United States District Court,
W.D. Texas, Austin Division.

RAPISTAN SYSTEMS ADVERTISING CORP. and Siemans Logistics and Assembly Systems, Inc,
Plaintiffs.
v.
DAIFUKU AMERICA CORPORATION,
Defendant.

Civil No. A-03-CA-682-LY

Feb. 9, 2006.

David E. Killough, Microsoft Corporation, Redmond, WA, David B. Weaver, Willem G. Schuurman, Vinson & Elkins, L.L.P., Austin, TX, for Defendants.

MEMORANDUM OPINION AND ORDER

LEE YEAKEL**, District Judge.**

1. Introduction

On April 4, 2005, this Court conducted a claims-construction hearing in this cause. *See* Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The Court now renders this Memorandum Opinion and Order to construe the claims of the patent in suit, U.S. Patent No. 5,127,510 ("the '510 Patent"). The '510 Patent is generally related to a sortation system that uses modular diverter shoes and a plurality of slats to accomplish the sortation and displacement of product. The Court has considered the parties' briefs and arguments, FN1 the applicable law, and the claims and specifications described in the ' 510 Patent and construes the terms at issue as set forth below.

FN1. The Court has considered, *inter alia,* Plaintiffs' Memorandum on Markman Claim Interpretation filed February 7, 2005 (Doc. # 30), Defendant Daifuku Corporation's Response in Opposition to Plaintiff Rapistan's Markman Brief filed February 28, 2005 (Doc. # 36), Defendant Daifuku America Corporation's Citation to Supplement Authority to its Markman Brief filed August 8, 2005 (Doc. # 55), Plaintiffs' Response to Defendant's Citation to Supplemental Authority to its Markman Brief filed August 25, 2005 (Doc. # 56), and the materials submitted by the parties at the April 4, 2005 claims-construction hearing.

2. Legal Principles Applicable to Claim Construction

"A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1240 (Fed.Cir.1999). Claim construction is an issue of law for the court to decide. Markman, 517 U.S. at 372.

To ascertain the meaning of claims, the court looks primarily to the intrinsic evidence: the claims, the specification, and the patent's prosecution history. FN2 Phillips v. AWH Corp., 415 F.3d 1303, 1314-17 (Fed.Cir.2005) (en banc); 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 specification must contain a written description of the invention that enables a person of ordinary skill in the art to make and use the invention. Markman, 52 F.3d at 979. A patent's claim must always be read or interpreted in the light of the specification. Phillips, 415 F.3d at 1316. For claim-construction purposes, the specification may reveal "a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." *Id.* Indeed, the specification's written description "may act as a sort of dictionary, which explains the invention and may define terms used in the claims". Markman, 52 F.3d at 979. "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." Watts v. XL Sys., Inc., 232 F.3d 877, 882 (Fed.Cir.2000). Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiment. Electro Med. Sys., S.A. v. Cooper Life Scis., Inc., 34 F.3d 1048, 1054 (Fed.Cir.1994). The court must also be mindful that "when a patentee uses a claim term throughout the entire specification, in a manner consistent with only one meaning, he has defined that term by implication". Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc., 262 F.3d 1258, 1271 (Fed.Cir.2001). However, "case law is clear that an applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention .... In short, it is the claims that measure the invention, as informed by the specification". Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed.Cir.2001).

FN2. In this case, there is no prosecution history to guide the Court.

The words of a claim "are generally given their ordinary and customary meaning." Phillips, 415 F.3d at 1312 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 1582 (Fed.Cir.1996)). "[T]he ordinary and customary meaning of a claim term 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, i.e., as of the effective filing date of the patent application." Phillips, 415 F.3d at 1313 (citing Innova/Pure Water, Inc. v. Safari Walter Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed.Cir.2004); Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1358 (Fed.Cir.2004); Ferguson Beauregard/Logic Controls v. Mega Sys., LLC, 350 F.3d 1327, 1338 (Fed.Cir.2003)).

There is a "heavy presumption in favor of the ordinary meaning of claim language". Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999). Although extrinsic evidence, such as dictionaries, may be helpful to the court, such evidence is less reliable than intrinsic evidence. Phillips, 415 F.3d at 1318. However, extrinsic evidence may be useful when considered in the context of the intrinsic evidence. Id. at 1319.

That parties agree that several of the claim terms at issue in this case are drafted in means-plus-function claim format; therefore, a discussion of the rules pertaining to such terms is appropriate. A means-plus-function claim limitation, a creature of statute, recites a function to be performed rather than a definite structure or materials for performing that function.

An element in a claim for a combination may be expressed as a means or step for performing a specified

function without recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. s. 112 (2001) ("Section 112"). The trade-off for the use of this technique is that the applicant is limited to the structure disclosed in the specification and equivalents. The use of the word "means" triggers a presumption that Section 112 applies. *See* Medical Instr. & Diag. Corp. v. Elekta AB, 344 F.3d 1205, 1210 (Fed.Cir.2003). The presumption is overcome if the claim does not set forth a function or if the claim recites sufficient structure to perform the claimed function-the structure recited must be sufficiently definite and specific. *See* Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed.Cir.1991). In other words, if the structure recited in the "means" claim is definite enough, Section 112 does not apply, and the claim is not narrowed to the structure described in the specification.

Once it is determined that a particular limitation is drafted in a means-plus-function format, claim construction of the elements is a two-step process. First, the court must identify the claimed function and then determine what structures disclosed in the written description corresponds to the "means" for performing the claimed function. *See* Lockheed Martin Corp. v. Space Sys./ Loral, Inc. 324 F.3d 1308, 1318-19 (Fed.Cir.2003). To qualify as corresponding structure, the structure must not only perform the claimed function, but the specification must clearly associate or link the structure with the performance of the structure. *See* Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc., 248 F.3d 1303, 1312 (Fed.Cir.2001). Corresponding structure need not include all things necessary to enable the invention to work, but it must include all structure that actually performs the recited function. Asyst Techs., Inc. v. Empak, Inc., 268 F.3d 1364, 1371 (Fed.Cir.2001).

This case also presents judicial-estoppel issues. The '510 Patent was previously litigated against a different defendant before the International Trade Commission ("ITC"). *See In re Certain Sortation Sys., Parts Thereof, & Prods. Containing Same,* USITC Investigation No. 337-TA-460 (Feb. 19, 2003). The ITC found the '510 Patent valid, found infringement, and, in that context, interpreted several of the claim terms at issue in the present case. The Federal Circuit affirmed. *See* Vanderlande Indus. Nederland BV v. U.S. Int'l Trade Comm'n, 366 F.3d 1311 (Fed.Cir.2004). However, "ITC's determinations regarding patent issues should be given no *res judicata* or collateral estoppel effect". Bio-Technology Gen. Corp. v. Genentech, Inc., 80 F.3d 1553, 1564 (Fed.Cir.1996) (quoting Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n, 851 F.2d 342, 344 (Fed.Cir.1988)). Even Federal Circuit decisions regarding ITC determinations have no preclusive effect on subsequent litigation. *See* Tandon Corp. v. U .S. Int'l Trade Comm'n, 831 F.2d 1017, 1019 (Fed.Cir.1987) ("[A]ny disposition of a Commission action by a Federal Court should not have a *res judicata* or collateral estoppel effect in cases before such courts."). However, judicial estoppel may prevent a party from arguing for one claim interpretation in front of one court, win on that argument, and then argue a different claim interpretation before another court. Judicial estoppel is distinct from collateral estoppel and *res judicata*. Rapistan points out that the doctrine is not finite. Generally, it has been used when the party is asserting a true "black to white" inconsistent position, requires reliance and prejudice, and has been found by some courts to apply only to factual issues. *See* Jackson Jordan, Inc. v. Plasser Am. Corp., 747 F.2d 1567, 1579 (Fed.Cir.1984). Regardless, however, a court may use the inconsistent position as evidence in the subsequent suit. *Id.*

3. Discussion

A. Agreed Terms

The parties have agreed to the construction of certain terms. The Court will recognize the parties'

construction of the following terms:

1. "Generally planar upper and lower wall portions" (Claims 13 & 23) means a generally level or flat structure near or at the top of the slat and near or at the bottom of the slat.

2. "Substantially continuous glide surfaces" (Claim 1) means a glide surface that extends from one point or location of the glide surface to the other endpoint or reference point of the glide surface without a substantial break.

3. "Follower portion" (Dependent Claims 36 & 45) means a part that is designed to follow along an object such as a track.

4. "Joined wall segments" (Dependent Claims 11, 22, & 29) means sections of a wall are joined together, whether by separate manufacture and subsequent connection or by unitary manufacture.

5. "A base portion defined by said glide portion for mounting said follower portion" (Dependent Claims 36 & 45) means a part that forms a base established by the glide portion and mounts a follower portion.

B. Disputed Terms

The parties dispute the construction of many terms. Those terms and the Court's construction of those terms are set forth below.

(1) "Each of said slats being defined by a wall formed as a right cylinder" (Claim 1)

Rapistan contends that this term is properly interpreted as "the slats having an outer planar shape that represents a surface generated by a straight line moving parallel to a fixed straight line and intersecting a fixed planar closed curve at a right angle to the straight line". Daifuku interprets this term "each slat consists of one wall the shape of which is that of a straight line moving parallel to a fixed straight line and intersecting a fixed planar closed curve at a right angle to the fixed straight line."

There are two main points of contention between the parties: (1) does "*a* wall" mean "*one* wall" or "*one or more* walls" and (2) does "slats being defined by a right cylinder" mean the outer surface of the slat represents a right cylinder or that the slat consists of one wall whose shape is a right cylinder.FN3

FN3. Originally, Rapistan also disputed that the right cylinder should be defined as closed. In subsequent briefing, Rapistan assented to the inclusion of "closed" in the definition of the term.

As to the first issue, Rapistan argues that in patent parlance "a" means "one or more" in open ended claims containing the transitional phrase "comprising." *See* KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed.Cir.2000). Daifuku rejoins that although "a" is typically construed to mean "one or more", the Court must look to the context of the term to determine the proper definition. *See* North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575-76 (Fed.Cir.1993). Daifuku points out that the claim at issue here makes reference to "said" wall. Daifuku asserts that when an object is preceded by "said," the object is presumed to be singular. *See* Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1024 (Fed.Cir.1997). Daifuku further asserts that throughout the specification the figures depict only one wall. Rapistan argues that the preferred embodiment describes "slat 22 includes an upper wall 30, a lower wall 32, an upwardly forwardly

sloping front wall 34 and rear wall 36". Rapistan contends that this language indicates that each of the slats may be comprised of one or more walls or wall segments that establish the outer boundary of the slat. Daifuku replies that although the preferred-embodiment language refers to "walls", the figure clearly shows one continuous wall made up of the wall portions described in the preferred-embodiment language. Generally, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiment. Electro Med. Sys., 34 F.3d at 1054. However, in this case, the Court agrees with Daifuku's interpretation of the breadth of the claim language. When the patent described "a wall" as "said wall", it defined "a wall" as singular.

As to the second issue, the Court will construe "defined" to mean "to establish the boundaries of". *See* Wenger Mfg., Inc. v. Coating Mack Sys., Inc., 239 F.3d 1225, 1237 (Fed.Cir.2001). The Court finds that the ordinary meaning of "form," the base word of "formed", is not technical, is self-evident, and means "to give a particular shape to".

The Court construes this term: the boundary of each of said slats is established by one wall that is shaped as a straight line moving parallel to a fixed straight line and intersecting a fixed planar closed curve at a right angle to the fixed straight line.

(2) "Diverter shoe" (Claims 1, 13, 23, 20, & 42)

Rapitsan contends that this term is defined "a device that moves along and relative to a conveyor surface to press against the side of an article carried on the conveying surface and move the article coming in contact with the shoe off the conveyor surface". Daifuku defines the term "a device inserted in or run along a track or groove to guide the movement of an object from one course to another". Daifuku argues that "diverter shoe" does not include the requirement that the device *press against the side* of an article and move the article coming into contact with the shoe *off the conveyor surface*. Both parties acknowledge that the term "diverter shoe" was known in the industry before the filing of the '510 Patent application. This is also evident from the claim language itself-Claim 1, in which the term first appears, is written in a *Jepson*-type format, indicating to the Court that the patent is an improvement on a previous patent. *In re Ehrreich,,* 599 F.2d 902, 909-10 (C.C.P.A.1979) ("[P]reamble elements in a *Jepson*-type claim are *impliedly admitted* to be old in the art ...."); *see also* In re Fout, 675 F.2d 297, 300 n. 2 (C.C.P.A.1982)

Rapistan provides the declaration of one of the '510 Patent inventors, Bernard H. Woltjer, to verify its assessment of the term's standing in the industry. The Court notes, however, that "inventor testimony is of little probative value for purposes of claim construction". E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1370 (Fed.Cir.2003). The Court will evaluate the patent's prior art to determine the industry understanding of the term "diverter shoe".

The *Brouwer* patent (Patent No. 4,738,347) is the direct ancestor of the ' 510 Patent. The invention described in the *Brouwer* patent serves the same purpose as that in the '510 Patent and contains many of the same design elements-including the use of a diverter shoe. The main difference between the two is that the *Brouwer* patent uses circular tubes in place of the slat that the '510 patent describes. The *Brouwer* patent is titled "Diverter Shoe and Diverter Rail". Throughout the patent, however, the term "pusher" is used in place of the term "diverter shoe". In its recitation of the background of the invention, the patent states:

Article diverters and sorters utilizing a moving transport surface consisting of a plurality of parallel tubes have been known for a number of years. Such diverters and/or sorters having pushers mounted on tubes and

cooperating with means to cause the pushers, on signal to move transversely across the transport surface and push the articles to one side or off the conveyor have been utilized for years.

The patent goes on to state: "What disposal is made of the article so moved depends on the purpose of the equipment. This invention relates to the type of system which discharges the article laterally from the transport system." This language leads the Court first to conclude that "pushing" is the known function of the diverter shoe. However, the Court notes that in neither the *Brouwer* patent nor in the '510 patent do the words "presses against the *side* of the article" appear.

The *Brouwer* patent leads the Court to further conclude that a diverter shoe is known to have the purpose of "mov[ing] the articles coming in contact with the shoe *off the conveyor surface*". The *Brouwer* patent uses the word "pusher" when speaking generically about two similar activities-sorting and diverting; however, it states that its purpose is to "discharge the articles laterally from the transport system". The patent is titled "Diverter Shoe and Diverter Rail". The '510 Patent states: "This invention relates to a conveyor sortation system and in particular to a positive displacement sortation system in which diverting shoes traveling with the conveyor surface laterally diverts packages onto selected spur lines" and is titled "Modular Diverter Shoe and Slat Construction". The Court concludes that when the pusher shoe is intended for the purpose of discharging articles off the conveyor, the term "diverter shoe" is used-as it is in the *Brouwer* title and throughout the '510 Patent.

The Court adopts the following definition of diverter shoe: "a device that moves along and relative to a conveyor surface to push against an article carried on the conveying surface and move the article coming in contact with the shoe off the conveyor surface".

(3) "Bearing means" (Claim 13)

Rapistan asserts that "bearing means" is "a structural element that engages another moving structure during relative motion between the two structures". Daifuku argues that "bearing means" is a means-plus-function term, whose function is "defining a bearing between at least one of said joining edges of each of said slats and an engaging portion of said glide surface of the corresponding one of said diverter shoes" and whose necessary structure is "one or more enlarged radius corners 64 and 66 of the glide surface of the shoe 44 and a corresponding enlarged radius corner(s) 38 and 40 at at least one of the joining edges of the outside surface of the slat 22".

Rapistan contends that "bearing" is a well-known structural term in the engineering and material-handling industry and is a sufficiently specific structural term to overcome the means-plus-function presumption. *See* Laitram Corp., 939 F.2d at 1536. Rapistan provides only the declaration of one of the ' 510 Patent inventors, Bernard H. Woltjer, to verify the term's standing in the industry. The Court again notes that "inventor testimony is of little probative value for purposes of claim construction". E-Pass Techs., 343 F.3d at 1370. The Court finds that the term is plainly written in means-plus-function language, and finds no sufficiently specific structure. Rapistan appears to agree with Daifuku's assessment of the function, but argues that the necessary structure is "an area bearing or a pair of non-rotational surfaces that contact and slide along each other". Rapistan's proposed structure is at best a generic rephrasing of the structure disclosed in the specification. Section 112 requires that the construction incorporate all of the structures *from the specification* necessary to carry out the claimed function.

After careful inspection of the specification and the function of the term, the Court concludes that each of

the structures from the specification that Daifuku proposes is a structure necessary to perform the function at issue. The Court adopts Daifuku's definition.

(4) "Track means" (Claims 1, 13, 23, 30, & 42)

Rapistan and Daifuku both acknowledge that this term is drafted in a means-plus-function construction and that the function is "engaging said diverter shoes for imparting a lateral force to move said diverter shoes laterally to displace product positioned on the conveying surface". *See* Section 112. Rapistan contends that the structure necessary to perform this function is a "guide rail". Daifuku asserts that the necessary structure is "a network of guide tracks, diverter switches, and diagonal rails".

The specification describes a preferred embodiment in which "[m]ovement of the shoe is guided by a network of guide tracks engaging a bearing 56 and changes in direction of movement are initiated by a diverter switch engaging a diverter pin 54". Rapistan argues that the diverter switch only *initiates* the movement on the track, or the change in direction from forward to lateral movement, and is not a necessary part of the function-"engaging said diverter shoes for imparting a lateral force to move said diverter shoes laterally to displace product positioned on the conveying surface". It further argues that a network of guide rails is not necessary to perform the function-only one guide rail is necessary. Finally, it argues that a "diagonal" rail is not necessary to perform the function because the '510 Patent incorporates the *Brouwer* patent which discloses guide rails which are referenced as being at an "angle" without being limited to "diagonal".

The Court will follow the language of the specification-"[m]ovement of the shoe is guided by a network of guide tracks engaging a bearing 56 and changes in direction of movement are initiated by a diverter switch engaging a diverter pin 54." The "change in direction" is not part of the function of track means, which refers only to *lateral* movement, thus the Court finds that a diverter switch is not a necessary structure. As the function is understood in plural terms, the Court finds that the "a network of guide tracks engaging a bearing 56" is what is necessary to engage the diverter shoes to impart a lateral force to move the diverter shoes laterally to displace product positioned on the conveying surface.

(5) "Lateral stabilizing means" (Claim 23; Dependant Claim 17)

Rapistan and Daifuku both acknowledge that this term is drafted in means-plus-function construction and that the function is "resisting vertical axis reaction-force couples". *See* Section 112. The disagreement between the parties lies in what structure is *necessary* to carry out the agreed-upon function. Rapistan contends that the corresponding structure are two sets of cooperating vertical walls that extend laterally on the shoe and slat and are closely spaced relative to their length. Daifuku asserts that the corresponding structure is channel 58 and the T-shaped projection 42, the channel of the shoe having an approximate length-to-width ratio of 5:1.

Rapistan refutes Daifuku's construction by noting that Section 112 does not "permit incorporation of structure from the written description beyond that necessary to perform the claimed function." *See* Asyst Techs., Inc., 268 F.3d at 1369-70. However, Daifuku points out that Section 112 requires that the construction incorporate all of the structures *from the specification* necessary to carry out the claimed function. Rapistan's construction does not track the structure provided in the specification. Instead Rapistan argues that "the requirements of the dependant claims are not to be read into the independent claims." *See* Wenger Mfg., 239 F.3d at 1234. However, the Court finds no other structure described in the specification that performs the function "resisting vertical axis reaction-force couples". The Court will not allow Rapistan

to skirt the consequences of a means-plus-function construction by appeal to principles of claim differentiation. *See* Dow Chem. Co. v. United States, 226 F.3d 1334, 1341-42 (Fed.Cir.2000) (doctrine of claim differentiation creates only rebuttable presumption that each claim in patent has different scope); Laitram Corp., 939 F.2d at 1538 (claim differentiation not applicable when dependant claim recites only structure disclosed in specification that corresponds to means claimed in independent claim).

The Court also finds, however, that Daifuku's construction includes structural features that are unnecessary to perform the function of resisting vertical axis reaction-force couples. *See* Asyst Techs., 268 F.3d at 1370 ("Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations."). Daifuku inserts the wording of the specification "preferably T-shaped" into its claim construction. The Court finds that although, according to the specification, a T-shaped projection is preferable, only the outward extension that engages the mating portion is actually necessary to perform the function.

The Court construes the claim term: an outward extension of one portion of the slat engaging a mating portion of the shoe glide surface.

(6) "Glide portion including means defining a glide surface" (Claims 30 & 42)

Rapistan contends that the definition of this term is: "a portion of the diverter shoe's support member which includes a glide surface". Daifuku argues that the term is written in means-plus-function form. It asserts that the function is "defining a glide surface adapted to glide along one of said slats" and the necessary structure is "a substantially continuous glide surface 50 that surrounds and has substantially the same configuration as the slat 22 and that has some contact points between the shoe and the slat at one or two enlarged radius corners 38 and 40 of a slat 22 having a parallelogram-shaped cross-section, including at least one or two enlarged radius corners 64 and 66, engaging one or two enlarged radius corners 38 and 40, channel 58, and T-shaped extension 42".

Rapistan asserts that, according to *Wenger Manufacturing,* "means defining" followed by a structure, in this case glide surface, is not subject to Section 112 interpretation. 239 F.3d at 1237.FN4 However, the Court reads *Wenger Manufacturing* only to reiterate the general rule that the means-plus-function presumption is overcome if the claim recites sufficiently definite and specific structure. *See id.;* Laitram Corp., 939 F.2d at 1536. In this case, the Court does not find that the claim outlines sufficiently specific structure to overcome the means-plus-function presumption and thus finds that Section 112 applies to the term.

FN4. Daifuku notes that Rapistan argued before the ITC that this term was written in a mean-plus-function construction. Daifuku argues that the Court should apply judicial estoppel to prohibit Rapistan from changing its position regarding the term before this Court. The Court has ultimately determined its own definition of this term and does not remark on Daifuku's judicial-estoppel argument.

In the event that the Court were to find the term written in means-plus-function terms, Rapistan argues that the function is "defining a glide surface" and asserts that the corresponding structure is "a plurality of walls or wall segments that establish a glide surface relative to the slat." The Court agrees with Daifuku's assessment of the function. Claim 42 states: "[a] support member having a glide portion including means defining a glide surface *adapted to glide along one of said slats*". (Emphasis added.) Rapistan's assessment of the function deletes the second half of the claim language and does not accurately reflect the function

expressed. The Court further finds Rapistan's recitation of structure lacking because it is not drawn from the specification itself. It is a generic rephrasing of structure that addresses only the first portion of the function to which the claim refers.

Daifuku agrees with Rapistan that wall segments are the necessary structures, but argues that in order for the wall segments to adequately perform the function of defining a glide surface *adapted* to glide along one of said slats, the wall segments must (1) define the substantially continuous glide surface which surrounds the slat and has substantially the same configuration as the slat; (2) define the enlarged-radius forward upper corner and the enlarged-radius lower rear corner to provide the engagement surfaces on which the glide surface rides; and (3) engage the lateral stabilizing means of the slat. The specification refers to continuous glide surface 50-the wall segments both parties assert are the main structure necessary to perform the function at issue-several times: (a) "[s]upport member 44 includes a glide portion 58 having a continuous glide surface 50 having substantially the same configuration as the outer surface of the slat for gliding movement on the slat"; (b) "[c]ontinuous surface 50 includes a channel 58 surrounding projection 42 of the slat such that the projection rides within the channel"; (c) "[c]ontinuous surface 50 additionally includes a support rib which engages top wall 30 of the slat to support an upper wall 62 of the support member"; (d) "[c]ontinuous surface 50 additionally includes an enlarged radius forward upper corner 64 and an enlarged radius lower rear corner 66, in which enlarged radius corners 38 and 40 of the slat, respectively, ride"; and (e) "[t]his arrangement provides bearing engagement between the enlarged radius corners of the slat and the corresponding corners of surface 50 to resist reaction forces tending to rotate the shoes about the axis of elongation of the slat".

The Court finds that only specification (a) is necessary to perform the function defining a glide surface adapted to glide along one of said slats. The other recited structures in the specification are either merely the preferred way for the glide surface to "hav[e] substantially the same configuration as the outer surface of the slat" or deal with other aspects of the invention not necessary to the stated function.

The Court finds the function intended by this term to be "defining a glide surface adapted to glide along one of said slats" and the necessary structure to be "continuous glide surface 50 having substantially the same configuration as the outer surface of the slat for gliding movement on the slat."

(7) "Glide surface surrounding said [slat] wall" (Claims 1, 12, & 23)

Rapistan contended in its initial brief that this term meant the "diverter shoes's inner surface moves over or along the slat without rotation and has some contact, but not necessarily complete contact, with the slat to cut off communication and retreat." Since the claims-construction hearing, Rapistan has submitted supplemental briefing, citing Sentry Protection Products, Inc. v. Eagle Manufacturing Co., 400 F.3d 910, 917 (Fed.Cir.2005), in which the Federal Circuit determined that " 'surrounding' only implies that substantially all, not necessarily 100% of the circumference of something is enclosed". The Court construes Rapistan's supplemental briefing to indicate that Rapistan wishes to amend its proposed definition of this term to include the Federal Circuit's definition of "surrounding". Daifuku defines the term: a diverter's shoe has some contact, but not necessarily complete contact, with the outer surface of the slat, and need not contact all sides of the slat-the glide surface completely encircles the slat.

The Federal Circuit defined this term in Vanderlande, 366 F.3d at 1317-22. After a thorough discussion, the court determined that "glide surface" is "a diverter shoe's inner surface that has some contact, but not necessarily complete contact, with the outer surface of the slat, and need not contact all sides of the slat". Id.

at 1322. Because the parties in *Vanderlande* agreed on the meaning of "surrounding", the Federal Circuit recited, but did not directly address, its meaning. *Id*. at 1318. However, the court "review [ed] the ITC's claim construction *de novo*" and did not find error. Vanderlande, 366 F.3d at 1318-23. The court stated the meaning of "surrounding" as "to extend on all sides; to encircle; to enclose on all sides to cut off communication or retreat." Id. at 1318. Daifuku strongly urges this Court to hold Rapistan to the definition for which it argued before the ITC. The Court, however, finds the definition approved by the Federal Circuit to be the proper definition.

This Court concludes that the proper, complete definition of the term is: a diverter shoe's inner surface that has some contact, but not necessarily complete contact, with the outer surface of the slat, and need not contact all sides of the slat-the glide surface extends on all sides; to encircle; to enclose on all sides; to cut off communication or retreat.

(8) "Glide surface having substantially the same configuration as said outer surface of said slat" (Claim 1)

Rapistan contends that this term means the "glide surface largely, but not wholly, resembles the configuration of the slat's outer surface". Daifuku asserts that the term means "the shape of the glide surface of the shoe largely but not wholly resembles in every relevant respect the shape of the outer surface of the slat". The Federal Circuit addressed this term in *Vanderlande* but did not directly rule on it, because the term was not in dispute when the ITC made its decision. In fact, the ITC did not give a formal definition of the term. However, the Federal Circuit stated that the definition that Vanderlande proposed before the Federal Circuit and the implicit definition provided by the ITC demonstrate "no meaningful distinction" and the Federal Circuit found "no error in the ITC's implicit claim construction". Vanderlande, 366 F.3d at 1323.

This Court defines the term as the Federal Circuit has implicitly approved: the glide surface largely, but not necessarily wholly, resembles the configuration of the outer surface of the slat in every, or largely every, relevant respect. The Court is not only persuaded by the Federal Circuit's apparent approval of this definition, but finds that this definition best captures the plain meaning of the words of the claim.

(9) "Defined by a wall having generally planar upper and lower wall portions joined by side wall portions defining edges between each of said wall portions" (Claims 13 & 23)

Rapistan contends that this term means "each slat is made up of one or more wall segments having a generally level or flat surface near or at the top of the slat that approximate a plane with some deviations,FN5 with each wall portion forming ajoining edge with another wall portion". Daifuku asserts that this term means "a single wall with four portions makes up a four-edged slat with upper and lower wall portions joined by side wall portions at the four corner edges".

FN5. The parties have agreed to the definition of "generally planar" so the Court will not address this portion of Rapistan's definition of this term.

The first element the Court must discern is whether this term entails only one wall or one or more walls. Rapistan points out that "a" in patent parlance typically means "one or more" in open ended claims containing the transitional phrase "comprising." *See* KCJ Corp., 223 F.3d at 1356. However, as the Court has construed the term "a wall" with regard to "right cylinder" as "one wall", the Court will import its understanding of the term in that context to this term. *See Epcon Gas Sys., Inc. v. Bauer Compressors, Inc.*,

219 F.3d 1022, 1030 (Fed.Cir.2002). Thus, the Court concludes that the term is referring to one wall.

Although Daifuku's definition directly tracks the specification, as Rapistan points out, the claim language itself does not require that there be four wall portions, or that the upper and lower portion be connected *to each other* through the side wall portions-thereby making the wall closed. However, the Court has construed a related term-"each of said slats being defined by a wall formed as a right cylinder"-to mean that one wall establishes the outer boundary of the slat. The Court will import its understanding of that term here.

Thus, the Court construes this term: each slat is made up of one wall containing a generally flat surface near or at the top of the slat, and a generally flat surface near or at the bottom of the slat with each end of said upper and lower wall portions joined together by side wall portions forming joining edges.

(10) "Wall portions joined by side wall portions defining joining edges" (Claims 13 and 23)

Rapistan defines "joining edges" as "the region adjacent the intersection of multiple surfaces and extend the length of the slat". Daifuku defines a "joining edge" as "the line where the edges, or ends, of two wall portions come together to form a unit, or, thereby, a corner edge". Daifuku relies on a dictionary definition of "edge" as "the line where an object or area begins or ends" and "join" as "to put or bring together so as to form a unit". Webster's New Collegiate Dictionary 396, 651 (9th ed.1988). Rapistan contends that, in the preferred embodiment, the regions of intersection between slat wall segments are enlarged lobes that form enlarged radius corners, not knife edges. Rapistan seems to conclude that Daifuku's definition would exclude the preferred embodiment. However, Daifuku also refers to the specification to support its definition; it notes that the specification refers to enlarged-radius corners where the upper wall "joins" the forward side wall portion. The Court infers that Daifuku does not intend to limit "edge" to a straight "knife edge", as Rapistan argues. However, the Court understands Rapistan's concern and agrees that "line", as used in Daifuku's proposed definition, connotes a two-dimensional concept that may insert the "knife edge" depiction of edge into Daifuku's proposed definition. Rapistan's definition, however, is so broad that it is confusing and misses the character of what the term is meant to express. Thus, the Court is compelled to fashion its own definition.

The Court first draws from Daifuku's definition of edge as "the line where an object or area begins or ends". Although the Court is not satisfied with the word "line" in the context of this patent, the Court finds that "edge" does refer to the place where an object or area ends. Logically, in the context of this patent, in combining the definition of "joining" with "edge", this place would have to be located at the juncture of the ends of the wall portions. The difficulty lies in how to describe that juncture when it, as in this case, is not geometrically linear.

Taking into consideration the plain meaning of the term in conjunction with the specification, the Court construes the term "joining edges" as: the line where the ends of two wall portions come together to form a unit-the line accommodating deviations from a mathematically precise line at least as great as the deviations of Figure 3 of the patent.

(11) "Planar upper portion defining said conveying surface" (Claim 1)

Rapistan contends that this term means "*generally* level or flat surface near or at the top of the slat and accommodates deviations from a mathematically precise flat surface at least as great as the deviations of Figure 3 of the patent". Daifuku asserts that it means the "top surface of the right cylinder is flat and constitutes the entire conveying surface". Daifuku argues that the ordinary meaning of planar is flat. Daifuku

reasons that if Rapistan meant "generally" flat or level, it could have included that language in the claim as it did in Claims 13 and 23. Because the preferred embodiment depicts a generally flat upper-slat surface distinguished by the raised-radius corners, Daifuku's proposed definition of this term would not comport with the preferred embodiment. Rapistan argues that the intrinsic evidence of the patent shows that this claim is intended to differentiate this invention from prior art, specifically the *Brouwer* patent which used two parallel, circular bars with a gap in between, from the flat slat surface described in the '510 Patent. Here, however, Rapistan contends that, with the prior art in mind, it is clear that this claim only intended to demonstrate that the new and improved slat of the '510 Patent is flat *as compared* to the circular bars of the *Brouwer* patent. Again, the Court is loath to adopt a definition of a term which does not comport with the specification. Further, as Claim 1 is clearly written in the *Jepson*-type format, the Court is persuaded by Rapistan's prior-art argument. *See* Fout, 675 F.2d at 300 n. 2 (preamble of *Jepson*-type claim is implied admission of prior art).

Although it is rare, the Court acknowledges that a claim may be written in such a manner as to exclude the preferred embodiment. *See* Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1477 (Fed.Cir.1998). The Court is mindful that a patent's claim must be read in view of the specification. Markman, 52 F.3d at 979. In International Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1370 (Fed.Cir.2004), for example, the invention was claimed as "polygonal", the dictionary definition of polygonal required straight lines, but the invention itself had curved lines. The court looked to the written description for context and guidance as to meanings attributed by those of ordinary skill in the art to term polygonal and to see whether the patentee acted as his own lexicographer, or otherwise disavowed or disclaimed the full scope of the ordinary and customary meaning of the term in question. Id . at 1371. Because the depiction showed straight lines not curved lines the court found the ordinary meaning applied. Id. at 1371-72. Here, the specification clearly depicts a generally flat upper-slat surface distinguished by the raised-radius corners.

The Court concludes that notwithstanding the fact that Rapistan could have included the word "generally" to be more clear, the term is properly understood as Rapistan has defined it.

(12) "Contiguous surfaces sloping laterally inward and longitudinally forward or rearward" (Claim 30)

Rapistan contends this terms means: two or more surfaces operative to be contacted by an article, which surfaces are in contact with each other and are sloped downwardly from a horizontal plane that passes through the highest location on the shoes' vertical diverting surface. At least one of these sloping surfaces has a component that slopes laterally inward, and at least one of these sloped surfaces has a component that slopes either forward or rearwardly. Daifuku's definition is: at least two generally planar surfaces, that are adjacent to and contact each other and slope downwardly from an upper extent of the diverting surface, that also slope laterally inward (*i.e.,* towards the lateral center of the shoe), and that also slope either forwardly toward or rearward from the direction of the flow of the conveyor system.

The main point of disagreement between the parties regards whether the "and" in the phrase "*and* at least one of these sloped surfaces has a component that slopes either forward or rearwardly," means "and" or means "or". Daifuku, citing Webster's New Collegiate Dictionary 84 (9th ed.1988), points out that "and" is ordinarily a word of inclusion. The Court has found no persuasive intrinsic evidence that "and" was intended to mean anything out of the ordinary. The specification, for instance, fits Daifuku's definition exactly; thus, by choosing Daifuku's definition of "and", the Court will not exclude the preferred embodiment. As for the other deviations between the two proposed definitions, the Court finds little substantive difference and the

briefing does not indicate that the parties hotly contest the rest of the term's meaning; regardless, the Court is more satisfied with Daifuku's definition on the whole and will adopt it.

(13) "Substantially the same thickness" (Claim 42; Dependent Claims 11, 22, 29, 35, & 39)

Rapistan contends that this term means that the wall segments have approximately the same thickness. Daifuku asserts that this term means the thickness of the wall segments are largely, but not wholly, the same. Daifuku's definition of "substantially" matches the definition for "substantially" that Rapistan has proposed with regard to other terms-for instance, "substantially the same configuration". The Court notes that absent evidence from the intrinsic record to the contrary, terms are presumed to be used consistently throughout the claims. *See Epcon Gas,* 279 F.3d at 1030. Further, the definition posed by Daifuku comports with the definition of the term approved by the Federal Circuit. *See* Vanderlande, 366 F.3d at 1323. The Court adopts Daifuku's definition of this term.

(14) "Diverter member [or portion] joined to said support portion" (Claims 30 & 42; Dependent Claim 9)

Rapistan construes this term as: the portion of a diverting shoe that presses against the side of an article on the conveying surface is connected, whether by separate manufacture and subsequent connection or by unitary manufacture, to the support member. Daifuku construes the term: a part for turning objects from one course to another is brought together so as to form a separable unit with the support member. There are three main points of contention between the parties: (1) Rapistan contends that the diverting member may be separable from or affixed to the support member while Daifuku argues it must be separable, (2) Daifuku argues that Rapistan's definition of diverting member does little more than restate the claim language, and (3) Daifuku argues that Rapistan has improperly inserted "presses against the side" into the definition of "diverting member".

As to the first issue, Rapistan asserts that although it is clear in the preferred embodiment that the diverting member may be separable from the support member, the term language itself does not limit the claim in that way. Rapistan focuses on the use of the word "joined." It argues that because the word "joined" is used throughout the patent to describe the connection of two surfaces, the claim term may be read as separable or connected in this claim term. Daifuku argues that the term should follow the preferred embodiment, which indicates that the shoe is separable. The Court determines the plain meaning of the claim language does not require that the support member be separable. The Court will not circumscribe the claim language to what is shown in the preferred embodiment or described in the specification without clear intrinsic evidence that it should do so. *See* Electro Med. Sys., 34 F.3d at 1054. Although it is clear that a separable shoe is the preferred embodiment, the Court finds that the claim language allows for a separable or integral shoe.

Regarding the second and third issues, Daifuku's definition of diverting member is an attempt at a combination of the dictionary meanings of "divert" and "member". *See* Webster's New Collegiate Dictionary 369, 740 (9th ed.1988). Rapistan's definition of diverter shoe defines what a diverting member is-a part of the diverter shoe. The Court agrees with the methodology of Rapistan's construction. The claim reads "... said diverter shoe comprising: ... a diverting member joined to said support member". It is logical to define a part of the object, the diverting member, by reference to the definition of the whole, diverter shoe, especially because the Court has found that "diverter" has a particular meaning according to the prior art. The dictionary meaning, as proposed by Daifuku, is too generic contextually for this term.

However, the Court does not adopt Rapistan's definition of diverter shoe in its entirety. The Court defines

the term: the part of the diverter shoe that pushes against an article on the conveying surface to move the article coming in contact with the shoe off the conveyor surface is connected, whether by separate manufacture and subsequent connection or by unitary manufacture, to the support member.

(15) "Quadrilateral-shaped cross-section" (Dependent Claim 2)

Rapistan contends that this term means the slat has a cross-section along its length that resembles a four-sided shape, but accommodates deviations from a theocratically precise quadrilateral. Daifuku asserts that the term means that the shape of the right cylinder when viewed in cross section is a four-sided polygon. The specification depicts a slat resembling a quadrilateral except for slightly raised radius corners. The Court is mindful that a patent's claim must be read in view of the specification. Markman, 52 F.3d at 979; *see also* International Rectifier, 361 F.3d at 1371-72. Although a claim may in rare instances be written in such a manner as to exclude the preferred embodiment, this Court finds that the term as written with reference to the specification does not expressly exclude the preferred embodiment. *See* Gentry Gallery, 134 F.3d at 1477. The Court adopts Rapistan's definition of this term.

(16) "Parallelogram-shaped cross-section" (Dependent Claim 3)

Rapistan contends that this term means the slat has a cross-section consistent along its length and resembles a shape having opposite sides parallel to each other, but accommodates deviations from a theoretically precise parallelogram. Daifuku asserts that this terms means that the slat has a cross section that is a four-sided polygon where the opposing sides are parallel and equal in length. For the reasons the Court has expressed with regard to "quadrilateral-shaped cross-section", the Court adopts Rapistan's definition of this term.

(17) "Two opposite said joining edges" (Dependent Claim 15)

Rapistan contends that this term means a joining edge is formed at two opposite regions of the slat and the location of contact with the glide surface. Daifuku asserts that it means two diagonally opposed joining edges. Claim 15 and its independent Claim 13 specify four joining edges-the edges formed at each end of the upper and lower wall portions connecting with the side wall portions.

The Court offers the following hypothetical to explain its reading of this term: a hypothetical edge A (the upper right edge) can only be "opposite" edge D (the lower left edge)because if edge B (the upper left edge) could be considered opposite, so would edge C (lower right edge), because they share the same spatial relationship with edge A. The term contemplates that each edge has only one opposite edge, thus in order to give each limitation in the claim meaning, as it must, the Court concludes that Daifuku's definition is correct. *See* Lantech, Inc. v. Keip Mach. Co., 32 F.3d 542, 547 (Fed.Cir.1994).

(18) "Mounting means" (Dependent Claim 5)

Rapistan and Daifuku both acknowledge that this term is a means-plus-function claim, whose function is mounting the opposite ends of the wall formed as a right cylinder to the endless chains. *See* Section 112. The disagreement between the parties lies in what structure is *necessary* to carry out the agreed-upon function. Rapistan contends that the structure is an end cap that is connected to the slat and to the chain on each end of the slat. Daifuku argues that the necessary structure is mounting member 96, including compression fitting portion 98 and a spacer portion 100. Compression fitting portion 98, has a diamond-shaped profile that is substantially conforming to the internal dimensions of slat 22, but which allows use on

either end of the slats. Fasteners 102 extending through the openings 104 in mounting bracket 105 engage threaded inserts 106 in compression fitting portion 98. The application of torque to fasteners 102 causes compression fitting portion 98 to expand thus frictionally engaging the inner wall surface of the slat. Mounting bracket 105 is supported by extended pins 107 of one chain link. Spacer portion 100 is configured to be larger in profile than the compression fitting 98, but no larger than the outer profile of the slat, such that it does not interfere with the packages being diverted from the slat.

Rapistan refutes Daifuku's construction by urging that Daifuku is attempting to include all limitations shown in the specification. However, Daifuku points out that Section 112 requires that the construction incorporate all of the structures from the specification *necessary* to carry out the claimed function. Rapistan's construction refers to structures, for example "end cap", that are not in the specification at all. On first reading it seems as if Daifuku's definition is so detailed that it must include unnecessary structures along with necessary structures; however, the Court concludes, after carefully reading the specification, that it cannot completely omit any of the components that Daifuku claims is necessary and still maintain the function of mounting the opposite ends of said wall to said chains.

The Court adopts an altered version of Daifuku's proposed definition: mounting member 96, including compression fitting portion 98, and a spacer portion 100. Compression fitting portion 98 has a profile that is substantially conforming to the internal dimensions of slat 22, but which allows use on either end of the slats. Fasteners 102 extending through the openings 104 in mounting bracket 105 engage threaded inserts 106 in compression fitting portion 98. The application of torque to fasteners 102 causes compression fitting portion 98 to expand thus frictionally engaging the inner wall surface of the slat. Mounting bracket 105 is supported by extended pins 107 of one chain link. The Court omits the requirement that the compression fitting portion be diamond-shaped because the Court finds that all that is necessary is that the compression fitting portion substantially conform to the internal dimensions of the slat. *See* Asyst Techs., 268 F.3d at 1370 ("Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations."). The Court further omits the structural element that "spacer portion 100 is configured to be larger in profile than the compression fitting 98 but no larger than the outer profile of the slat such that it does not interfere with the packages being diverted from the slat", because the Court does not find that this structural element is necessary to perform the function of mounting the opposite ends of the wall to the chains.

(19) "Compression fitting" (Dependent Claim 7)

Rapistan contends that this term means "a structure that engages another structure by way of compression". Daifuku asserts it means "a structure that expands in order to generate a frictional lock". The claim reads: "[t]he conveying system in [C]laim 5 wherein said mounting means includes a compression fitting for engaging inner surface of said wall". Daifuku points out that Claim 7 is dependent on Claim 5. It notes that "a claim in dependant form shall be construed to incorporate by reference all the limitations of the claim to which it refers". *See* Section 112. Thus, Daifuku argues, when construing the terms of Claim 7, the Court must incorporate all the limitations of Claim 5. Daifuku contends that because the Court, in the context of defining "mounting means" in Claim 5 has specifically referred to the compression fitting "expand[ing] thus frictionally engaging the inner wall surface of the slat", that the Court must read that limitation into its definition of "compression fitting" in Claim 7, because if the Court were to define "compression fitting" in Claim 7 more broadly than it did in Claim 5, as Rapistan's proposed definition does, it would give a dependent claim a broader interpretation than the claim on which it is dependent-which the Court will not do. *See* Dow Chem., 226 F.3d at 1341-42. The Court agrees and adopts Daifuku's definition of compression

fitting.

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