

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

**AERO PRODUCTS INTERNATIONAL, INC., a Florida corporation, and Robert B. Chaffee, an individual,**  
Plaintiffs.

v.

**INTEX RECREATION CORPORATION, a California corporation; Quality Trading, Inc., a California corporation; and Wal-Mart Stores, Inc., a Delaware corporation,**  
Defendants.

**Jan. 28, 2004.**

William H. Frankel, Michael Paul Chu, Mark Herbert Remus, Christopher Michael Dolan, David Howard Bluestone, Brinks, Hofer, Gilson & Lione, Chicago, IL, for plaintiffs/counter-defendants.

Mark E. Phelps, Marion D. Hefner, Leydig, Voit & Mayer, Ltd., Chicago, IL, David N. Makous, Thomas Sloan Kidde, Daniel C. DeCarlo, Scott Russell Maynard, Lewis, Brisbois, Bisgaard & Smith, LLP, Los Angeles, CA, for defendants/counter-claimants.

### ***MEMORANDUM OPINION AND ORDER***

**DARRAH, J.**

The Plaintiffs, Aero Products International, Inc. ("Aero") and Robert B. Chaffee, filed suit against the Defendants, Intex Recreation Corporation ("Intex"); Quality Trading, Inc. ("Quality Trading"); and Wal-Mart Stores, Inc. ("Wal-Mart"). In November 2003, a *Markman* hearing was held. Presently before the Court is the claim construction of the patent in dispute, U.S. Patent No. 5,367,726 ("the '726 patent").

### ***LEGAL STANDARD***

Terms in a claim are to be given their ordinary and accustomed meaning. *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1362 (Fed.Cir.1999) ( *K-2* ). The ordinary and accustomed meaning of a disputed claim term is presumed to be the correct one unless either a different meaning is clearly and deliberately set forth in the intrinsic evidence or the ordinary and accustomed meaning of the disputed term would deprive the claim of clarity-then extrinsic evidence may be used to ascertain the proper meaning of the term. *K-2*, 191 F.3d at 1362-63. Limitations that do not exist in a claim should not be read into that claim. However, claim language must be read consistently with the totality of the patent's applicable prosecution history. *Biovail Corp. v. Andrx Pharmaceuticals, Inc.*, 239 F.3d 1297, 1300 (Fed.Cir.2001) ( "*Biovail*" ). "In judicial 'claim construction' the court must achieve the same understanding of the patent ... as would a person experienced in the technology of the invention. Such a person would not rely solely on a dictionary of general linguistic usage, but would understand the claims in light of the specification and the prior art, guided by the prosecution history and experience in the technological field." *Toro Co. v. White Consol. Indus., Inc.*, 199

F.3d 1295, 1299 (Fed.Cir.1999).

To construe a patent claim, a court analyzes the intrinsic evidence of the record, which includes the claims and written description of the patent itself, and the prosecution history if it is in evidence. *See Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1375 (Fed.Cir.2003); *Biovail*, 239 F.3d at 1300. Dictionary definitions may also be consulted in establishing a claim term's ordinary meaning. *Altiris*, 318 F.3d at 1369.

When analyzing the intrinsic evidence, the court starts with the language of the claims and engages in a "heavy presumption" that claim terms carry their ordinary meanings as viewed by one of ordinary skill in the art. *Altiris*, 318 F.3d at 1369. The specification is highly relevant to the claim construction analysis. The specification is the single best guide to the meaning of a disputed term. *See Teleflex, Inc. v. Ficosa North America Corp.*, 299 F.3d 1313, 1325 (Fed.Cir.2002). However, while the claims must be read in view of the specification, limitations from the specification are not read into the claim. *Teleflex*, 299 F.3d at 1326.

Reliance on extrinsic evidence is improper if the intrinsic evidence unambiguously describes the scope of the patented invention. *Vitronics Corp. v. Conceptiontronic, Inc.*, 90 F.3d 1576, 1583 (Fed.Cir.1996) ( "*Vitronics*" ). However, the court is not barred from ever considering extrinsic evidence. *See Plant Genetic Sys. v. Dekalb Genetics Corp.*, 315 F.3d 1335, 1346 (Fed.Cir.2003) ( "*Dekalb*" ); *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed.Cir.1999) ( "*Pitney Bowes*" ). The court may not rely on extrinsic evidence in claim construction to contradict the meaning of the claims discernible from the intrinsic evidence. *See Pitney Bowes*, 182 F.3d at 1308; *Vitronics*, 90 F.3d at 1583. Extrinsic evidence, including expert testimony, may be consulted to ensure that the court's claim construction is not inconsistent with the expressed and widely held understanding to one in the field. *See Dekalb*, 315 F.3d at 1346; *Pitney Bowes*, 182 F.3d at 1308. For example, a court may rely on extrinsic evidence to understand the underlying technology to ensure that the court's interpretation is not inconsistent with one skilled in the art. *See Dekalb*, 315 F.3d at 1346; *Pitney Bowes*, 182 F.3d at 1308-09.

Dictionaries can help define a term but should not be used exclusively. "[B]ecause words often have multiple dictionary definitions, some having no relation to the claimed invention, the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor." *Intellectual Prop. Dev. v. UA-Columbia Cablevision*, 336 F.3d 1308, 1315 (Fed.Cir.2003) (citations omitted).

## ***BACKGROUND***

The '726 patent is a pneumatic support system used to inflate portable mattresses. Claims 9 and 12 are the only independent claims asserted in the present actions. The remaining contested claims, Claims 13-15, depend on Claim 12.

### ***Claim 9***

The parties dispute several terms in Claim 9. Claim 9 states (with the contested terms emphasized):

An inflatable support system, comprising:

an inflatable body having an interior, an exterior, and inflation input for transfer of air between the interior and the exterior; and

a one-way valve, disposed between the interior and the inflation input, for controlling the transfer of air, providing a *substantially hermetic seal* under low pressure conditions, such valve including:

a *circular lip*, disposed peripherally in the *passageway* and *protruding radially inward*, having a first surface generally facing the interior, defining a valve seat;

a flexible circular diaphragm, having an interior surface generally facing the interior and an outer surface facing away from the interior mounted for *axial movement in the passageway* away from and against the valve seat in respectively open and closed positions of the valve, so that an outer annular region of the outer surface of the diaphragm engages against the valve seat in the closed position; and

a *generally circular coupling* defining the *passageway*, the *coupling* having an *open end* defining the *inflation input* and a flared end, contiguous therewith, providing the *circular lip*, so that the (i) *coupling* at the *open end* has a smaller internal diameter than at the flared end and (ii) the diaphragm can be pushed axially to open the valve by *reaching into the open end* of the coupling.

### ***Claim 12***

The parties dispute terms in Claim 12 as well. Many of these terms are also found in Claim 9. Claim 12 states (with the contested terms emphasized):

An inflatable body comprising:

an inflatable bladder having an interior and an inflation input;

a one-way valve disposed between the interior and the inflation input providing a *substantially hermetic seal* under low pressure conditions, such valve including:

a *passageway* having a generally circular cross section and a first end in communication with the interior and a second end in communication with the inflation input;

a *circular lip*, disposed peripherally in the *passageway* and *protruding radially inward*, having a first surface generally facing the interior, defining a valve seat;

a flexible circular diaphragm, having an inner surface generally facing the interior and an outer surface facing away from the interior, mounted for *axial movement in the passageway* away from and against the valve seat in the respectively open and closed positions of the valve, so that (i) the act of inflation of the bladder under low pressure is sufficient to cause axial motion of the valve into the open position to permit the large influx of air and (ii) following inflation of the bladder, air pressure created in the interior the bladder by inflation thereof causes an outer annular region of the outer surface of the diaphragm to be urged into engagement against the valve seat to provide a *complete hermetic seal* when the valve is in the closed position; and

stiffening means for reducing flexing of the diaphragm except in its outer annular region.

### ***ANALYSIS***

The parties dispute multiple terms in each claim. Six of these terms are interrelated; and, therefore,

construing the claims of one of these terms affects the construction of the remainder of these terms. The six interrelated terms are: (1) open end, (2) inflation input, (3) generally circular coupling, (4) passageway, and (5) axial movement in the passageway. The remaining terms are not related to the construction of each other. These terms are: (6) reaching into the open end of the coupling, (7) circular lip, (8) protruding radially inward, (9) substantially hermetic seal, and (10) complete hermetic seal.

### *The Interrelated Terms*

The parties first dispute the meaning of the term "open end." Plaintiffs assert the open end is the end where air used to inflate the air mattress enters the passageway. Defendants construe the term open end as the end defined by the distal portion of the coupling which also constitutes the inflation input.

Claim 9 defines the open end as contiguous to the flared end, and neither party disputes the construction or location of the term flared end. However, in Defendants' definition, the open end does not touch, and is thus not contiguous to, the flared end. Defendants' brief states as much: "[I]t can be seen that the 'generally circular coupling' consists of the structure between the open end/inflation input and the flared end." (Defs.' Markman Br. at 11.) If a structure is between the open end and the flared end, then these two pieces cannot be contiguous.

Plaintiffs also explain that, pursuant to the terms of claim 9, the coupling at the open end must have a smaller internal diameter than at the flared end. Their construction shows that the open end does have a smaller internal diameter than the flared end. Under Defendants' proposed construction, the open end does not have this same claim limitation. Therefore, Plaintiffs' construction of the term open end properly construes the claim.

By defining the location and construction of the open end, the remaining interrelated terms can be constructed. The term inflation input in Claim 9 is defined by the open end. Plaintiffs argue this term means a point at which air enters the passageway. Defendants argue this term means the end of the coupling or passageway most distal from the interior. However, based on the text of Claim 9, the inflation input must be placed where the open end exists; and Plaintiffs' proposed construction properly construes the claim.

Regarding the term "generally circular coupling" with respect to the term open end, Plaintiffs argue that the generally circular coupling is a coupling that is generally circular and is formed by an open end that is contiguous with the flared end. Defendants use essentially the same definition; the generally circular coupling consists of the structure between the open end/inflation input and the flared end. The term open end has already been construed as consistent with Plaintiffs' construction. Accordingly, Plaintiffs' construction of the term generally circular coupling and, more importantly, its placement, are proper.

The passageway depends on the construction of the open end as well. According to Plaintiffs, the passageway is a way that allows passage of air to and from the interior of the bed. Defendants argue that the passageway is a path that runs along the entire length of the coupling. Claim 9 states that the generally circular coupling defines the passageway; thus, Plaintiffs' construction and positioning of the passageway are proper.

The parties dispute the construction of the term axial movement in the passageway. Plaintiffs define this term as meaning some axial movement of the diaphragm must be possible in the passageway; however, the axial movement need not be contained entirely within the passageway from the time the diaphragm moves

from the valve seat to the time the diaphragm returns to the valve seat. Defendants argue that the diaphragm must move wholly in, and not in and out of, the passageway. The parties thus dispute whether the word "in" requires movement wholly within the passageway or allows for some movement outside the passageway.

However, it appears that much of the parties' disagreement concerning these claims relates to the positioning of the passageway. Plaintiffs claim, based on their construction of the term passageway, that the diaphragm is shown to be outside the passageway in Specification Figures 16 and 19. Defendants assert that those drawings show the diaphragm within the passageway with no capability to move outside of it. However, as has been determined, Plaintiffs' construction of the term passageway is correct. Therefore, Plaintiffs' construction is correct regarding the axial movement, which need not be contained wholly within the passageway.

### ***Reaching Into the Open End of the Coupling***

The parties dispute the construction of reaching into the open end of the coupling. Plaintiffs argue that this term means the diaphragm is able to be pushed axially by reaching one's finger, or another element, into the open end of the coupling. Defendants counter and state that this term means that one's hand must be able to reach into the open end of the coupling.

Defendants largely rely on Specification Figure 16, which shows a finger pressing directly on a button, which then pushes the diaphragm down. However, other Specification Figures, such as 3, 5, and 6, show that a button and a valve stem push down on the diaphragm. Moreover, nothing in Claim 9 itself or the specification states that only a hand must reach into the open end of the coupling. In the absence of exclusionary language, a court must "give the claim its full breadth of ordinary meaning as understood by persons skilled in the art." *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed.Cir.2001). Therefore, Plaintiffs' construction is proper.

### ***Circular Lip, Protruding Radially Inward, and Substantially Hermetic Seal***

The parties agree on what the term circular lips means: a lip that is circular that juts from the surrounding surface towards the interior of the passageway. The only disagreement about this claim is the construction of the passageway, which has been previously construed.

Similarly, the parties do not dispute the definition of protruding radially inward. The lip is positioned towards the center of the device in question and remains placed along the whole radius throughout the whole piece.

The parties also agree on the construction of substantially hermetic seal. According to both parties, a substantially hermetic seal is a seal that is nearly or largely impervious to air.

### ***Complete Hermetic Seal***

Lastly, the parties differ on their construction of the term complete hermetic seal. Plaintiffs assert that a complete hermetic seal is a seal that does not require any additional parts to retain nearly or largely all of the air in the bed. Defendants contend that a complete hermetic seal is impervious to air.

Defendants base their construction on the intrinsic record. According to Defendants, the term "substantially" is used to modify hermetic seal earlier. In that term, substantial allows for some leakage of air. Conversely,

when the word complete is placed in front of hermetic seal, the seal now provides for no air leakage.

Plaintiffs' construction depends on the grammatical syntax and the context of the hermetic seal. According to Plaintiffs, the word "complete" only describes the status of the seal and not the quality; if the Plaintiffs wanted a seal that would allow no air through, they would have used the term "completely hermetic seal." Claim 12 only discusses one seal, as well. The valve helps create the substantially hermetic seal, and that seal becomes complete when air pressure inside the bladder causes the outer surface of the diaphragm to push against the valve seat.

The inconsistency presented by Defendants' construction is illustrated by Plaintiffs' definition of the term. There is only one seal that is used in Claim 12. That seal cannot be substantially hermetic, or allowing some air to leak through, while at the same time being complete, or allowing no air to leak through. This construction would be absurd and would render the construction of the term substantially hermetic seal illusory.

The proper construction is the one proposed by Plaintiffs. The seal, which is largely impervious to air, is finished once the bladder pushes the diaphragm against the valve seat. The dictionary also confirms this meaning-Webster's defines complete as "possessing all necessary parts, items, components, or elements: not lacking anything." In contrast, the word completely is defined as fully or entirely. Therefore, the term complete hermetic seal is construed as a seal that does not require any additional parts to retain nearly or largely all of the air in the bed.

### ***CONCLUSION***

For the foregoing reasons, the disputed terms of the '726 patent are construed, consistent with this opinion, as follows: (1) "the open end" is the end where air used to inflate the air mattress enters the passageway; (2) "the inflation input" is where air enters the passageway; (3) "the generally circular coupling" is a coupling that is generally circular and is formed by an open end that is contiguous with the flared end; (4) "the passageway" is a way that allows passage of air to and from the interior of the bed; (5) "axial movement in the passageway" means that some axial movement of the diaphragm must be possible in the passageway; and the axial movement need not be contained entirely within the passageway; (6) "reaching into the open end of the coupling" means that the diaphragm is able to be pushed axially by reaching one's finger, or another element, into the open end of the coupling; (7) the "circular lip" is a lip that is circular that juts from the surrounding surface towards the interior of the passageway; (8) "protruding radially inward" means that the lip is positioned towards the center of the device in question and remains placed along the whole radius throughout the whole piece; (9) a "substantially hermetic seal" is a seal that is nearly or largely impervious to air; and (10) "complete hermetic seal" means a seal that does not require any additional parts to retain nearly or largely all of the air in the bed.

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