United States District Court,
W.D. Pennsylvania.

ERBE ELEKTROMEDIZIN GMBH, Erbe USA Inc., and Conmed Corporation,
Plaintiff.
v.
CANADY Technology, LLC and Dr. Jerome Canady,
Defendants.

March 5, 2007.

Background: Patent assignees sued competitor, alleging infringement of patents directed to electrosurgical units and methods for achieving argon gas-enhanced electrocoagulation. Parties participated in a Markman hearing.

Holdings: The District Court, Donetta W. Ambrose, Chief Judge, held that:
(1) term "endoscope" meant a rigid or flexible medical instrument with more than one working channel;
(2) term "working channel" meant a channel of an endoscope that had an opening at each end through which a device could be inserted;
(3) term "predetermined minimum safety distance" to mean the minimum distance to prevent an electrode from coming into contact with the tissue;
(4) term "optical means" meant an optical lens used to view the distal end of the flexible tube and the tissue to be coagulated;
(5) term "not directed, non laminar stream," meant a diverging gas stream which need not be specifically aimed at the tissue to be coagulated;
(6) term "eschar" meant a dry scab formed after a burn;
(7) necessary structure for means-plus-function term "transferring electrical energy at a predetermined radio frequency range" was a radio frequency (RF) drive, a resonant output circuit, and a pencil having a needle-like electrode extending into a nozzle; and
(8) term "transferring electrical energy at a predetermined radio frequency range as arcs in ionized conductive pathways at a predetermined power level within the gas jet in an electrical circuit which includes the tissue" meant transferring electrical energy, at a predetermined radio frequency from RF drive to a resonant output circuit to the pencil to the needle-like electrode, which extended into the nozzle, to the tissue as arcs in ionized conductive pathways in a gas jet.

Claims construed.

4,781,175, 5,720,745. Construed.

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CLAIMS CONSTRUCTION OPINION and ORDER

DONEATTA W. AMBROSE**, Chief Judge.**

I. *BACKGROUND*

Plaintiff Erbe Elektromedizin GmbH ("Erbe") manufactures and sells flexible endoscopic probes for argon plasma FN1 coagulation ("APC"). Erbe is the owner, by assignment, of Patent No. 5,720,745 ("Patent '745") issued on February 24, 1998, titled "Electrosurgical Unit and Method for Achieving Coagulation of Biological Tissue." It was filed as a continuation-in-part of Erbe's prior Application Serial No. 981,009 ("the '009 application"),FN2 and had a six year prosecution history. Plaintiff Erbe USA, Inc. is a subsidiary of Erbe. Plaintiff ConMed Corporation ("Conmed") is in the business of manufacturing and selling electrosurgical generators and related devices, including argon gas-enhanced electrocoagulation equipment. ConMed is the owner, by assignment, of Patent No. 4,781,175 ("'175 patent"), which was issued on November 1, 1988, titled "Electrosurgical Conductive Gas Stream Technique of Achieving Improved Eschar for Coagulation." The ' 175 patent was filed on April 8, 1986, by Francis T. McGreevy, Carol Bertrand, and Karl W. Hahn, and expired on April 8, 2006.

FN1. Ionized gas is called plasma.

FN2. The '009 application was filed on November 24, 1992. The '009 application was rejected by the USPTO on August 2, 1993. After losing an appeal of the rejection, ERBE filed the continuation-in-part application ('879 C-I-P) on December 28, 1995, that led to the issuance of the '745 patent.

On January 21, 2000, Erbe entered into an agreement with ConMed to license several ConMed patents, including the '175 patent. Under the Agreement, Erbe was licensed to manufacture and sell various argon gas-enhanced electrocoagulation equipment, including electrosurgical generators and flexible probes related to argon gas-enhanced electrocoagulation.

Defendant Canady Technology markets and sells single use disposable flexible APC probes that may be connected to an adapter that in turn is connected to an Erbe APC electrosurgical unit. Defendant Dr. Jerome Canady is the CEO and partial owner of Canady Technology. (The Canady Defendants are hereinafter referred to as "Canady.") Erbe has sued Canady, *inter alia,* for infringement of the '745 patent. (Docket No. 18, Count I). ConMed has sued Canady, *inter alia,* for infringement of the '175 patent. (Docket No. 18, Count II)

"Determination of patent infringement is a two-step process." Leoutsakos v. Coll's Hospital Pharmacy, Inc., Civ. No. 3-1533, 2004 WL 1010162 at * 2 (Fed.Cir. May 4, 2004). "First, the court determines the scope and meaning of the patent claims asserted...." Leoutsakos, 2004 WL 1010162 at *2, *quoting,* Cybor Corp. v.

FAS Techs, Inc., 138 F.3d 1448, 1454 (Fed.Cir.1998). Second, the court compares the properly construed claims with the allegedly infringing device. Id.

We are at the first step of the process. The parties participated in a Markman hearing. The task now before me is to properly construe the claims in both the '745 and '175 patents.

II. *GENERAL PRINCIPLES OF CLAIM CONSTRUCTION*

Construction of a patent begins with the words of the claim. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). "[T]he words of a claim are 'generally given their ordinary and customary meaning.' " Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005), *quoting* Vitronics, 90 F.3d at 1582. "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." Id. at 1313, *citing* Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed.Cir.2004). In cases where the terms are not readily apparent, a court will consider the intrinsic evidence and extrinsic evidence. Id. at 1314.

The intrinsic evidence consists of the claims set forth in the patent itself, together with the specifications, the embodiments and the prosecution history. Id. at 1314. "[T]he context in which a term is used in the asserted claim can be highly instructive." Id. The specification " 'is the single best guide to the meaning of a disputed term' " and is usually dispositive. Id. at 1315, *quoting* Vitronics, 90 F.3d at 1582. Where the specification reveals a "special definition given to a claim terms by the patentee that differs from the meaning it would otherwise possess," the inventor's lexicography governs. Id. at 1316, *citing,* CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed.Cir.2002). A court should also consider the prosecution history if it is in evidence. Id. at 1317, *citing* Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed.Cir.1995). The prosecution history, "consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent." Id. at 1317. "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Id., *citing,* Vitronics, 90 F.3d at 1582-83.

"In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term." Vitronics, 90 F.3d at 1583. Where the ambiguities cannot be resolved by a consideration of the intrinsic evidence alone, however, the court may consider extrinsic evidence. Id. Expert testimony, dictionaries, and learned treatises are helpful sources of extrinsic evidence. Phillips, 415 F.3d at 1317. Extrinsic evidence is less significant than intrinsic evidence. Id. Thus, an expert's testimony that is at odds with the written record of the patent should be discounted. Id. at 1318, *quoting,* Key Pharms. v. Hercon Labs. Corp., 161 F.3d 709, 716 (Fed.Cir.1998).

"When construing patent claims, there is a heavy presumption that the language in the claim carries its ordinary and customary meaning amongst artisans of ordinary skill in the relevant art at the time of the invention." Housey Pharmaceuticals, Inc. v. Astrazeneca UK Ltd., 366 F.3d 1348, 1353-54 (Fed.Cir.2004). A court may also consider dictionaries and learned treatises in order to gain insight into the customary meaning accorded a term. Id., *citing,* Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202-03 (Fed.Cir.2002).

[1] Pursuant to the doctrine of "claim differentiation," limitations contained in dependant claims are not to

be read into the independent claims from which they depend. Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed.Cir.1999). In other words, dependent claims may aid in interpreting the scope of the claims from which they depend, Laitram Corp. v. NEC Corp., 62 F.3d 1388, 1392 (Fed.Cir.1995), because the court should "not interpret an independent claim in a way that is inconsistent with a claim which depends from it." Wright Med. Tech., Inc. v. Osteonics Corp., 122 F.3d 1440, 1445 (Fed.Cir.1997).

[2] [3] [4] Claim language drafted in a "means-plus-function" format is limited by statute. 35 U.S.C. s. 112, para. 6. A claim element is presumed to be a means-plus-function limitation if the word "means" appears in the claim element. Personalized Media Communications, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 703 (Fed.Cir.1998). A claim element subject to s. 112, para. 6 must be construed as covering the structure disclosed in the specification that performs the claimed function and all equivalents of that structure. 35 U.S.C. s. 112, para. 6; Sofamor Danek Group, Inc. v. DePuy-Motech, Inc., 74 F.3d 1216, 1220 (Fed.Cir.1996). "Therefore, s. 112, para. 6 requires both identification of the claimed function and identification of the structure in the written description necessary to perform that function. The statute does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim. Nor does the statute permit incorporation of structure from the written description beyond that necessary to perform the claimed function." Micro Chemical, Inc. v. Great Plains Chem. Co., Inc., 194 F.3d 1250, 1258 (Fed.Cir.1999), *citing,* Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed.Cir.1999). On the other hand, if the word "means" does not appear in the claim element, there is a rebuttable presumption that s. 112, para. 6 does not apply. CCS Fitness, 288 F.3d at 1369. The presumption can be rebutted "by showing that the claim element recite[s] a function without reciting sufficient structure for performing that function." Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 469 F.3d 1005, 1023 (Fed.Cir.2006), *citing,* Watts v. XL Sys. Inc., 232 F.3d 877, 880 (Fed.Cir.2000). The presumption flowing from the absence of the term 'means', however, is "one that is not readily overcome." Id., *citing,* Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed.Cir.2004).

There are two patents before me awaiting construction. I begin with the ' 745 patent.

III. ***THE*** '745 PATENT

According to the Amended Complaint, the '745 patent claims are directed to electrosurgical units and methods for achieving argon gas-enhanced electrocoagulation and, in particular, to the use of flexible endoscopic probes for gastrointestinal and tracheobronchial argon plasma coagulation. The '745 patent includes forty-eight claims. Ten of the forty-eight claims (Claims 1, 3, 4, 11, 13, 35, 37, 38, 39, and 41) are being asserted against Canady. Two claims are independent and eight are dependent. Claim 1 is independent and Claims 3, 4, 11, and 13 are dependent on Claim 1. Claim 35 is independent and Claims 37, 38, 39, and 41 are dependent on Claim 35. The parties disagree as to the interpretation of 15 claim terms contained therein.

A. '***745 Patent Claims***

Claim 1 provides as follows:

1. An electrosurgical unit for achieving coagulation of tissue, comprising:

an **endoscope** having:

a proximal end and an opposing distal end, and

a plurality of **working channels** extending between the two ends, each channel having a predetermined diameter and having an opening at each end;

a flexible, hollow tube having a longitudinal axis disposed in one of the working channels of the endoscope, the tube having a diameter which is less than the diameter of the channel through which it is inserted, the tube, including:

a distal end and an opposing proximal end, each end of the tube having an opening, the tube having an inside and an outside,

the tube positioned within the endoscope such that a portion of the tube including the opening at the distal end of the tube protrudes beyond the opening at the distal end of the endoscope and such that a **gas stream** exits from the opening at the distal end of the tube in order to establish an **inert gas atmosphere** between the distal end of the tube and the region of the tissue to be coagulated, and

an electrode for ionizing the inert gas positioned inside the tube and offset from the opening at the distal end of the tube a **predetermined minimum safety distance,** such that the electrode can not come in contact with the tissue;

a source of pressurized ionizable, inert gas connected to the opening at the proximal end of the tube and pressurized such that a stream of gas flows from the source, through the tube and exits through the opening at the distal end of the tube at **a low flow rate** of **less than about 1 liter/minute;**

optical means positioned within a second working channel of the endoscope and protruding sufficiently from the opening at the distal end of the second channel of the endoscope to view the distal end of the tube and the tissue to be coagulated; and

the portion of the tube protruding from the distal end of the endoscope positioned such that the longitudinal axis of the tube is **arranged sidewardly of the area of tissue to be coagulated.**

See, '745 patent (Docket No. 42, Ex. 1)(emphasis added to disputed claim terms). Claim 3 provides as follows:

3. The electrosurgical unit for achieving coagulation of tissue of claim 1, wherein **the opening at the distal end of the tube positioned longitudinally from the tube.**

See, '745 patent (Docket No. 42, Ex. 1)(emphasis added to disputed terms).

Claim 35 provides as follows:

35. A method for coagulating tissue during endoscopic surgery comprising the following steps:

providing a surgical endoscope, the **endoscope** having a proximal end, and opposing distal end, an opening at each end, and a plurality of **working channels,** extending between the openings at each end, each channel having a predetermined diameter, the endoscope having a flexible, hollow tube having a longitudinal axis inserted through one of the working channels of the endoscope, the tube having a diameter

which is less than the diameter of the channel through which it is inserted, the tube having a distal end, an opposing proximal end connected to a source of ionizable, inert gas, an opening at each end, a channel extending between the two ends, an inside, an outside; and an electrode, arranged stationarily inside the tube and being offset from the opening at the distal end of the tube a **predetermined minimum safety distance** in such a manner that the electrode can not come into contact with the tissue; the tube positioned within the working channel of the endoscope such that the opening at the distal end Of the tube protrudes beyond the opening at the distal end of the endoscope, and can be observed through **optical means** provided at or near the distal end of said endoscope;

supplying the inert gas from the source of said gas through the tube to the distal end opening of said tube with such a **low flow rate,** that gas exiting through said distal end opening is a **not directed, non laminar stream** but forms an **inert gas atmosphere** between the distal end of the tube and the region of the tissue to be coagulated, which the distal end opening is maintained at a distance from the tissue to be coagulated in which situation the area of tissue to be coagulated is **positioned sidewardly of the extended longitudinal axis of the said protruding end portion of said tube;**

ionizing said inert gas atmosphere by activating a high frequency voltage source connected to the electrode by establishing an electric field in the inert gas atmosphere between the electrode and the **sidewardly arranged area of tissue** to be coagulated; and

supplying an electric current by means of a plasma jet as a function of the direction of said electric field and the electric conductivity of the tissue surface to be coagulated, and **coagulating an area of the tissue sidewardly of the extended longitudinal axis** of the protruding end of the tube while the distal end opening of the tube is maintained in a substantially stationary position at a predetermined distance from the tissue to be coagulated, and while the ionized gas is being supplied through the distal end opening of the tube as a **not directed,** non laminar stream with a **low flow rate.**

See, '745 patent (Docket No. 42, Ex. 1)(emphasis added to disputed terms).

Claim 38 provides as follows:

38. The method as claimed in claim 35, whereby the stream of gas exits through said distal end opening with a flow rate of **less than about one liter per minute.**

See, '745 patent (Docket No. 42, Ex. 1)(emphasis added to disputed term).FN3

FN3. The remaining dependent claims provide as follows:
4. The electrosurgical unit for achieving coagulation of tissue of claim 1, wherein the gas comprising argon.

* * *

11. The electrosurgical unit for achieving coagulation of tissue during endoscopic surgery of claim 1, wherein an endpiece made out of a heat resistant material like ceramics is inserted into a distal end portion of the tube.

* * *

13. The electrosurgical unit for achieving coagulation of tissue during endoscopic surgery of claim 1, whereby the distal end portion of the tube protruding out of the distal end portion of the endoscope is provided with ring shaped markings permitting observation though said optical means haw far the distal end of the tube protrudes out of the distal end of the working channel of the endoscope, into which the tube is

inserted.

* * *

37. The method as claimed in claim 35, whereby a distal end portion of said tube is a tubular end piece made out of a heat resistant ceramic material.

* * *

39. The method as claimed in claim 38, whereby tissue in the gastrointestinal tract is coagulated.

* * *

41. The method as claimed in claim 32, whereby tissue in the tracheobronchial system is coagulated.

Docket No. 42, Ex. 1, Claims 4, 11, 13, 37, 39, and 41.
Each of the disputed claim terms is analyzed below.

1. ***Endoscope***

[5] The first disputed claim term "endoscope" is found in Claims 1 and 35 as set forth above.
Erbe's Proposed Definition: A flexible medical instrument having a plurality of working channels.

Canady's Proposed Definition: A rigid or flexible device having at least one working channel for use in performing surgery and having reliable insulation both externally and in the instrument channel.

(Docket No. 42, pp. 2-3).
a. ***Flexible vs. rigid or flexible***

To begin with, I agree with Defendants that the term "endoscope" is not limited in the claim to a flexible or rigid device. (Docket No. 42, Ex. 1, Claim 1). Furthermore, the specification notes that "[i]n accordance with the invention, an electrosurgical device for achieving coagulation of biological tissue preferably comprises an attachment.... The attachment can be provided on a rigid or flexible endoscope...." Docket No. 42, Ex. 1, col. 2, ll. 17-19, ll. 46-47. The specification further notes that "[i]n accordance with another embodiment of the invention a tube out of electrically not conducting material is arranged in a movable manner in the working channel, which tube is preferably a flexible hose, so that in the case of a rigid and also in the case of a flexible endoscope a desired alignment of the distal end of the hose or a tilting of the end of the hose can be performed,...." *Id*. at col. 3, ll. 1-7.

Erbe suggests that the invention is specifically directed to endoscopic uses in the gastrointestinal tract. (Docket No. 54, pp. 16-17 and Docket No. 68, pp. 6-8). While it is true that the specification describes specific embodiments of the invention as concerning the gastrointestinal tract, such example is non limiting. *See,* Phillips, 415 F.3d at 1323 (warning against confining the claims to those listed in the embodiments). For example, Erbe directs the Court's attention to the following sentence in the specifications: "In the case of the invention which allows endoscopic use in the gastrointestinal tract...." Docket No. 68, p. 7, *quoting,* Docket No. 42, Ex. 1, col. 6, ll. 58-61. The plain and unambiguous reading of this sentence leads to the conclusion it may be used in the gastrointestinal tract, as well as other endoscopic surgeries. In fact, the specifications disavow limiting the term endoscope to a flexible endoscope: "Although the invention has been described with reference to a particular arrangement of parts, features and the like, these are not intended to exhaust all possible arrangements or features, and indeed many other modifications and variations will be ascertainable to those of skill in the art." Docket No. 42, Ex. 1, col. 11, ll. 4-8. Consequently, I will not read such a limitation into the term endoscope. As such, I construe the term endoscope, in part, to mean a rigid or flexible medical instrument.

b. ***Plurality of working channels vs. having at least one working channel***

The parties further dispute whether an endoscope comprises a plurality of working channels or has at least one working channel. Docket No. 66, p. 28; Docket No. 68, p 12. The claim language itself is unambiguous in defining an endoscope as having "a plurality of working channels...." Docket No. 42, Ex. 1, col. 11, l. 14 and col. 15. Because I find this language unambiguous, I need not look to any further intrinsic evidence to define the term. A plain, ordinary and customary reading of this language means that there is more than one working channel.

c. ***Reliable insulation both externally and in the instrument channel***

Canady argues that the term endoscope should include reliable insulation both externally and in the instrument channel. Docket No. 66, p. 29. The claim language itself does not reference insulation. Both parties agree, however, that the specification states: "For argon plasma coagulation only endoscopes should be used whose electric insulation is absolutely reliable both exteriorly and in the instrument channel." Docket No. 42, Ex. 1, col. 10, ll. 21-23. I recognize that there is a fine line between "using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim ..." Phillips, 415 F.3d at 1323, *citing* Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed.Cir.1998). I agree with Erbe that reading such a limitation into the claim term endoscope would be importing a limitation from the specification. Consequently, I will not read such a limitation into the term.

According, the claim term endoscope is construed to be a rigid or flexible medical instrument with more than one working channel.

2. ***Working Channels***

[6] The second disputed claim term "working channels" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: A channel of an endoscope through which a device (e.g., flexible endoscopic tubes, optical means and/or surgical instruments) may be inserted.

Canady's Proposed Definition: A channel into which a surgical instrument may be inserted.

(Docket No. 42, p. 1). In attempting to construe the term "working channels," I turn to the claim language. An endoscope, as defined by Claim 1, has "working channels" with "an opening at each end" of every channel. Docket No. 42, Ex. 1, col. 11, ll. 14-16. The clear purpose of which is to allow for the insertion of tubes (col. 11, l.17), optical means (col. 11, l.44-48), and surgical instruments. Canady cites to the prosecution history, and specifically the '009 application, as support for its definition. (Docket No. 66, p. 22). Because I find that the language of the claim to be unambiguous, I need not consult the prosecution history. According, the claim term "working channel" is construed to mean a channel of an endoscope that has an opening at each end through which a device may be inserted.

3. ***Gas Strea774m*** FN4

FN4. Erbe contends that the term "gas stream" and "inert gas atmosphere" should be construed in reference to one another. While the terms are distinct, I recognize that words are not to be read in a vacuum, but must be read in connection with the entire patent.

[7] The third disputed claim term "gas stream" is found in Claim 1 as set forth above.

Erbe's Proposed Definition: A stream of gas that exits from the opening at the distal end of the flexible tube and has flow properties (e.g., non laminar and not directed) that allow formation of an inert gas atmosphere between the distal end of the flexible tube and the tissue to be coagulation.

Canady's Proposed Definition: A flow of gas.

(Docket No. 42, p. 3). Canady argues that Erbe tries to read multiple limitations into the term "gas stream" which should not be permitted because the limiting terms appear expressly in other parts of the claim, such that they need not be read into the claim term. Furthermore, Canady argues that reading those limiting terms into the term "gas stream" would render the limiting terms meaningless and superfluous when they appear in the other parts of the claim. (Docket No. 66, p. 23). I agree with Canady. In fact, in its Reply Brief, Erbe agrees that its interpretation of the term "gas stream" may incorporate limitations that appear elsewhere in the claims. (Docket No. 68, p. 12, n. 3). A person of ordinary skill in the art would understand that a gas stream to be a flow of gas. Consequently, the claim term "gas stream" is construed to mean a flow of gas.

4. ***Inert Gas Atmosphere***

[8] The fourth disputed claim term "inert gas atmosphere" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: A cloud of inert gas formed by a not directed, nonlaminar flow of inert gas.

Canady's Proposed Definition: A gas cloud, i.e., the rather small space between the electrode and the tissue to be coagulated is completely filled by an inert gas cloud in order to remove air, but not in order to perform a substantial mechanical action to fluid at the tissue.

(Docket No. 42, p. 3). Interestingly, the parties both generally define the term "inert gas atmosphere" as a cloud of gas. *Id*. I agree with Erbe that the term should also include the qualifying term "inert." Beyond that, however, I find that Erbe is attempting to read limitations into the term from the specifications, which is not permitted. Phillips, 415 F.3d at 1323. Canady, on the other hand, defines the term and then attempts to define it more specifically, which I find to be duplicative and unnecessary. Consequently, I construe the claim term "inert gas atmosphere" to mean a cloud of inert gas.

5. ***Predetermined Minimum Safety Distance***

[9] The fifth disputed claim term "predetermined minimum safety distance" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: The minimum distance between the electrode and the tissue to be coagulated that allows the electrode to operate in a safe manner.

Canady's Proposed Definition: A sufficient distance to prevent an electrode from coming into contact with the tissue under any circumstances; the distance being greater than 2 mm.

(Docket No. 42, p. 5). From the claim language itself, it is evident that the electrode cannot come in contact

with the tissue. *See,* (Docket No. 42, Ex. 11, col. 1, ll. 35-37 and col. 15, ll. 44-46). As a result, I agree with Canady to the extent that the term is construed to mean the minimum distance to prevent an electrode from coming into contact with the tissue.

I do not agree with Canady, however, that the term should be construed with the further limitation of "the distance being greater than 2 mm." Canady's looks to the prosecution history to support this limiting definition. (Docket No. 66, pp. 25-26). After a review of the cited documents (Docket No. 63, Exs. 16 and 17), I am not persuaded that Erbe characterized the predetermined minimum safety distance as being greater than 2 mm. Consequently, I construe the claim term "predetermined minimum safety distance" to mean the minimum distance to prevent an electrode from coming into contact with the tissue.

6. *Low Flow Rate*

[10] The sixth disputed claim term "low flow rate" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: A flow rate that causes the gas exiting through the opening at the distal end of the flexible tube to be a not directed, non laminar stream that forms an inert gas atmosphere.

Canady's Proposed Definition: Much smaller than one liter per minute and producing flow velocities less than 19 km/hour.FN5

FN5. I note that this proposed construction differs from the claim terms chart. In its Brief, Canady added the additional phrase "and producing flow velocities less than 19 km/hour," to the proposed construction. (Docket No. 66, p. 27). Erbe responded to the newly proposed construction in its Reply Brief. (Docket No. 68, p. 15). As a result, I will consider such proposed construction.

(Docket No. 42, p. 7). The claim language set forth in Claim 1 describes the characteristics of a low flow rate as being "less than about 1 liter/minute." Docket No. 42, Ex. 1, col. 11, ll. 42-43. Erbe's proposed construction ignores the plain claim language in Claim 1, which defines the characteristics of the term as a rate "of less than about 1 liter/minute." Docket No. 42, Ex. 1, col. 11, ll. 42-43. The claim language set forth in Claim 35 describes a low flow rate in terms of what it produces: "a not directed, non laminar stream...." *Id*. at col. 16, l. 14. Canady's proposed construction ignores this description. Consequently, I turn to the specification to determine the proper construction.

The abstract provides the following: "Argon or another inert gas is supplied from a source of gas through the tube to the exit opening with such a flow rate that gas exiting through the exit opening is a non laminar stream which forms an inert gas atmosphere...." *Id*. at Abstract. Canady argues, however, that the term "much smaller" should be included in the construction. (Docket No. 66, p. 27.) I disagree. While it is true that the specification uses the term "much smaller," FN6 using this limiting term to construe "low flow rate" would be importing an impermissible limitation. Phillips, 415 F.3d at 1323 (warning against confining the claims to those listed in the embodiments).

FN6. The specification provides as follows: "Whilst the flow-rate scale for gas volume flow on the argon gas valve used in connection with equipment for open surgery normally indicates flow rates between e.g. 1 to 10 l/min, the actual flow rate is *much smaller* in the case of the described use in combination with an endoscope,.... In a practical embodiment ... the actual flow rate during an above described coagulation was

0.2 l/min. However, depending on desired condition, ... flow rates may be adjusted...." *Id*. at col. 9, ll. 5-22 (emphasis added). Thus, the flow rates may be changes depending on the conditions such that a limitation of "much smaller" is improper. Phillips, 415 F.3d at 1323 (warning against confining the claims to those listed in the embodiments).

Canady next argues that based on the prosecution history, the term "low flow rate" is necessarily defined in terms of the flow velocity. (Docket No. 66, pp. 27-29). Canady points to Erbe's June 27, 1997 Amendment and Response after the patent officer rejected the claims based on Canady's '675 prior art reference. *Id*. at 28, *citing* Docket No. 63, Ex. 19, pp. 10-11. Therein, Erbe attempted to distinguish its low gas flow rate from the prior art in the '675 patent to the patent officer. "A flow rate of 1 liter per minute leads to a flow velocity of 19 m/h," and that "[s]uch velocities in Canady would certainly be classified as laminar jets...." (Docket No. 63, Ex. 19, pp. 10-11). Because the '745 patent is limited to low flow rates that avoid the production of laminar jets and produce only non laminar, inert gas atmospheres (Id.), Canady argues that Erbe necessarily limited its flow velocities to lower than the 19 km/hour it claimed was described in the '675 patent. Thus, Canady argues, the '745 patent is limited, necessarily, to flow velocities less than 19 km/hour. Erbe does not respond to this argument. *See,* Docket No. 54, pp. 22-24, and Docket No. 68, p. 15. I find Canady's rationale set forth in the prosecution history compelling and persuasive.

Consequently, I construe the term "low flow rate" as meaning a rate of flow of less than about 1 liter/minute and producing flow velocities less than 19 km/hour such that the gas exiting through the distal end opening forms a non laminar inert gas atmosphere.

7. *Less Than About 1 Liter / Minute*

[11] The seventh disputed claim term "less than about 1 liter/minute" is found in Claims 1 and 38 as set forth above.

Erbe's Proposed Definition: 1 liter/minute or less than 1 liter/minute.

Canady's Proposed Definition: Less than 1 liter per minute.

(Docket No. 42, p. 9). In viewing the claim language itself, it is clear that the term means less than 1 liter/minute. The prosecution history supports this construction. For example, in viewing the prior art of the '675 patent, the patent examiner noted that Canady fails to specifically disclose a flow rate which is less than 1 liter per minute. (Docket No. 63, Ex. 18, pp. 5-6). In response to this action by the patent officer, Erbe responded that "[a] flow rate of 1 litre per minute leads to a flow velocity of 19 m/h.... Such velocities in Canady would certainly be classified as laminar jets...." (Docket No. 63, Ex. 19, p. 12). Because the '745 patent is limited to low flow rates that avoid the production of laminar jets and produce only non laminar, inert gas atmospheres (Id.), the term "less than about 1 liter/minute" must be construed as less than 1 liter per minute.

8. *Optical Means*

[12] The eighth disputed claim term "optical means" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: An optical lens positioned within a working channel of the endoscope to view the distal end of the flexible tube and the tissue to be coagulated.

Canady's Proposed Definition: A viewing lens that is associated with viewing optics.

(Docket No. 42, p. 11). I agree with Erbe that the term "optical means" is a means-plus-function limitation. A claim element subject to s. 112, para. 6 must be construed as covering the structure disclosed in the specification that performs the claimed function and all equivalents of that structure. 35 U.S.C. s. 112, para. 6; Sofamor Danek Group, Inc., 74 F.3d at 1220. Claim 1 states the function is "to view the distal end of the tube and the tissue to be coagulated." *See,* Docket No. 42, Ex. 1, col. 11, ll. 44-48. Claim 35 states the function is to observe the distal end of the endoscope. *Id*. at col. 15, ll. 44-49. Looking to the specifications, it provides as follows:

The attachment is having such a length that the end of the attachment provided with the orifice can be seen well though a viewing lens at the distal end of the endoscope, which lens is associated with a viewing optics arranged in an instrument channel of the endoscope.

Thus, the structure disclosed is an optical lens. *See, id*. at col. 2, ll. 40-44; col. 4, ll. 1-3.

Canady suggests that the word "second" precede the words "working channel" in Erbe's proposed definition. Docket No. 66, pp. 30-31. Canady looks to Claim 1 for support, wherein it states: "optical means positioned within a second working channel of the endoscope...." Docket No. 42, Ex. 1, col. 11, ll. 44-45. Since Claim 35 does not limit said optical means, I am not persuaded that the word "second" must precede the words "working channel." Furthermore, as Erbe points out, Claim 35 states that the "optical means" is "provided at or near the distal end of said endoscope." *Id*. at col. 15, ll. 48-49. Thus, based on the same, I am not persuaded that "positioned within a working channel" is an appropriate definition either. *See, id*. at col. 4, ll. 1-3. Consequently, I construe the term "optical means" as an optical lens used to view the distal end of the flexible tube and the tissue to be coagulated.

9. *Arranged Sidewardly of the Area of Tissue to be Coagulated (Claim 1) Positioned Sidewardly of the Extended Longitudinal Axis of the Said Protruding End Portion of Said Tube (Claim 35)*

Sidewardly Arranged Area of Tissue (Claim 35)
Coagulating an Area of the Tissue Sidewardly of the Extended Longitudinal Axis (Claim 35)

[13] The next disputed claim terms set forth above all deal with the term "sidewardly." As such, the parties propose the following definition for all four phrases found in Claims 1 and 35.

Erbe's Proposed Definition: Positioned such that the longitudinal axis of the flexible tube is not substantially perpendicular to the surface area of the tissue to be coagulated.

Canady's Proposed Definition: The longitudinal axis of the tube being parallel to and spaced a distance from the tissue to be coagulated.

(Docket No. 42, p. 13, 17-19). After a review of the plain claim language, I find that one of ordinary skill in the art would construe the term "sidewardly" simply to mean to the side of. This is supported by the figures of the specification. *See,* Docket No. 42, Ex. 1, Figs. 4, 15 and 20. Consequently, I will construe the term "sidewardly" to mean to the side of.

10. ***The Opening at the Distal End of the Tube Positioned Longitudinally From the Tube***

[14] The next disputed claim term, "the opening at the distal end of the tube positioned longitudinally from the tube," is found in Claim 3 as set forth above.

Erbe's Proposed Definition: The opening at the distal end of the tube is perpendicular to the longitudinal axis of the distal end of the tube.

Canady's Proposed Definition: The opening of the distal end of the tube is on the longitudinal axis of the tube.

(Docket No. 42, p. 14). In reading the claim language, I find it to be ambiguous. As a result, I turn to the specifications, and in particular the figures showing the opening at the distal end of the tube. *See, e.g.* Docket No. 42, Ex. 1, Figs. 13-15 and 20. This shows that the opening at the distal end of the tube is perpendicular to the tube. Consequently, I construe the term "the opening at the distal end of the tube positioned longitudinally from the tube" to mean the opening at the distal end of the tube that is perpendicular to the tube.

11. ***Not Directed, Non Laminar Stream***

[15] The claim term "not directed, non laminar stream" appears twice in Claim 35.FN7 Erbe defines the terms "not directed ... stream" and "non laminar stream" separately. Canady defines the terms together.

FN7. Claim 35 provides, in relevant part, as follows:
35. A method for coagulating tissue during endoscopic surgery comprising the following steps: ... supplying the inert gas from the source of said gas thorough the tube to the distal end opening of said tube with such a low flow rate, that gas exiting through said distal end opening is a *not directed, non laminar stream* but forms an inert gas atmosphere between the distal end of the tube and the region of the tissue to be coagulated, ... supplying an electric current by means of a plasma jet as a function of the direction of said electric field and the electric conductivity of the tissue surface to be coagulated, and coagulating an area of the tissue sidewardly of the extended longitudinal axis of the protruding end of the tube while the distal end opening of the tube is maintained in a substantially stationary position at a predetermined distance from the tissue to be coagulated, and while the ionized gas is being supplied through the distal end opening of the tube as a *not directed, non laminar stream* with a low flow rate.

Docket No. 63, Ex. 1, col. 15, ll. 53-58, and col. 16, ll. 3-14 (emphasis added).
Erbe's Proposed Definition of "not directed ... stream": A gas stream that is not necessarily oriented toward the surface of the tissue to be coagulated.
Erbe's Proposed Definition of "non laminar stream": A diverging gas stream that allows an inert gas atmosphere to form.FN8

FN8. Erbe changed its proposed definition to eliminate the term "turbulent," because upon further reflection, the term "turbulent" was "inadvertent and incorrect." (Docket No. 68, p. 24). Consequently, I will delete this term from Erbe's proposed definition.

Canady's Proposed Definition of "not directed, non laminar stream": A turbulent, diverging gas stream.

(Docket No. 42, p. 15, 16; Docket No. 66, pp. 34-49). After a review of the claim language, I find that the terms should be read in relation to each other since they are always together in the claim language and describe the type of stream that the invention envisions.
In defining the claim terms, both Erbe and Canady propose some similar language: A diverging gas stream. I agree with the parties that "a diverging gas stream" should be included within the definition. *See,* Docket No. 63, Ex. 1, col. 8, ll. 31-33. I do not agree with Erbe, however, that the additional language "that allows an inert gas atmosphere to form" should be included. Such language would not make sense when read where the claim term appears for the first time in Claim 35. *See,* Docket No. 63, Ex. 1, col. 15, ll. 53-58. *See,* Footnote No. 8. Furthermore, I cannot agree with Canady, that the term "turbulent" should be included in the definition. To read "turbulent" into the construction would be placing a limitation set forth in the specifications into the claim, which is not permitted. Phillips, 415 F.3d at 1323, *citing* Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed.Cir.1998).

I do agree with Erbe, however, that I must give all terms, to the extent possible, meaning. Thus, I do not believe that the word "diverging" conveys the entire meaning of the term "not directed, non laminar stream." "Not directed" must be given some meaning. As such, I turn to the specifications which states that "the surgeon needs not take exactly aim" at the tissue to be coagulated. Docket No. 63, Ex. 1, col. 7, ll. 19-20. The specifications further state that '[i]n many cases it is not necessary to direct the axis of the orifice 9 of the tube 2 or the attachment 11 to the surface to be coagulated, as shown in FIG. 15, since the ionization of the gas stream 17 is normally automatically directed to the adjacent surface of the tissue 18, even if the tissue 18 is in a position as shown in FIGS. 3, 4, 6, 7 and 9 to 12, whilst the axis of the tube 2 or the attachment 11 is oriented as shown in FIGS. 2, 5 and 8.' Consequently, I construe the term "not directed, non laminar stream" as a diverging gas stream which need not be specifically aimed at the tissue to be coagulated.

IV. ***THE*** '175 PATENT

According to the Amended Complaint, the '175 patent claims are directed to electrosurgical units and methods related to argon gas-enhanced electrocoagulation. The '175 patent includes fifty-nine claims. Two of the fifty-nine claims (Claims 1 and 10) are being asserted against Canady. Claim 1 is an independent apparatus claim. Claim 10 is an independent method claim. There are seven claim terms are set forth in the Joint Disputed Claim Terms Chart that are at issue.FN9 (Docket No. 58, Ex. B).

FN9. There are fifteen claim terms set forth in the Joint Disputed Claim Terms Chart, but the following eight claim terms are not in dispute: electrosurgical unit ("ESU"), stroma of tissue, ionized conductive pathways, gas jet, sufficient to clear natural fluids from fluid-perfused tissue, reticulum, arc-created holes penetrating the tissue from a surface of the eschar, and a predetermined flow rate sufficient to clear natural fluids. (Docket No. 58, Ex. B; and Docket No. 66, pp. 47-58).

A. '***175 Patent Claims***

Claim 1 provides as follows:

1. An electrosurgical unit for creating an **improved** eschar in the stroma of tissue, comprising:

means for conducting a predetermined gas not containing oxygen in a jet to the tissue at a predetermined flow rate sufficient to clear natural fluids from fluid-perfused tissue and to substantially

expose the tissue stroma; and **means for transferring electrical energy at a predetermined radio frequency range in ionized conductive pathways at a predetermined power level with the gas jet in an electrical circuit which includes the tissue** to create the eschar**.**

See, '175 Patent (Docket No. 58, Ex. B) (emphasis added to disputed claim terms). Claim 10 provides as follows:

10. A method of electrosurgically creating an **improved** eschar in the stroma of tissue, comprising:

conducting a predetermined gas in a jet to the tissue at a predetermined flow rate sufficient to clear natural fluids from fluid-perfused tissue and to substantially expose the tissue stroma;

transferring electrical energy at a predetermined radio frequency range as arcs in ionized conductive pathways at a predetermined power level within the gas jet in an electrical circuit which includes the tissue; and

creating the **improved** eschar by the effects of the predetermined gas flowing at the predetermined rate and the predetermined power level of energy, the **improved** eschar generally characterized by:

an outer generally uniform depth reticulum of arc-created holes penetrating the tissue from a surface of the eschar, the arc holes having substantially comparable cross-sectional sizes and substantially uniform spatial distribution over the surface of the eschar, the tissue of the reticulum between adjacent arc holes providing pliability of the eschar without cracking; and

a generally uniform-depth thermally desiccated layer separating the arc hole reticulum from the unaffected tissue.

Id. Each of the disputed claim terms is analyzed below.

1. Eschar FN10

FN10. ConMed argues that I should define eschar "simply the same as the disputed term 'improved eschar'...." Docket No. 58, p. 12-13. I disagree. Where possible, I should try to give each term an independent meaning, such that no term is rendered superfluous. In doing so, I must construe the term eschar separate from the term improved eschar, since they appear separately in the claim. *See,* Docket No. 58, Ex. A, col. 36, ll. 67-68, and col. 37, l. 9.

[16] The first disputed claim term "eschar" is found in Claim 1.

ConMed's Proposed Definition: A layer of tissue at its surface which has been altered by electrical current to promote a physiological seal against oozing blood and natural fluids.

Canady's Proposed Definition: A dry scab formed after a burn.FN11

FN11. Contrary to ConMed's position, Canady's proposed definition is not a raised scab formed after a burn but a dry scab formed after a burn. *Compare,* Docket No. 67, p. 12; *with* Docket No. 66, p. 47.

(Docket No. 58, Ex. B, p. 1; Docket No. 66, p. 47). After a review of the claim term itself, it is evident that one of ordinary skill in the art would understand the term eschar to mean a dry scab formed after a burn. *See,* The Random House College Dictionary, p. 450 (Revised Ed.1980)(defining eschar as a hard curst or scab, as from a burn). This is supported by the specifications. Docket No. 58, Ex. A, col. 5, ll. 11-13. Consequently, I construe the term "eschar" to mean a dry scab formed after a burn.

2. *Improved* Eschar

[17] The next disputed claim term "improved eschar" is found in Claims 1 and 10 as set forth above.

ConMed's Proposed Definition: A shallower, more uniform and pliable surface layer of treated tissue that stops bleeding by more effectively sealing the affected tissue.

Canady's Proposed Definition: Indefinite.

(Docket No. 58, Ex. B, p. 5). After a review of the claim term itself, I find the term to be unclear. As a result, I turn to the specification for aid. After a review of the same, I disagree with Canady, however, that the claim term is indefinite.

An improved eschar, as indicated by the specification, is described as follows:

The fulguration eschar created by the present invention is characterized by an outer generally uniform depth reticulum of arc-created holes penetrating the tissue from a surface of the eschar; arc holes which are smaller in size, greater in number, more comparable or uniform in a cross-sectional size, and substantially more uniformly spacially distributed over the surface of the eschar; and a greater wall thickness of tissue between adjacent arc hold which provides pliabilitywithout cracking. Below the arc hole reticulum there exists a generally uniform-depth thermally desiccated layer which separates the arc hole reticulum from the unaffected tissue. The thermal desiccation layer of the fulguration eschar available from the present invention is also shallower in depth compared to the thermal desiccation layer of an eschar created by prior fulguration techniques.... [It] is further characterized by a substantial absence of charring and carbonization in arc hole reticulum.

Docket No. 58, Ex. A, col. 5, ll. 18-40; *see also, id*. at col. 34, ll. 48-65. Based on the same, I construe the term "improved eschar' to mean an eschar (as defined above) that, when compared to electrosurgical fulguration made prior to this invention, is characterized by a shallower arc hole reticulum layer that has more uniform and smaller diameter holes evenly distributed over the surface of the tissue that is substantially free of charring and carbonization with thicker walls of tissue between adjacent arc holes and is shallower, and with a thermal desiccation layer that is relatively thin and more uniform in depth."

3. *Means for Conducting a Predetermined Gas ... in a Jet to the Tissue*

[18] The next disputed claim term "means for conducting a predetermined gas ... in a jet to the tissue" is found in Claim 1 as set forth above.

ConMed's Proposed Definition: A nozzle having length and diameter characteristics which delivers gas in a directed or substantially laminar flow stream or jet.

Canady's Proposed Definition: A gas delivery apparatus, a flexible tube having a plurality of passageways therein, and a pencil having a nozzle.

(Docket No. 58, Ex. B, p. 2). The parties agree that this claim language is written in means-plus-function form and is subject to interpretation under 35 U.S.C. s. 112, para. 6. Docket No. 66, p. 43; Docket No. 58, p. 13. Claim 1 states the function is "conducting a predetermined gas not containing oxygen in a jet to the tissue at a predetermined flow rate sufficient to clear natural fluids from fluid-perfused tissue and to substantially expose the tissue stroma." The parties agree that a gas jet is defined as a directed or substantially laminar flow stream. (Docket No. 58, Ex. B, p. 3).

Next, I turn to the specification to identify the structure necessary for conducting a predetermined gas not containing oxygen in a jet to the tissue at a predetermined flow rate sufficient to clear natural fluids from fluid-perfused tissue and to substantially expose the tissue stroma. The specification provides as follows:

The ESU 40 includes three major components, a pencil 42 which is manipulated by the surgeon, a gas delivery apparatus 44 and an electrosurgical generator (ESG) 46. A flexible cord 48 connects the gas delivery apparatus 44 and the ESG 46 to the pencil 42. The gas delivery apparatus 44 delivers a predetermined gas through a plurality of individual passageways or lumens 50 in the cord 48 to the pencil 42. The gas issues from a nozzle 52 of the pencil 42 in a directed or substantially laminar flow stream or jet.

Docket No. 58, Ex. A, col. 8, ll. 5-14. Under the subheading "Pencil," the specification further provides as follows: "The funnel-like configuration 140 and the length and diameter relationship of the nozzle 52 cause the gases to exit the nozzle 52 in a substantially directed or laminar stream or jet 54 (FIG.4)." FN12 Docket No. 58, Ex. A, col. 10, ll. 29-32. From this I find the necessary structure to be a gas delivery apparatus, a flexible cord with a plurality of individual passageways, and a pencil with a funnel-like configuration and a length and diameter relationship with a nozzle.

FN12. While ConMed acknowledges the importance of this statement, it improperly leaves out the first part of the sentence that provides "[t]he funnel-like configuration." Docket No. 58, p. 14, *citing,* Docket No. 58, Ex. A, col. 10, ll. 30-32.

In attempting to support its proposed definition, ConMed, in its Reply Brief attempts to argue that a pencil and a cord are not necessary to accomplish the specific function. (Docket No. 67, pp. 5-7). I am not persuaded by ConMed's argument. As set forth in ConMed's Opening Brief, "the structure corresponding to this function is set forth in the specification of the '175 patent: electrosurgical unit (ESU) 40 having *inter alia* a gas delivery apparatus 44 and **a pencil** 42 that is provided with nozzle 52 for delivering gas in a directed or substantially laminar stream." Docket No. 58, pp. 13-14, *citing,* Docket No. 58, Ex. A, col. 8, ll. 5-8 (emphasis added). ConMed further acknowledges the specifications provides that "[t]he gas delivery apparatus 44 delivers a predetermined gas **through a plurality of individual passageways or lumens 50 in the cord** 48 **to the pencil 42**" and that "[t]he gas issues from a nozzle 52 **of the pencil** 42 in a directed or substantially laminar low stream or jet 54." *Id., citing,* col. 8, ll. 10-14 (emphasis added). Thus, I find no merit to ConMed's suggestion that the pencil and the cord play no role in the function of conducting a gas jet to the tissue.

4. ***Means for Transferring Electrical Energy at a Predetermined Radio Frequency Range***

[19] The next disputed claim term "transferring electrical energy at a predetermined radio frequency range" is found in Claim 1 as set forth above.

ConMed's Proposed Definition: An electrode within the nozzle or gas flow for transferring electrical energy at a predetermined radio frequency that allows the formation of the improved eschar.

Canady's Proposed Definition: An RF drive, a resonant output circuit, and a pencil having a needle-like electrode which extends into a nozzle.

(Docket No. 58, Ex. B, p. 4). The parties agree that this claim language is written in means-plus-function form and is subject to interpretation under 35 U.S.C. s. 112(6). Docket No. 66, p. 43; Docket No. 58, p. 21. This is the second means-plus-functions clause of Claim 1. Claim 1 states the function as "transferring electrical energy at a predetermined radio frequency range in ionized conductive pathways at a predetermined power level within the gas jet in an electrical circuit which includes the tissue to create the eschar." Docket No. 58, Ex. A, col. 37, ll. 5-9. ConMed agrees with this stated function. Docket No. 58, p. 26.

Next, I turn to the specification to identify the structure necessary for transferring electrical energy at a predetermined radio frequency range in ionized conductive pathways at a predetermined power level within the gas jet in an electrical circuit which includes the tissue to create the eschar. I begin with the description of the preferred embodiment which provides as follows:

The ESG 46 supplies electrical energy over a supply conductor 56 of the cord 48 to the pencil 42. The conductor 56 is electrically connected in the pencil to a needle-like electrode 58 which extends into the nozzle 52. The electrical energy supplied by the ESG 46 is of predetermined characteristic sufficient to ionize the gas flowing through the nozzle 52 and to create ionized pathways in the jet 54. The electrical energy travels in the ionized pathways in the jet 54 to a body tissue 62 where it creates a predetermined electrosurgical effect on the tissue 62.

Docket No. 58, Ex. A. col. 8, ll. 14-25. The specification also teaches that "[e]lectrical power at a predetermined level is delivered from the power supply 308 to an RF drive circuit 312. The logic control 304 delivers RF switching signals to the RF drive 312, thereby causing the RF drive 312 to selectively couple energy from the power supply 308 to a resonant output circuit 314 at a frequency established by the RF drive pluses. Energy is transferred from the resonant output circuit 314 to the pencil 42, and current is returned to the resonant output circuit 314 from the patient plate 70 (FIG.4)." *Id*. at col. 15, ll. 26-40. Consequently, I find the necessary structure to be an RF drive, a resonant output circuit, and a pencil having a needle-like electrode which extends into a nozzle.

In attempting to support their definition of the structure, ConMed improperly picks out only portions of the function.FN13 (Docket No. 67, p. 10). More particularly, ConMed does not give any meaning to the phrase "in an electrical circuit." If the term "in an electrical circuit" is to be given any meaning, then I find an RF drive and a resonant output circuit are necessary to the structure. Thus, I find no merit to ConMed's argument that an RF drive and a resonant output circuit are not necessary to the structure.

FN13. ConMed emphasizes that this claim term reads as follows: "means for *transferring electrical energy* at a predetermined radio frequency range *in ionized conductive pathways* at a predetermined power level *within the gas jet* in an electrical circuit which includes the tissue to create the eschar." Docket No. 67, p.

ConMed further argues that the "pencil" should not be part of the structure because it is not necessary. Again, I disagree. As ConMed points out in its Opening Brief, "[t]he structure corresponding to this function is found in the specification of the '175 patent, which teaches that 'conductor 56 is electrically connected **in the pencil** to a needle-like electrode 58 which extend into the nozzle 52'...." (Docket No. 58, p. 26) (emphasis added). Furthermore, the specification provides that "[t]he ESG will deliver electrical energy only after the nozzle and electrode support assembly 100 has been properly inserted within the pencil." Docket No. 58, Ex. A, col. 11, ll. 7-9. Thus, I find no merit to this argument either.

5. ***Transferring Electrical Energy at a Predetermined Radio Frequency Range as Arcs in Ionized Conductive Pathways at a Predetermined Power Level Within the Gas Jet in an Electrical Circuit Which Includes the Tissue***

[20] The final disputed claim term "transferring electrical energy at a predetermined radio frequency range as arcs in ionized conductive pathways at a predetermined power level within the gas jet in an electrical circuit which includes the tissue" is found in Claim 10 as set forth above.

ConMed's Proposed Definition: Transferring electrical energy through an electrode within the nozzle or gas flow at a predetermined radio frequency by imparting an electrical charge to particles of the gas stream that allows the formation of the improved eschar.

Canady's Proposed Definition: A fulgration mode of operation.

(Docket No. 58, Ex. B, pp. 9-10; Docket No. 58, p. 20). Unlike the terms of Claim 1, this term at issue in Claim 10 is not a means plus function claim. Rather, I must give the terms their ordinary meaning as set forth under the standards above. I note from the Joint Disputed Claim Terms Chart that the terms ionized conductive pathways and gas jet are not in dispute.FN14 *See,* Docket No. 58, Ex. B. p. 3. Thus, I must seek to construe the other disputed claim terms.

FN14. According to the parties, "ionized conductive pathways" is construed as pathways which carry electrical current, as opposed to radiate current and "gas jet" is construed as a directed or substantially laminar flow stream. Docket No. 58, Ex. B. p. 3.

The specification provides as follows:

The ESG 46 supplies electrical energy over a supply conductor 56 of the cord 48 to the pencil 42. The conductor 56 is electrically connected in the pencil to a needle-like electrode 58 which extends into the nozzle 52. The electrical energy supplied by the ESG 46 is of predetermined characteristic sufficient to ionize the gas flowing through the nozzle 52 and to create ionized pathways in the jet 54. The electrical energy travels in the ionized pathways in the jet 54 to a body tissue 62 where it creates a predetermined electrosurgical effect on the tissue 62.

In the fulguration mode of operation of the ESU, also referred to herein as a "macro" mode of operation, electrical energy is transferred in the ionized pathways in the form of arcs 60. The arcs 60 travel within the

jet 54 until they reach the tissue 62 at the electrosurgical site. The jet 54 expands slightly above the surface of the tissue 62 and the arcs 60 disperse over a slightly enlarged area of the tissue surface compared to the cross-sectional area of the jet 54. The electrical energy of the arcs is transferred into the tissue 62 and creates the upper arc hole reticulum or layer 30 and a desiccated layer 32 there below.

Docket No. 58, Ex. A. col. 8, ll. 14-37. The specification also teaches that "[e]lectrical power at a predetermined level is delivered from the power supply 308 to an RF drive circuit 312. The logic control 304 delivers RF switching signals to the RF drive 312, thereby causing the RF drive 312 to selectively couple energy from the power supply 308 to a resonant output circuit 314 at a frequency established by the RF drive pluses. Energy is transferred from the resonant output circuit 314 to the pencil 42, and current is returned to the resonant output circuit 314 from the patient plate 70 (FIG.4)." *Id*. at col. 15, ll. 26-40. Consequently, I construe the term to mean transferring electrical energy, at a predetermined radio frequency from the RF drive to a resonant output circuit to the pencil to the needle-like electrode, which extends into the nozzle, to the tissue as arcs in ionized conductive pathways in a gas jet.

ConMed argues that the term "means transferring electrical energy at a predetermined radio frequency range" found in the second means-plus-function clause of Claim 1 must have the same meaning as the disputed term "transferring electrical energy at a predetermined radio frequency range as arcs in ionized conductive pathways at a predetermined power level with the gas jet in an electrical circuit which includes the tissue" found in Claim 10. Docket No. 58, p. 19. I disagree. To begin with, Claim 1 is in a means-plus-function format and Claim 10 is not a means-plus-function format. Second, the claim term at issue in Claim 10 contains additional language, namely "as arcs in ionized conductive pathways at a predetermined power level with the gas jet in an electrical circuit which includes the tissue," which must be given its ordinary and customary meaning or defined by the intrinsic evidence. Consequently, I reject ConMed's argument in this regard.

In addition, I reject Canady's proposed definition. (Docket No. 66, p. 54). Canady's proposed definition fails to take into consideration the entirety of the claim term at issue as well. *Id*.

W.D.Pa.,2007.
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