United States District Court,
D. New Hampshire.

HYPERTHERM, INC,
v.
AMERICAN TORCH TIP COMPANY.

Civil No. 05-cv-373-JD

Jan. 29, 2008.

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ORDER

JOSEPH A. DICLERICO, JR.**, District Judge.**

Hypertherm, Inc. has filed an action for patent infringement against American Torch Tip Company ("ATTC"). The patents at issue in this suit pertain to plasma arc torches that are used for cutting metal. Hypertherm and ATTC seek claim construction for terms used in four patents, U.S. Patent No. 7,019,255 ("the '255 patent"), U.S. Patent No. 6,946,617 ("the '617 patent"), U.S. Patent No. 5,977,510 ("the '510 patent"), and U.S. Patent No. 5,310,988 ("the '988 patent"). The parties filed briefs and responses in support of their claim constructions, and a *Markman* hearing was held.

Standard of Review

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005) (internal quotation marks omitted). Construing a term in a patent claim is an issue of law. *z4 Techs.,* Inc. v. Microsoft Corp., 507 F.3d 1340, 1347 (Fed.Cir.2007). "Words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art in question." Stumbo v. Eastman Outdoors, Inc., 508 F.3d 1358, 2007 WL 4180137 at (Fed.Cir. Nov. 28, 2007).

In construing patent claims, the court looks "first at intrinsic evidence such as surrounding claim language, the specification, the prosecution history, and also at extrinsic evidence, which may include expert testimony and dictionaries." L.B. Plastics, Inc. v. Amerimax Home Prods., Inc., 499 F.3d 1303, 1308

(Fed.Cir.2007). Extrinsic evidence, however, is less reliable than intrinsic evidence which includes the claims, the specification, and the prosecution history. Phillips, 415 F.3d at 1319-21. "Patent scope should be coextensive with what the inventor invented as evidenced by what is disclosed in the patent specification." Acumed LLC v. Stryker Corp., 483 F.3d 800, 815 (Fed.Cir.2007).

Discussion

Hypertherm contends that the disputed claims have their ordinary and customary meanings. ATTC contends that the prosecution histories affect the scope of some claims and that additional limitations should be construed from the specifications into the disputed claims. Hypertherm opposes the limitations that ATTC proposes. The disputed claims are construed as follows.

I. ***Disputed Claims in the '255 and*** '617 Patents

The '255 patent issued from a continuation of the application that became the '617 patent. As a result, the '255 and '617 patents are related and share the same specification and drawings. Because the disputed claims are materially similar, the claims are construed together.

The '255 and '617 patents are directed to "a method and apparatus for alignment of components of a plasma arc torch." The apparatus addressed in the patents are electrodes, coolant tubes, and their combination in a torch. The disputed claims are claims 7 and 25 in the '255 patent and claim 12 in the ' 617 patent, which are similar and are directed to an electrode. The phrase that gives rise to the parties' dispute, "wherein the coolant tube is not rigidly attachable to a torch body," is used in all three claims. Claim 12 in the '617 patent states:

An electrode for a plasma arc torch, the electrode comprising:

a hollow elongated body having an open end and a closed end; and

a surface located on an interior portion of the elongated body adapted to mate and align with a coolant tube along a direction of a longitudinal axis of the coolant tube, *wherein the coolant tube is not rigidly attachable to a torch body* and an opening in the second end of the coolant tube does not contact an inner surface of the electrode.

Claim 7 of the '255 patent states:

An electrode for a plasma arc torch, the electrode comprising:

a hollow elongated body having an open end and a closed end; and

a surface located on an interior portion of the elongated body adapted to mate and align with a coolant tube along a direction of a longitudinal axis of the coolant tube, *wherein the coolant tube is not rigidly attachable to a torch body*.

Claim 25 of the '255 states:

An electrode for a plasma arc torch, the electrode comprising:

a hollow elongated body having an open end and a closed end; and

a surface located on an interior portion of the elongated body in a region between the open end and the closed end, the surface adapted to mate and align with a coolant tube along a direction of a longitudinal axis of the coolant tube, *wherein the coolant tube is not rigidly attachable to a torch body*.

ATTC contends, based on the prosecution history of the '617 and '255 patents, that the disputed phrase was added to distinguish the electrode claim from prior art and that the phrase makes each disputed claim a combination claim for both the electrode and the coolant tube. Hypertherm agrees that the disputed phrase was added to the claims during the prosecution of the patents to distinguish the claimed invention from prior art. Hypertherm argues, however, that the phrase describes the environment in which the electrode operates, which is a limitation on the invention, but does not add a claim for the coolant tube along with the electrode.

A. *Environment*

Hypertherm's environment theory has not been addressed by the Federal Circuit. Hypertherm relies on Williams Mfg. Corp. v. United Shoe Mach. Co., 316 U.S. 364, 369 (1942), and two district court cases, Canon Inc. v. GCC Int'l Ltd., 450 F.Supp.2d 243, 250 (S.D.N.Y.2006); Smith Corona Corp. v. Pelikan, Inc., 784 F.Supp. 452, 461 (M.D.Tenn.1992). In *Williams,* United Shoe had accused Williams Manufacturing of infringing its patent for improvements in a lasting machine for making the heels of shoes. *Id*. at 365-66. Williams sought and was granted certiorari on its counterclaim that the patent claims in suit were invalid because they attempted to repatent a broad combination of old devices. *Id* . at 365. The Court concluded that the patent's reference to other parts of the shoe machine did not incorporate the entire machine into the claim but instead was necessary to describe the new and novel combinations. *Id*. at 368.

In *Smith Corona,* the jury found that the defendant, Pelikan, infringed three of Smith Corona's patents for ink ribbon cassettes. 784 F.Supp. at 459. Pelikan moved for JNOV, arguing that the claims of the patents in suit were directed to a combination of an ink ribbon cassette, correction cassette, and a typewriter switch, not the ribbon cassette alone. Id. at 460. The court ruled that the asserted claims addressed the typewriter ink ribbon cassettes which were "designed to function in the described environment of compatible correction cassettes and typewriter switches." Id. at 463. As such, the court distinguished between a claim for a combination of components and a claim for a single component that was limited by an intended purpose or environment. Id. at 463-64. The court further found that the prosecution history supported that view because Smith Corona consistently represented that the asserted claims were directed to a ribbon cassette with a structure to assure compatibility with correction tape but did not claim a combination among the ink cassette, the correction tape, and the switch. Id. at 465.

In Canon, 450 F.Supp.2d at 246, the parties disputed the scope of a claim for a toner cartridge that is used in a laser printer or fax machine. The defendants argued that the claim included a limitation that the cartridge would be used in a "main assembly" with "a hole defined by the twisted surfaces." Id. at 249. Canon argued that the reference in the claim to the "main assembly" and "a hole defined by the twisted surfaces" merely described the environment in which the claimed cartridge was intended to operate and was not an element of the claim. *Id*.

The court concluded that Canon could describe the structure of the main assembly without incorporating that structure into the claimed invention. *Id*. at 250; *but see Canon, Inc. v. GCC Int'l, Ltd.,* 2007 WL 4005018 at

(Fed.Cir. Nov. 16, 2007) (stating that "[o]n the present record, there is a reasonably debatable question of whether Claim 58 should be construed to cover the cartridge alone or the cartridge as part of a combination" but not reaching a final conclusion). The court considered the prosecution history and found that it did not clearly show that Canon had distinguished prior art from its claimed invention based on the disputed term. *Id*.

The environment theory appears to be less applicable here where the disputed claims include a description of another part of the invention, not merely other parts of a preexisting mechanism. In addition, unlike the circumstances in *Canon,* here the parties agree that Hypertherm added the disputed phrase about the coolant tube to the electrode claims to distinguish those claims from prior art. Therefore, to the extent a patentee may describe the environment of an invention without claiming those parts in combination with the invention, that theory does not fit the circumstances of this case.

B. ***Specifications***

The patents' specifications establish that the claimed electrodes and coolant tubes are separate parts of a plasma arc torch. The specifications explain that the electrode and coolant tube must be precisely aligned with each other to allow the coolant tube to operate effectively during torch operation. If the tube is misaligned with the electrode, heat is not removed, which causes the insert material in the electrode to wear away more rapidly and shortens the operating life of the electrode. The specifications of the '255 and '617 patents demonstrate that the purpose of the invention claimed was to design an electrode and a coolant tube that would align together properly, within the torch, both to extend the life of the electrode and to facilitate replacing the parts as needed in the field.

The invention claimed "achieves reliable and repeatable positioning of the coolant tube relative to the electrode" and reduces errors in the alignment of a coolant tube relative to the electrode. Col. 2, ll. 29-35. The '255 and ' 617 patents claim electrodes, coolant tubes, and plasma arc torches. The ' 255 patent also claims a method for locating a coolant tube relative to an electrode in a torch. As such, some of the claims are directed at individual parts of the torch and others, such as claims 12, 19, and 26 in the '255 patent and claims 19 and 26 in the '617 patent, are combination claims directed to the torch comprised of a torch body, an electrode, and a coolant tube.

The phrase, "wherein the coolant tube is not rigidly attachable to a torch body," explains the alignment and junction between the electrode and the tube and also limits the scope of the electrode to one with that configuration. The combination claims are directed at the electrode with the coolant tube within a torch body. In those claims, the phrase describing the coolant tube is not part of the phrase describing the electrode element. Instead, the tube is described as "comprising an elongated body ... wherein the elongated body is not rigidly attachable to the torch body." Therefore, when a combination is claimed, the electrode element is not described in relation to the coolant tube, which is a separate element of that claim. Conversely, when only the electrode is claimed, the phrase describing the coolant tube is necessary to provide a context for that part of the invention directed to the electrode's surface which is "adapted to mate and align with a coolant tube." The disputed phrase does not claim the coolant tube in combination with the electrode but limits the claimed electrode to one that is adapted to align and mate with the described coolant tube.

C. ***Claim Differentiation***

The doctrine of claim differentiation also supports a construction that maintains the distinction between the

electrode claims and the combination claims. The doctrine of claim differentiation provides a presumption that each claim in a patent has a different scope. Sinorgchem Co., Shandong v. Int'l Trade Comm'n, 511 F.3d 1132, 2007 WL 4465270 at (Fed.Cir. Dec. 21, 2007). "To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed.Cir.2007) (internal quotation marks omitted). Therefore, "claim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous." FN1 AllVoice Computing PLC v. Nuance Commc'ns, Inc., 504 F.3d 1236, 1247 (Fed.Cir.2007) (internal quotation marks omitted).

FN1. ATTC mistakenly contends that the doctrine of claim differentiation arises only when a dependent claim includes a limitation that is presumed not to be present in the independent claim. While that is an application of the doctrine, *see* Acumed, 483 F.3d at 806, it may also apply in the context of two independent claims, *see* AllVoice, 504 F.3d at 1247.

Claim 19 in the '617 patent and claims 12 and 26 in the '255 patent, which are explicit combination claims, are directed to a torch comprising a torch body, a coolant tube, and an electrode.FN2 The disputed phrase, "wherein the coolant tube is not rigidly attachable to a torch body," in the electrode claims, refers to a torch body along with the coolant tube. If the electrode claims were converted to combination claims, they would duplicate the scope of the explicit combination claims, rendering the combination claims superfluous. In the absence of a strong reason for rebutting the claim differentiation presumption, the construction urged by ATTC is not correct.

FN2. Claim 19 in the '255 patent and claim 26 in the '617 patent are combination claims that also include an element for a means of aligning the electrode and the tube.

II. ***Disputed Claim Terms in the*** '988 Patent

The '988 patent pertains to an "Electrode for High Current Density Plasma Arc Torch." Hypertherm accuses ATTC of infringing "one or more claims of the ' 988 Patent." FN3 Am. Compl. para. 34. For purposes of claim construction, Hypertherm and ATTC dispute the meaning of the term "operating current" as used in the claims of the ' 988 patent. Hypertherm contends that "operating current" means "the current used during operation of the torch." ATTC argues that "operating current" is limited to "a low current of approximately 15-70 amps." ATTC also argues that claim 12, which is a method claim, is directed to a method "for extending the life of a low current electrode of approximately 15-70 amps."

FN3. In their motions for claim construction, Hypertherm contends that ATTC is infringing claims 1 and 11 of the '988 patent, while ATTC states that it is accused of infringing claims 2 through 10, which depend from claim 1, and claims 12 and 14.

The claims of the '988 patent use the term "operating current" without further modification or definition. Claim 12 does not include an express limitation to a low current electrode. The specification does not explicitly define the term "operating current" or the electrode in claim 12.

ATTC asserts that the specification and prosecution history of the '988 patent limit the term "operating current," as used in claim 1, to a low operating current and limit claim 12 to a low current electrode. Despite its assertion, ATTC offers no evidence from the prosecution history to support that theory. Instead, ATTC relies on references in the '988 patent to low operating current and to operating current between 15 and 70 amperes. Hypertherm agrees that the purpose of the '988 patent invention was to solve the problems caused by low operating currents but argues that the claims are not limited to low operating currents and that the invention can also work with higher operating currents.

At the *Markman* hearing, ATTC emphasized two cases in which the Federal Circuit construed claims to include limitations that were not expressed in the claims themselves. *See* Microsoft Corp. v. Multi-Tech Sys., 357 F.3d 1340, 1348-49 (Fed.Cir.2004); Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1368-71 (Fed.Cir.2003). In each of those cases, the court noted the general rule that it is improper to read a limitation from the specification into a claim. The court concluded that a patentee may nevertheless limit claims by making it clear in the specification "that the invention does not include a particular feature ... even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." Microsoft, 357 F.3d at 1347 (internal quotation marks omitted). To make that determination, the court "looks to whether the specification refers to a limitation only as a part of less than all possible embodiments or whether the specification read as a whole suggests that the very character of the invention requires the limitation be a part of every embodiment." Alloc, 342 F.3d at 1370.

In this case, the invention claimed in the '988 patent is summarized as follows:

A plasma arc torch for cutting metal with a reactive plasma gas such as oxygen or air uses an electrode with a body formed of a high thermal conductive material and an insert of a material with a high thermionic emissivity. The insert is preferably hafnium and the body is preferably copper. The insert is cylindrical and has an emitting surface exposed to the plasma gas. The area (A) required for emitting varies as a function of the maximum operating current (I) carried by the electrode.

Col. 1, ll. 57-65. In functional terms, "the insert has a diameter that is at least coextensive with the molten emission spot produced on the emitting surface by the selected operating current." Col. 1-2. In mathematical terms, "the current sensitivity, which is defined as total current divided by the available emission area, is a constant number." Col. 2, ll. 5-8. "Viewed as a process, the invention involves sizing the insert so that the surface area exposed to the plasma gas is sufficient to sustain a selected operating current without the arc impinging on the copper body and small enough to prevent the insert material from heating to its boiling point." Co. 2., ll. 35-39.

Nothing in that description of the invention suggests that the "very character of the invention" requires a limitation to low operating current. ATTC cites parts of the specification which state that the invention was designed to address the problem of electrode wear during low current uses. ATTC also argues that the specification limits the operating current to 15 to 70 amperes by citing those current levels as the maximum operating current used in tests whose results are displayed in Table I. Col. 4, ll. 34-44. ATTC notes that the specification distinguishes the '988 patent invention in discussing the standard size of the insert used in electrodes previously, which was developed in 260 ampere cutting systems.

Hypertherm counters that although the purpose of the invention was to solve the low current problem, the electrodes claimed in claims 1 and 11 and the method claimed in claim 12 are not limited to low current uses. It explains that the test results shown in Table 1 are limited to the stated maximum current levels

because those are the only tests that were done. Hypertherm also cites the statement in the specification that the invention is particularly effective at low current levels but that "it can operate ... at other current levels." FN4 Col. 6, ll. 44-48.

FN4. ATTC denigrates that statement as merely generalized boilerplate entitled to little weight, citing Aspex Eyewear, Inc. v. Altair Eyewear, Inc., 386 F.Supp.2d 526, 534-35 (S.D.N.Y.2005). The statement in the '988 patent that the invention can operate at other current levels is not the kind of interchangeable disclaimer that was targeted in the cited case.

It is undisputed that the challenged claims do limitation for low current. Although the invention to solve a particular problem with low current uses, shown that the invention requires that limitation. the claims in the '988 patent are construed to mean without a limitation on the level of current.

III. ***Disputed Claim Terms in the*** '510 Patent

Hypertherm accuses ATTC of infringing claim 10 of the '510 patent. Claim 10 is directed to a torch nozzle as follows:

A nozzle for a plasma arc torch having a torch body, and an electrode mounted in the body in relative [sic] to the nozzle to define a plasma chamber there between, the nozzle comprising:

a hollow, body portion defining a cavity; and

a substantially solid, head portion formed integrally with the body portion defining an exit orifice extending from the chamber, the exit orifice having a converging inlet and an outlet, wherein the exit orifice has a length to diameter ratio greater than 3 and the inlet has a radius of curvature.

Col. 6, ll. 47-57. The parties dispute the meaning of the terms "exit orifice" and "radius of curvature."

A. ***Exit Orifice***

Hypertherm contends that "exit orifice" means "[t]he opening of the nozzle through which a plasma arc may pass before attaching to a workpiece." ATTC interprets the term to mean "[t]he exit opening of the nozzle following any velocity reduction space and/or acceleration space, through which a plasma arc may pass before attaching to a workpiece." The issue for claim construction is whether the exit orifice excludes a velocity reduction or acceleration space.

ATTC contends that the specification describes the exit orifice without a velocity reduction or acceleration space. In support of that argument, ATTC quotes a part of the "Background" section which states that one factor influencing cutting speed "is the shape and size of an exit orifice of the nozzle through which the plasma arc exits the torch." ATTC also quotes a statement in the detailed description section, "[a] plasma arc, i.e., an ionized gas jet, passes through the exit orifice and attaches to a workpiece ...." to show that "exit orifice" is defined to exclude any velocity reduction or acceleration space.

The quoted statements in the patent specification do not mention a velocity reduction or acceleration space and do not suggest that the exit orifice excludes that space. The statement from the background section, explaining that the shape and size of the exit orifice affect the cutting speed, supports an interpretation that

the exit orifice would *include* any changes in size that were used to reduce or accelerate the plasma. Therefore, the specification is not helpful to ATTC.

ATTC also argues that the prosecution history of the '510 patent shows that "exit orifice" must be limited because Hypertherm distinguished its invention in the '510 patent from the '356 patent to Sakuragi by noting that the '356 patent had a velocity reduction space that led to a tapering acceleration space. Based on that statement, ATTC contends that Hypertherm limited the exit orifice in the '510 nozzle to the part below any space for velocity reduction and acceleration.

Hypertherm's cited response to the PTO described the Sakuragi '356 patent as noted by ATTC. Hypertherm then distinguished the '356 patent from its invention based on the radius of curvature used in Hypertherm's invention stating that Hypertherm "presents a solution for preventing double arcing as in the present invention, Sakuragi, however, does not teach or suggest providing a nozzle with a converging inlet having a radius of curvature for reducing double arcing as in the present invention. Instead, Sakuragi teaches that double arcing should be prevented by providing a velocity reduction space (N). Therefore Sakuragi teaches away from the claimed invention." Ex. 22 at 0061. That explanation shows that Hypertherm acknowledged that the '510 and '356 patents had the same purpose but distinguished the '510 patent from Sakuragi's '356 patent based on the different means to prevent double arcing, not on the location of the exit orifice, as ATTC contends.

ATTC also argues that Hypertherm described the exit orifice in a way that excluded the velocity reduction and acceleration space and that by relying on that definition during prosecution of the patent, Hypertherm disclaimed a broader version. The phrase ATTC relies on is Hypertherm's explanation of Sakuragi's patent with reference to Figure 1a in that patent. Hypertherm stated that Sakuragi's patent claims a velocity reduction space, shown as part N, which leads to an acceleration space, shown as part P, "which leads to the nozzle orifice." Because Hypertherm described the nozzle orifice as a separate component from the reduction and acceleration spaces in Sakuragi's patent, ATTC argues that Hypertherm's use of the term "exit orifice" in the '510 patent excludes the reduction and acceleration spaces.

The cited description did not disclaim parts of a nozzle for purposes of distinguishing Hypertherm's application from the Sakuragi patent. Instead, Hypertherm was merely describing the figure shown in that patent. As addressed above, Hypertherm distinguished its invention from Sakuragi's '536 patent not on the location of the exit orifice but on different grounds-that is, that Sakuragi used velocity reduction and acceleration to avoid double arcing while Hypertherm's invention relied on an inlet with a radius of curvature. As such, Hypertherm did not limit the exit orifice to that part below or excluding any space used for velocity reduction or acceleration.

B. *Radius of Curvature*

The parties dispute the meaning of "radius of curvature" in claim 10 of the ' 510 patent. Hypertherm contends that "radius of curvature" means a curve. ATTC contends that the phrase means "a curve, as distinguished from a sharp corner such of [sic] the inlet such as shown in Fig. 1a of U.S. Pat. No. 5,591,356, having a dimension in order of magnitude greater than 25% of the diameter of the exit orifice." ATTC argues that "radius of curvature" requires a further definition based on the patent specification and the prosecution history.

1. Prosecution History

ATTC provides little developed argumentation in support of its definition based on the prosecution history. In one sentence, ATTC states that Hypertherm distinguished the radius of curvature of its invention from the nozzle shown in Figure 1a of Sakuragi's '536 patent "by noting '[t]he intlet of the nozzle orifice [of Sakuragi ...] is characterized by a sharp corner.' " Hypertherm agrees that the radius of curvature claimed in the '510 patent is distinguished from a sharp corner. Therefore, the cited prosecution history adds nothing to the claim construction analysis.

2. Specification

ATTC contends that the specification distinguishes the invention from prior art because prior art had an inlet into the exit orifice with a sharp or square edge. ATTC also contends that Hypertherm limited the radius of curvature to mean "greater than 25% of the diameter of the exit orifice." During the *Markman* hearing, ATTC argued that the radius of curvature must be specifically defined to avoid ambiguity. Hypertherm contends that construing "radius of curvature" to mean, simply, a curve is not ambiguous and was not further limited by the specification.FN5

FN5. At the *Markman* hearing, counsel for Hypertherm referred to the Abstract of the '510 patent as providing the definition of the invention. Counsel for ATTC asserted, without citation to authority, that the Abstract of a patent is not part of the specification that could be considered for purposes of claim construction. Contrary to ATTC's counsel's opinion, the Abstract of a patent is part of the intrinsic evidence that may be considered in construing a claim. *See* Hill-Rom Co. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341 n.* (Fed.Cir.2000); *see also* Andersen, 474 F.3d at 1367 (citing abstract in support of claim construction); Pip/Nip, Inc. v. Platte Chem. Co., 304 F.3d 1235, 1244 (Fed.Cir.2002) (citing abstract as part of specification in claim construction).

A curve is not a sharp corner. The further definition that ATTC proposes, referring to Sakuragi's '536 patent, is not supported by the specification.

That part of ATTC's proposed construction that imposes a ratio limitation on the radius of curvature is taken from a preferred embodiment described in the specification, which may not be imported into a claim. *See* Phillips, 415 F.3d at 1323. The specification does not include the "order of magnitude" language that ATTC proposes, and ATTC provides no other source for that limitation. Further, as Hypertherm points out, the dependent claims of claim 10 add limitations for specific ratios between the radius of curvature and the diameter of the exit orifice, which raises a presumption that a specific ratio should not be read into claim 10. *See* Phillips, 415 F.3d at 1315. ATTC has not provided a sufficient basis to overcome that presumption.

The phrase, "radius of curvature," as used in claim 10 of the '510 patent is construed to mean a curve as distinguished from a sharp angle.

Conclusion

For the foregoing reasons, the parties' motions for claim construction (documents no. 88 and 89) are granted in part and denied in part as follows:

I. *Claim Construction for the '255 and* '617 Patents

Claims 7 and 25 in the '255 patent and claim 12 in the '617 patent, with respect to their disputed terms, are

construed to be directed to an electrode that is adapted to mate and align with a coolant tube which is not rigidly attachable to a torch body. Claims 7, 25, and 12 are not combination claims directed to both an electrode and a coolant tube.

II. ***Claim Construction for the*** '988 Patent

"Operating current," as used in claim 1 of the '988 patent is the current used to operate the torch and is not limited to "a low current of approximately 15-70 amps." Claim 12 is not limited to a method "for extending the life of a low current electrode of approximately 15-70 amps."

III. ***Claim Construction for the*** '510 Patent

"Exit orifice" as used in claim 10 of the '510 patent means that part of the nozzle that extends from the chamber and includes both a converging inlet and an outlet. "Exit orifice" is not limited to an area below space used for velocity reduction and acceleration.

"Radius of curvature" as used in claim 10 of the '510 patent means a curve as distinguished from a sharp corner. "Radius of curvature" is not limited or defined with reference to any other patent or with a particular ratio or dimension.

ATTC's response to Hypertherm's motion for summary judgment will be due as provided in the court's order of December 20, 2007. Motions for summary judgment may be filed within the time allowed by the court's order of June 13, 2007.

With the disputed phrases construed, the parties would be well advised to undertake a realistic review of the infringement allegations and ATTC's counterclaims. The court will require the parties to mediate prior to trial if they are unable to reach a settlement on their own. The parties are in the best position to determine when mediation will occur. The parties can select their mediator, and if the parties request, the court will suggest for their consideration the name of a mediator who has extensive experience mediating intellectual property disputes.

SO ORDERED.

D.N.H.,2008.
Hypertherm, Inc. v. American Torch Tip Co.