United States District Court,
E.D. California.

DUHN OIL TOOL, INC,
Plaintiff.
v.
COOPER CAMERON CORPORATION,
Defendants.

No. 1:05-CV-01411 OWW LJO

Feb. 1, 2007.

Background: Patent owner brought action alleging that competitor was infringing its patent for wellhead isolation tool and wellhead assembly incorporating tool. Parties moved for claim interpretation.

Holdings: The District Court, Wanger, J., held that:
(1) term "extending from" was not limited to integral or mechanically connected structural relationship, and
(2) language of "wherein" clause represented functional limitation, and not method step.

Ordered accordingly.

6,920,925. Construed.

Edward Richard Schwartz, Christie, Parker and Hale, LLP, Pasadena, CA, James M. Whitelaw, Jennifer Suzanne Anderson, Joseph Edward Thomas, Thomas Whitelaw & Tyler LLP, Irvine, CA, for Plaintiff.

Charles J. Rogers, Conley Rose, P.C., Houston, TX, Mark D. Miller, Kimble, MacMichael and Upton, Fresno, CA, for Defendants.

MEMORANDUM DECISION AND ORDER RE CLAIM INTERPRETATION

WANGER**, District Judge.**

1. *INTRODUCTION*

Before the court are the parties' motions for a Markman claim interpretation of United States Patent No. 6,920,925 (the "'925 Patent" or the "Patent"). (Doc. 40, Duhn Oil's Claim Construction Brief, Filed August 21, 2006 ("Pl.Brief"); Doc. 43, Defendant's Opening Markman Brief, Filed August, 21, 2006 ("Def.Brief").) Oral argument was heard on October 11, 2006.

2. *PROCEDURAL HISTORY*

Plaintiff Duhn Oil Tool, Inc. ("Duhn Oil" or "Plaintiff") filed its complaint for patent infringement against Defendant Cooper Cameron Corporation ("Cameron" or "Defendant") on November 11, 2005. (Doc. 1, Complaint.) Cameron answered and filed a counterclaim for declaratory relief of patent invalidity against Duhn Oil on May 17, 2006. (Doc. 15, Def.'s Answer and Counterclaim.) On April 12, 2006 Duhn Oil filed and answer to Cameron's counterclaim. (Doc. 18, Pl.'s Answer to Counterclaim.)

Cameron filed a motion for summary judgment on July 15, 2006. (Doc. 26, Motion for Summary Judgment.) On August 4, 2006 Duhn Oil opposed the motion. (Doc. 31, Opposition.) On August 14, 2006, Cameron filed a reply to the opposition. (Doc. 33, Reply/Response to Opposition.)

On August 21, 2006 Duhn Oil filed a claim construction brief for a Markman hearing. (Doc. 43, Duhn Oil's Claim Construction Brief.) On September 5, 2006 Cameron filed its opposition to the brief. (Doc. 47, Cameron's Markman Opposition Brief.)

Cameron filed its claim construction brief on August 21, 2006. (Doc. 43, Cameron's Motion for Claim Construction.) On September 5, 2006 Duhn Oil filed its opposition. (Doc. 44, Duhn Oil's Markman Opposition Brief.)

3. *FACTUAL BACKGROUND*

A. Origin of Litigation

Duhn Oil designs and manufactures quality completion products for the oil industry. (Doc. 1, Complaint, para. 4.) Duhn Oil's products are sold throughout the United States. (*Id.*) On February 19, 2003 Duhn Oil filed an application with the United States Patent and Trademark Office ("USPTO") to obtain a patent for a wellhead isolation tool and a wellhead assembly incorporating such a tool. (*Id.,* para. 5.) The application matured into the '925 Patent entitled "Wellhead Isolation Tool" and the patent was issued on July 26, 2005.

Duhn Oil sues Cameron for patent infringement alleging that Defendant has offered products for sale in the United States that infringe on Duhn Oil's ' 925 patent. (Id., para. 6.) Duhn Oil accuses Defendant of violating its ' 925 patent under 35 U.S.C. s. 271. (*Id.,* para. 7.) Duhn Oil argues that it has been damaged by the infringement and seeks the following relief:

1. Declaratory judgment that the '925 patent is valid and is owned by Plaintiff.

2. Declaratory judgment that Defendant has committed acts of patent infringement by its offer for sale and sale of products that infringe the ' 925 patent.

3. Defendant should be enjoined from infringing on the patent.

4. A mandatory injunction for Cameron to deliver to Duhn Oil for destruction any and all products in Defendant's possession embodying the patented invention as well as any promotional literature therefore.

5. Damages.

6. Prejudgment interest on infringement damages.

7. Costs.

8. Any other relief that the court may deem just and proper.

(Doc. 1, Complaint.)

Defendant Cameron denies infringing Duhn Oil's '925 patent and filed counterclaims asserting:

1. Duhn Oil has failed to state a claim upon which relief can be granted.

2. Defendant is not infringing and has never infringed, either directly or indirectly any valid claim of the '925 patent.

3. The claims of the '925 patent are invalid for failure to meet the conditions of patentability in 35 U.S.C. s.s. 102 and 103, and for failure to comply with requirements of 35 U.S.C. s. 112.

4. Duhn Oil failed to disclose material information with the intent to deceive the USPTO in applying for the '925 patent. The patent is unenforceable due to the actions and or omissions of Plaintiff and its agents constituting inequitable conduct during the prosecution of the application that issued as the '925 patent.

5. Plaintiff is estopped from enforcing the '925 patent as alleged because of statements, representations and admissions made, and/or actions taken during the prosecution of a related continuation application.

6. Plaintiff's claims are barred, in whole or in part, by the doctrine of equitable estoppel.

7. Plaintiff is precluded from recovering any alleged damages for any patent infringement occurring prior to the filing date of its complaint. Plaintiff has failed to plead, and cannot prove, compliance with the marking requirements of 35 U.S.C. s. 287. FN1

FN1. 35 U.S.C. s. 287 provides that in the event of such a failure to mark "no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement [which includes the filing of an action for infringement] and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice."

(Doc. 15, Def.'s Answer and Counterclaims To Plaintiff's Complaint.)

B. Background of the '925 Patent FN2

FN2. This description is taken entirely from Doc. 43, Defendant's Opening Markman Brief, Filed August 21, 2006.

Duhn Oil is the owner of the '925 patent. The '925 Patent, entitled "Wellhead Isolation Tool," generally relates to a wellhead assembly used in high-pressure fracturing operations. Fracturing operations are used to

stimulate an existing well's hydrocarbon production and involve introducing generally abrasive material into the well's producing regions at very high pressure. The wellhead assembly described in the '925 Patent includes a casing head coupled to the wellbore, and a tubing head mounted over the casing head. The tubing head has a first radial flange extending from it at an upper end. The wellhead isolation tool, or "frac mandrel," is suspended concentrically (circularly) within the tubing head and aligned with a production casing suspended below in the wellbore. The frac mandrel is a generally elongate FN3 annular FN4 member FN5, and has a second radial flange extending from it. In some embodiments, the first flange extending from the tubing head and the second flange extending from the frac mandrel are fastened together. When assembled with respect to the wellhead assembly, the frac mandrel isolates to protect certain wellhead components from the extreme pressures used during well stimulation processes such as fracturing.

FN3. The adjective use of the term "elongate" is defined as "stretched out." Merriam-Webster's Collegiate Dictionary, Eleventh Edition, http:// www. m- w. com, (last visited January 22, 2007.)

FN4. The term "annular" is defined as "of, relating to, or forming a ring." Merriam-Webster's Collegiate Dictionary, Eleventh Edition, http:// www. m- w. com, (last visited January 22, 2007.)

FN5. The term "member" is defined as "a part of a whole." Merriam-Webster's Collegiate Dictionary, Eleventh Edition, http:// www. m- w. com, (last visited January 22, 2007.)

C. Claims At IssueFN6

FN6. Defendant states that claims 1 and 37 recite similar limitations and are sufficiently represented by the broader language of claim 1. (Doc. 43, Def.'s Markman Brief.) Even though claims 1 and 37 are the only independent claims at issue, Duhn Oil argues that the following claims are dependent on claim 1, either directly or indirectly, and are therefore also at issue as being infringed by Defendant in this case: Claims 2-6, 10-12, 19, 28-30, and 34-36. (Doc. 40, Pl. Markman Brief.) Defendant only disputes claims 1 and 37 and, for this reason, only claims 1 and 37 are addressed in this order.

Claim 1 specifies a wellhead assembly having various components as follows:

1. A wellhead assembly comprising:

-> a casing;

-> a first tubular member mounted over the casing;

-> a first tubular member flange extending from the first tubular member;

-> a generally elongate annular member ("frac mandrel") suspended in the first tubular member, said annular member having a first end portion extending above the first tubular member and a second end portion below the first end portion;

-> a secondary flange extending from the frac mandrel;

-> a plurality of fasteners fastening the secondary flange to the first tubular member flange; and

-> a production tubular member aligned with the frac mandrel, wherein an axial force acts on the generally frac mandrel and is reacted in both the first tubular member flange and the secondary flange.

(Doc. 41, Ex. 1, Filed August 21, 2006.)

Claim 1 identifies the components either by their location and/or their functionality. For example, the production tubular member is aligned with the annular member in such a way that an axial force acts on the annular member and such force is reacted in the first tubular member flange and the secondary flange to which it is attached.

i. Terms in Dispute

The parties dispute two terms found in Claims 1 and 37. The first set of disputed terms relate to the "extending from language" in the claims:

-> Claim 1: "... a secondary flange **extending from** the elongate annular member ..."

-> Claim 37: "... a second flange **extending from** the generally elongate annular member ..." and the variant, "said annular member having a first end portion **extending above** the first tubular member ..." FN7

FN7. The disputed term "extend" is used throughout the patent. Though the term is given different locational references it is used in the same way as describing a starting point for the location of one component as stretching out towards the path or direction of another component.

Duhn Oil argues for a broad reading of the term "extending from" interpreted as "located or stretching outwardly." This interpretation would include products that abut each other. Cameron argues that the term "extending from" should be narrowly construed and limited to only include products that have a structural relationship and are either integral or mechanically connected to each other. This interpretation would not include products that abut each other.

The second set of disputed terms relate to the "wherein clause" of claims 1 and 37:

-> Claim 1: "... **wherein** an axial force acts on the generally elongate annular member and is reacted in both the first tubular member flange and the secondary flange ..."

-> Claim 37: "... **wherein** an axial force acts on the generally elongate annular member and is reacted in both the first tubular member flange and the secondary flange ..."

Duhn Oil argues that the absence of the word "means" in the "wherein" clause gives rise to a presumption that it is not a "means-plus-function" claim. Duhn Oil maintains that the "wherein clause" should not be construed as a "means-plus-function" claim because the "wherein clause" explicitly identifies both a function and the structures which perform the claimed function.

Cameron, on the other hand, argues that the "wherein clause" should be construed as a "means-plus-function" claim because the clause uses functional language but does not recite any structure for performing the claimed function.

4. *STANDARD OF REVIEW*

Liquid Dynamics Corp. v. Vaughan Co., 355 F.3d 1361 (Fed.Cir.2004) explains:

An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is "comparing the properly construed claims to the device accused of infringing." Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed.Cir.1998). The first step, claim construction, is a question of law. Id. at 1451. The second step is factual. Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed.Cir.1998). When construing a claim, a court principally consults the evidence intrinsic to the patent, *viz.,* the claims themselves, the written description portion of the specification, and the prosecution history. *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed.Cir.1996).

Liquid Dynamics Corp., 355 F.3d at 1367.

[1] [2] A patent is a fully integrated document. It must set out a written description of the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains" to practice the invention. 35 U.S.C. s. 112. The written description required by 35 U.S.C. s. 112 must clearly allow persons of ordinary skill in the art to recognize that the inventor invented what is claimed. Reiffin v. Microsoft Corp., 214 F.3d 1342, 1346 (Fed.Cir.2000). Adequate description of the invention guards against the inventor's overreaching by insisting that he recount his invention in such detail that his future claims can be determined to be encompassed within his original creation. Id. In interpreting the meaning of an asserted claim, a court should first refer to the following sources of intrinsic evidence: the patent claims, the specification, and the prosecution history. *See* Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1331 (Fed.Cir.2001); *See also,* Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 870 (Fed.Cir.1998); Vitronics Corp., v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). Intrinsic evidence alone will usually be sufficient to resolve any ambiguities in disputed claim terms. *See* Vitronics, 90 F.3d at 1583. In such cases, extrinsic evidence should not be considered. *See* id.

A. Patent Language

[3] [4] [5] [6] [7] [8] [9] Patent claims are the numbered paragraphs at the end of a patent's specification that define the scope of the patent. Trinity Indus. v. Road Sys., 121 F.Supp.2d 1028, 1033 (Fed.Cir.2000.) The threshold issue in any patent infringement case is claim construction because it is necessary to understand the scope of the patent's claims to determine whether the accused device infringes the patent. Id. Claim construction is a question of law for the court to decide. Id. In construing the meaning of disputed claim terms, the court first looks to the words (both asserted and nonasserted) of the claims themselves. *See* Vitronics, 90 F.3d at 1582. "[T]he language of the claim defines the scope of the protected invention." Bell Comm. Research, Inc. v. Vitalink Comm., Corp., 55 F.3d 615, 619 (Fed.Cir.1995); *see also* Vitronics, 90 F.3d at 1582. Words are generally given their ordinary and plain meaning, although a patentee may choose to be a lexicographer and define a word in a way other than its ordinary meaning. *See* id. (citing Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed.Cir.1996)) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the

term with a different meaning."). The words of the claim are interpreted in accordance with their ordinary meaning, as understood by a person reasonably skilled in the art. *See* Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580 (Fed.Cir.1995); Vitronics, 90 F.3d at 1582; Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387 (Fed.Cir.1992). Technical terms should be construed from the perspective of a person experienced in the field of the invention. *See* CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1153 (Fed.Cir.1997). A USPTO examiner is a person skilled in the art of the patent. *See,* In re Lee, 277 F.3d 1338, 1345 (Fed.Cir.2002) (the foundation of the principle of judicial deference to the rulings of agency tribunals is that the tribunal has specialized knowledge and expertise such that when reasoned findings are made, a reviewing court may confidently defer to the agency's application of its knowledge in its area of expertise.) In order to ascribe a special definition to a claim term, the definition must be clearly stated in the patent specification or the file history. Vitronics, 90 F.3d at 1582 (citations omitted). A claim should not be construed in a manner that renders the claim language meaningless or superfluous. Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1171 (Fed.Cir.1993).

B. Specification

[10] The claims "must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979. Section 112 provides:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35 U.S.C. s. 112, para.para. 1-2.

The specification is reviewed "to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning." Vitronics, 90 F.3d at 1582; CVI/Beta Ventures, 112 F.3d at 1153. If the inventor uses a term in a manner other than its ordinary meaning, that meaning is given effect because the inventor is free to be his or her own lexicographer. *See* Vitronics, 90 F.3d at 1582 (citing Hoechst, 78 F.3d at 1578). In this regard, the specification "may act as a sort of dictionary." Markman, 52 F.3d at 979. The specification can define terms either explicitly or by implication. *See* Vitronics, 90 F.3d at 1582 (citing Markman, 52 F.3d at 979).

The specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582. Though claims should always be read in view of the specification, the Federal Circuit cautions that the scope of a claim should not be limited to specific embodiments disclosed in the specification. *See, e.g.,* Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed.Cir.1997); Intervet America, Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed.Cir.1989).

C. Prosecution History

[11] [12] When construing the language of a claim, the prosecution history of the patent should be considered, provided that it is in evidence. Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir.1995); Markman, 52 F.3d at 980; Vitronics, 90 F.3d at 1582 (citing Graham v. John Deere, 383

U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966)); CVI/Beta Ventures, 112 F.3d at 1155. The prosecution history, or file wrapper, of the patent provides a complete record of all proceedings, including all express representations made by the patent applicant regarding the scope of the claims, before the USPTO. *See* Vitronics, 90 F.3d at 1583. The file wrapper limits the scope of a claim term so as to exclude any interpretation disclaimed during prosecution of the patent. *See* id. at 1583 (citing Southwall Tech., 54 F.3d at 1576); CVI/Beta Ventures, 112 F.3d at 1155. In addition, any prior art cited during the prosecution history may indicate what the patent claims do not cover. *See* Vitronics, 90 F.3d at 1583 (citing Autogiro Co. of America v. United States, 181 Ct.Cl. 55, 384 F.2d 391, 399 (Ct.Cl.1967)). However, the prosecution history "cannot enlarge, diminish, or'vary' the limitations in the claims." Markman, 52 F.3d at 980 (quoting Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 12 Otto 222, 26 L.Ed. 149 (1880)).

D. Extrinsic Evidence

[13] [14] [15] [16] Extrinsic evidence may be resorted to only for interpretation of terms used in the claim and specification when their meaning is in dispute or ambiguous. *See* Vitronics, 90 F.3d at 1584-85. Extrinsic evidence is "all evidence external to the patent, including expert and inventor testimony, dictionaries, and learned treatises." Markman, 52 F.3d at 979, 980. Extrinsic evidence may be consulted during construction of a claim to assist with the understanding of "scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history." Markman, 52 F.3d at 980; *see* Vitronics, 90 F.3d at 1584. Extrinsic evidence may be received to aid in " 'coming to a correct conclusion' as to the true meaning of the language employed in the patent." Markman, 52 F.3d at 979 (citations omitted). After consideration of all available intrinsic evidence, if there still is some genuine ambiguity in the claims, extrinsic evidence may be consulted to interpret the meaning of the language used in the claim. *See* Vitronics, 90 F.3d at 1584. Extrinsic evidence cannot be used, however, for the purpose of varying or contradicting the terms of the claims. *See* id.

5. DISCUSSION

A. SHOULD THE TERM "EXTENDING FROM" IN CLAIMS 1 AND 37 BE LIMITED TO PRODUCTS THAT ARE MECHANICALLY CONNECTED OR SHOULD IT BE CONSTRUED TO ALSO INCLUDE PRODUCTS THAT ABUT EACH OTHER BUT HAVE NO MECHANICAL CONNECTION?

i. Patent Language Arguments

[17] An analysis of the '925 patent language indicates that the term "extending from" is not limited to "integral or mechanically connected" structural relationships. Interpreting "extending from" as limiting the structural relationship between the secondary flange and the frac mandrel to being either an integral or mechanical connection, improperly confines the term "extending from" to specific embodiments of the invention. Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed.Cir.2005) (although the specification describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.)

Cameron disagrees. Cameron first argues that the "extending from" language is not specifically defined in the '925 patent. Cameron asserts that a structural relationship characterized as an abutment, as opposed to being integral or mechanically connected, is not contemplated by the purported invention disclosed and

claimed in the '925 patent. Cameron, however, fails to explain why the patent's failure to contemplate the structural relationship of an abutment limits the "extending from" clause to being integral or mechanically connected. In essence, Cameron requests that the court interpret the patent's "extending from" language to give it the meaning, "integral or mechanically connected," which goes beyond the patent's express language to add a meaning that is neither obvious nor required. The structural relationship of an abutment contemplates a relationship where two structures that abut (are in contact or adjacent to each other) "extend from" each other.

Cameron next argues that Duhn Oil's interpretation of "extending from" is inconsistent with the "wherein" clause and would render the claimed device inoperable. According to Cameron, Duhn Oil's interpretation only requires that the secondary flange be positioned "outward" of the frac mandrel with no requirement that the flange be connected to the frac mandrel, or even be touching the frac mandrel in any way. Cameron argues that this proposed definition is overbroad. According to Cameron, under Duhn Oil's construction there would be no way for the force to transmit from the frac mandrel to its secondary flange because it does not require that the secondary flange even touch the frac mandrel. It only requires that it be "positioned outward."

However, the "wherein" clause does not require that the "secondary flange" be mechanically connected to, or integral with, the frac mandrel as Cameron contends. The axial force could be reacted to independently by the "first tubular member flange" and the "secondary flange" if they are in contact without being integrally connected. Claim 12 FN8 states the wellhead assembly of claim 4 FN9 which incorporates by reference the wellhead assembly of claim 1 "wherein the secondary flange is separate from the elongate annular member (frac mandrel)." Since a dependent claim is narrower in scope than the independent claim on which it depends, claim 1 includes embodiments of the wellhead assembly wherein the secondary flange is either separate from or connected to the frac mandrel. Similarly, claim 46 claims the wellhead assembly of claim 37 "wherein the first tubular member and the secondary flange are fastened together," thereby demonstrating that claim 37 also claims embodiments of the wellhead assembly wherein the secondary flange is either separate from or connected to the frac mandrel. The construction of the term "extending from" taken in conjunction with the "wherein" clause of claims 1 and 37 is consistent with the scope of those claims and does not render either of those claims inoperative.

FN8. Claim 12 reads: "A wellhead assembly as recited in claim 4 wherein the secondary flange is separate from the elongate annular member (frac mandrel)."

FN9. Claim 4 reads: "A wellhead assembly as recited in claim 1 further comprising a seal between the elongate annular member second end portion and the first tubular member."

ii. Specification Arguments

When construing the "extending from" term in light of the specification, Figure 4b of the patent shows that the term is broader than Cameron asserts. For example, Fig. 4b depicts an embodiment of the claimed invention where the "lock screws 40 ... are threadedly retracted to allow unrestricted access through bore 92 defined through the secondary flange." Because the lock screws 40 are retracted in this embodiment, they do not interact with the annular groves 212, 214 of the frac mandrel 60, and therefore cannot be said to be "mechanically connected" to the elongate annular member 60 (frac mandrel). Fig. 4b, thus, explicitly

discloses an embodiment of the present invention where the "secondary flange" is not integral with or mechanically connected to the frac mandrel 60.

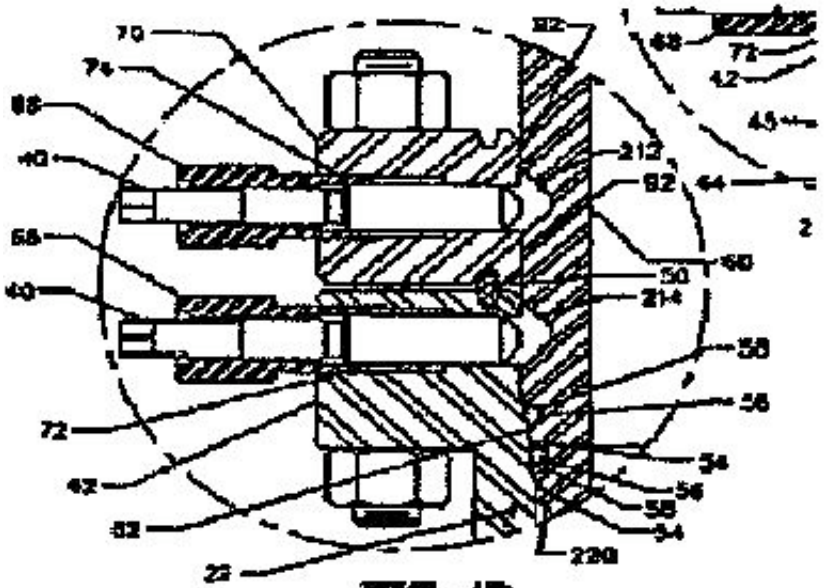


FIG. 4B

Cameron argues that Duhn Oil's construction is inconsistent with the disclosure set forth in the '925 patent specification. According to Cameron the '925 patent specifications reveal that the use of the term is limited to reference to "integral" parts of a single structural component of the wellhead assembly described in the patent. For example, the '925 Patent describes an integral flange that connects to a fracturing tree as "[a] radial flange 208 [that] extends from an upper end of the wellhead isolation tool." Moreover, the non-integral secondary flanges 70 and 110 illustrated in the '925 Patent are never described as "extending from" the mandrel. Only in the claims of the '925 Patent is the secondary flange first described as "extending from" the mandrel. Thus, although '925 Patent describes non-integral alternatives for the secondary flange, interpreting the recitation "extending from" in a manner consistent with the written description suggests that this recitation is limited to an integral or one-piece relationship. Cameron also argues that term "extending from is never defined and there is no explanation of the term found in the prosecution history."

According to Cameron the relationship between the frac mandrel and the secondary flange is described in three different ways in the patent specifications:

1. ***Mechanically connected:*** Duhn Oil emphasizes that the secondary flange is disclosed as a separate part slid over the frac mandrel and positioned outwardly of the frac mandrel but fails to address the fact that the secondary flange is mechanically connected.

2. ***Integral:*** the secondary flange is described as being an "integral" part of the frac mandrel at Col. 3, lines 25-27, and at Col. 7, lines 22-24.

3. ***Threaded Connection:*** the "secondary tie down flange" described as secured to the frac mandrel with a

threaded connection. (Col. 3, lines 28-37, and Col. 7, lines 17-22.)

Cameron argues that there are no other possible configurations contemplated or disclosed in the '925 Patent. There is no suggestion in the ' 925 Patent that the secondary flange is or may be disposed around but not connected to the mandrel. Cameron argues that the entire context of the ' 925 Patent evidences that the secondary flange is, at a minimum, mechanically connected to the mandrel. Lastly, Cameron argues that every described embodiment of the invention requires some sort of mechanical connection between the secondary flange and the mandrel and that the mechanically extending flanges are not just examples of flanges but are the only extending flanges contemplated and claimed in the '925 patent. According to Cameron, the only logical conclusion is to construe "extending from" as either integral or having a mechanical connection. Because Cameron's products merely abut each other, Cameron argues that they do not infringe.

Cameron correctly argues that the "extending from" language is not specifically defined in the '925 patent. However, it does not follow that an abutment relationship is not included merely because the term "extending from" is not defined. To determine the meaning of the term "extending from" an analysis of the term's use in the patent language and a comparison to the specifications is required.

Claim 1 describes a first tubular member flange "extending from" the first tubular member. In a separate provision, Claim 1 also describes "a plurality of fasteners fastening the secondary flange to the first tubular member flange." If the term "extending from" were to only contemplate a mechanical connection, then the term describing the relationship between the secondary flange and the first tubular member through a plurality of fasteners would not be necessary.

Claim 3 describes "a wellhead assembly as recited in claim 2 wherein said annular lip extends radially inward defining an opening having a first diameter, wherein the elongate annular member first end portion comprises an inner surface having a second diameter and wherein the portion of the production tubular member comprises an inner surface having a third diameter, wherein said first, second and third diameters are equal." An embodiment of this claim is found in Fig. 3. A close analysis of Fig. 3 shows the annular lip "extending" into the inner bore. There is no mechanical connection contemplated in this diagram or description. Both the diagram and the description show an abutment but not a connection

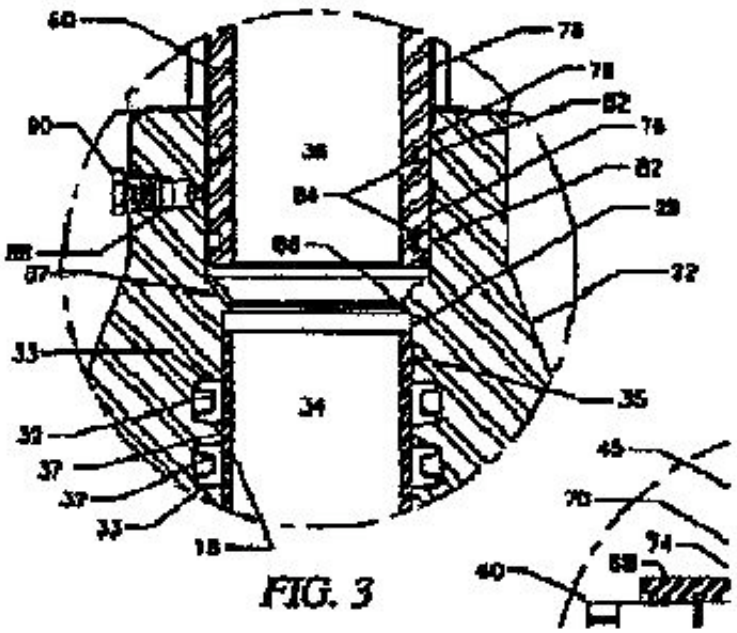


FIG. 3

Claim 37 describes, "A wellhead assembly comprising ... a generally elongate annular member (frac mandrel) suspended in the first tubular member and said annular member having a first end portion extending above the first tubular member and a second end portion below the first end portion within the first tubular member FN10, wherein the elongate annular member comprises an outer surface before the first and second ends, wherein a portion of a section of the outer surface of the elongate annular member mates with the smaller diameter inner surface section of the first tubular member."

FN10. The same relationship is contemplated in claim 52.

An analysis of this claim and a comparison of Fig. 1 indicates that the lower portion of the frac mandrel is encased by the upper portion of the first tubular member flange. A visual assessment of Fig. 1 reveals that the upper portion of the frac mandrel abuts from the first tubular member. Further, the fact that the frac mandrel is "suspended" in the first tubular member indicates a relationship where the first tubular member is holding the frac mandrel in place by encasing it rather than through a threaded or mechanical connection. There is no description of any mechanical connection in either the language of this claim or in the visual description of the embodiment in Fig. 1.

Claim 50 describes "A wellhead assembly as recited in claim 37 further comprising a third flange extending from the generally elongate annular member spaced apart from the second flange." In Fig. 1 the third flange is indicated by no. 208 on the diagram. There is no mechanical or threaded connection contemplated in the relationship between the third flange and the frac mandrel. The third flange abuts the frac mandrel.

Claim 59 describes "A wellhead assembly as recited in claim 52 wherein a portion of the first tubular member extends within a casing head coupled to the casing, the wellhead assembly further comprising ... an annular hanger suspended in the casing head ... wherein the first tubular member comprises a lower section within the upper inner surface section of the annular hanger and wherein the second end portion of the elongate annular member extends to the intermediate inner surface section of the annular hanger

sandwiching a portion of the first tubular member lower section between the outer surface of the elongate annular member and the upper inner surface of the annular hanger ..."

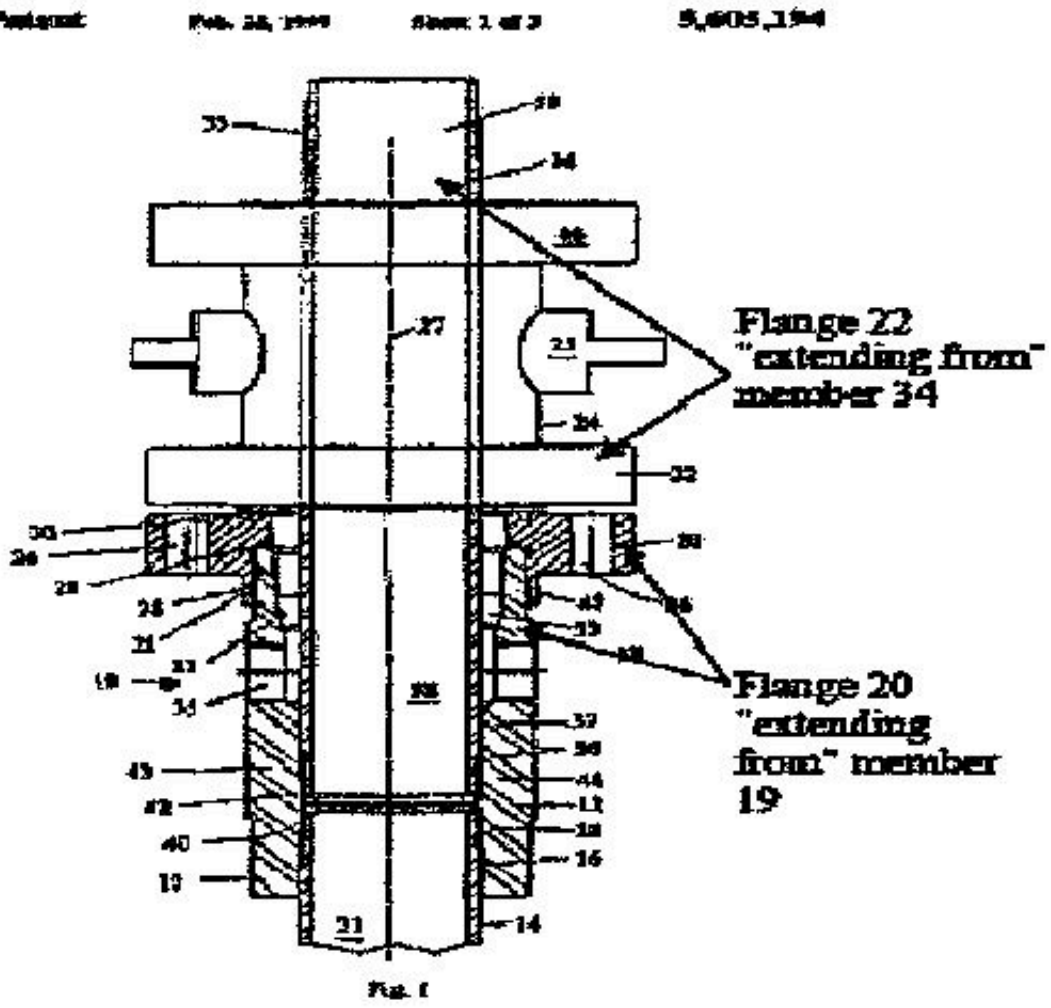
Similarly, the language of claim 50 compared to Fig. 1 does not indicate a threaded or mechanical connection between the frac mandrel, the casing head, and the first tubular member. According to Fig. 1, all three components meet at the area of the inner surface section of the annular hanger. The components abut each other in Fig. 1 and have a relationship where some components are "suspended" by others in the relationship. Neither the language nor the diagram indicates any mechanical connection.

Based on a comparison between the language of the claims and the attached diagrams of the patent, it cannot be said that the term "extending from" was meant to only be limited to components that are mechanically connected.

iii. Prosecution History

The Patent Examiner who is skilled in the art, interpreted the term "extending from" to cover a wide variety of different structural relationships between the flange and the member it "extends from." The common feature of all these configurations is that the flange is "located or stretching outwardly from the frac mandrel." During the prosecution the Examiner used the term "extending from" to cover various flange structures including a use where the structure was "integral," but he did not limit the application of "extending from" to that structure. Duhn Oil cites the Examiner's references to prior art in the prosecution history of the '925 patent.

For example in the Smith '194 patent The Examiner describes flange 20 threaded on member 19 as "extending from" that member. He also describes Flange 22 slipped over member 34 as "extending from" that member. (Doc. 40, Ex. 2, Part 6., P. 247, Office Action dated 10/05/2004).



In the Cornelssen et al '386 Patent, Flange 120, which rests on top of member 10 but has a wider diameter than member 10, is described by the Examiner as "extending from" that member. (Id.)

***1162**

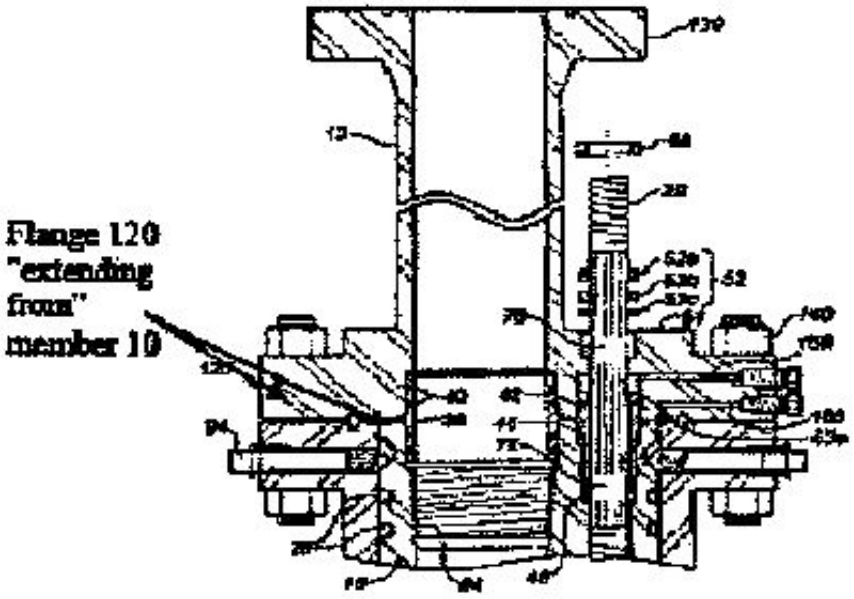


FIG. 7

In the Van Bilderbeek '596 patent: The Examiner describes flange 330 as "extending from" the member of which it is an integral part. (Doc. 40, Ex. 2, Part 8, P. 316, Office Action dated 1/18/2005).

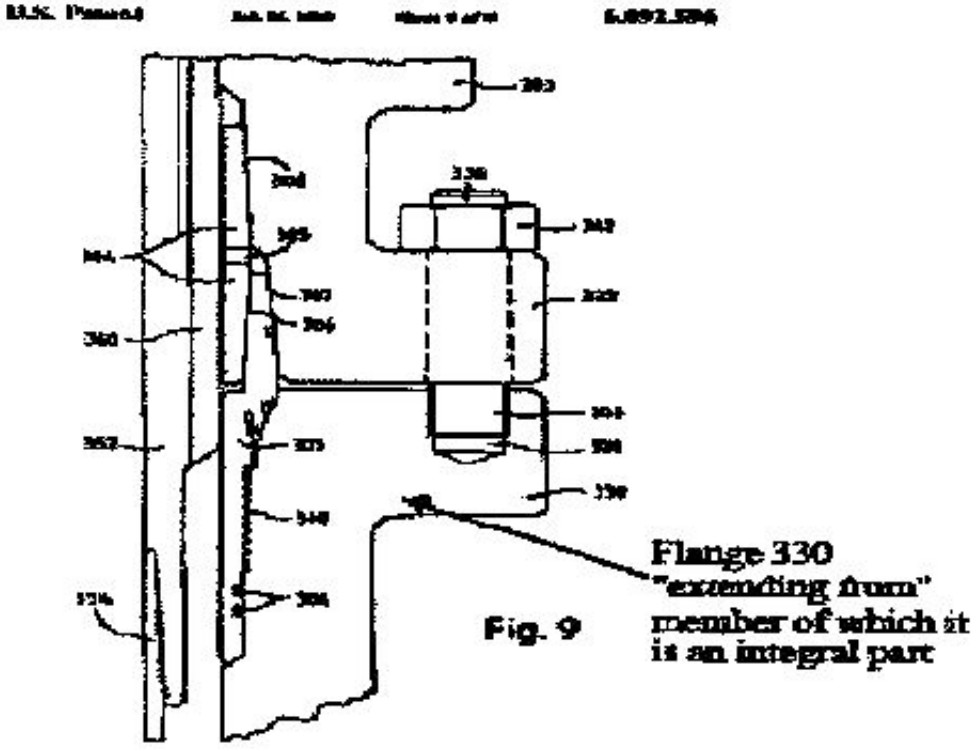


Fig. 9

Based on the prosecution history of the patent, regardless of in what configuration the term "extending from" is used, all of the uses comprise a structure which is projecting from or abuts another structure. This is consistent with the ordinary meaning of "extending from" which describes the relative position of two components or portions of a component, not how they are connected.

Cameron disputes Duhn Oil's use of the prosecution history arguing that Duhn Oil's proposed construction is inconsistent with the arguments it made before the USPTO during the prosecution of the application that issued the ' 925 Patent and it should be estopped to deny the position it then took. Cameron first argues that Duhn Oil is precluded from asserting the "extending from" language of the Smith '194 patent and the Cornelssen '386 patent because the USPTO's references to the Smith '194 patent and the Cornelssen '386 patent were made in rejecting Duhn Oil's then pending patent claims. Cameron argues that the Examiner rejected a number of Duhn Oil's claims including claims 1 and 37 in the office action of October 5, 2004. Defendant asserts that Duhn Oil then "refused to agree that the flanges and frac mandrels identified by the Examiner disclosed the claimed 'secondary flange' and frac mandrel of the issued claims 1 and 37 in the '925 patent." According to Cameron, Duhn Oil effectively asserted that the "secondary flange" identified by the Examiner was not "extending from" the frac mandrel disclosed in the Smith and Cornelssen prior art patents because Duhn Oil referred to those flanges and frac mandrels as the "alleged" secondary flange and the "alleged" frac mandrel.FN11 This argument does not follow. Referring to the secondary flange and the frac mandrel as "alleged" in the Smith and Cornelssen patents is not the logical equivalent asserting that those two components do not extend from each other.

FN11. In support of its argument, Cameron cites Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1457 (Fed.Cir.1998.) for the rule that when a patentee takes a position before the USPTO during prosecution of a patent application, the patentee should be barred from asserting an inconsistent position on claim construction. However, Duhn Oil did not take an inconsistent position during the prosecution of the case.

However, the secondary flange, which was added along with the "extending from" phrase and is one of the components that participates in the reaction to fracturing force, was the element added to overcome the rejection based on the Smith '194 patent. Duhn Oil argues that the presence of the secondary flange, and not its particular location, was the point of distinction. The amendment does not limit Duhn Oil's ability to claim the definition of "extending from" to include the relative location disclosed in the '194 patent.

iv. Extrinsic Evidence

In support of its argument, Duhn Oil refers to the dictionary meaning of the terms.FN12 The ordinary meaning of the terms "extend" and "from" are readily apparent, and it is proper to use a dictionary definition to ascertain their meaning. Phillips 415 F.3d at 1314 (in some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words ... In such circumstances, general purpose dictionaries may be helpful.)

FN12. Phillips also provides a warning on the use of dictionaries and other external sources. The court states: "The problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive". Phillips, 415 F.3d at 1324. This problem does

not exist in this case where the focus is instead on how Duhn Oil used the claim term in the claims, specification, and prosecution history, rather than starting with a broad definition and limiting it by the claims and specifications language.

The term "extending" is commonly defined as "to jut out: stick out: protrude, project." (Doc. 45. Schwartz Decl., Ex. 3, Filed September 5, 2006.) Further the term "from" is commonly defined as "used as a function word to indicate a starting point." (*Id.*) Thus, the phrase "extending from" means to "protrude" from a "starting point." However, the definitions of "extending" or "from," separately or in combination do not require that whatever is "protruding" from the "starting point" be "integral" or "mechanically connected" to the "starting point." The '925 patent only requires that one structure be positioned so as to stretch or protrude outwardly in relation to the other structure.

B. IS THE LANGUAGE OF THE "WHEREIN" CLAUSE IN CLAIMS 1 AND 37 PURELY FUNCTIONAL SO AS TO BE INTERPRETED AS A "MEANS-PLUS-FUNCTION" CLAIM UNDER 35 U.S.C. s. 112**, para. 6 OR DOES THE LANGUAGE DESCRIBE BOTH A FUNCTION AND A STRUCTURE SO THAT INTERPRETING THE CLAUSE AS A "MEANS-PLUS-FUNCTION" CLAIM WOULD BE IMPROPER?**

The disputed language of the "wherein" clause states: "A wellhead assembly comprising ... a production tubular member aligned with the elongate member, wherein an axial force acts on the generally elongate member and is reacted in both the first tubular member flange and the second flange."

The primary tools used by courts to discern the meaning of claim terms are the specifications and the prosecution file history. *see,* Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed.Cir.2005). The intrinsic evidence is the first and principal step toward determining the meaning of the claims. see also, Vitronics Corp., 90 F.3d at 1582. While the court should look to the specification for guidance as to how to interpret the ordinary meaning of a claim term, it must avoid importing limitations into the claims from the specification. *See* Phillips, 415 F.3d at 1323.

[18] [19] A patent is presumed to be valid. 35 U.S.C. s. 282. "While we have acknowledged the maxim that claims should be construed to preserve their validity, we have not applied that principle broadly, and we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction." Phillips, 415 F.3d at 1327. In such cases, we have looked to whether it is reasonable to infer that the USPTO would not have issued an invalid patent, and that the ambiguity in the claim language should therefore be resolved in a manner that would preserve the patent's validity. Id. The applicability of the doctrine in a particular case therefore depends on the strength of the inference that the USPTO would have recognized that one claim interpretation would render the claim invalid, and that the USPTO would not have issued the patent assuming that to be the proper construction of the term. Id. at 1328. A defendant challenging the patent by arguing that the patent itself proves its own invalidity, must demonstrate such proof clearly and convincingly. *see, e.g.* University of Rochester v. G.D. Searle & Co., Inc., 358 F.3d 916, 930 (Fed.Cir.2004.) However, when claims are amenable to more than one construction, they should, when reasonably possible, be interpreted so as to preserve their validity. Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1557 (Fed.Cir.1996.)

I. The language of the "wherein" clause of claims 1 and 37 represents a functional limitation and not a method step.

Courts have interpreted functional language in an apparatus claim as requiring that an accused apparatus possess the capability of performing the recited function. *See* Intel Corp. v. U.S. Int'l Trade Comm'n, 946 F.2d 821, 832 (Fed.Cir.1991.) Functional language is nothing more than defining something by what it does rather than by what it is. *In re Swinehart,* 55 C.C.P.A. at 1030. In contrast to "functional language" a "method" limitation recites a process or a step for using an apparatus.

[20] In the present case, the language of the "wherein" clause of claims 1 and 37 does nothing more than define how the "first tubular member flange" and the secondary flange react when an axial force acts on the frac mandrel. Accordingly the "wherein" clause assumes the presence of an axial force. The clause does not require that an axial force be applied by a user nor does it specify a method as to how the force is provided. The clause only requires that a wellhead assembly be subject to an axial force. Contrary to Cameron's contention, the axial force of the wherein clause can be any axial force and is not limited to the excess loads caused during fracturing. The axial force can include forces due to gravity, pressure from the well, or any other environmental force that could act on the wellhead assemblies of claims 1 and 37.

Further, the language of claims 1 and 37 does not require that the device be in use to infringe. One can infringe claims 1 and 37 simply by assembling a device that when under an axial force, reacts (transmits) the axial force onto the first tubular member flange and the secondary flange. Cameron asserts that "simple logic and a review of the '925 patent demonstrate that this 'axial force' would not be present if the wellhead apparatus were assembled and placed in a box". However, the limitations of claims 1 and 37 require that the "wellhead assembly" already be connected to a well, and not lying in a box somewhere. The device claimed in both claims 1 and 37 includes the limitation of a casing, which is actually a part of the working well itself and therefore the claimed device can never be fully assembled in a box. Rather, when the claimed device is fully assembled at the well, the device of claims 1 and 37 will inherently be exposed to the axial force of gravity acting on it in addition to any pressure applied by the well itself.

The "wherein" clause of claims 1 and 37 does not require that a certain type of axial force act on the frac mandrel but only requires that there is some type of axial force acting on the frac mandrel. In other words, the requirement of an axial force merely requires that the wellhead assembly be in an environment where there is an axial force present and acting on the frac mandrel. Given that an axial force is present and acting on the frac mandrel, the wherein clause imports the functional limitation that said axial force be reacted in both the first tubular member flange and the secondary flange.

Because the "wherein" clause of claims 1 and 37 merely limits the functionality of the first tubular member flange and the secondary flange while an axial force is present and acting on the frac mandrel, it does not constitute a method step as Cameron contends. Instead, it is more analogous to claims that use "adapted for" language or conditional language to describe how an apparatus will behave under certain conditions.

II. The prosecution history supports the argument that claims 1 and 37 merely describe how the device will react when such force inevitably acts on the device.

In light of the prosecution history and specification, the "wherein" clause of claims 1 and 37 is merely a functional limitation on the structure of the device of claims 1 and 37. According to the prosecution history of the Smith ' 194 patent, to overcome a rejection of claim 1 during prosecution of the ' 925 patent, Duhn's patent attorney argued that "if a load were to be axially acted upon the alleged frac mandrel34 of Smith, the load will not be reacted in both the alleged first tubular member flange and the alleged secondary flange disclosed therein." Hence, Duhn differentiated claim 1 from the prior art by arguing that the language of the

"wherein" clause limited claim 1, not by requiring a method step, but by requiring that "the first tubular member flange" and "the secondary flange" react in a different way from the prior art when an axial force is applied. Moreover, at no point during the prosecution of the '925 patent did the prosecuting attorney or the Examiner even hint at the possibility that claims 1 or 37 require that the wellhead assembly actually be used in order to meet the subject claim limitation. The Examiner, like the prosecuting attorney, agreed that the language of the "wherein" clause of claims 1 and 37 merely places a functional limitation onto the device being claimed.

As an example, Duhn Oil argues that during prosecution, the Examiner rejected what was then claim 72 as being anticipated by U.S. Patent No. 6,092,596 ("the '596 patent"). (*See* the Office action of January 18, 2005 Claim 72 included language identical to the language of the "wherein" clause of claims 1 and 37.) The Examiner found that Figure 9 and Col. 8, line 47 through Col. 9, line 24 of the '596 patent disclosed what was recited in claim 72 including the language of the "wherein" clause. The Examiner stated that the '596 patent discloses a device "wherein an axial force acts on the frac mandrel and is reacted in both the first and second flanges." The language of Col. 8, line 47 through Col. 9, line 24 of the '596 patent describes structural elements of a clamping well casing in terms of how those elements will inherently function when the device is assembled.FN13

FN13. Col. 8, line 47 through Col. 9 line 24 of the '596 patent states:

Two compression rings 364 (each similar to one half of the ring 64 of Fig. 4) separated by a plain ring 365 are retained within a correspondingly shaped annular, internal recess formed by the upper and lower section 303, 330. Also, within this recess is an annular sleeve 301. The sleeve 301 is threaded at 302 onto a corresponding internal thread on the section 330. Seals 304 are provided to seal between the sleeve and the section 330.

The sleeve 301 has an upper region which has both an internally tapered surface 306 and an externally tapered surface. The upper section 303 has an upper internally tapered surface 308 and a lower internally tapered surface 307.

When the components are assembled as shown in Fig. 9, tightening of the nuts 342 (of which there will be several around the circumference) draws the upper section 303 towards the lower section 330. This will cause all the taperng surfaces to ride over one another.

The surface 308 of the upper section 303 will ride over the upper compression ring 364 and will compress the ring inwardly.

The surface 307 of the upper section 303 will ride over the upper part of the sleeve 301 and will compress the sleeve inwardly.

At the same time, the upper part of the sleeve 301 will be driven into the tapering gap between the lower one of the compression rings 364 and the upper section 303, and this will cause the lower compression ring

to be compressed radially inwards, to grip the casing hanger 352, at whatever part of the hanger lies within the circumference of the rings 364.

In this embodiment, metal/metal seals exist between the surfaces of the upper and lower sections, the compression rings 364 and the sleeve 301. The surfaces of the compression rings which will make contact with the hanger 352 can be ribbed or serrated, in order to enhance the grip of the rings on the hanger. The compression ring could be made from a single component with two oppositely tapered surfaces, instead of the construction described above.

The clamping/clamping system described here is easy and simple to operate and allows the parts of the clamp to be held apart, against gravitational influences, until the components to be clamped are in their correct relative positions. It also allows the clamp to be easily opened and closed to allow adjustment of relative axial positions.
The Examiner cited prior art against the language of the "wherein" clause of claims 1 and 37, which describes a structure in terms of functional limitations. Thus, the Examiner, who is of ordinary skill in the art, understood that the language of the "wherein" clause of claims 1 and 37 constituted a functional limitation and not a method step. Therefore, applying the presumption that the Examiner correctly analyzed the '925 application, it would be incorrect to do as Cameron suggests and usurp the clear intent of the Applicant and the Examiner. to re-write the functional limitation of claims 1 and 37 into a method step.

III. Whether Duhn Oil's claim of infringement is estopped by the *Festo* and the Doctrine of Equivalents is not reasonable on claim interpretation as a matter of law.

[21] The doctrine of equivalents applies that when the patentee originally claimed the subject matter alleged to infringe but then narrowed the claim in response to a rejection; the patentee may not argue that the surrendered territory comprised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent. Festo v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., et al, 535 U.S. 722, 733-734, 122 S.Ct. 1831, 152 L.Ed.2d 944 (2002). In some cases the USPTO may have rejected an earlier version of the patent application on the ground that a claim does not meet a statutory requirement for patentability. Id. at 727, 122 S.Ct. 1831. When the patentee responds to the rejection by narrowing the claims, this prosecution history estops the patentee from later arguing that the subject matter covered by the original, broader claim was nothing more than an equivalent. Id. Competitors may rely on the estoppel to ensure that their own devices will not be found to infringe by equivalence. Id. at 727, 122 S.Ct. 1831. Prosecution history estoppel ensures that the doctrine of equivalents remains tied to its underlying purpose. Id. at 734, 122 S.Ct. 1831. Where the original application once embraced the purported equivalent but the patentee narrowed the claims to obtain the patent or to protect its validity, the patentee cannot assert that the patentee lacked the words to describe the subject matter in question. Id. at 734, 122 S.Ct. 1831. The doctrine of equivalents is premised on language's inability to capture the essence of innovation, but a prior application describing the precise element at issue undercuts that premise. Id. at 734, 122 S.Ct. 1831. In that instance the prosecution history has established that the inventor turned his attention to the subject matter in question, knew the words for both the broader and narrower claim, and affirmatively chose the narrower. Id. at 734-735, 122 S.Ct. 1831.

Cameron argues that Duhn Oil inserted the "wherein" clause of claims 1 and 37 through a narrowing amendment admitted to be made for "reasons related to patentability." Cameron claims that Duhn Oil filed a

Petition to Make Special through which it admitted that it was aware of the construction of the accused products at the time the amended claims were submitted to the Patent Office. As a result, Cameron argues that Duhn Oil cannot rebut the presumption which precludes it from asserting a claim of infringement under the doctrine of equivalents. However, the parties have not sufficiently explained what was abandoned to comply with the examiner's rejection to permit the application of the doctrine of equivalents. This is a factual inquiry that will test whatever design and function the invention now has, to determine what was rejected or limited by the examiner and patentee. The issues Cameron raises as well as the issue of how and with what effect Duhn Oil chose to narrow its claims from broader language to meet the requirements for patentability, involve questions of fact that cannot be decided on this record.

6. *CONCLUSION*

For the reasons stated above, the following claim interpretation is made for Plaintiff's '925 patent:

-> The term "extending from" in claims 1 and 37 is not limited to products or structures that are mechanically or structurally connected and includes structures or products that abut each other.

-> The language of the "wherein" clause of claims 1 and 37 represents a functional limitation and not a method step.

-> The Court cannot determine the applicability of prosecution estoppel based on the Doctrine of Equivalents on the existing record.

SO ORDERED.

E.D.Cal.,2007.
Duhn Oil Tool, Inc. v. Cooper Cameron Corp.