HONORABLE RONALD B. LEIGHTON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT TACOMA

TERAGREN, LLC, a Washington limited liability company, Plaintiff, v. SMITH & FONG COMPANY, a California corporation, Defendant.	Case No. C07-5612RBL MARKMAN CLAIMS CONSTRUCTION RULING

This matter is before the court following a claims construction hearing pursuant to *Markman v. Westview Instruments, Inc*. 517 U.S. 370 (1996). The parties seek construction of certain claims of United States Patent No. 5,543,197 (the "'197 patent"). The court's construction of this patent's claims is set forth below.

A. Introduction.

Plaintiff Teragren LLC manufactures bamboo flooring using a composite of bamboo strands, adhesive, and "filler." It does so pursuant to a license agreement with the owner of the '197 patent, Bamboo Strands LLC, which is in turn owned by the original patent applicant, Jay Plaehn. The '197 patent relates to "parallel, randomly stacked, stranded, laminated bamboo beams and boards." Bamboo Strands LLC and Plaehn have intervened, and support Plaintiff's claim construction positions. Defendant Smith & Fong is also a manufacturer and seller of bamboo flooring. Teragren brought this action for patent infringement against

Smith & Fong, claiming that its products infringed the '197 patent. One of Smith & Fong's suppliers, Anji Tianzhen Bamboo Floorings Company, Ltd., has also intervened in support of Smith & Fong's positions. This Order will refer to Plaintiff and Bamboo Strands together as "Plaintiff" and Defendants Smith & Fong and Anzi Tianzhen together as "Defendant."

B. The '197 Patent.

Mr. Plaehn initially applied *pro se* for his patent in 1994. The Examiner rejected the application for indefiniteness, and as anticipated by the Chu patent (U.S. Patent No. 4,810,551). Plaehn retained counsel and cancelled the original application's claims, and submitted 6 new claims. The Examiner also rejected these claims as obvious, and Plaehn cancelled them. He submitted 10 new claims, which were allowed on March 1, 1996. Defendants focus on the claims Plaehn cancelled and the limits he specifically placed on the claims he ultimately submitted, and which were accepted. This prosecution history is described in greater detail where relevant, below.

The '197 patent is entitled "Parallel, Randomly Stacked, Stranded, Laminated Bamboo Boards and Beams." Its Abstract describes "A composite bamboo beam for use as a substitute for natural wood beams. Segments of bamboo stalk, either split or whole, are longitudinally aligned and randomly stacked. The bamboo segments are compressed and bonded together to form a cohesive bamboo composite structure from which beams of the desired dimension may be cut."[*See* '197 patent, Ex. H to the Seyedali Dec, Dkt. # 39. A copy of this patent is attached to this Order as Exhibit 1 for reference.]

The '197 patent has 10 claims, all of which contain terms that the parties ask the Court to construe. As a result, all of the claims of the '197 patent are at issue here.

C. Standards for Claim Construction.

It is now well-settled that claim construction is a matter of law for the court. *Markman v. Westview Instruments, Inc*. 517 U.S. 370 (1996). In construing the language of a claim, the court primarily focuses on so-called "intrinsic evidence" which is comprised of "the patent itself, including the claims, the specification and, if in evidence, the prosecution history." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Specifically, the court first looks to

> the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention. Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.

Id. The court then reviews the specification to determine whether

> the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication . . . . Thus, 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.

Id. The court may then consider the prosecution history of the patent, if in evidence. This history contains the complete

> record of all proceedings before the Patent and Trademark office, including any express representation made by the applicant regarding the scope of the claims. As such, the record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims. Included within an analysis of the file history may be an examination of the prior art cited therein.

Id. at 1582-83.

Plaintiff correctly points out that it is the court's duty to resolve fundamental disputes among the parties as to the scope of a claim term, but it is not the court's duty to construe every claim term, or to repeat or restate every claim term. *See U.S. Surgical Corp. v. Ethicon, Inc*., 103 F.3d 1554, 1568 (Fed. Cir. 1997); *02 Micro Int'l Ltd. v. Beyond Innovation Tech Corp*., 521 F.3d 1351, 1362 (Fed. Cir. 2008).

> Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

See Phillips v. AWH Corp., 415 F. 3d 1303, 1312 (Fed. Cir. 2005).

D. Construction of Disputed Terms.

The parties disagree as to the meaning of five terms, each of which is used in multiple claims. The disputed terms are "Bamboo beam" (which is used in all claims in the '197 Patent); "Bamboo segments" (which is used in all claims in the '197 Patent); "longitudinal segments of whole bamboo stocks [or stalks]" (which is used in dependent claims 4, 6, and 10 of the '197 Patent); "Random" or "randomly," as used to describe the orientation of the various bamboo segments within the structure in independent claims 1, 5, and 7; and "wood fillers" (which is used in claims 2, 5, and 8 of the '197 Patent).

1. "Bamboo Beam."

The first disputed term is "bamboo beam," which appears in the preamble[1] to each of the claims of the '197 Patent. Plaintiff contends that this term does not require construction, as its meaning is plain: a beam made of bamboo. Plaintiff emphasizes that its Patent envisions the manufacture of a large, integral structure, and that it has consistently described a product which could be "cut to virtually any dimension." Defendant relies on the dictionary definition of "beam" in support of its proposed construction, "a beam made of bamboo and of sufficient size and strength to serve as a structural support." The dictionary definition of "beam" is a "long piece of heavy often squared timber suitable for use in construction." [*See* Seyedali Dec. at Ex. I, Dkt. # 39]. Plaintiff argues that the construction urged by Defendant is itself ambiguous, viewed in the context of this dispute.

Defendant contends that the term "beam" necessarily describes something that is of sufficient size and strength to serve as a structural support, or at least that it is something other than flooring planks and plywood. It also contends "beam" must be contrasted with other sorts of lumber, including boards and layered or laminated products like plywood.

In support of its proposed construction, Defendant relies heavily on the prosecution history of the '197 Patent. It emphasizes the efforts Mr. Plaehn made to distinguish his invention from the existing Chu '551 Patent, which described boards, and not beams, made from bamboo. Defendant argues that Plaehn distinguished Chu (and obtained a patent) by emphasizing that unlike Chu, he was describing a beam and not a board[2], and that where Chu did describe a beam, he described a laminated or layered bamboo beam.

Thus, Plaehn's second attempt at obtaining a patent (the first Amendment to his initial, pro se application) emphasized that his product could use whole bamboo stocks, and that Chu did not teach the use of randomly stacked and bonded bamboo segments. Instead, Chu used uniform lengths of bamboo segments, and he layered them in longitudinal and lateral layers. Chu did not teach a beam which "could be

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[1]The term also appears in the body of claims 2, 5, 7 and 8. Plaintiff argues that the preamble does not limit a claim, particularly where sufficient structure is set forth in the body of the claim itself. Defendant contends that the preamble acts as a limitation, where it "gives life and meaning" to the claim, where there is a colloquy about it between the inventor and the examiner in the prosecution history, and where the term is used to distinguish a reference (here the Chu '551 Patent). *See Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). The Court concludes that the term "beam" in the context of the '197 Patent and the dispute here does not imply a necessary minimum size, and that the invention patented instead focuses on a manufacturing process, not on the end result. The term "beam" is not in itself a limitation.

[2]The '197 Patent describes "Bamboo Boards and Beams" but it is undisputed that Plaehn sought to have the "board" description removed from his patent.

virtually any length." Plaehn emphasized the fact that his product was not limited in length to the distance between the annular rings in a bamboo stock. [*See* Seyedali Dec. at Ex. D; Dkt. #39].

Plaehn's first Amendment was rejected because the Examiner concluded that the random stacking of bamboo strips was "instantly contemplated" by Chu, and it would be "prima facie obvious to provide laminated boards having random stacking of bamboo sections thus meeting the instant objective, i.e. a wood substitute having the potential of stronger, lighter beams compared to conventional wood beams." [*See* Seyedali Dec. at Ex. F, p.3; Dkt. #39]

Plaehn's second Amendment, which led to the issuance of the '197 Patent, emphasized the random orientation of the bamboo strips, horizontally, vertically, and rotationally. [*See* Seyedali Dec. at Ex. G; Dkt. #39]. Plaehn pointed out that his invention resulted in a "single integral structure" with a "generally uniform cross section." Plaehn's Amendment did not include the primary feature taught by Chu: layers of bamboo segments of uniform lengths, aligned at right or other angles. [*Id*. at p. 7]. Unlike Chu, Plaehn's invention did not include a "skin," either between two layers of bamboo or on the outside of a series of layers of bamboo. This Amendment resulted in the issuance of the '197 Patent.

The gist of Defendant's argument is that Plaehn consciously narrowed his application to disclaim boards, and to focus on the "beams" that could be manufactured using his process.

Plaintiff's response is that the '197 Patent is distinguished from the Chu '551 Patent by the generally parallel, random orientation of its bamboo segments and stocks. His initial application described "consolidated bamboo beams of large dimensions (example 30" by 30" by 80') that can be conveniently milled into standard size beams and boards of various dimensions." [*See* Seyedali Dec. at Ex. A, pp. 1-2; Dkt. #39] The prosecution history does not change this aspect of Plaehn's invention.

The Court agrees that, in the context of the parties' dispute, the term "beam" does not act to limit the claims. It does not necessitate a product of a specific or minimum size. It does not exclude products of the size and shape of flooring planks or boards, which are milled from the larger composite structure manufactured using the process described in the '197 Patent. The term "bamboo beam" as used in the '197 Patent does not include laminated or layered products.

2. "Bamboo segments."

The second disputed term is "bamboo segments," which is found in all claims of the '197 Patent. For example, Claim 1describes "A bamboo beam comprising, in combination, a plurality of bamboo

segments, each of said bamboo segments having a length, width, and a longitudinal axis, said longitudinal axes of said segments being generally parallel to one another . . . ." [*See* Seyedali Dec. at Ex. H; Dkt. #39] Plaintiff argues that this term does not require construction as the meaning is plain.

Defendant argues that the term "segment" as used in the '197 Patent means "natural whole bamboo stalks of random lengths along their longest dimension and having circular cross sections." It argues that the term excludes "radially split or otherwise altered bamboo strips or strands, and longitudinal segments of uniform length." Defendant again relies heavily on the prosecution history of the '197 Patent in support of its position. It argues that Plaehn unequivocally surrendered claims to strips or strands or otherwise altered bamboo segments, and that Plaintiff cannot recapture that subject matter now. *See Fantasy Sports Properties, Inc. v. Sportsline.com, Inc.*, 287 F.3d 1108, 1115-1116 (Fed. Cir. 2002)

Plaintiff responds that the doctrine of claim differentiation creates a presumption that the limitations on dependent claims do not apply to the independent claims upon which they depend, that the presumption is especially strong where there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims.

Plaehn's original application described products manufactured from "strips, strands, or in special application, whole bamboo stocks." [*See* Seyedali Dec. at Ex. A; Dkt. #39] When these claims were rejected, Plaehn replaced "lumber equivalent that is manufactured out of strips, strands, or in special application, whole bamboo stocks" with a "bamboo beam . . . comprising a plurality of bamboo segments." As Defendant argues, this language remains in each of the issued claims. Defendant argues that Plaehn expressly excluded from the claims "products made from anything other than natural whole bamboo stalks [or stocks]." [*See* Defendant's Proposed Claim Construction at p. 14; Dkt. # 38].

The flaw in this argument is that the "whole bamboo stock" language appears only in dependent claims 4, 6, and 10 of the '197 Patent. As Plaintiff contends, the independent claims are broader. Indeed, the preferred embodiment of the invention, as described in the specification, consists of bamboo stalks "split open and dried in segments ranging from 1/4 to 3/4 inch in width to approximately 5 to 20 feet in length." Additionally, Figures 1& 2 of the '197 patent show the end of the claimed product, and clearly show split or otherwise altered bamboo segments. They do not show a circular cross section. The Defendant's proposed construction of the term "bamboo segments" to mean whole bamboo stocks or

having a circular cross section is also inconsistent with dependent claims 3 and 9, which describe segments with a width of 1/4 to 3/4 inch.

The court does not conclude that the change in language relied upon by the Defendant was the focus of the Examiner's initial rejection of Plaehn's application, or her ultimate acceptance of the application. Plaehn described a product which, unlike Chu's, could use "whole stocks" of bamboo, but he explicitly did not disclaim the use of split or otherwise altered stocks.

For these reasons, the Court concludes that the term "bamboo segments" as used in the '197 Patent means lengths of bamboo stocks, which may be whole stocks having a circular cross section, or lengths of stocks which have been split or otherwise altered to have a width of between 1/4 to 3/4 inch.

3. "Longitudinal segments of whole bamboo stocks."

The third disputed claim is "longitudinal segments of whole bamboo stalks[3]." This term is used in dependent claims 4, 6, and 10, and is related to the term "segments," discussed above. For example, claim 4 describes "the bamboo beam of claim 1 wherein said bamboo segments are longitudinal segments of whole bamboo stocks." [*See* Seyedali Dec. at Ex. H; Dkt. #39]

Plaintiffs contend that construction of this term is not necessary. The term is used in narrower, dependent claims and describes the use of whole bamboo stocks [or stalks], rather than "any bamboo segments," which is described above.

Defendant contends that the term refers to "full length" bamboo stocks [or stalks] that have not been either segmented into shorter lengths or split or stripped longitudinally. Defendant also contends that the term excludes longitudinal segments that have uniform lengths. This latter point is discussed in connection with "randomness," below.

As to the former point, the Defendant relies again on the claim prosecution history described above. Defendant contends that the "longitudinal segments of whole bamboo stocks" refers to whole bamboo (with a circular cross section) that have been cut or shortened into shorter bamboo segments, but which retain their circular cross section. For the reasons discussed above, this is not a fair or correct construction of the term. Plaehn's invention permitted the use of "whole bamboo stocks," which Chu's did not.

[3]The parties touch on, but do not seek construction of the term "stock" or "stalk," and the difference between them, if any, is not discussed in any depth. This Order therefore does not address the meaning of the term "stock" as opposed to the term "stalk."

However, it is also clear that Plaehn's invention also used stocks that were split. The "longitudinal segments of whole bamboo stocks" described in dependent claims 4, 6, and 10 are a subset of the "segments" described in the independent claims. Unlike the broader claims, the dependent claims at issue here do describe the use of bamboo stocks which have not been split along their longitudinal axis, and which therefore do have a circular cross section.

For these reasons, the Court concludes that the term "longitudinal segments of whole bamboo stocks" as used in claims 4, 6, and 10 in the '197 Patent means bamboo stocks which have not been split along their longitudinal axis, and which therefore do have a circular cross section.

4. "Random orientation."

The fourth disputed claim term is "random" or "random orientation." This term is used in claims 1, 5, and 7 of the '197 patent. For example, claim 1 describes "random horizontal and vertical orientation about the length and width of each of said segments, respectively, said segments also having random rotational orientation with regard to said longitudinal axis of each of said segments." [*See* Seyedali Dec. at Ex. H; Dkt. #39]

Plaintiff contends that no construction is required, as the meaning of the term is plain: the bamboo segments are placed randomly in the product, with regard to their horizontal, vertical, and rotational orientation. Defendant claims that the horizontal and vertical randomness elements require the bamboo segments to be randomly positioned with respect to each other at the ends of the beam, and randomly staggered and lapped along the length, or longest side, of the beam. Defendant contends that the term "rotational" is indefinite and has no meaning.

As to the latter point, the Court does not agree, though it may not impact the claims and defenses in the case. The term "random rotational orientation" means that a given segment of bamboo within the beam is placed without regard to a top or bottom; the piece (whether a segment of whole bamboo or a piece that has been split) may be randomly rotated around its longitudinal axis. This is consistent with the common understanding of the term, and with the description of "random" in connection with the vertical and horizontal orientation of the segments within the beam, discussed below.

The term "random" with respect to the vertical and horizontal location of the bamboo segments within the beam is not in dispute. A given bamboo segment may be placed within the beam structure in any location, fore and aft, up and down, when viewing the beam from the side (along its length); the segments

are generally parallel to each other along their longitudinal axis in all cases. This is in contrast with the orderly, stacked placement of bamboo patented by Chu, and with the alternating, laminated "layers" he described.

The dispute with respect to this issue relates to the "staggered" or lapped placement of the segments along the length of the beam. It is true that the '197 patent does not address this aspect of the location of the segments within the described beam.

Defendant nevertheless argues that the '197 patent's prosecution history requires the segments to also be placed randomly with respect to each other at the ends of the beam, and to be randomly staggered and lapped along the length, or longest side, of the beam.

Plaehn did describe segments so placed at each step of his patent application process. He did so because the gist of his invention was a beam that, unlike Chu's, could be manufactured to a beam of virtually any length. His invention was not limited in length to the distance between the annular rings (the weakest part) of a given bamboo segment. Plaehn's initial application described bamboo strands "randomly placed and randomly lapped upon one another in random lengths" [*See* Seyedali Dec. at Ex. A, p. 4; Dkt. #39] His First Amendment explained the advantages of his process, including that it "assures a uniform and length-wise staggered stacking of bamboo segments." [*See* Seyedali Dec. at Ex. D, pp. 4-6; Dkt. #39] His Second Amendment similarly emphasized that all claims recite that the plurality of bamboo segments are longitudinally aligned and randomly stacked onto one another." [*See* Seyedali Dec. at Ex. G, p.2; Dkt. #39]

The randomness feature of Plaehn's invention specifically included the notion that the bamboo segments would be of random lengths, and placed into the beam in a generally parallel fashion, but randomly with respect to their vertical, horizontal, and rotational orientation, and furthermore that they would be randomly staggered and lapped along the length of the beam.

For these reasons, the Court concludes that the term "random" or "randomly oriented"as used in claims 1, 5, and 7 means that the bamboo segments and stocks used to construct the bamboo beam are not placed in an orderly or uniform fashion; they do not have a top or a bottom, or a front or a back. Instead, they are placed at random. As used in the '197 patent, the term also requires that the generally parallel bamboo segments have random, not uniform, lengths, and are staggered or lapped along the length of the beam.

5. "Wood Fillers."

The fifth disputed claim term is "wood fillers. The term is used in claims 2, 5, and 8. For example, claim 2 describes "The bamboo beam of claim 1 further comprising wood fillers between said bamboo segments, wherein said wood fillers eliminate gaps within said bamboo beam . . . ." [*See* Seyedali Dec. at Ex. H; Dkt. #39]

Plaintiff contends that the term refers to a compound such as those used by carpenters or wood workers, that can be used to eliminate gaps in the bamboo beam. Defendant contends that the term is limited to fillers made of wood and excludes fillers containing other lignocellulosic materials such as bamboo.

There is not a dictionary definition for the term. The issue is whether, in the context of this dispute, the term means a product used to fill gaps in wood (including bamboo), or a material made of non-bamboo wood used to fill gaps in bamboo beams.

Neither the prosecution history nor the patent itself is particularly helpful on this issue. Plaintiff relies on the "common" understanding of the term, while Defendant focuses on the fact that, in a wholly different context, Plaehn distinguished between wood and other lignocellulosic materials such as bamboo. This is not enough to conclude that the term has any other than the common meaning. Nothing in the patent or the prosecution history suggests that Plaehn intended to or did exclude "wood fillers" not made of wood. Indeed, there is no support in the record for the proposition that the viability of Plahen's invention depended on the exclusion of bamboo or non-organic materials for the purpose of filling the gaps necessarily resulting from the random stacking of bamboo segments.

The Court concludes that the term "wood filler" as used in the '197 Patent means a substance that is used to fill gaps in wood, including bamboo, not a substance made of wood used for that purpose.

IT IS SO ORDERED.

DATED this 6th day of January, 2009.

RONALD B. LEIGHTON
UNITED STATES DISTRICT JUDGE