tools which can be used effectively for cauterizing a small area of a person's body.

For various different purposes, it frequently becomes necessary to cauterize a particular area of a person's body. This process requires the application of heat and is frequently done to stop the flow of blood when small veins have been ruptured.

Tools for cauterizing are usually electrically energized with high frequency electrical energy. Such element is then positioned in the proper location to effect the cauterizing operation.

Since the cauterizing function has particular application in closing small veins which have been ruptured, it frequently occurs that there is a pool of blood near the cauterizing location. As such, it is most helpful to have a source of vacuum to remove such excess blood before or during the cauterizing operation.

Due to the limited space wherein such operations are performed, an additional vacuum tube becomes an obstacle which can and does interfere with the cauterizing procedure. Therefore, it is an object of the present invention to provide a medical tool which is capable of performing the cauterizing function and which includes vacuum means which does not interfere with the cauterizing.

Another object of the present invention is to provide a medical tool as characterized above which includes means for manually manipulating the evacuating means so that the area of the patient can be evacuated and cauterized with minimum motions and time involved.

A further object of the present invention is to provide a medical tool as characterized above which can be used to perform all of the aforementioned functions while being held in one hand of the operating physician.

An even further object of the present invention is to provide a medical tool as characterized above wherein the cauterizing blade can be quickly and easily changed.

Another further object of the present invention is to provide a medical tool as characterized above having a manually operable slider which can be moved to effect retraction or extension of the vacuum tube with respect to the cauterizing blade.

An even further object of the present invention is to provide a medical tool as characterized above which is simple and inexpensive to manufacture and which is rugged and dependable in an operation.

The novel features which I consider characteristic of my invention are set forth with particularity in the appended claims. The device itself, however, both as to its organization and mode of operation, together with additional objects and advantages thereof, will best be understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of a medical tool according to the present invention;

FIG. 2 is an end elevational view of the medical tool of FIG. 1;

FIG. 3 is a fragmentary longitudinal sectional view, taken substantially along line 3—3 of FIG. 2;

FIG. 4 is a transverse sectional view, taken substantially along line 4—4 of FIG. 3;

FIG. 5 is a fragmentary sectional view taken substantially along 5—5 of FIG. 3 and,

FIG. 6 is a fragmentary perspective view of the end of the medical tool of FIG. 1.

Like reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to FIG. 1 of the drawings, there is shown therein a medical tool 10 according to the present invention. It comprises a body 12 which is shaped somewhat like a pencil, and is preferably formed of plastic, although it could be formed of any appropriate material.

Body 12 has a generally tapered exterior configuration, having a larger cross-sectional rearward portion 12a than the forward portion 12b.

Extending from the rear of body 12 is an electrical conductor 14 and a vacuum tube or conduit 16. Conductor 14 is adapted to be connected to any appropriate source of electrical energy for purposes to be hereinafter described, and conduit 16 is adapted to be connected to any appropriate source of vacuum as will hereinafter become more apparent.

Referring more particularly to FIG. 3 of the drawings, body 12 is formed with a pair of through openings 12c and 12d which may extend the entire length of the body or may communicate with a large central opening 12e. The electrical conductor 14 extends into the body 12, within the central opening 12e thereof, into the rear portion of an electrical connector 18. It is soldered therein as shown at 20. Such connector 18 is provided with an opening 18a wherein is positioned a cauterizing element or blade 22.

In accordance with the present invention, cauterizing element 22 may take substantially any desired form or shape but is preferably formed with an end portion 22a which is adapted to engage one end of connector 18. As shown most clearly in FIG. 5 of the drawings, connector 18 may be provided with a slot 18b which provides sufficient resiliency to receive the end portion 22a of element 22 to provide a good mechanical as well as electrical connection therebetween.

Although element 22 may take substantially any desired form or shape appropriate for the intended use, the element 22 shown in the drawings includes a blade portion 22b having oppositely disposed coplanar faces or surfaces 22c.

Slidably positioned within through opening 12d of body 12 is the end 16a of conduit 16. To effect longitudinal movement of conduit 16, for purposes which will hereinafter be explained, a manually operable slider 24 is fastened thereto as shown at 26. Such slider 24 comprises a depending portion 24a formed with a first opening 24b for loosely receiving conductor 14, as shown in the drawings, and a second opening 24c for snugly receiving the vacuum tube 16. Any appropriate bonding material may be used at 26 to firmly secure the tube 16 to the depending portion 24a of slider 24.

Slider 24 further includes a finger operated extension 24d which, as shown most clearly in FIG. 1 of the drawings, may be formed with a rough or knurled surface 24e, and which is curved to conform to the general shape or contour of body 12. The depending portion 24a of slider 24 extends through an opening or cavity 12f formed in the side wall of body 12 as shown most clearly in FIG. 3 of the drawings.

The subject medical tool is used by a physician, by being held like an ordinary pen or pencil. As such, the physician is able to direct the cauterizing blade 22 as well as the vacuum tube 16 to the precise location. When it is desired to evacuate the space wherein the cauterization is to take place, it is merely necessary for the physician, by manipulation of his thumb or forefinger, to extend the tube 16 by sliding the slider 24 to its forward position as shown in FIG. 6. This places the end of tube 16 adjacent the cauterizing blade 22 so as to evacuate the area to be cauterized.

Following such evacuation, in order for the physician to properly view the area being cauterized and to insure that the cauterizing blade 22 is properly positioned, the vacuum tube 16 is retracted to the position shown in FIG. 1, merely by the physician sliding the slider 24 to its rearward position. Thus, the cauterizing blade 22 is unobstructed and can be located at the proper place.

It is thus seen that the present invention provides a medical tool which is simple to manufacture and simple to operate and which is capable of providing optimum effectiveness in cauterizing, while nonetheless providing evacuation for cleaning the area to be cauterized. Further, the evacuating elements offer no obstruction to the cauterizing function by virtue of being retractable at will.

Although I have shown and described certain specific embodiments of my invention, I am well aware that many modifications thereof are possible.

I claim:

1. A medical tool comprising in combination, an elongated body formed with first and second through openings and a cavity in a side wall thereof,

cauterizing means comprising an electrical conductor within said first through opening and a cauterizing blade extending from one end of said first opening and connected in circuit with said conductor, a tube slideably positioned within said second through opening and adapted to be connected to a vacuum source, and

a slider extending through said cavity in said body and fastened to said tube to be manually operated exteriorly of said body to extend and retract said tube to and from adjacent said cauterizing blade.

2. A medical tool according to claim 1, wherein said slider is formed with a depending portion which extends through said cavity and is fastened to said tube within said second through opening.

3. A medical tool according to claim 2, wherein said slider has an extension disposed at an angle to said depending portion to cover said cavity in said side wall to be manually operable for extending and retracting said tube.

4. A medical tool according to claim 3, wherein said body is generally cylindrical and said extension is arcuate to conform to said external shape of said body and to cover the cavity in the side wall thereof.

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