United States District Court,
N.D. Illinois, Eastern Division.

HERMAN MILLER, INC,
Plaintiff.
v.
TEKNION CORP. and Okamura Corp,
Defendants.

July 30, 2007.

Background: Patent owner brought action against competitor alleging infringement of patent generally directed toward chair having backrest with bowed-section and flexible fabric membrane and patent generally relating to flexible fabric membrane and lumbar support features. Parties brought motions for summary judgment.

Holdings: The District Court, Gettleman, J., held that:
(1) term, "adjacent," meant in close proximity to or not distant;
(2) prosecution history commentary did not incorporate clear, drastic limitation into word "adjacent";
(3) bowed section of backrest frame side members was curved portion of frame created by connection of upper section and lower section;
(4) use of terms "bowed section," "upper section," and "lower section" within claim did not require there to be "discrete" sections so as to avoid having superfluous claim language;
(5) phrase, "at substantially a lumbar region," meant approximate portion of backrest where lumbar section of user's back would be supported by backrest;
(6) resort to industry standards was unnecessary to define meaning of phrase, "lumbar region";
(7) term, "substantially," meant approximately or about, as opposed to term of magnitude; and
(8) phrase, "second bowed section corresponding to said first bowed section," contemplated bowed shape portion of membrane to maintain general agreement with shape of first bowed shaped section.

Motions granted in part and denied in part.

6,588,842. Not Infringed.

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MEMORANDUM OPINION AND ORDER

GETTLEMAN**, District Judge.**

Plaintiff, Hermann Miller, Inc. ("plaintiff"), filed suit against defendants, Teknion Corp. ("Teknion") and Okamura Corp. ("Okamura") (collectively "defendants"), alleging that defendants infringe U.S. Patent Nos. 6,273,506 ("the '506 patent"), 6,513,222 ("the '222 patent"), 6,588,842 ("the '842 patent") and 6,588,741 ("the '741 patent"), which cover various features of swivel office chairs. In its initial complaint, plaintiff asserted claims 55-58 of the '506 patent; claims 15, 16 and 18 of the '222 patent; claims 1, 5, 6, 12, 15 and 32 of the '842 patent; and claims 1, 2, 4-10, 12-15, 17, 19, 20 and 24-27 of the '741 patent. In response, defendants moved for partial summary judgment of invalidity, arguing that claims 55, 56 and 58 of the '506 patent and claims 15, 16 and 18 of the '222 patent were invalid as anticipated and obvious under 35 U.S.C. s.s. 102 and 103, and that claim 15 of the '222 patent was indefinite for failing to meet the statutory requirements of 35 U.S.C. s. 112. After both parties submitted briefs in support of their arguments, plaintiff moved for partial summary judgment of literal infringement of the ' 506 patent-asserting claims 50-58. Defendants responded, opposing plaintiff's motion and cross-moving for summary judgment of non-infringement of both the '506 and the '222 patents.

Defendants also moved for partial summary judgment of non-infringement of the '842 and '741 patents. Plaintiff accordingly filed a brief opposing defendants' motion for partial summary judgment of non-infringement of the '842 and '741 patents and concomitantly cross-moved for partial summary judgment of literal infringement of the '741 patent.

While this case was pending, however, the Supreme Court issued its decision-regarding the issue of obviousness in patent law-in KSR International Co. v. Teleflex, Inc., 550 U.S. 398, 127 S.Ct. 1727, 167 L.Ed.2d 705 (2007). In light of the Court's decision in KSR, plaintiff decided to issue a statement of non-liability as to the '506 and '222 patents. As a result, the parties voluntarily dismissed all claims and counterclaims relating to the '506 and ' 222 patents, leaving only the '741 and '842 patents at issue.

FACTS

In the mid-1990's, Herman Miller, Inc. introduced the Aeron chair into the chair market. The Aeron is described by Herman Miller as providing users with ergonomic benefits that result in improved comfort, posture and blood circulation. Herman Miller applied for and obtained multiple patents covering various aspects of the Aeron. Two of these patents, the '741 and '842 patents, are at issue in this case. The '741 patent is a continuation of the '842 patent. Accordingly, both share a common specification. Although the specifications are common to both, the claims of the two patents are directed to different features of various preferred embodiments. The claims of the '741 patent are generally directed to a chair having a backrest with a bowed-section and a flexible fabric membrane, while the claims of the '842 patent generally relate to a flexible fabric membrane and lumbar support features.

Defendant Okamura, one of Herman Miller's competitors, is a Japanese manufacturer of the accused Contessa chair. Okamura, ostensibly interested in introducing the Contessa into the United States market, attempted to enter into distribution agreements with two U.S. companies, KI and Knoll. Unable to reach an agreement with either company, Okamura searched elsewhere, eventually making contact with the Canadian company, defendant Teknion. Teknion and Okamura thereafter entered into a distribution agreement whereby Teknion became a distributor of the Contessa in the United States. Teknion is also a distributor of

the t3 chair.

Herman Miller subsequently brought this action, in part alleging that certain claims of the asserted patents read on Okamura's Contessa and Tecknion's t3 chairs, and that the actions of both companies constitute infringement under 35 U.S.C. s. 271. Both sides have moved for partial summary judgment.

SUMMARY JUDGMENT STANDARD

A movant is entitled to summary judgment under Rule 56 when the moving papersand affidavits show there is no genuine issue of material fact and the movant is entitled to judgment as a matter of law. *See* Fed.R.Civ.P. 56(c); Celotex Corp. v. Catrett, 477 U.S. 317, 322, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986); Unterreiner v. Volkswagen of Am., Inc., 8 F.3d 1206, 1209 (7th Cir.1993). Once a moving party has met its burden, the nonmoving party must go beyond the pleadings and set forth specific facts showing there is a genuine issue for trial. *See* Fed.R.Civ.P. 56(c); Becker v. Tenenbaum-Hill Assocs., Inc., 914 F.2d 107, 110 (7th Cir.1990). The court considers the record as a whole and draws all reasonable inferences in the light most favorable to the party opposing the motion. *See* Fisher v. Transco Services-Milwaukee, Inc., 979 F.2d 1239, 1242 (7th Cir.1992).

DISCUSSION

INFRINGEMENT OF THE '842 AND '741 PATENTS

Plaintiff has asserted against defendants claims 1, 5, 6, 12, 15 and 32 of the '842 patent; and claims 1, 2, 4-10, 12-15, 17, 19, 20 and 24-27 of the '741 patent. Defendants thereafter moved for summary judgment of non-infringement of the '842 and '741 patents, arguing that neither the Contessa nor the T-3 chairs include the backrest structure as claimed. In response, plaintiff opposed defendants' motion and cross-moved for partial summary judgment of literal infringement of the '741 patent.

[1] [2] [3] Patent infringement analysis is a two-step process comprising the steps of (1) interpreting the patent claims, and (2) comparing the "properly" interpreted claims with the accused device. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed.Cir.1998). Under the all-limitations rule, "[t]o infringe a claim, each claim limitation must be present in the accused product, literally or equivalently." Dawn Equip. Co. v. Ky. Farms Inc., 140 F.3d 1009, 1014 (Fed.Cir.1998). It is within the court's bailiwick to resolve claim construction issues in a summary judgment motion because claim construction is a matter of law. Markman v. Westview Inst., Inc., 517 U.S. 370, 376-78, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

I. Infringement of the '741 Patent

A. Claim Construction

The '741 patent is generally directed to office chairs, and is particularly directed to a backrest for a chair. The '741 and the '842 patent share a common specification. Defendants argue that many of the limitations of the '741 patent are simply not found in the chairs at issue. In so doing, defendants proffer constructions of various claim terms including "adjacent," "bow," "bow-shaped," "bowed section," "substantially a lumbar region," and "corresponding." Accordingly, this court must determine the proper scope of these claim terms.

Claim 1 of the '741 patent recites FN1:

FN1. The rest of the asserted claims of the '741 patent are too numerous and bear such similarity to these claims that it would be repetitious to recite them within the text of the opinion. Moreover, each of the disputed terms can be found in claim 1.

1. A seating structure comprising:
a support structure;

a seat supported by said support structure and comprising a front and rear;

a backrest pivotally connected to said support structure and positioned adjacent said rear of said seat, wherein said backrest comprises a frame having a pair of spaced-apart, bow-shaped side members, each of said side members having a lower section and an upper section, wherein each of said upper sectionsextends from one of said respective lower sections so as to form a pair of first bowed sections at substantially a lumbar region of said backrest, wherein said first bowed sections have generally convex-shaped forwardly facing contour, and wherein said upper section of each side member further extends laterally outwardly from said lower section; and

a flexible membrane coupled to and extending between said side members and having a second bowed section corresponding to said first bowed sections of said side members.

[4] [5] [6] [7] The words of a claim " 'are generally given their ordinary and customary meaning,' " which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed.Cir.2005) (en banc) (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996)). In cases in which the ordinary and customary meaning of the claim language is readily apparent to even "lay judges," claim construction requires "little more than the application of the widely accepted meaning of commonly understood words." Id. at 1314. Where there is such claim language, courts can look to extrinsic evidence such as dictionaries, encyclopedias and treatises to determine claim construction, provided the evidence is "considered in the context of the intrinsic evidence." Id. at 1319. Thus, dictionaries are helpful in understanding the ordinary meaning of claim terms "so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Id. at 1322-23.

[8] [9] The meaning of a claim term, however, "as understood by persons of skill in the art is often not immediately apparent...." Id. at 1314. And indeed, claim terms in patents are not read in a vacuum. *See* Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed.Cir.2005). Frequently, rendering a proper determination of the claim meaning calls for the court to look to " 'those sources available to the public that show what a person of skill in the art would have understood the disputed claim language to mean.' " Phillips, 415 F.3d at 1314 (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1116 (Fed.Cir.2004)). These sources include the claims, the specification, the prosecution history, and relevant extrinsic evidence. Id. Of these sources, the specification provides the court with the most powerful bulb for illuminating the meaning of the claim language. Id. at 1315. The court is, of course, ever-mindful of the Federal Circuit's oft-repeated admonition that courts should refrain from confining claims to specific embodiments. *See* id at 1323. But, as the Federal Circuit aptly stated in Phillips, "[t]he problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive." Id. at 1321.

1. Claim Construction of the Term "adjacent"

[10] Defendants first contend that the accused chairs do not meet the limitation of "a backrest ... positioned adjacent said rear of said seat." Defendants assert that "positioned adjacent" means that the bottom of the backrest is at or below the level of the seat. This construction, defendants argue, is mandated by both the specification and the prosecution history of the '741 patent's grandparent patent application, U.S. Patent Application No. 08/347,475 (the "'475 application"). Plaintiff opposes this construction, contending that the plain meaning of "adjacent" should apply, and arguing that defendants have mischaracterized the prosecution history by providing the court with an abridged version of the file wrapper.

It is not uncommon for patent drafters to use-or for courts to have to construe-the term "adjacent." *See* Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1348-49 (Fed.Cir.2005); Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F.Supp.2d 93, 105 (D.Conn.2006). In Free Motion, the Federal Circuit held that the term "adjacent" should be construed as "not distant." Free Motion, 423 F.3d at 1349. The court there noted that "adjacent" bears several related dictionary definitions, and that there was nothing within the intrinsic evidence to cause the court to apply anything but the broadest definition of the term.

[11] In the instant case, defendants argue that the intrinsic evidence requires the court to apply a narrower scope to "adjacent." The court notes that the claims themselves provide no insight into the meaning of "adjacent." Defendants direct the court to Figure 4 of the '741 patent, which shows a chair with a bottom of the backrest located at or below the level of, rather than spaced above, the seat. Again, however, it is hornbook patent law that preferred embodiments found in the specification should not be read as limiting the claims. *See* Phillips, 415 F.3d at 1323. Because the specification fails to expatiate on what "adjacent" to the seat means and, *a fortiori,* what the term "positioned adjacent" means, the court declines defendants' invitation to limit the claims to the preferred embodiment as illustrated in various drawings within the patent. Therefore, if a limiting definition is to manifest itself in the intrinsic evidence, it will have to come from the prosecution history. Id. at 1317 ("In addition to consulting the specification, we have held that a court 'should also consider the patent's prosecution history, if it is in evidence.' ") (quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed.Cir.1995) (en banc)).

[12] Defendants argue that during the prosecution of the '475 application-a grandparent patent application-plaintiff added the term "adjacent" to distinguish the prior art. *See* Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed.Cir.1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation."). Consequently, according to defendants, plaintiff disclaimed a broad construction of the term. As defendants see it, the patent office examiner rejected the pending claims as being anticipated by the chair disclosed in prior art in the Canadian patent issued to Diffrient (No. 1,235,055). In response, plaintiff added the limitation "with said back positioned adjacent said rear portion of said seat" to overcome the rejection. Through extrapolation, defendants contend that because the backrest in Diffrient was positioned above the seat, plaintiff limited the term "adjacent" to mean "at or below the level of the rear of the seat."

Plaintiff contends that neither the claims in the grandparent case nor the patent office examiner's rejection contemplated a requirement that precluded the backrest from being spaced above the rear of the seat. According to plaintiff, the patent office examiner requested a definition for the location of the "rear" of the seat, and that is why the claim limitation in question was added.

[13] After reading the office action and the response to that office action, the court finds defendants' argument to be untenable. The court notes that "[w]hile the prosecution history is relevant to claim construction, 'it often lacks the clarity of the specification and thus is less useful for claim construction purposes.' " LG Elecs., Inc. v. Bizcom Elecs., Inc., 453 F.3d 1364, 1373 (Fed.Cir.2006) (quoting Phillips, 415 F.3d at 1317). The various snippets of language cited by defendants may relate to a back of a chair and its positioning, but they by no means "rise to the level of disclaiming or limiting the scope of the express claim language." Id. Indeed, in rejecting certain claims in the '475 application as being anticipated, the patent office examiner stated:

Diffrient discloses a tiltable chair and methods comprising a seat (11) and back (12) connected to a base (10) through an exposed linkage assembly. The linkage assembly comprising a link member (65) including a pair of links attached pivoted to the base at an axle (5) and extending at the sides of the seat and back. The link member having a first portion pivotally attached (at 84) to a side of the seat at location above the seating surface (see Fig. 3) which would be substantially aligned with a user's hips and extending to be rigidly connected to the back (at 67). The linkage also includes a *rear link* (92) pivotally connected between the base and a rear portion of the seat to form a four bar linkage with the link member (**the claims do not define a rear direction which would preclude the link 92 of Diffrient from being "rear"**) .... [Italics appear in original (emphasis added)]

In response to this, the applicant amended the claims to state in part, "a seat comprising a seating surface, *a front portion, a rear portion* and a side portion; a back; and a linkage assembly connecting said seat and back to said base member, *with said back positioned adjacent said rear portion of said seat, ...*?" Response to Office Action (emphasis added to show amended language). The applicant then stated in his remarks to the office action:

Independent claim 102 recites a seat having a front and rear portion and a linkage assembly connecting a seat and a back to said base member, "with said back positioned adjacent to the *rear portion* of said seat." In this way, claim 102 now orients the seat relative to the back and clarifies the meaning of various directional recitations. [Emphasis in original]

This language does not indicate a clear disavowal of scope on the part of the applicant. To the contrary, this commentary indicates that the applicant amended the claims to incorporate "directional recitations" into the claims and to "orient the seat relative to the back," i.e., the seat and back are adjacent to each other. It does not show an attempt to limit the backrest to only positions at or below the level of the seat. The court simply cannot read such innocuous language as incorporating a clear, drastic limitation into the word "adjacent." Therefore, this court defines "adjacent" in claim 1 of the '741 patent as meaning "in close proximity to" or "not distant."

2. Claim Construction of the Term "bow"

[14] The parties also disagree over the terms, "bow," "bow-shaped" and "bowed section" as used in claim 1 of the '741 patent. The claims at issue contain the following limitation:

a backrest ... wherein said backrest comprises a frame having a pair of spaced-apart, *bow-shaped* side members, each of said side members having a lowersection and an upper section, wherein each of said upper sections extends from one of said respective lower sections so as to form a pair of *first bowed*

sections at substantially a lumbar region of said backrest, wherein said *first bowed sections* have a generally convex-shaped forwardly facing contour, and wherein said upper section of each side member further extends laterally outwardly from said lower section .... [Emphasis added]

[15] Defendants contend that the written description and drawings indicate that "bow" means that the sides of the backrest frame form an arch with a discrete upper section and a discrete lower section. In particular, defendants argue that the written description defines the bowed section as a discrete section of the backrest frame and that the drawings illustrate a backrest frame that has a section extending above the "peak" of the bow and a section extending below the "peak" of the bow. According to defendants, every embodiment of the patent shows a discrete lower section extending below the bowed section.

Plaintiff argues that defendants are reading limitations into the claims; specifically, that defendants are reading the word "discrete" into the claims. Plaintiff contends that the proper reading of "bowed section" is the section formed by at least a portion of the upper section and at least a portion of the lower section.

A reading of the language of the claim itself reveals the proper meaning of "bow." The claim recites "each of said upper sections extends from one of said respective lower sections so as to form a pair of first bowed sections ...." ' 741 Patent, col. 22, *ll*. 45-47. Therefore, the bowed section of the backrest frame side members is that portion of the frame created by the connection of an upper section and a lower section. It is neither uncommon nor improper in patent claim drafting to define structures in such ways. The use of the terms "upper section" and "lower section" allow the claim drafter to then further describe other characteristics and limitations within the same or a dependent claim. For instance, dependent claim 6 recites, "The seating structure of claim 1 wherein said frame further comprises *a top member extending between and connecting said upper sections* of said side members and *a bottom member extending between and connecting said lower sections* of said side members." Id., cols. 22:66-23:3 (emphasis added). Without using the terms "lower section" and "upper section" it would be impractical to describe where the "top member" or "bottom member" is placed.

Moreover, the use of "bowed" in "bowed sections" provides a limitation to the interaction of the upper and lower sections. Arguably, a chair having a backrest with side members wherein the lower and upper sections came together to form a sharp point (perhaps a 90 (deg.) angle), would not infringe the patent claim because the formation created by the connection of the upper and lower sections must be "bowed," which the claim defines as "a generally convex-shaped forwardly facing contour." *See* id., col. 22, *ll*. 49-50. Thus, the "bowed section" must be "curved." Accordingly, contrary to defendants' argument, the use of the terms "bowed section," "upper section" and "lower section" within the claim do not require there to be "discrete" sections so as to avoid having superfluous claim language. Rather, as properly construed, each term holds meaning. In sum, the bowed section of the backrest frame side members is the curved portion of the frame created by the connection of an upper section and a lower section.

3. Claim Construction of the Term "Substantially a Lumbar Region"

[16] Both parties dispute the construction of the term "at substantially a lumbar region" as it is used in claim 1 of the '741 patent. The claim recite "each of said upper sections extends from one of said respective lower sections so as to form a pair of first bowed sections at substantially a lumbar region of said backrest ...." Id., col. 22, *ll*. 45-48 (emphasis added). Defendants argue that this limitation requires the bowed section to be at the lumbar region of the backrest, which is between six and ten inches above the seat of the chair. According to defendants, a person having ordinary skill in the art would recognize the lumbar region to be a

specific region of the human spine, which the seating industry standards locate as being between six and ten inches above the seat. Defendants further contend that the claim drafter's implementation of the term "substantially" mandates that a majority of the bowed section rest within the six to ten inch range. Defendants base this argument on their belief that when the term "substantially" modifies a location or position, it is language of magnitude.

In contrast, plaintiff argues that the specification and claims make clear the term "at substantially a lumbar region" means the portion of the backrest that supports the lumbar region of a user's spine. In particular, plaintiff contends that defendants are reading an industry standard into the claims which, according to plaintiff, is both improper and unnecessary because the intrinsic evidence provides enough insight into the meaning of the term. Further, plaintiff asserts that the term "substantially" is a term of approximation-at least as used in the claim-and that defendants are incorrect in understanding "substantially" to require the bowed sections to be "mostly in, or within" the lumbar region. Rather, plaintiff argues, the term means "at or near" and as a result, the first bowed sections are located at or near a region of the backrest that will support the lumbar region of a user's spine.

[17] The court agrees with plaintiff's construction. The language of the claims-in light of the specification-provides the proper construction of "at substantially a lumbar region of said backrest," which is approximately the portion of the backrest where the lumbar section of a user's back would be supported by the backrest. The specification simply calls for the first and second bowed sections to act in unison "[t]o support the lumbar region of a user's back ...." Id., col. 12, *ll*. 65-67. The court finds it unnecessary to resort to industry standards to define what the term "lumbar region" means. The term is not indefinite because one of ordinary skill in the art would readily understand the meaning of "lumbar region."

Moreover, even if the court were to entertain defendants' insistence on using the standard to illuminate the meaning of the claim term, the court notes that the standard was misinterpreted by defendants. Defendants cite an industry standard-one from the American National Standards Institute ("ANSI")-to define what exactly the "lumbar region" is. The Federal Circuit has acknowledged that "regulations issued by regulatory agencies can be helpful to a claim construction analysis if they are probative of an industry-specific meaning for a disputed claim term." Mars, Inc. v. H.J. Heinz Co., L.P., 377 F.3d 1369, 1374 n. 3 (Fed.Cir.2004). Defendants argue that the standard demands that the lumbar region be 6.0 to 10.0 inches above the seat. This interpretation of the standard, however, is incorrect. The industry standard cited states:

Current practices and information *suggest* that, for upright or near-upright posture chairs, a lumbar support area of at least 15.2 to 22.9 cm (*6.0 to 9.0 inches*) *high* and 30.5 cm (12.0 inches) wide with a vertically convex and horizontally concave radius *is acceptable* (Farrell and Booth, 1984). *A vertical height to the center of the* lumbar support, either fixed or adjustable, within the range of 15.2 to 25.4 cm (*6.0 to 10.0 inches*) above the Seat Reference Point (SRP) *is generally acceptable* (Branton, 1984).

American National Standard for Human Factors Engineering of Visual Display Terminal Workstations, (Feb. 4, 1988) (emphasis added).

First, the use of the terms "suggest" and "acceptable" indicate that the standard falls within the species of a guideline rather than a hard and fast rule. Second, defendants have misread the terms of this standard. It does not require a four inch high range for the lumbar region. Rather, as plaintiff correctly points out, the *suggested* height-range, or span, of the lumbar support region is 6.0 to 9.0 inches. As a result, because the standard suggests that the vertical height to the center of this support range-as measured from the seat-

should be within the range of 6.0 to 10.0 inches, the lumbar support region can begin with the bottom portion of the region at 1.5 inches above the seat and extend to where the top portion of the support region is at 14.5 inches above the seat (depending on whether one is using the 6.0 inch height range or the 9.0 inch height range). Therefore, the suggested lumbar region is much larger in area than that urged by defendants.

Again, however, the standard is not dispositive of the claim construction, because without it one of ordinary skill would nonetheless readily understand the meaning of the term. ANSI standards were only briefly recited in the Background of the Invention section of the specification, to provide background information relating to seat height-not lumbar region ranges.

[18] [19] [20] Further, this court agrees with plaintiff's interpretation of the term "substantially" as used in the claims. "Expressions such as 'substantially' are used in patent documents when warranted by the nature of the invention, in order to accommodate the minor variations that may be appropriate to secure the invention." Verve v. Crane Cams, Inc., 311 F.3d 1116, 1120 (Fed.Cir.2002). Further, "like the term 'about,' the term 'substantially' is a descriptive term commonly used in patent claims to 'avoid a strict numerical boundary to the specified parameter.' " Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed.Cir.2001) (quoting Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217 (Fed.Cir.1995)). The term, however, is capable of dual meaning. *See* Epcon Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1031 ("The phrase 'substantially constant' denotes language of approximation, while the phrase 'substantially below' signifies language of magnitude, i.e., not insubstantial."). "Since the term 'substantially' is capable of multiple interpretations, we turn to the intrinsic evidence to determine which interpretation should be adopted." Deering Precision Instruments, LLC v. Vector Distribution Sys., Inc., 347 F.3d 1314, 1323 (Fed.Cir.2003).

A plain reading of the claims compels the court to interpret "substantially" to mean "approximately" or "about" as opposed to a term of magnitude. The straightforward language of the claim itself provides support for this conclusion. The claim recites in relevant part, "so as to form a pair of first bowed sections at substantially a lumbar region of said backrest." ' 741 Patent, col. 22, *ll*. 46-48. The claim tells a person having skill in the art *where* the bow is formed *at;* it is expressing that the bowed-shaped section is formed not "perfectly" or "precisely" at the portion of the backrest where the lumbar region of the user will be located, but rather, *at* "substantially," or in other words "approximately" the portion of the backrest where the lumbar region of the user will be located. *See* Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1329 (Fed.Cir.2006) ("The term 'substantial' implies 'approximate,' rather than 'perfect.' ").

The court notes that the term "substantially" appears numerous times throughout the specification-albeit not when describing the bowed-shaped section. For instance, in the Summary of the Invention, the patentee states "the linkage assembly is adapted to allow the seat and back to tilt downwardly and rearwardly such that the seat pivots about an effective pivot point *at substantially* the ankle of a user having feet resting on a floor." '741 Patent, col. 2, 58-62 (emphasis added). In another portion of the Summary of the Invention, the patentee again uses the term, stating "The piston rod is extensible [sic] between a collapsed position in which the cylinder and inner tube are *substantially within* the intermediate tube and the intermediate tube is *substantially within* the outer guide tube ...." Id., col. 3, *ll*. 7-12 (emphasis added).

If the patentee had desired to convey to persons having skill in the art that the bulk of the bowed section be located within the lumbar region of the backrest, he certainly could have done so by adopting the phrase "substantially within" as he did in the Summary of the Invention when discussing the piston rod. As the claim currently stands, however, the court declines to engage in the type of word stretching needed to bend

the term "substantially" around defendants' asserted construction. Therefore, the court finds the term "substantially" to mean "approximately" or "about." Thus, the term "at substantially a lumbar region" means approximately the portion of the backrest where the lumbar section of a user's back would be supported by the backrest.

4. Claim Construction of the Term "Corresponding"

[21] Defendants also contend that the Contessa chair does not include the limitation of "a flexible membrane coupled to and extending between said side members and having *a second bowed section corresponding to said first bowed sections of said side members*." '741 Patent, col. 22, *ll*. 53-56 (emphasis added). Specifically, defendants argue that the specification, and in particular, Figures 1 and 20, demand that "corresponding" means that the bowed section of the membrane correspond exactly to the bow shaped side members.

Plaintiff disputes defendants' interpretation, contending that "corresponding" requires that the second bowed section-the bowed section of the membrane- *generally* takes the shape of the bowed shaped sections. According to plaintiff, defendants' asserted definition is wrong because the term "corresponding" in no way requires conformity or agreement without any deviation whatever.

The court agrees with plaintiff that the term "corresponding" does not require "exact" agreement such that no deviation in the shape of the second bowed section is permitted. The plain meaning of the term does not require such strict identity of shape. Rather, the individual bowed sections are required merely to correspond to one another. As a starting point, the court notes that the Merriam-Webster Dictionary defines "correspond" "to be in conformity or agreement: suit, agree: match." Webster's Third New International Dictionary of The English Language Unabridged 511 (3rd ed.2002); *see* Old Town Canoe Co. v. Confluence Holdings Corp., 448 F.3d 1309, 1316 (Fed.Cir.2006) ("reference to the dictionary was not an improper attempt to find meaning in the abstract divorced from the context of the intrinsic record but properly was a starting point in its analysis, which was centered around the intrinsic record consistent with Phillips"). In the instant case, the specification simply fails to shed even a modicum of light on the term, and the court finds the Figures referenced by defendants to be entirely unhelpful because it is impossible to determine from them whether there is or is not "exact" agreement. In other words, neither the claims themselves nor the specification provide any assistance in deciphering the meaning of the "corresponding."

Accordingly, the court finds that this situation lends itself to giving greater weight to the dictionary definition of the term. As the court in Phillips stated:

In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words .... In such circumstances, general purpose dictionaries may be helpful. 415 F.3d at 1314 (citations omitted).

It would be inimical to the plain meaning of the term to construe "corresponding" so narrowly without any guidance from the specification. Indeed, incorporating "exact" into the ordinary meaning of the definition would be akin to rewriting the claim. Therefore, this court finds the limitation "a second bowed section corresponding to said first bowed section" to contemplate the bowed shape portion of the membrane to maintain general agreement with the shape of the first bowed shaped section.

B. Literal Infringement

[22] [23] Literal infringement occurs when an accused device meets each limitation of a claim exactly. Lantech, Inc. v. Keip Mach. Co., 32 F.3d 542, 547 (Fed.Cir.1994). Accordingly, if "any deviation from the claim" exists, literal infringement cannot exist. Id. Summary judgment of non-infringement is proper where there is no genuine issue as to whether the accused device lacks a single claim element or its equivalent. Lockheed Martin Corp. v. Space Sys./Loral, Inc., 324 F.3d 1308, 1321 (Fed.Cir.2003).

[24] Having construed "adjacent" as meaning "in close proximity to" or not "distant," it becomes apparent that the Contessa includes this claim limitation. Essentially, defendants argue that because the Contessa has a "void" between the backrest and the seat, it does not include a backrest "adjacent" to the seat either literally or under the doctrine of equivalents. Defendants contend that because an article published by plaintiff explained the negative effects of having a void, it is impossible for it to infringe. This argument, however, is untenable. It is an argument related to claim construction as well as the function, way, result test under the doctrine of equivalents. (See discussion in Section II below). But as the court has held, the proper construction of "adjacent" does not exclude all voids. And the fact that the Contessa has a void-an embodiment apparently disfavored by plaintiff, but an embodiment contemplated by the claims nonetheless-does not allow defendants to avoid literal infringement. The Contessa literally includes the limitation of a backrest "adjacent" to the seat.

[25] Further, the Contessa includes bow-shaped side members as is required by the claims. Clearly, the Contessa includes side members that have a lower and upper section that meet together to form a bow-shaped section at approximately the portion of the backrest where the lumbar region of a user's back is supported. Likewise, the Contessa literally includes a second bowed-section that corresponds to the bow-shaped side members of the chair. Thus, each of the limitations of claim 1 of the '741 patent are literally met by the Contessa.

Because the remaining asserted claims are not in dispute, the court grants plaintiff's motion for partial summary judgment of literal infringement and denies defendants' motion for partial summary judgment of non-infringement of all the asserted claims of the '741 patent except for claim 10.FN2

FN2. Claim 10 is discussed below.

II. Infringement of the '842 Patent **Under the Doctrine of Equivalents**

[26] Plaintiff concedes that the Contessa chair does not literally infringe the asserted claims of the '842 patent and claim 10 of the '741 patent. Plaintiff insists, however, sufficient evidence exists to establish infringement under the doctrine of equivalents.

A. Infringement Under the Doctrine of Equivalents

Claim 1 of the '842 patent recites:

1. A backrest for a chair comprising:

a membrane attached to said frame and having a first body-contacting surface and an opposite second surface, wherein at least a portion of said membrane is see through, and wherein said membrane comprises

an blastomeric material, wherein said blastomeric material comprises blastomeric monofilament, and wherein said membrane comprises a fabric comprising said blastomeric monofilament and stands [sic] of monofilament yarn; and

a back support member attached to said frame and having a support surface, wherein at least a portion of said support surface *contacts* said second surface of said membrane, and wherein at least a portion of said back support member is visible through said membrane from said first body contacting surface thereof. [Emphasis added]

Claim 10 of the '741 patent also includes a limitation using the term "contact" and recites in relevant part, "a back support member disposed in an opening of said frame between said side members proximate said lumbar region, said back support member *contacting* said flexible membrane." '741 Patent, col. 23, *ll*. 50-54 (emphasis added). Because plaintiff has conceded no literal infringement, the dispute has been whittled down to whether the allegedly infringing chairs have back supports that "contact" the "membrane" under the doctrine of equivalents.

[27] [28] Under the doctrine of equivalents, an accused product is equivalent to a claim limitation when there is an insubstantial difference between the two. AquaTex Indus. v. Techniche Solutions, 419 F.3d 1374, 1382 (Fed.Cir.2005). An insubstantial difference exists where the element in the accused device "performs substantially the same function in substantially the same way to obtain the same result" as the particular claim limitation. Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608, 70 S.Ct. 854, 94 L.Ed. 1097 (1950). Additionally, "courts must consider the totality of the circumstances of each case and determine whether the alleged equivalent can be fairlycharacterized as an insubstantial change from the claimed subject matter without rendering the pertinent limitation meaningless." Freedman Seating Co. v. Am. Seating Co., 420 F.3d 1350, 1359 (Fed.Cir.2005).

There seems to be no dispute that "contacts" or "contacting" means touching when the chair is not in use. Because the simple language of the claim compels this construction, this obvious interpretation has compelled plaintiff to concede no literal infringement. Plaintiff argues, however, that the essence of the claim limitation is that it functions so that a least a portion of the back support touches the membrane when a user sits back in the chair to provide a support surface for a user's back by contacting the membrane which contacts the user's back. Therefore, according to plaintiff, the Contessa performs the substantially same function because when a user leans against the backrest of the Contessa, the Contessa's back support will in fact contact the user's back.

Plaintiff's arguments are unavailing. To find that the Contessa includes the limitation of "contacts" would be to violate the claim vitiation doctrine because it would essentially write the term out of the claim. *See* Tronzo v. Biomet, Inc., 156 F.3d 1154, 1160 (Fed.Cir.1998) ("If a theory of equivalence would vitiate a claim limitation ... then there can be no infringement under the doctrine of equivalents as a matter of law."). In Tronzo, the accused device contained a component that was hemispherical in shape but performed the same function in the same way to achieve the same result as the conical shaped component of the patented device. Id. The court there held that because the evidence indicated that the accused device's component would meet the function-way-result test regardless of its shape, a finding of infringement under the doctrine of equivalents would vitiate the claim limitation by writing out the requirement that the component have a "generally conical outer surface." Id. Similarly, if a back support *not in* contact with the membrane was found to be equivalent to a back support *in* contact with the membrane, the term "contacts" would be rendered meaningless. This would vitiate the limitation of "wherein at least a portion of said support surface

contacts said second surface of said membrane" by writing the term "contacts" out of the asserted claims.

Patents that involve relatively simple structures call for skilled patent drafters to understand and foresee the limiting nature of claim language. *See* Sage Prods. v. Devon Indus., 126 F.3d 1420, 1425 (Fed.Cir.1997) ("A skilled patent drafter would foresee the limiting potential of the 'over said slot' limitation."). If the patentee had wanted patent protection for a back support not in contact with the membrane, it could have sought claims that more broadly defined back support by excising "contacts" from the claim limitation. *See* id. ("If [patentee] desired broad patent protection for any container that performed a function similar to its claimed container, it could have sought claims with fewer structural encumbrances.").

Therefore, the court finds the doctrine of equivalents inapplicable in the instant case. Accordingly, the court grants defendants' motion for partial summary judgment of non-infringement of the asserted claims of the '842 patent and claim 10 of the '741 patent.

CONCLUSION

For the reasons discussed above, plaintiff's motion for partial summary judgment of literal infringement of the '741 patent is granted. Defendants' motion for partial summary judgment of non-infringement of all asserted claims is granted as to claim 10 and denied in all other respects. Defendants' motion for partial summary judgment on non-infringement of the asserted claims of the '842 patent is granted.

N.D.Ill.,2007.
Herman Miller, Inc. v. Teknion Corp.

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