

United States District Court,
E.D. Michigan, Southern Division.

WINN, INC., a California corporation, and Ben Huang, an individual,
Plaintiffs / Counterdefendants.

v.

KING PAR CORP., a Michigan corporation,
Defendant / Counterclaimant.

and

MAIBOR CORP., a Taiwanese corporation, and Ming Hsing Leather Co., Ltd., a Taiwanese corporation,
Defendants.

Aug. 16, 2005.

Alan N. Harris, Bodman, Longley, Ann Arbor, MI, Darrell L. Olson, Paul A. Stewart, Knobbe, Martens, Irvine, CA, Dennis J. Levasseur, Bodman, Detroit, MI, for Plaintiffs and Counter Defendants.

Marshall G. MacFarlane, Troy, MI, for Defendants.

Daniel J. Kelly, Young & Basile, Troy, MI, for Defendants and Counter Claimant.

DECISION ON CLAIM CONSTRUCTION

COHN, J.

I. Introduction

This is a patent case. Plaintiffs Winn, Inc., and Ben Huang (collectively referred to as Winn), the owners of U.S. Patent Nos. 5,695,418 (the '418 Patent); 5,797,813 (the '813 Patent); and 5,857,929 (the '929 Patent), are suing Defendants King Par Corp. (King Par); Maibor Corp. (Maibor); and Ming Hsing Leather Co., Ltd. (Ming Hsing) for patent infringement. A tutorial was held on August 5, 2004. In response to the order entered August 6, 2004, Winn identified the following as paradigm claims for each of the patents in suit:
FN1

FN1. *See* Designation by Plaintiffs Winn Incorporated and Ben Huang of Paradigm Claims, filed Oct. 5, 2004.

| | |
|--------|-------------------|
| Patent | Paradigm Claim |
|--------|-------------------|

'418 Claim 1
Patent

'813 Claim 6
Patent

'929 Claim 1
Patent

King Par then identified the terms in these claims that it deems ambiguous and in need of claim construction.FN2 Before the Court are the parties' papers relating to interpretation of the ambiguous terms in Claim 1 of the '418 Patent, Claim 6 of the '813 Patent, and Claim 1 of the '929 Patent. The Court held a *Markman* hearing on July 12, 2005.FN3

FN2. *See* Defendant's Designation of Ambiguous Words and Phrases in the Claims of the Patents-In-Suit, filed Oct. 25, 2004.

FN3. In *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), the Supreme Court made clear that claim construction is a question of law for the court. *Markman* and subsequent case law set forth the guidelines for claim construction. A hearing on claim construction is known as a *Markman* proceeding. *See* JAMES M. AMEND, PATENT LAW: A PRIMER FOR FEDERAL DISTRICT JUDGES 15-18 (1998).

II. The Inventions

Dr. Ben Huang (Huang) is the sole inventor of the patents in suit and the founder of Winn, Inc.

A. The '418 Patent

1. The Invention Generally

In December 1990, Huang invented an improved grip for tennis racquets and other devices that are subject to shock when impacted. The invention formed the basis for a patent application that Huang filed in January 1991 and that later issued as the '418 Patent.

The '418 Patent is entitled "Shock Absorbing Grip for Racquets and the Like." The Abstract describes the invention as follows:

A shock absorbing grip for the handle of a tennis racquet or the like having a polyurethane layer bonded to a felt layer where the ratio of the thickness of the polyurethane layer to the felt layer is equal to or larger than about 0.18. The bonded-together layers are configured as a strip which is wrapped about the racquet handle.

Winn introduced a commercial version of Huang's new grip. Winn initially marketed the grips for use on

tennis racquets. By December 1991, nearly all of Wilson Sporting Goods Company's high-performance tennis racquets were sold with Winn's new grips. Huang later adapted the grip for use on golf clubs. Winn introduced its first golf-club grip in 1995.

2. Claim 1 FN4

FN4. The terms King Par deemed ambiguous and in need of claim construction are displayed in boldface type.

Claim 1 of the '418 Patent reads:

The combination of a handle for an impact imparting device and shock absorbing grip applied over such handle to conform to the external configuration of such handle, said combination comprising:

a strip which is spirally wrapped about said handle, the strip consisting of an open-pored textile layer having an inner surface adhered to and abutting said handle and a smooth closed pore polyurethane layer having its inner surface bonded to the outer surface of the textile layer remote from said handle, with the pores of such polyurethane layer extending generally normal to the longitudinal axis of said handle, the thickness ratio of the transverse central region of the polyurethane layer/textile layer being equal to or larger than approximately 0.18, and with the textile layer providing strength for the polyurethane layer while the polyurethane layer both absorbs shocks and provides tackiness so as to inhibit slippage of a user's hand relative to said handle with the thickness of the strip being substantially 1.3-2.0 mm;

the thickness of the textile layer tapering from a transverse central region towards the sides of the strip to facilitate wrapping of the strip about the handle; and

an adhesive provided along the inner surface of the textile strip securing the strip to the handle.

'418 Patent, col. 4, ll. 31-56.

The parties agreed on the interpretation of the following term:

| Term | Interpretation |
|--------|---|
| bonded | No construction necessary. If some construction is required, "bonded" should be construed to mean joined, connected, or adhered firmly together. |

The Court therefore will adopt this interpretation. The parties disagreed on the interpretation of the following terms:

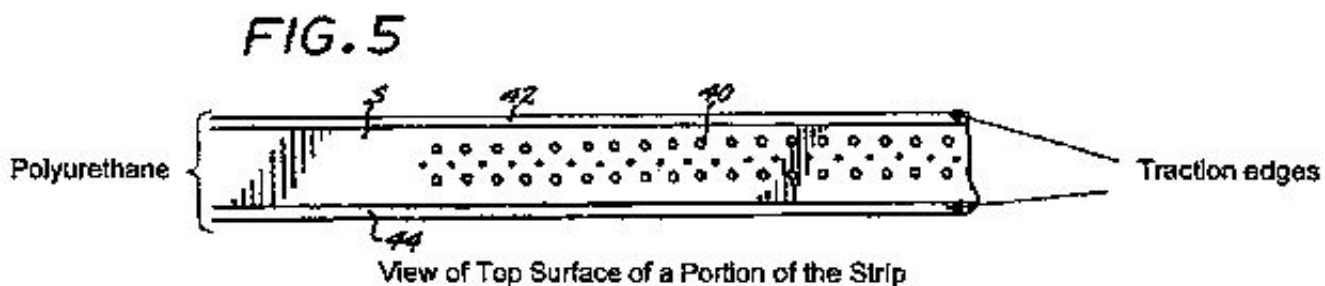
(1) consisting of,

- (2) closed pore,
- (3) open-pored,
- (4) generally normal,
- (5) handle, and
- (6) abutting.

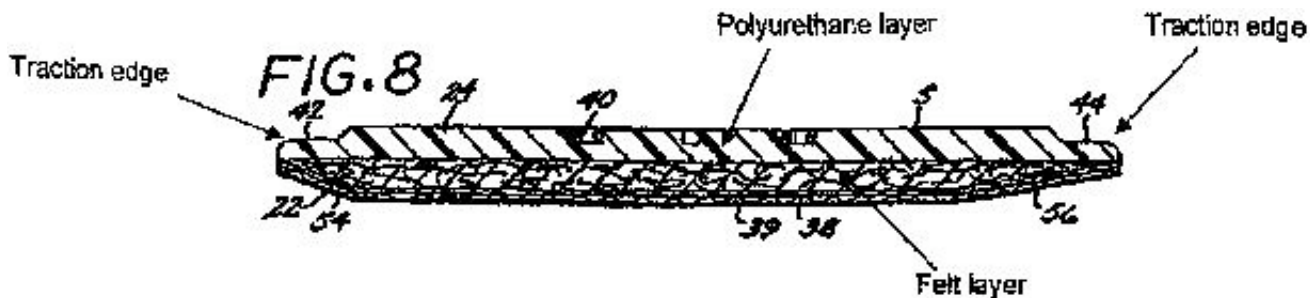
B. The '813 Patent

1. The Invention Generally

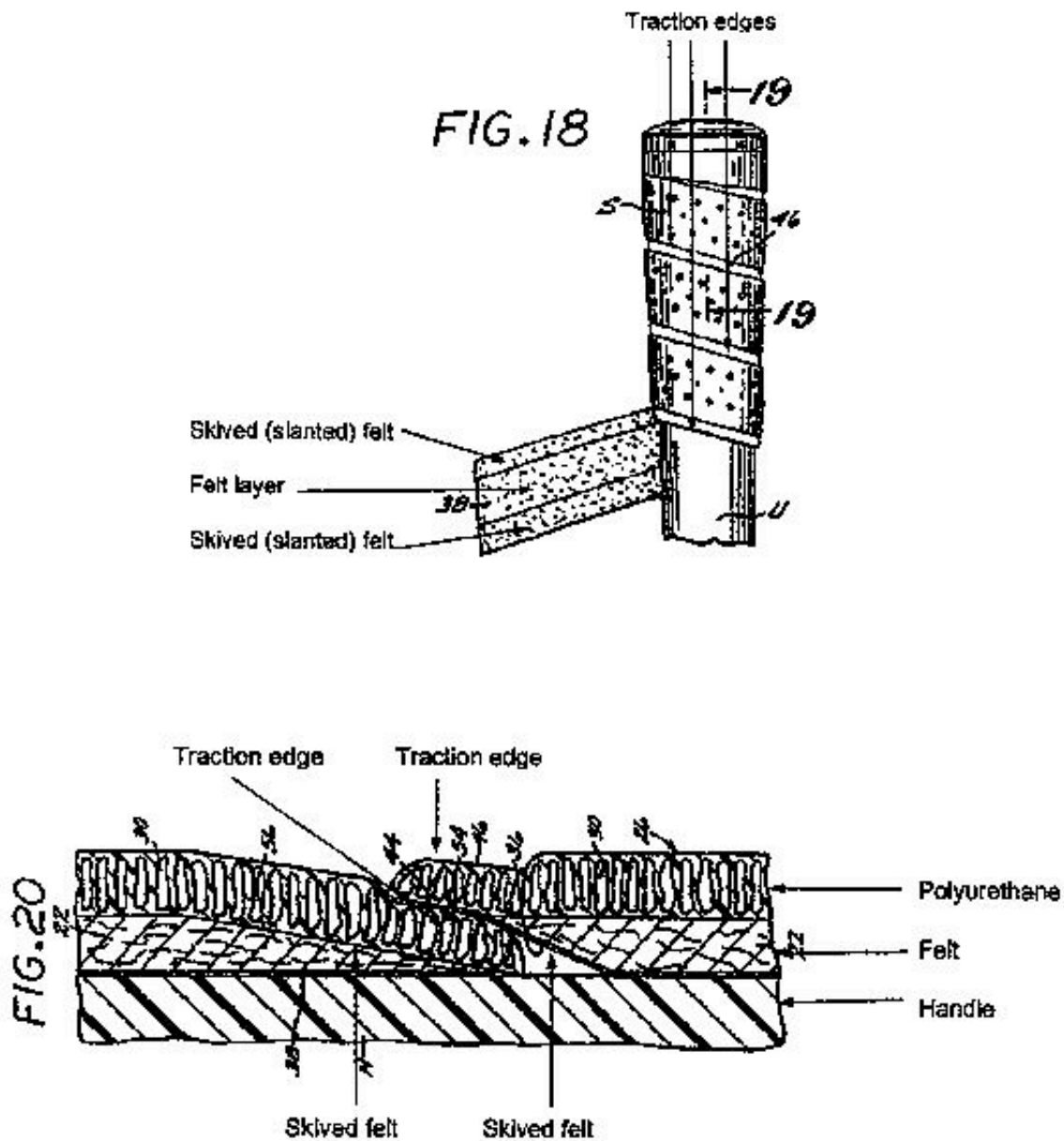
Huang subsequently developed a series of improvements to make the grip more suitable for use on golf clubs. These improvements formed the basis of the '813 Patent. The improvements included compressing the side edges of the grip's outer polyurethane layer to form "traction edges," as shown below.



'813 Patent, fig. 5 (text added by plaintiff). The traction edges are indentations into the polyurethane layer of the strip, as shown below in the items labeled 42 and 44.



'813 Patent, fig. 8 (text added by plaintiff). The traction edges overlap each other when the strip is spirally wrapped to form a grip, as shown below.



'813 Patent, fig. 18, fig. 20 (text added by plaintiff). The polyurethane used in the grip is water resistant, while the felt used is water absorbent. Huang says that overlapping the traction edges prevents any felt from showing through to the surface of the grip, creating a water-retarding seal.

Huang also wrapped his new golf grip around a rubber sleeve before installing the grip/sleeve combination onto a golf club. This allows for easy installation of the grip on a golf club and it also allows the grip to be sold as an after-market product so a golfer could install the grip on clubs. Huang says that before his invention, replacement grips needed to be hand wrapped by the golfer or by a professional.

The '813 Patent is entitled "Handle Grip." The Abstract describes the invention as follows:

A shock absorbing grip for a golf club having a strip formed of a polyurethane layer bonded to a felt layer. The strip is spirally wrapped about the golf club handle with the side edges being formed with recessed

reinforcement side edges which are overlapping to form a water retarding joint between the side edges of the strip. The felt layer may be formed with an upwardly extending central groove along its length to form a spiral depression when the strip is spirally wrapped about a handle.

2. Claim 6 FN5

FN5. The terms King Par deemed ambiguous and in need of claim construction are displayed in boldface type.

Claim 6 of the '813 Patent reads:

The combination of a handle of an impact imparting device and a resilient grip, such combination comprising:

a strip consisting of an open-pored felt layer having a generally flat inner surface and radially extending side edges, and a flat closed pore polyurethane layer having its inner surface bonded to the outer surface of the felt layer, with the pores of such polyurethane layer extending generally normal to the longitudinal axis of the strip, and with the felt layer providing strength for the polyurethane layer while the polyurethane layer both absorbs shocks and provides tackiness so as to inhibit slippage of a user's hand relative to a handle;

an adhesive on the underside of the felt layer;

heat compressed radially inwardly extending reinforcement side edges formed in the polyurethane layer of the strip along with the length of the strip;

outwardly and downwardly slanted side edges formed along the length of the felt layer;

a resilient sleeve applied to the handle; and

the strip being spirally wrapped about the sleeve to define said grip, with the underside of adjoining recessed side edges overlapping one another to define a water retarding joint between the adjoining side edges.

'813 Patent, col. 8, ll. 41-64.

The parties agreed on the interpretation of the following terms:

| Term | Interpretation |
|-------------------|--|
| bonded | No construction necessary. If some construction is required, "bonded" should be construed to mean joined, connected, |
| | or adhered firmly together. |
| radially inwardly | From the circumference toward the |

| | |
|-----------|------------------------------------|
| | center |
| outwardly | Toward the edges of the felt layer |

The Court therefore will adopt these interpretations. The parties disagreed on the interpretation of the following terms:

- (1) consisting of,
- (2) open-pored,
- (3) closed pore,
- (4) generally normal,
- (5) downwardly, and
- (6) layer.

C. The '929 Patent

1. The Invention Generally

Another improvement Huang made to his grip was a modification providing for a simple and cost-effective way to manufacture two-color golf grips. This improvement consisted of a grip made from a composite strip formed from two segments, with each segment a different color. Huang says that each segment is a narrower version of the strip described in the '813 Patent. This improvement formed the basis for the '929 Patent.

The '929 Patent is entitled "Two Piece Handle Grip." The Abstract describes the invention as follows:

A shock absorbing grip for a golf club or racquet having a two-piece strip formed of a polyurethane layer bonded to a felt layer where one strip segment is wider or equal than the other strip segment. The strip is spirally wrapped about a golf club or racquet handle with the side edges being formed with recessed reinforcement side edges which are overlapped to form a water retarding joint between the side edges of the strip. The strip segments and side edges may be fabricated in contrasting colors to provide a unique decorative appearance.

2. Claim 1 FN6

FN6. The terms King Par deemed ambiguous and in need of claim construction are displayed in boldface type.

Claim 1 of the '929 Patent reads:

The combination of a handle of an impact imparting device and a resilient grip, comprising:

a strip fabricated from first and second strip segments adhered together along their facing edges, each segment consisting of an open-pored felt layer having a generally flat inner surface and side edges, and a flat closed pore polyurethane layer having its inner surface bonded to the outer surface of the felt layer, and with the felt layer providing strength for the polyurethane layer while the polyurethane layer both absorbs shocks and provides tackiness so as to inhibit slippage of a user's hand relative to a handle;

the segments being of contrasting colors;

an adhesive applied to the underside of the felt layer; and

the strip being spirally wrapped about the handle.

'929 Patent, col. 8, ll. 8-22.

The parties agreed on the interpretation of the following term:

| Term | Interpretation |
|--------|--|
| bonded | No construction necessary. If some construction is required, "bonded" should be construed to mean joined, connected, |
| | or adhered firmly together. |

The Court therefore will adopt this interpretation. The parties disagreed on the interpretation of the following terms:

- (1) consisting of,
- (2) open-pored,
- (3) closed pore,
- (4) segments, and
- (5) facing edges.FN7

FN7. In sum, there were four terms common to the '418 Patent, the '813 Patent, and the '929 Patent that are in need of interpretation:

- (1) consisting of;
- (2) closed pore;

(3) open-pored; and

(4) generally normal.

The parties agreed that, for purposes of construing these terms as they appear in Claim 6 of the '813 Patent and Claim 1 of the '929 Patent, the Court should use the interpretation of these terms it deems appropriate for the '418 Patent.

III. Legal Standard

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed.Cir.2004); *White v. Dunbar*, 119 U.S. 47, 52, 7 S.Ct. 72, 30 L.Ed. 303 (1886) ("The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public ... to construe it in a manner different from the plain import of its terms."). Claim construction, or interpretation, is a matter of law for the Court. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995) (*en banc*), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The focus is on "what one of ordinary skill in the art at the time of the invention would have understood the term to mean." *Id.* at 986. This is based on the understanding that patents are addressed to and intended to be read by others of skill in the relevant art. *In re Nelson*, 47 C.C.P.A. 1031, 280 F.2d 172, 181 (C.C.P.A.1960), *overruled on other grounds by In re Kirk*, 54 C.C.P.A. 1119, 376 F.2d 936 (C.C.P.A.1967) ("The descriptions in patents are not addressed to the public generally, to lawyers or to judges, but, as section 112 says, to those skilled in the art to which the invention pertains or with which it is most nearly connected.").

Significantly, on the same day that the Court held the *Markman* hearing in this case, the Court of Appeals for the Federal Circuit issued a decision that clarifies the legal standard applicable to claim construction. Accordingly, the resolution of the parties' disputed terms must be informed by the Federal Circuit's *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 2005 WL 1620331, (Fed.Cir. July 12, 2005) (*en banc*).

In *Phillips*, the Federal Circuit reaffirmed the examination of intrinsic evidence, most notably the language of the patent's claims and specification, as the primary method in construing a patent claim. *Id.* at *7-*8. In so doing, the *Phillips* court cited with approval *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed.Cir.1996), in which the Federal Circuit succinctly summarized the role of intrinsic evidence:

First, we look 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.

Thus, second, it is always necessary to review 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.... The specification

contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. 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.

Third, the court may also consider the prosecution history of the patent, if in evidence. This history contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations 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.

Vitronics, 90 F.3d at 1582 (citations omitted).

Ordinary meaning is not the end of the analysis; the specification and prosecution history must be examined to determine if it is appropriate to afford a claim term its ordinary meaning. *Kumar v. Ovonic Battery Co.*, 351 F.3d 1364, 1367-68 (Fed.Cir.2003). The Federal Circuit recently explained the "twin axioms" regarding the role of the specification in claim construction:

On the one hand, claims must be read in view of the specification, of which they are a part. On the other hand, it is improper to read a limitation from the specification into the claims. Although parties frequently cite one or the other of these axioms to us as if the axiom were sufficient, standing alone, to resolve the claim construction issues we are called upon to decide, the axioms themselves seldom provide an answer, but instead merely frame the question to be resolved. We have recognized that there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification. As we have explained, an inherent tension exists as to whether a statement is a clear lexicographic definition or a description of a preferred embodiment. The problem is to interpret claims in view of the specification without unnecessarily importing limitations from the specification into the claims. That problem can present particular difficulties in a case such as this one, in which the written description of the invention is narrow, but the claim language is sufficiently broad that it can be read to encompass features not described in the written description, either by general characterization or by example in any of the illustrative embodiments.

Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904 (Fed.Cir.2004) (citations and quotation marks omitted); *see also* *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 810 F.2d 1113, 1116 (Fed.Cir.1987) ("Claims are not interpreted in a vacuum, but are part of and are read in light of the specification.").

Thus, in certain situations, the specification or prosecution history may show an intent to depart from the ordinary meaning of a claim term. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366-67 (Fed.Cir.2002). For example, the patentee may act as his own lexicographer and explicitly define a term in the specification or prosecution history. *Id.* The patentee may also characterize "the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." *Teleflex, Inc. v. Ficosa North America Corp.*, 299 F.3d 1313, 1327 (Fed.Cir.2002); *see* *Alloc, Inc. v. ITC*, 342 F.3d 1361, 1377 (Fed.Cir.2003) ("a claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee limited the scope of the claims"). If the "specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent" even if the language itself might be broad enough to cover the feature in question. *Scimed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed.Cir.2001). Similarly, "when the preferred embodiment is described in the specification as the invention itself, the

claims are not necessarily entitled to a scope broader than that embodiment." *Modine Mfg. Co. v. ITC*, 75 F.3d 1545, 1551 (Fed.Cir.1996), *abrogated on other grounds by Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed.Cir.2000), *rev'd*, 535 U.S. 722, 122 S.Ct. 1831, 152 L.Ed.2d 944 (2002). However, simply because the specification describes only one embodiment of the invention does not mean that the claims should automatically be limited to that embodiment. *Liebel-Flarsheim*, 358 F.3d at 906. Above all, the intrinsic evidence must show a clear and unmistakable intent to limit claim scope in order to overcome ordinary meaning and narrow a claim. *Id.*

The Federal Circuit has recognized that extrinsic evidence, which "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, can be useful in claim construction. In *Phillips*, however, the *en banc* Federal Circuit rejected any approach to claim construction that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions. *See Phillips*, 415 F.3d 1303, 2005 WL 1620331 at *13-*14. In so doing, the Federal Circuit rejected the approach suggested by *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed.Cir.2002), that a court should discern the ordinary meaning of a patent's claim terms through dictionaries or other texts before looking at a patent's specification. *Phillips*, 415 F.3d 1303, 2005 WL 1620331 at *13-*14. "The main problem with elevating the dictionary to such prominence is that it focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent." *Id.* at *14. *Phillips* emphasizes the principle that the patent system is based on the proposition that a patent's claims cover only the invented subject matter. *Id.* What is described in the claims flows from the statutory requirement imposed on the patentee to describe and particularly claim what he or she has invented. *Id.* *Phillips* notes that the use of a dictionary definition can conflict with this requirement because the patent application did not create the dictionary to describe the invention. *Id.* "Thus, there may be a disconnect between the patentee's responsibility to describe and claim his invention, and the dictionary editors' objective of aggregating all possible definitions for particular words." *Id.*

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Rather, the Federal Circuit in *Phillips* assigned dictionaries a role subordinate to the intrinsic record. The *en banc* court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 16. "[W]hat matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law." *Id.*

IV. Discussion FN8

FN8. The respective positions of the parties initially on interpretation of the ambiguous terms are displayed in a tabular format in Exhibit A.

A. Preface

As discussed above, the Court held a *Markman* hearing on July 12, 2005. The Court provided the parties with a tabular summary of their initial interpretations of thirteen claim terms. *See Ex. A.* The parties had already agreed on three of the thirteen terms ("bonded," "radially inwardly," and "outwardly"). *Id.* The parties then made presentations to the Court regarding their respective positions on the disputed claim terms. After viewing the presentations and discussing the parties' positions with them, the Court tentatively resolved many of the disputed terms during the *Markman* hearing. Accordingly, the parties now appear to agree on the interpretations of the following terms.FN9

FN9. In their supplemental papers, the parties indicated that they are submitting their revised proposed claim construction summaries. Plaintiffs' supplemental brief states that their summary "sets forth the parties' joint claim constructions in those instances in which the parties were able to agree." Plaintiffs later state, however, that their revised proposed claim construction summary is intended to reflect the comments of the Court at the *Markman* hearing, even where Plaintiffs disagreed with those comments. Accordingly, the submission of this Chart is not intended as a waiver of the Plaintiffs' right to challenge these interpretations on appeal or, if appropriate, to ask the Court to reconsider these interpretations at a later stage in the case.

Pl. Supp. Br. at 2. Accordingly, it appears as though the plaintiffs are *acquiescing* in the Court's comments at the *Markman* hearing rather than *agreeing* with those comments. Defendants make no reference in their supplemental papers to any challenge or disagreement they have to the revised claim construction that follows.

| Term | Patent and Claim | Interpretation |
|------------------|--|---|
| consisting of | '418 Patent (Claim 1) '813 Patent (Claim 6) | The strip has exactly two layers, and no more. <i>See Markman Hr'g. Tr.</i> at 4:18-20. |
| | '929 Patent (Claim 1) | 20. |
| open-pored | '418 Patent (Claim 1) '813 Patent (Claim 6) | Permeable to air, water, or other fluids. <i>See Markman Hr'g. Tr.</i> at 5:12-18. |
| | '929 Patent (Claim 1) | |
| generally normal | '418 Patent (Claim 1) '813 Patent (Claim 6) | Pores which extend vertically. <i>See Markman Hr'g. Tr.</i> at 6:8-16. |
| abutting | '418 Patent (Claim 1) | Touching or bordering on. <i>See Markman Hr'g. Tr.</i> at 7:7-9. |
| downwardly | '813 Patent (Claim 6) | Toward the polyurethane layer. <i>See Markman Hr'g. Tr.</i> at 7:10-11. |
| layer | '813 Patent (Claim 6) | A single, substantially discrete stratum. <i>See Markman Hr'g. Tr.</i> at 7:21-23; 34:3-6. |
| segments | '929 Patent (Claim 1) | No construction necessary. If some construction is required, "segments" should be construed to mean |

one of the parts into which the strip naturally separates or is divided. *See Markman*

| | | |
|--------------|-----------------------|---|
| | | Hr'g. Tr. at 7:24. |
| facing edges | '929 Patent (Claim 1) | No construction necessary. If some construction is required, "facing edges" should be construed to mean edges that face each other. <i>See Markman</i> Hr'g. Tr. at 7:25; 8:25. |

Only two terms remain for the Court to construe: (1) "closed pore," which appears in Claim 1 of the '418 Patent, Claim 6 of the '813 Patent, and Claim 1 of the '929 Patent; and (2) "handle," which appears in Claim 1 of the '418 Patent. At the conclusion of the *Markman* hearing, the Court directed the parties to submit supplemental papers addressing the remaining disputed terms. *See Markman* Hr'g. Tr. at 42:25; 43:1-3; 47:25; 48:1-11.

B. Closed Pore

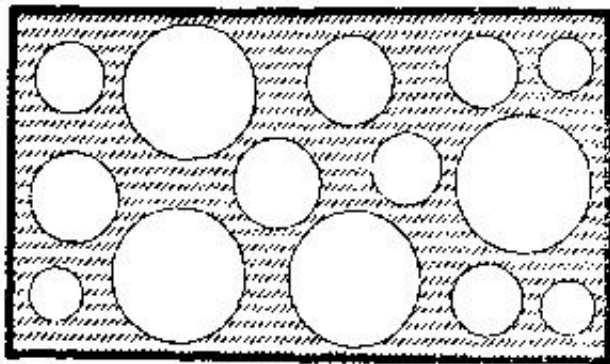
Claim 1 of the '418 Patent requires that the grip include "a smooth closed pore polyurethane layer" (emphasis added).

a. Winn's Interpretation

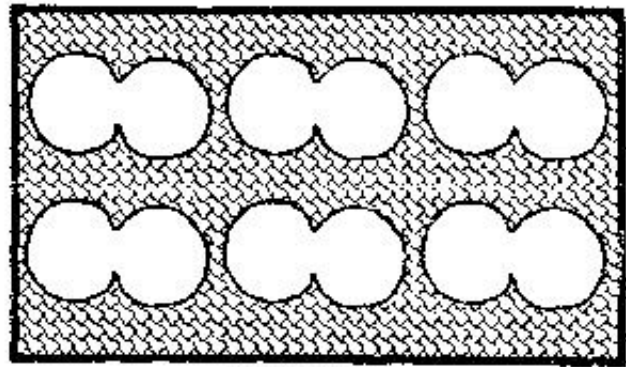
Winn submitted with its claim construction brief a declaration from Kurt Frisch (Frisch), who has a Ph.D. in Polymer Science, that provides an explanation of polyurethane foam. According to Frisch, what distinguishes a polyurethane foam from other forms of polyurethane is the presence of a large number of pockets of air or other gasses embedded in an otherwise solid structure. These pockets are called "cells" or "pores." Polyurethane foams traditionally are divided into two general classes: (1) "closed cell" and (2) "open cell." Frisch says that in a closed cell foam, most of the pockets of air or gas are trapped inside the foam and cannot escape.FN10 The trapped air will remain inside the closed cell foam when it is squeezed, providing a cushioning effect. In contrast, an open cell foam does not have most of the air trapped inside. Frisch says a sponge is an example of an open cell foam.

FN10. In support, Frish cited, *inter alia*, the Polyurethane Foam Association's "Flexible Polyurethane Foam Glossary," which defines "closed cells" as "[f]oam cells having intact cell membranes thereby reducing or eliminating passageways for airflow." Frish Decl. Ex. 2.

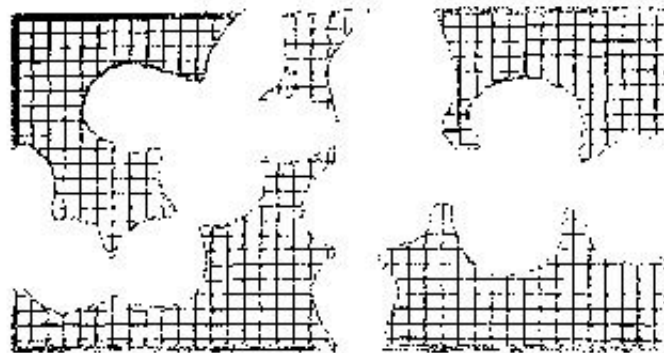
The parties provided the Court with example illustrations of closed pore and open pore polyurethane foam during the tutorial:



Closed Pore



Closed Pore



Open Pore

Winn's supplemental papers propose a construction of "closed pore" as "[p]olyurethane in which air or other gasses are trapped inside most of the pores of the polyurethane, substantially preventing air from passing through the polyurethane."

b. King Par's Interpretation

King Par maintained in its brief that the term "closed pore" should be defined as "a discrete, totally self-contained 'bubble' or 'cell', independent of the other bubbles or cells in the polyurethane material, an island of space, completely surrounded by solid material, and not interconnecting with any of its neighbors." King Par says that accepting Winn's interpretation, *i.e.*, interpreting a closed pore foam as allowing "bubbles" or "cells" to interconnect so long as air cannot flow through the foam and escape the foam structure, would mean that virtually every pore within a polyurethane layer could be interconnected with all of the other pores and, as long as there was no path for air to escape, the polyurethane could still be classified as closed pore.

In support of its position, King Par cites portions of the '418 Patent specification:

The improved grip of the present invention additionally aligns the pores of the polyurethane layer generally normal to the longitudinal axis of the racquet handle.... (418 Patent, col. 2, II. 13-16).

The grip also includes a smooth closed pore polyurethane layer generally designated 16 which is bonded to the textile layer 12. ('418 Patent, col. 2, II. 45-47).

As indicated in FIGS. 4, 7 and 8, the polyurethane layer 16 is formed with pores 22 which extend vertically, i.e., generally normal to the longitudinal axis of racket handle.... ('418 Patent, col. 2, II. 54-57).

In this manner, pores 22 extending perpendicularly relative to the strip's longitudinal axis are formed while the underside of the polyurethane strip is bonded to the outer surface 18 of the felt strip. ('418 Patent, col. 2, II. 64-67).

Compression of the polyurethane is enhanced by the vertical alignment of pores 22. ('418 Patent, col. 4, II. 12-14).

King Par says that this specification language, coupled with the following drawings from the '418 Patent referenced in the quoted specification language, makes it clear that the '418 Patent teaches that each pore in the closed pore polyurethane foam is independent, i.e., it does not connect with any adjacent pore.

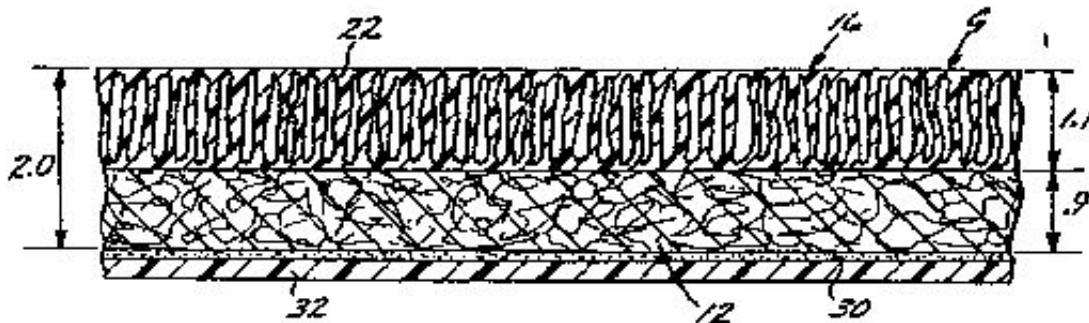


FIG. 4

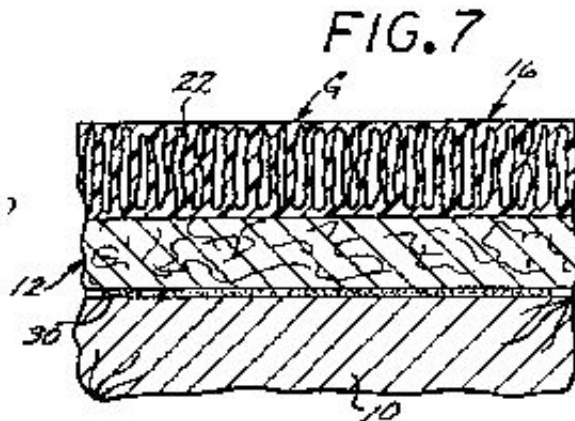


FIG. 7

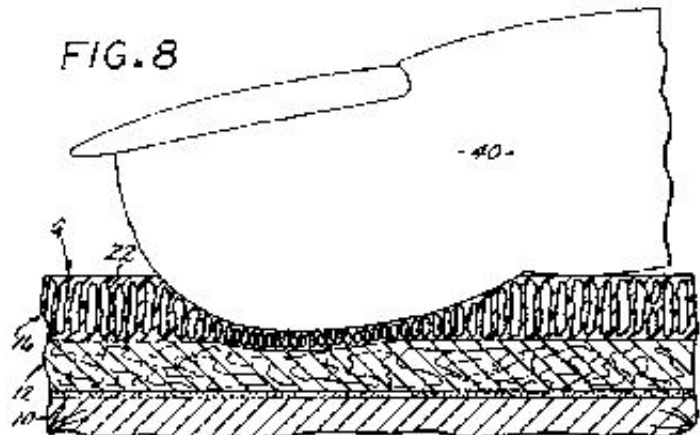


FIG. 8

King Par stated during its presentation at the *Markman* hearing that a closed pore polyurethane foam *could*

encompass interconnecting cells so long as air cannot flow through the foam and escape the foam structure.FN11 *See Markman* Hr'g. Tr. at 38:1-9. In its supplemental papers, King Par proposes a construction of "closed pore" as "[h]aving no passageway from the interior of the polyurethane layer through either the upper or lower boundary of the polyurethane layer."

FN11. Indeed, in their briefs, the parties cited the American Society of Testing Materials' "Standard Terminology Relating to Plastics," which defines "closed-cell cellular plastics" as "cellular plastics in which almost all the cells are noninterconnecting." Def. Ex. 6; Frish Decl. Ex. 5.

c. Analysis

The parties' disagreement about the construction of "closed pore" focuses on whether closed pore polyurethane can allow air to pass through the polyurethane. Winn says that closed pore polyurethane *substantially* prevents air from passing through the polyurethane, while King Par says that closed pore means that there can be *no* passageway from the interior of the polyurethane layer through the upper or lower boundaries of the layer; *i.e.*, it is impermeable to air.

Nothing in Claim 1 of the '418 Patent, the specification, or the prosecution history definitively resolves this dispute. Claim 1 simply recites a "smooth closed pore polyurethane layer...." '418 Patent, col. 4, line 38. The specification teaches a method of forming the polyurethane layer, *see id.* at col. 2, II. 58-67, but it does not teach whether the layer is impermeable to air. The specification does state that, when forming the polyurethane layer using the method taught in the specification, "pores 22 extending perpendicularly relative to the strip's longitudinal axis are formed while the underside of the polyurethane strip is bonded to the outer surface 18 of the felt strip." *Id.* at col. 2, II. 64-67. None of these pores, as illustrated above in figures 4, 7, and 8 of the '418 Patent, extends beyond the upper or lower boundaries of the polyurethane layer. This comports with King Par's proposed interpretation that a closed pore polyurethane called for by the specification is impermeable to air.

Indeed, Winn's papers also seem to favor King Par's proposed interpretation. Winn stated in its brief that "[i]n closed cell polyurethane foam, the pockets of air or gas are trapped inside the foam and cannot escape. If one squeezes a closed cell foam, the trapped air remains inside the foam and the air pockets provide a cushioning effect." Pl. Br. at 11. In support of this statement, Winn relies on Frisch's declaration. Frisch affirmed that trapped air remains inside a closed cell polyurethane foam. Frisch Decl. at para. 7. In contrast, air inside an open cell polyurethane foam escapes when the foam is squeezed. *Id.* at para. 8. King Par likewise provided a declaration of an expert in the field of polymer science. Shaw Ling Hsu (Hsu), a professor and head of polymer science and engineering at the University of Massachusetts, affirmed that closed pore polyurethane foam features "non-communicating" cells sealed off by polymer. Hsu Decl. at 3:25-26. This extrinsic evidence, together with the illustration of pores in figures 4, 7, and 8 of the '418 Patent, leads the Court to conclude that King Par's proposed interpretation of "closed pore" is correct. Accordingly, the Court construes the term "closed pore" as "having no passageway from the interior of the polyurethane layer through either the upper or lower boundary of the polyurethane layer." FN12

FN12. Closed-pore polyurethane foam is not a unique product. Indeed, it is well known in the art. *See, e.g.*, POLYURETHANE HANDBOOK 1-6 (Gunter Oertel ed., Hanser Publishers 1985) (discussing the origins of polyurethane; noting the technology for commercial production of flexible polyester foams was developed in the early 1950s; and providing examples of commercial uses for polyurethane foam, including

the furniture and bedding, automotive, construction, and appliance industries). Yet, despite its prominence, the parties continue to dispute the meaning of "closed pore." Nothing in the '418 Patent, whether in the claims, the specification, or the drawings, suggests that Huang is using the term uniquely; indeed, he is not being his own lexicographer. The Court finds it curious that the parties have struggled to reach agreement on the definition of the term.

C. Handle

Claim 1 of the '418 Patent requires "a handle for an impact imparting device." (emphasis added).

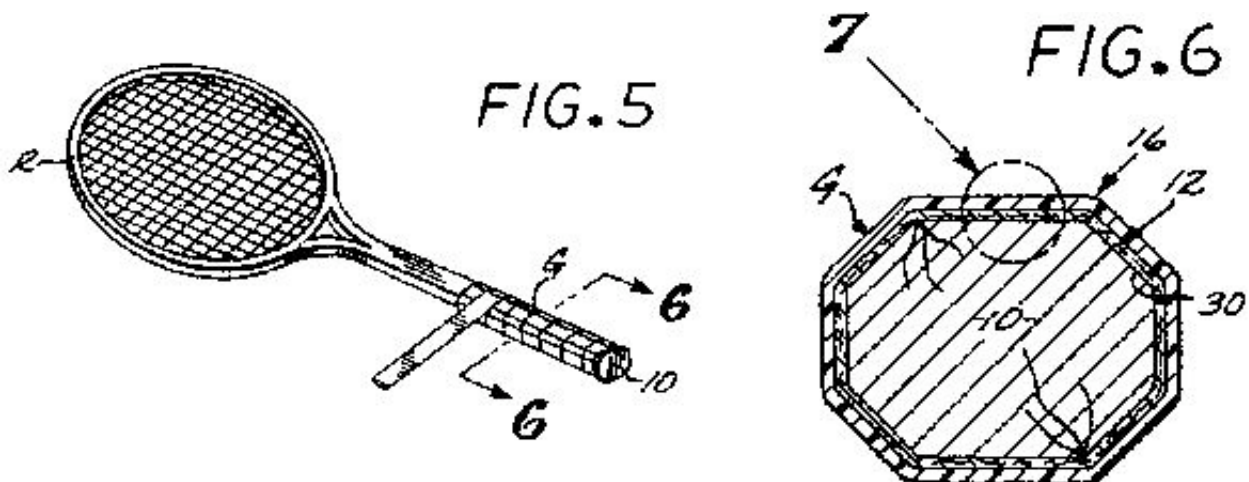
a. Winn's Interpretation

Winn seeks to have the term interpreted consistent with its ordinary meaning, which Winn says is "a part that is designed especially to be grasped by the hand or that may be grasped by the hand." Pl. Br. at 16 (citing WEBSTER'S THIRD NEW INT'L DICTIONARY 1027 (1993)). In the context of the '418 Patent, a grip is applied to the handle before the handle is grasped by the hand. Because of this, Winn says that "handle" also can be described as the portion of the device around which the grip is wrapped. Additionally, Winn says that the definition of "handle" encompasses the presence of a sleeve.

In its supplemental papers, Winn proposes a construction of "handle" to reflect its ordinary meaning, "namely the portion of the impact imparting device that is designed to be grasped by the hand, and it does not exclude any sleeves, coatings, or other materials that are designed to be grasped by the hand."

b. King Par's Interpretation

King Par disagrees that "handle," as it appears in Claim 1 of the '418 Patent, encompasses the presence of a sleeve. King Par refers to the drawings of a tennis racquet handle in the '418 Patent (shown below), which King Par says shows a solid element with no sleeve, covering or other enclosure.



Accordingly, as noted in its supplemental papers, King Par would have "handle" interpreted as "[t]he portion of the tennis racquet to which the shock absorbing grip is applied, excluding any intermediate sleeve."

FN13. The problem with this proposed interpretation is the fact that King Par is attempting to have the Court construe a claim term in the negative, *i.e.*, by excluding the presence of an intermediate sleeve. It appears that, in proposing this interpretation, King Par is looking ahead to either an issue of validity or infringement—the Court is not clear which. The Court, however, has engaged in this claim construction exercise without looking at the infringing device and without considering issues of validity or infringement, either literal or by equivalence.

c. Analysis

What divides the parties' interpretation is both parties' desire to define the relationship of the handle to that of the presence of an intermediate sleeve or the absence of an intermediate sleeve. Nothing in the '418 Patent discloses the presence of a sleeve. Indeed, Claim 1 and the specification only refer to a "handle." Claim 1 also teaches "a strip which is spirally rapped about said handle, the strip consisting of an open-pored textile layer having an inner surface adhered to and abutting said handle....," '418 Patent, col. 4, ll. 35-37, as well as "an adhesive provided along the inner surface of the textile strip securing the strip to the handle." *Id.* at col. 4, ll. 55-56. The express claim language teaches that the textile strip is bonded to the handle. Accordingly, the Court construes the term "handle" as "the portion of the impact-imparting device to which the shock absorbing grip is applied."

V. Conclusion

In reaching this decision, the Court has employed the principles of claim construction discussed in *Phillips* and its progeny. The Court focused primarily on the express language of Claim 1 and the specification of the '418 Patent, as well as very little extrinsic evidence that both parties provided in their papers. No reference to the prosecution history of the patents has been made, nor did the Court consult dictionaries to construe the claim terms.

This is a tentative decision. Experience in patent cases shows that subsequent proceedings and particularly trial may reveal aspects of claim interpretation not apparent in the papers at this point of the case.

In sum, the terms upon which the parties differ in interpretation are interpreted as follows:

A. '418 Patent (Claim 1)

| Term | Interpretation |
|---------------|--|
| consisting of | The strip has exactly two layers, and no more. |
| open-pored | Permeable to air, water, or other fluids. |
| closed pore | Having no passageway from the interior of the polyurethane layer through either the upper or lower boundary of the polyurethane layer. |
| bonded | No construction necessary. If some |

construction is required, "bonded" should be construed to mean joined,

| | |
|------------------|---|
| | connected, or adhered firmly together. |
| generally normal | Pores which extend vertically. |
| handle | The portion of the impact-imparting device to which the |
| | shock absorbing grip is applied. |
| abutting | Touching or bordering on. |

B. '813 Patent (Claim 6)

| Term | Interpretation |
|-------------------|---|
| consisting of | The strip has exactly two layers, and no more. |
| open-pored | Permeable to air, water, or other fluids. |
| closed pore | Having no passageway from the interior of the polyurethane layer through either the upper or lower |
| | boundary of the polyurethane layer. |
| bonded | No construction necessary. If some construction is required, "bonded" should be construed to mean joined, |
| | connected, or adhered firmly together. |
| generally normal | Pores which extend vertically. |
| radially inwardly | From the circumference toward the center. |
| outwardly | Toward the edges of the felt layer. |
| downwardly | Toward the polyurethane layer. |
| layer | A single, substantially discrete stratum. |

C. '929 Patent (Claim 1)

| Term | Interpretation |
|---------------|--|
| consisting of | The strip has exactly two layers, and no more. |
| open-pored | Permeable to air, water, or other fluids. |
| closed pore | Having no passageway from the interior of the polyurethane layer through either the upper or lower |
| | boundary of the polyurethane layer. |

bonded No construction necessary. If some construction is required, "bonded" should be construed to mean joined,

| | |
|--|--|
| | connected, or adhered firmly together. |
|--|--|

segments No construction necessary. If some construction is required, "segments" should be construed to mean one of the parts into which the strip naturally separates or is

| | |
|--|----------|
| | divided. |
|--|----------|

facing edges No construction necessary. If some construction is required, "facing edges" should be construed to mean

| | |
|--|-----------------------------|
| | edges that face each other. |
|--|-----------------------------|

A status conference is scheduled for Tuesday, August 30, 2005 at 2:00 p.m., to determine the future course of the case.

E.D.Mich.,2005.

Winn, Inc. v. King Par Corp.

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