

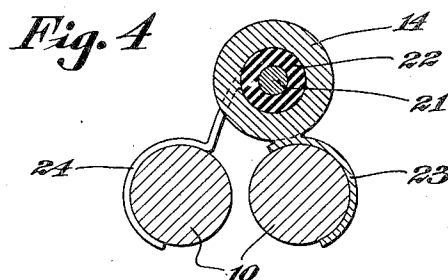
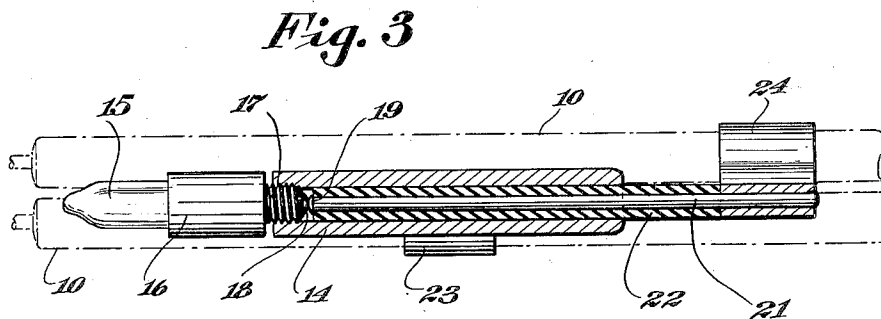
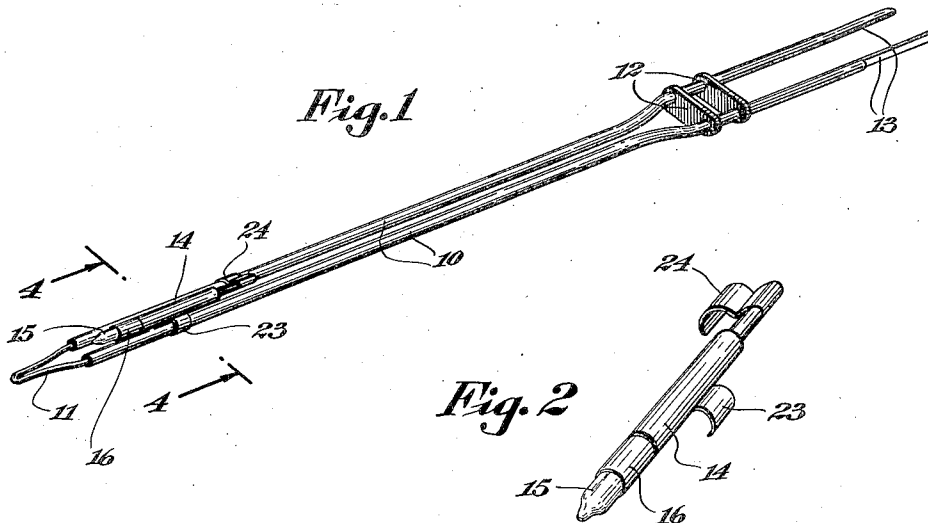
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A. KLEINE

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ILLUMINATED CAUTERY ELECTRODE

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INVENTOR
Arnold Kleine,
BY *Fredrick Gruenfeld*
ATTORNEY

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ILLUMINATED CAUTERY ELECTRODE

Arnold Kleine, Flushing, N. Y., assignor to Com-
prex Oscillator Corp., New York, N. Y., a cor-
poration of New York

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4 Claims. (Cl. 240—2)

My present invention relates generally to surgi-
cal instruments, and has particular reference to
cautery electrodes.

It is a general object of my invention to pro-
vide a cautery electrode with an inexpensive,
compact, and efficient illuminating device to per-
mit the cauterizing operation to be conducted
under illumination.

The type of cautery electrode to which my in-
vention refers consists essentially of two rigidly
spaced conducting rods, with an operative cauter-
izing loop or similar electrode bridging the for-
ward ends of the rods. At their rear ends the
rods are adapted to be connected to the opposite
terminals of a suitable source of electric current,
preferably and usually by removably associating
these rear ends with a clamping device having
two jaws or the like mutually insulated from each
other and connected to the opposite terminals of
the current source, respectively. A typical
cautery electrode of this type is illustrated in Let-
ters Patent No. 1,899,220, issued February 28, 1933.

One of the features of my invention lies in the
provision of an arrangement which permits illu-
mination to be effected without requiring recourse
to a separate lamp tube or similar stem. The use
of such a separate instrumentality is often un-
satisfactory because it requires separate insertion
into the cavity in which the cauterization is to be
performed; and usually this requires, in turn,
that an exterior endoscopic sheath be employed.

My invention is predicated upon a realization
of the fact that the voltage of a cauterizing cur-
rent is of such a small magnitude that the rods of
the cautery electrode may, themselves, serve ef-
ficiently to conduct the current to a miniature
electric lamp or similar illuminating device. Ac-
cordingly, my invention consists, briefly, in the
combination of the conventional type of cautery
electrode, with an illuminating device which is
carried by the rods of the electrode near the for-
ward ends of the rods and in a manner which
electrically connects the illuminating device di-
rectly to the rods so as to shunt the device across
the operative loop.

In a preferred embodiment, the illuminating
device is so constructed and arranged that it may
be removably applied to the rods of the cautery
electrode. In this way, the present invention may
be readily adapted to cautery electrodes that are
already manufactured and in use; and the pres-
ent type of illuminating device may be manufac-
tured and sold as an attachment for the conven-
tional type of cautery electrode.

In accordance with my invention, the illumi-

nating device preferably consists of a lamp bulb,
a socket for the bulb, and a pair of conductive
supports carried by the socket and engaging the
rods of the electrode, respectively; the supports
being mutually insulated from each other and
being in electrical connection, respectively, with
the opposite socket terminals. Preferably, the
supports are in the form of resilient conductive
clips which permit the device to be readily
snapped into and out of engagement with the elec-
trode rods.

I achieve the foregoing objects, and such other
objects as may hereinafter appear or be pointed
out, in the manner illustratively exemplified in
the accompanying drawing, wherein—

Figure 1 is a perspective view of a cautery elec-
trode equipped with an illuminating device of the
present character;

Figure 2 is a perspective view of the preferred
form of illuminating device, shown by itself;

Figure 3 is a greatly enlarged longitudinal sec-
tion through the illuminating device, showing the
electrode rods in dot-and-dash lines; and

Figure 4 is an enlarged cross-sectional view
taken substantially along the line 4—4 of Figure 1.

In the drawing, I have shown a typical cautery
electrode consisting of the two parallel and rigidly
spaced rods 10, with the V-shaped cauterizing
loop or operative electrode 11 bridging their for-
ward ends. At the rear I have shown the rods
10 bent into a slightly increased spaced relation-
ship and rigidly bound together by the braces 12
which are of suitable insulating material. The
free rear ends 13 are adapted to be associated
with a suitable handle or clamping device in any
desired manner, e. g., in the manner disclosed in
the aforementioned patent, this installation of
the electrode serving to pass a low voltage cur-
rent through the rods 10 and through the loop 11,
thereby causing a heating of the latter.

The illuminating device which I have illus-
trated, and which is constructed in accordance
with my invention, consists of the tubular me-
tallic element 14 having an interiorly threaded
bore at its forward end serving as the socket for
the bulb 15. The latter is preferably assembled in
association with the metallic sleeve 16, during
manufacture, and the sleeve 16 is provided with
the rearwardly projecting threaded plug 17
adapted to be screw-threaded into engagement
with the socket. The lateral sides of the plug 17
are connected, in well known manner, with one
end of the lamp filament; and the other end of the
filament is connected to the central tap 18 on the

rear end of the plug 17, this tap being insulated from the body of the plug 17.

The socket terminals are composed, similarly, of the tubular element 14 itself (which establishes connection with the side wall of the plug 17), and the center contact 19 which lies at the base of the socket and is surrounded by the insulating sleeve 22. The contact 19 is encountered by the central tap 18 of the lamp when the latter is screwed into the socket.

A conductive rod 21 extends rearwardly from the contact 19 and is surrounded by the insulating sleeve 22 which maintains an insulated relationship between the two socket terminals.

In accordance with my invention, conductive supports 23 and 24 are carried by the lamp socket, the support 23 being in electrical connection with the socket terminal which is constituted by the sleeve 14, and the support 24 being in electrical connection with the socket terminal 19. The latter electrical connection may be established in any suitable manner, as by soldering or similarly connecting the rear end of the rod 21 to the support 24.

It is to be noted that the supports 23 and 24 extend in opposite lateral directions, and the reason for this is that one of the supports is designed to engage over one of the rods 10 while the other support is adapted to engage over the other rod 10. A preferred mode of construction consists in forming the supports 23 and 24, at their ends, in the form of semi-circular resilient clips which may be snapped into and out of engagement with the rods 10, thereby establishing a firm but removable frictional engagement and contact between the rods 10 and the opposite socket terminals.

It is important, of course, that the sleeve 14 and the other portions of the socket in electrical connection therewith be maintained out of contact with the electrode wire with which the support 24 engages. This is preferably accomplished by associating the supports with the lamp device in the manner illustrated in the drawing, whereby the lamp assumes a position more closely adjacent to one of the rods than to the other. This manner of mounting the device has the added advantage of not interfering with the air gap between the rods 10, this gap being a desirable thing from the standpoint of heat dissipation.

Obviously, the manner of constructing the present supports may be varied by those skilled in the art. The device illustrated, for example, need not be constructed so as to permit a resilient snapping and unsnapping of the supports with respect to the electrode rods. The device may be applied and removed from the cautery electrode by an endwise movement over the front end of the electrode.

The advantage of the device lies in its extreme simplicity and the ease with which it may be associated with the cautery electrode. It is to be noted that the lamp socket and lamp bulb constitute a cylindrical assembly having an overall diameter substantially no greater than the diameter of either of the rods 10. By arranging for the association of this cylindrical illuminating device with the electrode rods in a manner which arranges the device close to one of the rods, and parallel thereto, a compact instrumentality results which is readily insertable into most of the body cavities in which cauterization is to be performed. From this aspect, the invention is not restricted to the removable nature of the illuminating device; and it will be obvious that, if desired, the

device may be made a permanent part of the electrode assembly.

The outstanding and advantageous characteristic of the present device and assembly lies in the fact that the illuminating instrumentality is straddled across the electrode rods, simultaneously deriving mechanical support therefrom and electrical current for operating the lamp.

In general, it will be understood that changes in the details, herein described and illustrated for the purpose of explaining the nature of my invention, may be made by those skilled in the art without departing from the spirit and scope of the invention as expressed in the appended claims. It is, therefore, intended that these details be interpreted as illustrative, and not in a limiting sense.

Having thus described my invention, and illustrated its use, what I claim as new and desire to secure by Letters Patent is—

1. An illuminating device for a cautery electrode in which a pair of rigidly spaced conducting rods have an operative cauterizing loop bridging their forward ends, said device comprising a lamp bulb, a socket for the bulb, and means for mounting the socket closely alongside of said rods with its axis parallel to said rods and in shunted electrical relation to said rods; said means comprising a pair of conductive supports carried by said socket and adapted to engage said rods, respectively, and means for connecting said supports in mutually insulated relation to the socket terminals, respectively.

2. An illuminating device for a cautery electrode in which a pair of rigidly spaced conducting rods have an operative cauterizing loop bridging their forward ends, said device comprising a lamp bulb, a socket for the bulb, and means for mounting the socket closely alongside of said rods with its axis parallel to said rods and in shunted electrical relation to said rods; said means comprising a pair of conductive supports carried by said socket and adapted to removably engage said rods, respectively, and means for connecting said supports in mutually insulated relation to the socket terminals, respectively.

3. An illuminating device for a cautery electrode in which a pair of rigidly spaced conducting rods have an operative cauterizing loop bridging their forward ends, said device comprising a lamp bulb, a socket for the bulb, and means for mounting the socket closely alongside of said rods with its axis parallel to said rods and in shunted electrical relation to said rods; said means comprising a pair of resilient clips carried by said socket and adapted to be removably engaged around said rods, respectively, and means for connecting said clips in mutually insulated relation to the socket terminals, respectively.

4. An illuminating device for a cautery electrode in which a pair of rigidly spaced conducting rods have an operative cauterizing loop bridging their forward ends, said device comprising a lamp bulb, a socket for the bulb, and means for mounting the socket closely alongside of said rods with its axis parallel to said rods and in shunted electrical relation to said rods; said means comprising a conductive support connected to one socket terminal and adapted to engage around one of said rods, a second conductive support connected to the other socket terminal and adapted to engage around the other of said rods and means for insulating said supports from each other.