United States District Court,
D. Minnesota.

EZ DOCK, INC,
Plaintiff.
v.
SCHAFER SYSTEMS, INC,
et al. Defendants.

No. Civ. 98-2364RHKAJE

Jan. 22, 2003.

Daniel J. Maertens and Lora Esch Mitchell, Fredrikson & Byron, P.A., Minneapolis, Minnesota; and McPherson D. Moore, Ned W. Randle, and Douglas E. Warren, Polster, Lieder, Woodruff & Lucchesi, L.C., Saint Louis, Missouri, for Plaintiff.

Douglas J. Williams, J. Derek Vandenburgh, Jon Trembath, and William F. McIntyre, Jr. Merchant & Gould, P.C., Minneapolis, Minnesota; and G. Brian Pingel, Pingel & Templer P.C., West Des Moines, Iowa, for Defendants.

MEMORANDUM OPINION AND ORDER

KYLE**, J.**

Introduction

Plaintiff EZ Dock, Inc., owns U.S. Patent No. 5,281,055 ("the '055 patent"), which describes a floating dock comprised of one or more uniform sections that can be coupled together to make an endless combination of formations. EZ Dock has brought suit against Defendants Schafer Systems, Inc., and Connect-A-Dock, Inc., alleging that they have infringed eight claims of the '055 patent. Presently before the Court is the parties' request, made pursuant to Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995), *aff'd* 517 U.S. 370 (1996), to have the Court construe two phrases found in the claims at issue: "generally frustoconically shaped pylon" and "extending from the top surface to the bottom surface." FN1

FN1. Defendants also brought a Motion to Strike the Affidavit and Expert Report of EZ Dock's Patent Law Expert and Other Extrinsic Evidence. The Court has found it unnecessary to consult extrinsic evidence, aside from dictionary definitions, and will deny the Motion.

Background

I. The Patent-In Suit

On January 25, 1994, the Patent and Trademark Office ("PTO") issued the '055 patent, which describes a floating dock system and contains twelve claims. (Mitchell Decl. Ex. 1 ('055 patent).) On August 14, 2001, the PTO issued a re-examination certificate for the '055 patent. (Id., Ex. 2 (Reexamination Certificate).) In pertinent part, the 2001 Certificate confirmed the patentability of claims 1-12, and determined that new claims numbered 13 through 20 were patentable, adding them to the '055 patent.

EZ Dock asserts that Schafer has infringed eight claims of the '055 patent, as reexamined: claims 8, 9, 13-15, and 18-20. Of those claims-at-issue, numbers 8, 13, and 20 are independent claims and read as follows (the phrases to be construed in italics):

8: A floating dock, comprising

a docking member with top, bottom and side surfaces defining a hollow cavity and *a generally frustoconically shaped pylon* within the cavity *extending from the top surface to the bottom surface*.FN2

FN2. Dependent claim 9 states as follows:
The floating dock of claim 8 wherein the base of the pylon defines a hole in the bottom surface of the docking member so that air is captured within the pylon when the docking member is positioned in water.
13: A floating dock comprising
a docking member with top, bottom and side surfaces defining an enclosed air filled hollow cavity, and *a generally frustoconically shaped reinforcing pylon* within the enclosed air filled hollow cavity *extending from the top surface to the bottom surface,* each such pylon at the bottom surface having an opening sufficient to allow air to also be captured within the pylon when the bottom surface of the docking member is positioned in water.FN3

FN3. Dependent claims 14, 15, 18 and 19 state as follows:
14. The floating dock as defined in claim 13 including at least two pylons that extend substantially between the side surfaces of the docking member.
15. The floating dock as defined in claim 14 in which the at least two pylons are generally parallel to one another.
18. The floating dock as defined in claim 13 in which the side surfaces are generally perpendicular to the bottom and top surfaces.
19. The floating dock as defined in claim 8 in which the side surfaces extend substantially only between the top and bottom surfaces of the docking member.
20: A floating dock comprising at least two docking members, said docking members being adapted to be connected together to form said floating dock; each said docking member comprising top, bottom and side surfaces defining a hollow cavity and *a generally frustoconically shaped pylon* within the cavity *extending from the top surface to the bottom surface*.

Analysis

I. Standard of Decision

Through the process of claim construction, the court ascertains the scope and meaning of each claim as a matter of law. Markman v. Westview Instruments, Inc., 517 U.S. 370, 386 (1996). "It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed." Multiform Desiccants, Inc., v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed.Cir.1998). EZ Dock asserts that a person of ordinary skill in the art of dock design and construction is someone who has a high school education and has no experience in rotational molding. (Pl.'s Initial Markman Brief at 11.) Schafer does not dispute EZ

Dock's assertion as to who constitutes a person of ordinary skill in field of the invention. Thus, this Court must construe the claims through the eyes of an individual who has a high school education. *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995).

Two categories of evidence can pertain to the construction of claim language in a patent. "Intrinsic" evidence consists of the language of the claims, the specification of the patent, and the prosecution history. *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). To properly construe claims, a court must always examine the claims, the rest of the specification, and, if in evidence, the prosecution history. *Id*. A court must evaluate the language of the claims themselves, consider next the specification and, finally, the prosecution history. *Id*. at 1582-89. If the meaning of the claim terms is unambiguous, and the court can determine that meaning from the intrinsic evidence, it need not rely on extrinsic evidence in construing the claim. *See id*. at 1583.

"Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Markman, 52 F.3d at 980. A court may, in its discretion, receive extrinsic evidence to aid in understanding the patent. *Id*. When an analysis of intrinsic evidence alone will resolve a genuine ambiguity in a disputed claim term, however, it is improper for a court to rely on extrinsic evidence. Vitronics, 90 F.3d at 1582. "Dictionaries and technical treatises, which are extrinsic evidence, hold a 'special place,' however, and may sometimes be considered along with the intrinsic evidence when determining the ordinary meaning of claim terms." Bell Atlantic Network Servs., Inc. v. Covad Communics. Group, Inc., 262 F.3d 1258, 1267 (Fed.Cir.2001). A court cannot use extrinsic evidence for the purpose of varying or contradicting the terms of the claims. Markman, 52 F.3d at 981.

II. "Generally Frustoconically Shaped Pylon"

The key disagreement between the parties is whether a "generally frustoconically shaped pylon" can have a shape other than that of a right circular cone that has had the top part cut off.FN4 The Defendants contend that it cannot. The Plaintiff asserts that the pylon can have a base in the shape of any closed plane, such as a circle, rectangle, hexagon, cruciform, oval, or an irregularly shaped closed plane.

FN4. A right circular cone is produced by revolving a right triangle about one of its shorter sides, the radius of the circular base being the length of the other short side. (*See* McIntyre Markman Decl., Ex. I (entry for cone from *McGraw-Hill Concise Encyclopedia of Science & Technology* (4^{th} ed.1998)).)

Beginning with the claims themselves, the Court notes that the phrase at issue consists of two adverbs ("generally" and "frustoconically") and one adjective ("shaped"), all of which modify the noun "pylon." The language of the claims, quoted above, does not define these terms either individually or collectively. As determined above, the Court must construe this term through the eyes of an individual having a high school education.

The main difficulty presented by the phrase "a generally frustoconically shaped pylon" is that the ordinary meanings of the noun "pylon" do not fit neatly into the claimed invention, a floating dock. EZ Dock argued that "[l]ooking up a word in a dictionary should be straightforward," (EZ Dock Reply Brief at 3), and provided definitions from *Webster's Third New International Dictionary of the English Language* for several words or word roots used in the phrase in question. Significantly, however, EZ Dock did not include that dictionary's definition for "pylon," and in fact provided no definition for "pylon." *Webster's Third New*

International Dictionary defines it as follows:

1 a: a usually massive gateway often with flanking towers-compare PROPYLON b: an ancient Egyptian gateway building having a truncated pyramidal form; *broadly:* two such truncated pyramids with a gateway between c: a monumental mass placed so as to flank an entranceway (as an approach to a bridge 2: a tower (as of steelwork) for supporting either end of a wire (as for a telegraph line) over a long span 3 a: a post, tower, or other projection marking a prescribed course of flight for an airplane b: a structure for supporting the propeller on the side of a rigid airship or for attaching an auxiliary fuel tank, a bomb, or other external stores carried by an airplane.

From the foregoing, it is evident that the ordinary meanings of the term "pylon" do not make sense in the context of a floating dock.FN5 The Court therefore turns to the specification and prosecution history for assistance in determining what the patentee meant by the term "pylon."

FN5. Inserting one of the several alternate definitions of "pylon" into Independent Claim 8 of the '055 patent produces the following results:
A floating dock, comprising:

a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped *massive gateway, often with flanking towers* within the cavity extending from the top surface to the bottom surface.
A floating dock, comprising:

a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped *ancient Egyptian gateway building having a truncated pyramidal form* within the cavity extending from the top surface to the bottom surface.
A floating dock, comprising:

a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped *monumental mass placed so as to flank an entranceway* within the cavity extending from the top surface to the bottom surface.
A floating dock, comprising:

a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped *tower (as of steelwork) for supporting either end of a wire (as for a telegraph line) over a long span* within the cavity extending from the top surface to the bottom surface.
A floating dock, comprising:

a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped *post, tower, or other projection marking a prescribed course of flight for an airplane* within the cavity extending from the top surface to the bottom surface.
"Claims must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979. The specification may show that the patent "uses the words in a manner clearly inconsistent with the ordinary meaning reflected, for example, in a dictionary definition. In such a case, the inconsistent dictionary definition must be rejected." Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed.Cir.2002). An inventor may act as his own lexicographer and use the specification to supply new meanings for terms, either explicitly or implicitly. Electro Scientific Indus., Inc. v. Dynamic Details, Inc., 307 F.3d 1343, 1347 (Fed.Cir.2002). When construing claims, however, a court must not add limitations that appear only in the specification. Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed.Cir.1994).

Here, the inventors did not explicitly act as lexicographers in their specification by defining the phrase "generally frustoconically shaped pylon" or any of its component parts. The specification's discussion of "pylons" is the following:

Each docking member 12 is desirably generally hollow. The thickness of the wall of the docking member 12 can vary with need but should desirably be in the range of 0.19 to 0.63 inches, with a wall thickness of approximately 0.25 inches being preferred. Within the hollow cavity of the docking member 12, elongate struts stretch from the bottom surface to the top surface. These struts provide additional structural support for the docking member 12 as well as prevent sagging of the deck when pressure is applied (as when a person walks upon the deck).

The struts can be of any suitable formation. In the preferred embodiment, portions of the bottom surface extent upwardly into the interior of the docking member 12 towards the top surface to form a series of tapered *generally frustoconically shaped pylons* 30. The struts desirably include *pylons* with an arcuate top connected by slightly taller and wider *pylons*. In the preferred embodiment, two generally parallel strips of *pylons* run along the length of the bottom surface of the docking member 12. When the docking member 12 is positioned on the water, air is trapped within the *pylons* 30, thereby allowing the docking member 12 to remain afloat in the event that it becomes damaged and water begins to enter the cavity. (Mitchell Aff. Ex. 1 ('055 patent) at col. 3 11. 3-27 (emphasis added).) FN6

FN6. Nothing in the PTO's August 2001 Re-examination Certificate modifies these paragraphs.

Thus, implicitly, a "generally frustoconically shaped pylon" is a form of strut, a structure intended to provide support within the hollow cavity of the docking member.FN7

FN7. The patent also includes two figures-Figures 2 and 3-that pertain to the "pylons" labeled in the specification as element 30.

The prosecution history of the '055 patent is the next category of relevant intrinsic evidence. A patent's prosecution history also provides relevant information about the scope and meaning of claim terms. Markman, 52 F.3d at 980. Arguments and amendments made during the prosecution of the patent application, and other aspects of the prosecution history, are relevant in determining the meaning of terms in

the claims. *See* Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir.1995). The definition for a disputed claim term might appear in the prosecution history. *See* Honeywell, Inc. v. Victor Co. of Japan, Ltd., 298 F.3d 1317, 1323 (Fed.Cir.2002) (observing that it is well settled that an inventor may define a claim term in the prosecution history).

EZ Dock cites to a May 11, 1993 Amendment submitted to the PTO in support of its argument that the applicants defined "pylon" to mean "conical." The Amendment indicated that the applicants had "amended page 6 of the specification to state that the pylons formed by the docking members are *generally frustoconically shaped* ." (Mitchell Aff. Ex. 10 at 3.) The Amendment also stated, "Webster's New Collegiate Dictionary, Copyright 1979 by G. & C. Merriam Co., defines a pylon as a structure that is 'conical." ' FN8 (*Id*.) The Amendment concluded with the assertion that, therefore, the words "generally frustoconically shaped," added to page 6 of the specification "are equivalent to the word they are describing in the specification [i.e., pylon] ... and do not represent new matter." The PTO allowed this amendment.

FN8. In point of fact, no such definition appears in that edition of Webster's New Collegiate Dictionary. The only definition for "pylon" in that edition which contains the word "conical" states that a "pylon" can mean "a conical marker used on a road (as for directing traffic)."

From the foregoing, the Court determines that the inventors defined the term "pylon" to mean "a structure that is 'conical." ' To construe the phrase at issue, therefore, it must determine what an individual who has completed high school would understand "a structure that is 'conical" ' to be. The Defendants argue that a conical structure must be shaped like a right circular cone and must have a circular base. Placing it in the parlance of teenagers, the Defendants contend that the pylon in question must look like an ice-cream cone. FN9

FN9. The Defendants argue, with no supporting evidence, that a "typical high school educated person would not think of a shape with a noncircular base as a cone." Noting that a pyramid has a noncircular base, the Defendants go on to argue, again without a supporting factual basis, that "[a] typical high school educated person would not think of a pyramid as a cone." The Court rejects this line of argument as speculative.

When one compares that argument to the '055 patent, however, problems arise. The specification refers to a preferred embodiment having strips of pylons, and Figure 2 of the patent shows two parallel strips of openings on the bottom surface of a docking member. Each strip consists of a pattern of alternating rectangular openings and oblong openings. The drawings of a patent are relevant intrinsic evidence that the Court may consider in construing claims. *See* Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324 (Fed.Cir.2002). The Defendants offer no compelling explanation as to what those strips shown in Figure 2 represent if not the strips of pylons discussed in the specification, as seen from the bottom. Viewing the patent as a whole, it is evident that the '055 patent contemplates "pylons" which have something other than perfectly round bases.

"A claim construction that excludes from its scope a preferred embodiment 'is rarely, if ever, correct and would require highly persuasive evidentiary support." ' Bowers v. Baystate Techs., Inc., 302 F.3d 1334, 1345 (Fed.Cir.2002) (quoting Vitronics, 90 F.3d at 1583). The Defendants contend that EZ Dock's proposed construction of a "pylon" as a "conical" structure having a base in the shape of any closed plane (not just a circle) would encompass Heinrich's flange, found in the prior art in United States Patent No. 4,365,577. The

Court has carefully reviewed the Heinrich patent and finds the Defendants' arguments to be unpersuasive. The Defendants have not presented the "highly persuasive evidentiary support" necessary to warrant their narrow proposed interpretation of the phrase at issue.

The Court concludes that, in the context of the '055 patent, a "pylon" is a conical structure; that is, it is a structure having a closed plane base and a surface formed by line segments joining every point of the boundary of the base to a common vertex. Having determined what a pylon is, the Court turns to the modifying adjective and adverbs, "generally frustoconically shaped."

EZ Dock argues that the presence of the term "generally" in the phrase "generally frustoconically shaped pylon" means that "the shape of the pylon of the floating dock is not specifically, totally, or only frustoconical in shape." (EZ Dock Initial Markman Brief at 13 (emphasis in original).) According to EZ Dock, the pylon may have some characteristics of a frustoconical shape, but also have other characteristics which are not frustoconical. "Frustoconical" means "of the shape of a frustrum of a cone." FN10 In the context of a cone, a "frustrum" is ordinarily "the part of a solid ... between two parallel planes cutting the solid, especially the section between the base and a plane parallel to the base," *American Heritage Dictionary of the English Language* (4th ed.2000), or "the basal part of a solid cone ... formed by cutting off the top by a plane parallel to the base," *Merriam Webster's Collegiate Dictionary* (10th ed.2002). The top of a frustrum, therefore, is ordinarily parallel to its base and is flat.

FN10. "Frustoconically shaped" and "frustoconical" are equivalent terms.

The specification and Figure 3 from the '055 patent provide some insight into what a "generally frustoconically shaped pylon" includes. The specification indicates that it is desirable for the pylons to have an *arcuate* top; i.e., a top that is "curved like a bow," *Merriam Webster's Collegiate Dictionary* (10th ed.2002), or "having the form of a bow; curved," *American Heritage Dictionary of the English Language* (4th ed.2000). The arcuate top is illustrated in Figure 3. Upon consideration of the intrinsic evidence and Federal Circuit cases construing the term "generally," the Court concludes that a "generally frustoconically shaped pylon" is a structure that, for the most part, is in the shape of the frustrum of a solid having (1) a closed plane base and (2) a surface formed by line segments joining every point of the boundary of the base to a common vertex.

III. "Extending from the Top Surface to the Bottom Surface"

With respect to the second phrase to be construed, the parties dispute whether the top and bottom of the pylons discussed above must be molded into the top and bottom surfaces of the docking section in order to "extend[ ] from the top surface to the bottom surface." The Defendants argue that the term at issue requires a "kiss-off" between the pylon and the top wall of the docking section; that is, the pylon must be molded into the plastic shell forming the top surface of the dock. For this assertion, they rely principally on statements in the specification and the prosecution history regarding the function the pylons serve; they "provide additional structural support for the docking member as well as preventing sagging of the deck under applied pressure," and offer rigidity to the docking member.

The specification again points up a difficulty with the Defendants' arguments. The specification states that, "[t]he struts desirably include pylons with an arcuate top connected by *slightly taller and wider* pylons." For

some pylons to be *slightly taller than* other pylons, it is evident that not all of the pylons can be the same height. If, however, the Defendants' proposed construction applied, such that all pylons must be molded into the plastic that forms the top surface of the deck, all of the pylons would be the same height. Thus, the Defendants' proposed construction of "extending from the top surface to the bottom surface" would exclude what the inventors indicated was a desirable embodiment of the patent. As discussed above, a party who advances a claim construction that excludes from its scope a preferred embodiment must come forward with highly persuasive evidentiary support for that construction. Bowers, 302 F.3d at 1345. The Court has considered Defendants arguments, based on prior art references, and concludes that they are not highly persuasive evidence of EZ Dock's intent to claim only pylons that have been molded into the top surface of the deck.

Conclusion

Based on the foregoing and all of the files records and proceedings herein, IT IS ORDERED that

1. Defendants' Motion to Strike the Affidavit and Expert Report of EZ Dock's Patent Law Expert and Other Extrinsic Evidence (Doc. No. 106) is DENIED; and

2. The following claim terms in United States Patent No. 5,281,055 have the following meanings:

Claim language	Court's construction
pylon	a structure having a closed plane base and the surface formed by line segments joining every point of the boundary of the base to a common vertex
a generally frustoconically shaped pylon	a structure that is, for the most part, in the shape of the frustrum of a solid having a closed plane base and the surface formed by line segments joining every point of the boundary of the base to a common vertex
extending from the top surface to the bottom surface	stretching between the top surface and the bottom surface

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