IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

GREENKEEPERS OF DELAWARE, LLC and GREENKEEPERS, INC.,	:	CIVIL ACTION
Plaintiffs,	:	NO. 07-2419
v.	:	
SOFTSPIKES, LLC, and PRIDE MANUFACTURING, LLC,	:	
Defendants.	:	
GREENKEEPERS, INC. and GREENKEEPERS OF DELAWARE, LLC,	:	CIVIL ACTION
Plaintiffs,	:	NO. 09-2454
v.	:	
TAYLOR MADE GOLF COMPANY, INC., CALLAWAY GOLF COMPANY, and ECCO USA, INC.,	:	
Defendants.	:	

MEMORANDUM ON CLAIM CONSTRUCTION

Baylson, J. **February 5, 2010**

I. Introduction

Plaintiffs Greenkeepers, Inc. and Greenkeepers of Delaware, LLC (collectively, "Greenkeepers" or "Plaintiffs"), allege, inter alia, that Softspikes, LLC ("Softspikes"), Pride Manufacturing, LLC ("Pride"), Taylor Made Golf Company, Inc. ("Taylor Made"), Callaway Golf Company ("Callaway"), and ECCO USA, Inc. ("ECCO," collectively with Softspikes, Pride, Taylor Made, and Callaway, "Defendants") infringed upon Greenkeepers' U.S. Reissued Patent Number RE40, 047 (filed Mar. 11, 2004) ("'047 Patent") on small removable golf cleats by selling golf cleats purportedly covered by the '047 Patent. Presently before the Court are the parties' briefs on claim construction pursuant to Markman v. Westview Instruments, Inc., 52

F.3d 967 (Fed. Cir.1995) (en banc), aff'd 517 U.S. 370. On January 21, 2010, the Court heard oral argument on claim construction.

II. Legal Standard

Generally, a claim term is given its "ordinary and customary meaning," that being the definition given by "a person of ordinary skill in the art in question at the time of the invention." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir . 2005) (en banc). The Federal Circuit has explained that the claim construction inquiry begins by looking at the intrinsic evidence: the language of the claims, the specification, and the prosecution history.

"[T]he claims themselves"—that is "the use of a term within the claim," "[o]ther claims of the patent in question, both asserted and asserted," and "[d]ifferences among claims"—"provide substantial guidance as to the meaning of particular claim terms." Id. at 1314. "[I]t is [also] appropriate for a court . . . to rely heavily" on the specification, the patentee's written description, for guiding as to the meaning of the claims." Id. at 1314. In fact, "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. at 1315 (quoting Vitrionics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Additionally, the court "should also consider the patent's prosecution history, if it is in evidence." Markman, 52 F.3d at 980. Though "less useful" and "often lack[ing] the clarity of the specification," "the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim's scope narrower than it would otherwise be." Phillips, 415 F.3d at 1317.

Apart from intrinsic evidence, the court is also authorized to rely on extrinsic evidence, that being "'evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.'" Id. (quoting Markman, 52 F.3d at 980). Such evidence, through "shed[ding] useful light on the relevant art," is "less significant than the intrinsic record in determining the legally operative meaning of claim language," and "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." Id. at 1317, 1319 (internal quotation marks omitted).

III. Discussion

The parties dispute the construction of several terms: (A) "outwardly angled," (B) "teeth" and "traction teeth," (C) "low profile," (D) "lateral stability and traction through the plane of a golf swing," (E) "enhanced" or "to enhance" lateral stability and traction, (F) "axis ALT," and (G)"shoe mounting" or "attachment member." The Court will address each in turn.

A. "Outwardly Angled Traction Surface"

Claim Terms	Plaintiffs' Construction	Defendants' Construction
"outwardly angled traction surface" (Claim 7) "outer traction surface having an outward angulation" (Claims 9, 19-23) "outer traction surface extending from said main body in a direction away from and at an angle to said axis AL" (Claims 12-14, 17-18)	"a surface facing away from the axis AL that provides traction, having an outward angle relative to the axis AL that is predetermined"	"a surface facing away from the axis AL that provides traction, having an outward angle relative to the axis AL that is predetermined, such that the angle does not change in use"

The '047 Patent describes the covered golf cleats as having a traction surface that is "outwardly angled." '047 Patent, col. 5 l.50; see also id. col.5, ll.66-67, col.7, ll.1, 14-15, 30-32, & col. 8, l.1. The parties agree as to the first part of the definition, that being, "a surface facing

away from the axis AL that provides traction, having an outward angle relative to the axis AL," but disagree as to the second part respecting whether the angle can change in use**.**

1. The Parties' Contentions

Greenkeepers contend that the '047 Patent's intrinsic evidence indicates that the outward angle "is predetermined," which means that the angle is settled in advance and "maintain[s] the desired angle . . . throughout the life of the cleat," '047 Patent, col.2, ll. 12-14, not that the angle will not change in use. (Pls.' Resp. 2-3, Softspikes, Docket No. 70, Taylor Made, Docket No. 68.) Greenkeepers aver that the claim language and patent specification provide that the cleats are made of "resilient and flexible material," '047 Patent, col.6, l.28; see also id. col.1, ll.56-57, that is, polyurethane material that may have the hardness of a tire and may flex slightly under load. (Pls.' Opening 8-11, Softspikes, Docket No. 61, Taylor Made, Docket No. 56.)

Defendants respond that the patent specification shows that the cleats were designed to not flex. (Defs.' Opening 11-12, Softspikes, Docket No. 57.)[1] According to Defendants, Greenkeepers expressly disavowed claim coverage of flexible cleats during the patent's prosecution history,[2] by characterizing their cleats as having the "hardness of a bowling ball," and by distinguishing cleats covered by a prior Dassler patent that had outwardly angled teeth, on

[1]Taylor Made, Callaway, and ECCO joined onto Softspikes's construction briefs. (Taylor Made, Docket Nos. 54, 67, & 69; see also Oral Arg. Tr. 71:25-72:8, Jan. 21, 2010.) At the January 21, 2010 oral argument, counsel for Defendants confirmed that Pride shares Softspikes's constructions and supporting arguments. (Oral Arg. Tr. 4:19-23.)

[2]The "prosecution history" includes the prosecution of United States Patent Number 5,794,367 (filed Feb. 20, 1997), the first of '047 Patent inventor Francis C. Carroll's patent applications for outwardly angled golf cleats, United States Patent Number 6,530,162 (filed Feb. 28, 1998), a continuation-in-part application of the then-pending '0367 Patent, and of which the '047 Patent is a reissue. Carroll's prosecution efforts are attributed to Greenkeepers, to whom the patents have been assigned.

the basis that because such the angle of such teeth change under load, the teeth are not suitable for golf cleats because any bending may interfere with a golfer's swing. (Defs.' Opening 12-14 (internal quotation marks omitted).) Defendants aver that Greenkeepers have not presented extrinsic evidence showing that virtually all golf cleats bend or flex under load. (Defs.' Reply 3-6, Softspikes, Docket No. 77, Taylor Made, Docket No. 79.)

Greenkeepers reply that even the hardness of a bowling ball permits some flexing, and that they differentiated Dassler cleats on the basis that such cleats had an angle that changed greatly under load, not that the cleats' angle changed at all. (Pls.' Reply 3-6, Softspikes Docket No. 78, Taylor Made, Docket No. 89.)

2. Analysis

The primary question for the Court is whether Greenkeepers disclaimed coverage of cleats for which the outward angle changes under load. "The doctrine of prosecution disclaimer is well established in Supreme Court precedent, precluding patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution." Omega Eng'g, Inc, v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003). "[W]here the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender." Id. at 1325. The Federal Circuit, however, requires statements to be "both so clear as to show reasonable and deliberateness" and "so unmistakable as to be unambiguous evidence of disclaimer" before applying the doctrine. Id. at 1325; see also id. at 1324-25 (describing and comparing cases involving an ambiguous claim disavowal with those involving a clear

disavowal). Such a requirement aims "[t]o balance the importance of public notice with the right of patentees to seek broad patent coverage." Id. at 1325.

The prosecution history indicates that Greenkeepers differentiated prior art Dassler cleats whose angle changed greatly under load: Greenkeepers stated that because the Dassler cleats' angle "change[s] because of the great flexibility thereof" and "varies on load application," they are not "adaptable to use in golf cleats," since bending, "minute that it may be, may interfere with the golfer's swing." (Defs.' Resp., Ex. J at SS_00006013, SS_00006015-16, Ex. I, at SS_00006033.). As a result, Greenkeepers "expressly disclaimed" coverage of golf cleats whose outward angle substantially changes under load, and prosecution disclaimer applies. Omega Eng'g, 334 F.3d at 1323.

On the other hand, the Court is not convinced that Plaintiff's disavowal is so broad as to cover golf cleats with an outward angle that does not change at all under load, because the patent language repeatedly emphasizes that the cleats are to be made of a "flexible" material, '047 Patent, col.6, l.28; see also id. col.1, ll.56-57. Moreover, examination of a sample of the '047 Patent at the January 21, 2010 oral argument confirmed that the cleats can bend, however slightly, when pressure is applied. (Oral Arg. Tr. 44:7-22, Jan. 21, 2010, Softspikes, Docket No. 88, Taylor Made, Docket No. 83.) Rather than accepting either of the parties' proposed constructions, the Court, therefore, finds that the intrinsic evidence indicates that the outward angle referenced in the patent may permit some bending under load, albeit not significant bending, which Greenkeepers previously disclaimed. The parties, in their post-argument supplemental briefing, did not expressly object to the Court's construction. (Pls.' Supp. Br. 1-2, Softspikes, Docket No. 92, Taylor Made, Docket No. 86; Defs.' Supp. Br. 1-2, Softspikes,

Docket No. 93, Taylor Made, Docket No. 87.) Accordingly, the Court construes "outwardly angled traction surface," "outer traction surface having an outward angulation," and "outer traction surface extending from said main body in a direction away from and at an angle to said axis AL," as "a surface facing away from the axis AL that provides traction, having an outward angle relative to the axis AL that is predetermined, such that it does not change significantly in use."

B. "Teeth" and "Traction Teeth"[3]

Claim Terms	Plaintiffs' Construction	Defendants' Construction	Defendant ECCO's Additional Construction
"traction tooth" or "traction teeth" (Claims 3, 7, 9, 10, 12-15, 17-19, 24) "teeth" (Claims 20-24)	"outwardly angled elongated projections for engaging grass and/or turf"	"structure that provides traction by reaching through the grass to bite into the ground below and does not bend either upwardly or downwardly with load"	"protrusions that provide traction by reaching through the grass to bite into the ground below and do not bend either upwardly or downwardly under load"

The parties dispute whether "traction tooth" and "traction teeth," see '047 Patent, col.4, ll.58, 60-61, col.5, ll.47, 49, 54, 62, & 64, col.6, 10, 12, 27, 29-30, 35, 38, 41, 49, 51, 64, & 66, & col.8, ll.11&13, and "teeth," see id. col.7, 11, 18 & 22, col. 8, ll.2, 21, refer to structures or projections that "bite into the ground" and bend under load. The Court's subsequent summary of the parties' contentions excludes their arguments respecting the flexibility of the teeth, because

[3]ECCO, in addition to adopting all of the arguments forwarded by the other Defendants, assert additional constructions and supporting arguments. Rather than filing its own brief, ECCO joined onto the briefs filed by Defendants Nike, Inc. ("Nike") and MacNeill Engineering Company, Inc. ("MacNeill") in a third case filed by Greenkeepers, Greenkeepers, Inc. v. Nike, Inc., No. 04-3747, which has since settled (Docket No. 106). (Taylor Made, Docket Nos. 55 & 66.) Accordingly, in this Memorandum, citations to "ECCO Opening" refer to Nike and MacNeill's Opening Claim Construction Brief (Nike, Docket No. 83), and citations to "ECCO Resp." refer to Nike and MacNeill's Responsive Claim Construction Brief (Nike, Docket No. 94).

these have been detailed supra.

1. The Parties' Contentions

According to Greenkeepers, the patent specification indicates that the teeth, rather than biting into the ground, aim to "reduce damage to putting green surfaces," '047 Patent, col.2, l.2, and that Defendants' constructions exclude the patent's preferred embodiments. (Pls.' Opening 11-13.) Greenkeepers further aver that teeth need not "bite," as human and animal teeth do, because under their dictionary definition, they also encompass protrusions on combs, gears, or saws. (Pls.' Resp. 10-11.)

In response, Defendants aver that Greenkeepers repeatedly referred to the teeth in the covered cleats as "biting" into the ground, and distinguished prior art Curley cleats as not having true "teeth," because their protrusions did not pierce the ground. (Defs.' Resp. 10.) Defendant ECCO then takes issue with Greenkeepers' inclusion of "outwardly angled" in their proposed construction of "teeth" and "traction teeth," because the specification often describes the "teeth" or "traction teeth" as being "outward angled," thereby indicating that the "teeth" themselves need not be outwardly angled. (Def. ECCO's Resp. 15-17.)

Greenkeepers reply that during the prosecution history, they only described their teeth as "biting" into the "turf" grass, not the ground beneath the turf, in distinguishing prior art cleats that had essentially flat protrusions that stayed on the lawn surface. (Pls.' Resp. 11-14.)

2. Analysis

As a preliminary matter, the parties appear to agree that "teeth" and "traction teeth" have the same meaning, because these terms were used interchangeably in the patent specification (Defs.' Resp. 12-13), and because the parties each offer only one definition for both terms (Pls.'

Opening 11; Defs.' Opening 16; ECCO Opening 20). Turning next to whether the construction of "teeth" and "traction teeth" should include references to outward angulation or bending, the Court finds that such references are inappropriate. The patent specification often uses "outward angled" to modify and add detail to "teeth" or "traction teeth," thereby suggesting that teeth need not have a predetermined angle. See, e.g., '047 Patent, col.5, ll.49-50 (describing the cleats as "each traction tooth having an axis ALT and an outwardly angled outer traction surface . . . to provide lateral stability . . . ."). As for flexibility, this has already been encompassed in the construction of "outward angled." As a result, the Court believes it would be redundant to add any description relating to flexibility into the definition of "teeth" and "traction teeth." Court will not construe "teeth" and "traction teeth" to include references to flexibility or bending, or outward angulation.

As for whether the teeth bite into the ground, Greenkeepers distinguished the teeth in its cleats from prior art cleats by emphasizing that Wilson cleats had "non-penetrating tip[s]" (Defs.' Resp., Ex. M, at SS_00005767), and that Dassler cleats' "so-called arms . . . are really not teeth but are really cushioning arms," that "do not contemplate [the] studs digging in the turf of a golf course" (Defs.' Resp. Ex. J at 00006011-12, Ex. K at 00005991).[4] As a result, prosecution disclaimer applies, because Greenkeepers "expressly disclaimed" coverage of golf cleats that do not penetrate at all into the grass. Omega Eng'g, 334 F.3d at 1323. As with "outwardly angled," however, the Court is concerned about the breadth of this disclaimer. Greenkeepers disavowed

[4]To the extent that Defendants contend that Greenkeepers' prosecution of the same patent in Europe distinguished prior art Curley cleats on a similar basis, the Court need not and will not address this contention, given that such evidence may be extrinsic, the intrinsic evidence alone demonstrates prosecution disclaimer, and thus, it is unlikely that such evidence will shed useful light on how to construe teeth and traction teeth.

coverage of teeth that "dig . . . in the turf," but the Court has not found statements from the prosecution history distinguishing the cleats at hand from teeth that dig past the turf into the ground below, nor have Defendants identified any. The Court, thus, will construe "teeth," "traction tooth," and "traction teeth" as being "protrusions that penetrate into the turf below."

C. "Low Profile"

Claim Terms	Plaintiffs' Construction	Defendants' Construction	Defendant ECCO's Additional Construction
"low profile traction teeth" (Claims 3, 10, 17, 19) "teeth being in low profile" (Claim 6)	"traction teeth that are shorter in depth than conventional metal spikes"	"traction teeth that are shorter than conventional golf spikes"	"traction teeth that are less than 6 mm long"

For the claim terms "low profile traction teeth" and "teeth being in low in profile," '047 Patent, col.4, l.58, col.5, l.33-34, & col.6, l.10, 59, & 64, the parties dispute how to describe conventional spikes at the relevant time period for the patent, and whether the appropriate measurement for comparing spikes is length or depth.

1. The Parties' Contentions

Greenkeepers contend that the conventional spikes against which their "low profile traction teeth" must be compared, as of 1996, were eight millimeters long and metal. (Pls.' Opening 16-18.) Greenkeepers also aver that the relevant measurement is depth, not height, because the advantage of the cleats is that they bring the golfers lower to the ground, for which vertical height of the spikes while under load, which is measured by depth, and not the overall length of the spikes, is critical. (Pls.' Resp. 14-17; Pls.' Reply 10-11.)

Defendants first take issue with the fact that Greenkeepers' construction compares their spikes to "metal" ones, and argue that neither intrinsic nor extrinsic evidence supports the

inclusion of this adjective, for example by using the word "metal" to describe conventional prior art spikes in the '047 Patent's specification. (Defs.' Opening 19, Defs.' Resp. 13.) In addition, ECCO, though agreeing with Plaintiffs that the relevant time period is 1996, contends that the conventional spikes were six millimeters in length, not eight millimeters, as is evident from the fact that the patent specification purportedly describes as prior art a six millimeters spike. (ECCO Opening 23-24, Resp. 17.) ECCO, relying on its own expert testimony, also argues that the relevant measure is overall length, not depth, because length determines damage to the greens, which is what the '047 Patent states that it aims to avoid. (ECCO Opening 24-26, ECCO Resp. 18-19.)

2. Analysis

"[I]n a case tried to a jury, the [C]ourt has the power and obligation to construe as a matter of law the meaning of language used in the patent claim," Markman, 52 F.3d at 978-79; however,

> claims are often drafted using terminology that is not as precise or specific as it might be. As long as the result complies with the statutory requirement to "particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention," 35 U.S.C. § 112, para. 2, that practice is permissible. That does not mean, however, that a court, under the rubric of claim construction, may give a claim whatever additional precision or specificity is necessary to facilitate a comparison between the claim and the accused product. Rather, after the court has defined the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact.

PPG Indus. v. Guardian Indus. Corp. 156 F.3d 1351, 1355 (Fed. Cir. 1998).

In PPG Industries, the Federal Circuit determined that the district judge "properly left it to the jury to determine whether the amounts of iron sulfide in SMG glass have a material effect on the basic and novel characteristics of the glass," because "the patent is silent about iron sulfide and what constitutes a material effect on the properties of the glass." Id. at 1527. This is exactly

the situation the Court now faces in construing "low-profile traction teeth" and "teeth that are low in profile." The claims did not specify whether the conventional spikes in relation to which the '047 Patent's covered cleats are "low profile," are metal, six or eight millimeters in length, or measured in height or depth. The Court will not read such additional precision into the claims, and will not usurp the jury's "task of determining whether construed claim reads on the accused product." Id. at 1355. Accordingly, the Court construes "low profile traction teeth" and "teeth that are low in profile" to be "traction teeth that are shorter than conventional spikes as of 1996."

D. "Lateral Stability and Traction Through the Plane of a Golf Swing"

Claim Term	Plaintiffs' Construction	Defendants' Construction	Defendant ECCO's Additional Construction
"lateral stability and traction through the plane of a golf swing" (all claims)	"resisting slipping to the side and providing adhesive friction as a golfer swings a golf club from the backswing through hitting the ball and the follow-through"	(none provided in claim construction briefs)	(indefinite)

Greenkeepers and Defendant ECCO contest whether the term "lateral stability and traction through the plane of a golf swing" is definite. The other Defendants did not propose a construction or address the definiteness of this claim term in their construction briefs, although they contend that once the word "to enhance" is added, the term is indefinite, a contention that the Court will address infra.

1. The Parties' Contentions

Greenkeepers contend that, under Federal Circuit law, the contested terms are entitled to a presumption of definiteness. (Pls.' Opening 19-21; Pls.' Resp. 22-23.) For "lateral stability and traction through the plane of a golf swing," Greenkeepers aver that the patent specification

identifies as the preferred embodiment a set 37.5 degree of outward angulation, that provides a "defined reference baseline from which a person or ordinary skill in the art could determine how much outward angulation . . . is required to provide lateral stability and traction through the plane of a golf swing, without undue experimentation." (Pls.' Opening 20-21.) Greenkeepers continue that commonsense provides that "through the plane of a golf swing" refers to the time period during which a golfer swings. (Pls.' Resp. 25-26.)

ECCO urges the Court to find that "lateral stability and traction through the plane of a golf swing" is indefinite. For "lateral stability and traction," ECCO contends that these indicators are affected by multiple variables, including the orientation of the golf cleats, the action of the foot during the golf swing, and the weather and turf conditions. (ECCO Opening 33-35.) ECCO continues that the '047 Patent's prosecution history concerns that there is no objective measure for lateral traction and stability, because Greenkeepers distinguished prior art McMullin cleats because there was "no basis" for finding that such cleats inherently enhanced lateral traction and stability, and "depending on the size of the angle, you might or might not achieve that function." (ECCO Resp. 26-28.) As for "through the plane of a golf swing," ECCO avers that this does not make any sense in the claim term, because the golf cleats can only provide traction and stability by interacting with the ground, but the plane of the golf swing does not go "anywhere near the shoes or cleats." (ECCO Opening 32-33 (emphasis omitted).) ECCO contends that Greenkeepers cannot rewrite their claims to replace "through the plane of a golf swing" with "during the golf swing." (ECCO Resp. 25-26.)

2. Analysis

Under 35 U.S.C. § 112, ¶ 2, the claims of a patent must "particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention."

> The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, e.g., competitors of the patent owner, can determine whether or not they infringe. That determination requires a construction of the claims according to the familiar canons of claim construction.

All Dental Prodx, LLC v. Advantage Dental Prods., 309 F.3d 774, 779-80 (Fed. Cir. 2002) (citations omitted). "A claim is considered indefinite if it does not reasonably apprise those skilled in the art of its scope." IPXL Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377, 1383-84 (Fed. Cir. 2005). This construction must be understood "in light of the specification of which they are a part. Indeed, a patentee may be his or her own lexicographer by defining the claim terms." Oakley, Inc. v. Sunglass Hut Int'l, 316 F.3d 1331, 1340-41 (Fed. Cir. 2003). Also, a "patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." Id. at 1341. Because a claim is presumed to be valid, the accused infringer has "an evidentiary burden of clear and convincing evidence to show facts supporting a conclusion of invalidity," Cement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1351 (Fed. Cir. 2009), and the claim "is indefinite only if [it] is insolubly ambiguous, and no narrowing construction can properly be adopted," Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1338-39 (Fed. Cir. 2003) (quotations omitted).

The Court is not persuaded that "lateral stability and traction through the plane of a golf swing," is "insolubly ambiguous." Id. at 1339. Although "lateral stability and traction" appear to be affected by many different factors, such as weather and turf conditions, and the unique swing and foot action of the golfer, the parties have already agreed that "traction" means "the adhesive friction of a body on a surface" (Pls.' Opening, App'x I, at 1), and an ordinary person trained in

the arts, employing commonsense, would understand that "lateral stability" refers to the ability to resist slipping to the side to permit the golfer to maintain balance and control while swinging. Moreover, ECCO's strained reading of "through the plane of a golf swing" as imposing a spatial rather than a temporal limitation, thereby rendering the term nonsensical (ECCO Opening 32-35), fails to show invalidity by clear and convincing evidence; rather, the term can be readily and reasonably understood as referring to lateral stability and traction as a golfer completes his or her golf swing. The Court, therefore, presumes that "lateral stability and traction through the plane of a golf swing" is definite, and adopts Greenkeepers' construction.

E. "Enhanced" and "To Enhance" Lateral Stability and Traction

<table>
<tr><th>Claim Terms</th><th>Plaintiffs' Construction</th><th>Defendants' Constructions</th><th>Defendant ECCO's Additional Construction</th></tr>
<tr><td>"to enhance lateral stability and traction" (Claims 9-24)</td><td rowspan="2">"the outward angulation of the traction tooth surface provides more lateral stability and traction through the plane of a golf swing when compared to the surfaces of teeth of the prior art plastic cleats cited in the background section of the specification"</td><td>(indefinite)</td><td rowspan="2">"for an outwardly angled tooth or an outwardly angled traction surface, to produce more lateral stability and traction than is provided by all types of teeth or traction surfaces, respectively, that are not outwardly angled (in other words, not angled, or angled inwardly)</td></tr>
<tr><td>"enhanced traction" (Claim 3)</td><td>"if there were an objective standard to measure enhanced lateral stability and traction through the plane of a golf swing, the enhancement must mean that the outward angulation of the traction teeth surfaces provide more lateral stability and traction through the plane of a golf swing when compared to the surfaces of teeth of substantially similar cleats that are not outwardly angled"</td></tr>
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For the terms "enhanced traction," '047 Patent, col.4, l.64, and "to enhance lateral

stability and traction," id. col.6, ll.1-2, 15-16, 33-34, & 33-34, col.7, ll.2-3, 15-17, & col.8, ll.16-17, the parties again dispute whether the presumption of definiteness applies. In addition, the parties dispute how to characterize cleats in relation to which the cleats provide improved lateral stability and traction.

1. The Parties' Contentions

Greenkeepers reassert that claim terms are entitled to a strong presumption of validity and definiteness, and that here, tests are available to test lateral stability and traction, as evidenced by a cleat test measuring cleats' relative traction on varying surfaces under different conditions that was conducted by MacNeill, one of the defendants in a related patent case brought by Greenkeepers that has since settled. (Pls.' Resp. 24-25.) According to Greenkeepers, the patent specification indicates that the covered cleats aim to provide "better" traction and stability than existing golf cleats, that being, the cleats referenced in the patent application. (Pls.' Opening 22-23.) Greenkeepers continue that the discussion in Defendants' proposed construction of "substantially similar cleats that are not outwardly angled" or "all types of teeth . . . that are not outwardly angled" has no basis in the intrinsic record and is a veiled non-infringement argument. (Pls.' Opening 23.)

Defendants respond that Greenkeepers have failed to articulate an objective measure for finding enhanced stability and traction or to show how outward angulation in fact provides an enhancement. (Defs.' Reply. 12-14.) As for the MacNeill traction test, Defendants contend that this test found little statistical difference in traction among many cleats, because the cleats' performance changed when they were worn in different shoes. (Defs.' Reply 13-14.) Defendants further aver that the '047 Patent's background section cites to prior art patents that cover a wide

range of cleats, including ones that were never made, and that Greenkeepers never compared its cleats to this prior art. (Defs.' Reply 11-12.) As for the relevant comparison group, Defendants argue that the claim language indicates that stability and traction are enhanced by the outward angulation of the spikes' outer surface. (Defs.' Opening 23-24; Defs.' Reply 11.)

2. Analysis

Turning first to definiteness, having found "lateral stability and traction through the swing of a golf swing" to be definite, the Court is not persuaded that merely adding the words "to enhance" renders the term indefinite. Greenkeepers have identified one test, the MacNeill test, that was able to objectively measure traction. (Pls.' Resp. 24-25.) Although the MacNeill test arguably showed that traction may also be affected by other factors such as the shoe in which the cleats are attached, this falls short of presenting "clear and convincing evidence," Cement Mfg., 587 F.3d at 1351, that the traction of the golf cleats themselves cannot be measured. As the Federal Circuit has clarified, a "patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." Oakley, 316 F.3d at 1341. Defendants, therefore, have not met their evidentiary burden and the definiteness presumption applies.

As for the relevant comparison group, the "Background and Brief Description of the Invention" section of the '047 Patent describes the prior art plastic Deacon patents and the "biggest complaints" of such patents, '047 Patent, col.1, ll.21-38, and then explains that "[t]he object of the present invention is to provide an improved golf shoe cleat which has better traction and lateral stability," id., col.1, ll.39-41. The claim specification plainly indicates that Greenkeepers sought to compare cleats covered by the '047 Patent with cleats covered by the

Deacon patents for purposes of lateral stability and traction. The prosecution history, however, demonstrates that Greenkeepers then sought to distinguish cleats covered by other patents, such as the Bouyer patents, that were not outwardly angled on the basis that the '047 Patent's outward angulation "permits more grass or turf to be engaged and hence, more traction," and thus, "[i]t is clear that the outward angulation . . . provides more lateral stability and enhanced traction to the plane of a golf swing." (Defs.' Opening, Ex. N, at SS_00005888-89.) As a result, the doctrine of prosecution history disclaimer applies, and Greenkeepers cannot now construe "to enhance traction" or "enhanced lateral stability and traction" as comparing cleats covered by the '047 Patent to only the plastic Deacon cleats, as opposed to prior art cleats that are not outwardly angled. Accordingly, the Court construes "to enhance traction" and "enhanced lateral stability and traction" to be "for the outward angulation of the tooth traction surface to provide more lateral stability and traction than prior art teeth that are not outwardly angled." The Court views this construction as being less confusing than Defendants' and ECCO's additional proposed constructions.

F. "Axis ALT"

Claim Term	Plaintiffs' Construction	Defendants' Construction
"axis ALT" (Claims 1-3, 5, 6, 7, 9, 11 15, 16)	"a straight line with respect to which a traction tooth is generally symmetrical"	(indefinite)

Turning to the term "axis ALT," '047 Patent, col.4, ll.31-33, 47, 62, col.5, ll.15-16, 29, 49, & 64, & col.6, ll.18, 41-42, 46 the parties dispute whether the term is definite.

1. The Parties' Contentions

Greenkeepers aver that the patent specification provides two illustrations, Figures 2 and 6, reproduced infra, and accompanying text that "clearly define" the "axis ALT"as passing through the tooth and about which the tooth is generally symmetrical." (Pls.' Opening 24.)

Defendants criticize the diagrams as being unclear as to how the axis ALT passes through the tooth, for example specifying whether it begins at the center of the peak or the tip of the tooth. (Defs.' Opening 24-25.) In addition, Defendants contend that another diagram employed during the prosecution history**,** though not labeling the "axis ALT" but showing an axis proceeding through a traction tooth, demonstrate that Greenkeepers have inconsistently drawn the "axis ALT," thereby indicating the axis's indefiniteness. (Defs.' Reply 14-16.) According to Defendants, Greenkeepers' own expert conceded during his deposition testimony that the axis ALT was not "clearly defined" in the patent. (Defs.' Opening 25.) ECCO adds that "axial" is defined in the dictionary as being "symmetrical" about an object, and that the irregular shape of the teeth indicates the lack of an inherent axis around which each tooth can be symmetrical. (ECCO Opening 38-40.)

Greenkeepers reply that Figures 2 and 6 of the patent specification are consistent, and only seem to portray different angles due to the limitations of two-dimensional modeling. (Pls.' Reply 16-17.) Greenkeepers then contend that the additional illustrations that purportedly represent the "axis ALT" do not in fact do so, and only aimed to illustrate that the '047 Patent's teeth are longer due to outward angulation. (Pls.' Reply 16.) Greenkeepers also argue that expert testimony is extrinsic and therefore disfavored, and that ECCO's dictionary definition confirms that "axial" means generally symmetrical, as reflected in Plaintiffs' construction of "axis ALT." (Pls.' Resp. 26-28.)

2. Analysis

Figures 2 and 6, which illustrate the "axis ALT" in the '047 Patent's specification, are reproduced here:

FIGURE 2

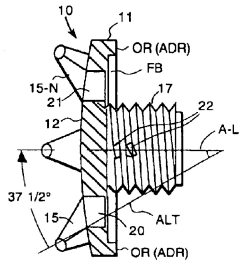
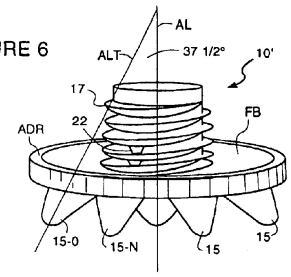
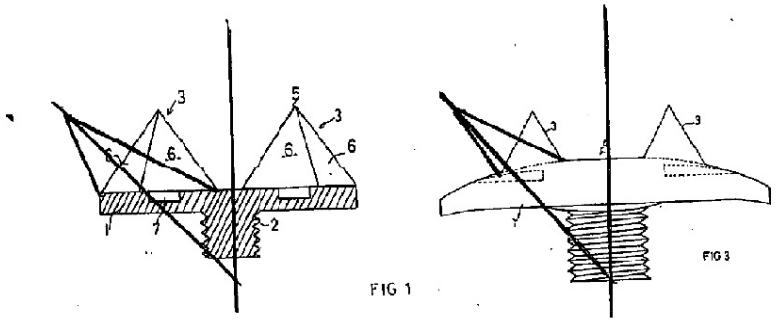


FIGURE 6



The Court has determined that the "axis ALT" line matches Greenkeepers' proposed construction, that being that the axis goes through the traction tooth, and that the tooth is generally symmetrical around the axis. Again, the Court cannot find a claim term to be indefinite merely because Greenkeepers are unable to "define with mathematical precision" the term to be construed, Oakley, 316 F.3d at 1341; and thus, the Court need not require Greenkeepers to specify whether the "axis ALT" must pass through the center of the peak or the tip of the tooth. Here, the diagrams clarify that the "axis ALT" should be drawn through the traction tooth, and that the preferred embodiment has a 37.5 degree angle between this axis and the axis AL, which proceeds through the shoe attaching or mounting member in the center. This is enough for a person of ordinary skill trained in the arts to understand what "axis ALT" represents.

As for the purportedly inconsistent figures employed by Greenkeepers during the prosecution history to represent prior art Bouyer cleats, from which Greenkeepers sought to distinguish their cleat, the figures are as follows:



(Defs.' Opening, Ex. N, at SS_00005889.) The accompanying text explains that Greenkeepers have "drawn in . . . ink exemplary teeth having the . . . outward angulation according to the present invention." (Defs.' Opening, Ex. N, at SS_00005888.) None of the axes in these illustrations pass through the traction teeth are labeled, making it unclear as to whether "axis ALT" is being represented. Moreover, even assuming arguendo that axis ALT is the middle of the three represented lines that intersects with the central vertical axis, these figures are not inconsistent with those in the '047 Patent's specification: The patent prosecution diagrams also show the tooth being generally symmetrical around the "axis ALT" which is at an outward angle from the central vertical axis. Having examined the intrinsic record, the Court is not otherwise persuaded by the statement of Greenkeepers' expert that the axis ALT line is not "clearly defined." The Court therefore agrees with Greenkeepers that the "axis ALT" is definite, and adds to Plaintiffs' proposed construction an explanation that the axis passes through the traction tooth. Accordingly, "axis ALT" will be construed as "a straight line passing through a traction tooth and with respect to which the traction tooth is generally symmetrical."

G. "Shoe Mounting" or "Attachment" "Member"

Claim Terms	Plaintiffs' Constructions	Defendants' Construction
"shoe mounting member" (Claims 1,3, 4, 5, 6, 7, 9, 10, 12, 19) "shoe attachment means" (Claim 6) "mounting member" (Claim 7) "shoe attaching member" (Claims 2, 5, 9, 10, 12-15, 17-24)	"a distinct part of the structure of the golf cleat that fixes the golf cleat to a shoe" Or, if the term is adjudicated to be a means-plus-function, "a locking stud adapted for rotatable engagement with a receptacle fixed in the bottom of a golf shoe, and equivalents thereof"	"means plus function terms, in which the means are the attachment means disclosed in Figures 2, 6, 7A, 7B, 8A and 8B and the accompanying text (col. 2, ll. 28-32; col. 3, ll. 59-67; col. 4, l. 1.3) and the function is securing the cleat in the receptacle in the sole of a shoe upon rotation of the cleat"

The final set of disputed claim terms are "shoe mounting member," '047 Patent, col.4, ll.24, 28, 36-37, 52, & 67, col.5, ll.8, 25, 44, & 60, & col.6, ll.8, 25, &62-63, "shoe attachment means," id. col.5, l.22, "mounting member," id. col.2, l.41, and "shoe attaching member," id. col.4, l.42, col.5, l.5, & 56-58, col.6, l.6, 23, & 58, col.7, l.8, & col.8, l.8. The parties contest whether the terms are means-plus-function terms, and assuming arguendo that they are, whether the construction should be limited to the figures and functions expressly stated in the patent, or also "equivalents thereof."

1. The Parties' Contentions

Greenkeepers aver that the '047 Patent's claim language details the structural features required to attach the covered cleats to a shoe, that being that the member has an axis AL and projects outwardly, and thus, that the disputed terms are not means-plus-function terms. (Pls. Opening 38-40, Pls.' Resp. 36.) In particular, Greenkeepers contend that the asserted claims do not use the word "means," thereby failing to trigger the statutory means-plus-function presumption, and that "member" has been routinely held to not indicative of a means-plus-function. (Pls.' Opening 38-39.) Greenkeepers contrast their proposed construction from that of

Defendants, which purportedly reads limitations from the '047 Patent's preferred embodiments into the claims, a reading that is impermissible under Federal Circuit law, and is belied by the requirement that a term, even if construed to be a means-plus-function, be construed to include "equivalents" to the structure described in the patent specification. (Pls' Resp. 38.) Greenkeepers thereby urge the Court, should it find the disputed terms to have means-plus-functions, to construe them as not limited to the structures illustrated or described in the '047 Patent. (Pls.' Resp. 39.)

In response, Defendants contend that the '047 Patent's specification provides no structural limitations on a shoe attaching or mounting members, and only offer the function that such a member fix the golf cleat to a shoe. (Defs.' Opening 28.) Defendants continue that the disputed terms should be construed as being limited to the three structures identified in the specification: (1) a threaded stud with a plastic fillet, (2) a threaded stud surrounded by a series of latching teeth, and (3), an interlocking triangle. (Defs.' Opening 28.) Defendants fault Greenkeepers for focusing on an imaginary "axis AL" line that does not require the member to be symmetric about it. (Defs.' Reply 16-17.) To the extent that Greenkeepers urge the Court to construe the disputed terms as including functionally equivalent structures, Defendants aver that equivalencies are questions of fact determined by the jury. (Defs.' Reply 17.)

ECCO adds that the '047 Patent abandoned the structural limitations defined in United States Patent Number 5,794,367 (filed Feb. 20, 1997), the original patent application filed by the '047 Patent's inventor to cover outwardly angled golf cleats, thereby indicating that the '047 Patent contains only a functional description. (ECCO Opening 9-10.) ECCO also contends that Greenkeepers' proposed means-plus-function construction is overbroad, and that a patentee

cannot assert undisclosed techniques or methods that could perform the function, but must focus on the structures found in the specification. (ECCO Resp. 4-8.)

2. Analysis

The Federal Circuit has explained that "Section 112, paragraph 6 [of Title 35 of the United States Code,] allows a patentee to recite a function to be performed as a claim limitation rather than reciting structure or materials for performing that function." Omega Eng'g, 334 F.3d at 1321. "Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function." Phillips, 415 F.3d at 1311. In construing means-plus function terms, courts first "identify the claimed function, staying true to the claim language and the limitations expressly recited by the claims"; then, courts must "ascertain the corresponding structures in the written description that perform those functions." Id. In sum, a means-plus-function term is construed so that it is limited to "the structure . . . necessary to perform the claimed function." Id.

When a term does not contain the word "means," courts presume that section 112, paragraph 6 does not apply. See, e.g., Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004). This presumption is a "strong one that is not readily overcome." Id. In this case, the only term using the word "means" is "shoe attaching means," but Greenkeepers are not asserting claim 6 of the '047 Patent, the only claim containing the terms. Thus, the presumption that the terms are not means-plus-functions applies; however, "merely because an element does not include the word 'means' does not automatically prevent that element from being construed as a means-plus-function element." Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996). The Court must examine whether "the alleged

means-plus-function claim element" "recite[s] a definite structure which performs the described function." Id. If this question is answered in the affirmative, the terms are not means-plus-function ones, and need not be limited to the structures "necessary to perform the claimed function." Omega Eng'g, 334 F.3d at 1321.

Turning to shoe attaching or mounting members in the pending case, the Court finds that they are not means-plus-function terms for purposes of section 112, paragraph 6. The Federal Circuit has cautioned against employing "unduly restrictive" readings to determine whether claim terms recite sufficient structure, and has determined "that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function." Lighting World, 382 F.3d at 1359-60. Here, even though the term shoe attaching or mounting member may not bring to mind a particular structure, there is language in the '047 Patent's specification that describes the required structure necessary for the members described in the patent: the member has "an axis AL which is perpendicular to said inner face and project[s] outwardly from said inner face and adapted to secure said cleat in a receptacle in said golf shoe upon rotation of said shoe mounting member about said axis in said receptacle." '047 Patent, col.4, ll.52-57. Contrary to Defendants' assertions, the '047 Patent's shoe attaching or mounting member does not cover "every conceivable device" (Defs.' Resp. 29); rather, the asserted claim language requires that a member be secured in a golf shoe's "receptacle" "upon rotation of said shoe mounting member," '047 Patent, col.4, ll.55-57, thereby eliminating structures that are recessed in the cleat or that are engaged by sliding into the receptacle.

In addition, courts, including the Federal Circuit, have repeatedly found that

> dictionary definitions, not to mention common sense, point to the word "member" (descriptive modifier notwithstanding) as a structural term. See Webster's New International Dictionary (2d ed. 1956) defining "member" as, inter alia, ". . . 5. A part of a whole; an independent constituent of a body, structure, or any organized thing, or a unit in a series . . . 12. Engin. Any essential part of a framed structure."

SDS USA, Inc. v. Ken Specialties, Inc., 107 F. Supp. 2d 574, 591 (D.N.J. 2000); see also, e.g., CCS Fitness, Inc., 288 F.3d 1359, 1367 (Fed. Cir. 2002) ("'[M]ember,' as defined by common and technical dictionaries, refers to a structural unit such as a beam or tie, or a combination of these." (internal quotation marks and alteration omitted)). As a result, the Court has determined that there is insufficient evidence to overcome the "strong" presumption, Lighting World, 382 F.3d at 1358, that "shoe attaching member," "shoe mounting member," "shoe attachment means," and "mounting member" are not means-plus-function terms, and will adopt Greenkeepers' construction.

IV. Conclusion

The Court will construe the terms in the '047 Patent consistent with the above analysis. An appropriate Order follows.

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