

United States District Court,
N.D. Iowa, Cedar Rapids Division.

HIGHWAY EQUIPMENT COMPANY, INC,
Plaintiff/Counterclaim-Defendant.

v.
CIVES CORPORATION and Monroe Truck Equipment, Inc,
Defendants/Counterclaim-Plaintiffs.

No. 04-CV-147-LRR

March 7, 2007.

Background: Road maintenance equipment manufacturer filed action against competitors seeking declaratory judgment that patents for combined dump truck and spreader apparatus and vehicle mounted sand spreader were invalid and that its multi-purpose dump bodies did not infringe patents. Competitors filed counterclaims for infringement, contributory infringement, and inducement of infringement.

Holdings: The District Court, Reade, Chief Judge, held that:

- (1) actual controversy existed;
- (2) claim required conveyor to extend from front wall to back wall, but did not require that conveyor be located entirely within first and second ends of dump body; and
- (3) claim covered only auger structure, and did not include slat-and-sprocket conveyor structure.

Ordered accordingly.

5,772,389, 6,179,230, 6,308,900, 6,354,786. Construed.

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ORDER REGARDING CLAIM CONSTRUCTION

READE, Chief Judge.

TABLE OF CONTENTS

I. INTRODUCTION

II. BACKGROUND	1083
A. Factual Background	1083
B. Procedural Background	1084
III. JURISDICTION	1085
IV. PRINCIPLES OF CLAIM CONSTRUCTION	1086
A. Claims	1087
B. Specification	1087
C. Prosecution History	1088
D. Extrinsic Evidence	1088
E. Means-Plus-Function Construction	1089
V. CONSTRUCTION OF THE '389 PATENT	1090
A. Claim 1	1091
1. "being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof"	1091
2. "spreader means cooperating with said conveyor means for spreading the materials"	1093
3. "said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-circular cross sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means"	1095
4. "along the entire length of said conveyor means"	1097
B. Claim 4	1097
C. Claim 5 and Claim 7	1098
VI. CONSTRUCTION OF THE '786 PATENT	1098
A. Claim 1	1098
1. "endless conveyor means trained over said drive means, said conveyor means being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof for conveying the materials along said body"	1099
a. "endless conveyor means"	1099
b. "said conveyor means being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof for conveying the materials along said body"	1103
2. "said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-elliptical cross-sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means"	1104
3. "along the entire length of said conveyor means"	1104
B. Claim 3	1105

VII. CONSTRUCTION OF THE '230 PATENT	1105
A. Claim 1	1107
1. Other portions between the curved and terminal portions?	1107
2. "sufficient to induce"	1109
3. Conclusion	1110
B. Claim 2 and Claim 3	1110
C. Claim 7	1110
D. Claim 9	1110
1. "bin sidewall which is continuously curved from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall"	1111
2. "the terminal boundary of the inner portion of the curved sidewall being inclined above the horizontal at an angle sufficient to induce sand contained therein to slide downwardly, in the presence of agitation arising from vehicle motion, into the conveyor"	1111
VIII. CONSTRUCTION OF THE '900 PATENT	1112
IX. CONCLUSION	1115

I. INTRODUCTION

This matter comes before the court for construction of the disputed claims of the four patents-in-suit, the '389 Patent, FN1 the ' 786 Patent, FN2 the ' 230 Patent FN3 and the ' 900 Patent.FN4

FN1. Combined Dump Truck and Spreader Apparatus, U.S. Patent No. 5,772,389 (filed Sept. 20, 1996) (issued June 30, 1998).

FN2. Combined Dump Truck and Spreader Apparatus, U.S. Patent No. 6,354,786 (filed June 24, 1998) (issued Mar. 12, 2002).

FN3. Vehicle Mounted Sand Spreader, U.S. Patent No. 6,179,230 (filed May 30, 1997) (issued Jan. 30, 2001).

FN4. Vehicle Mounted Sand Spreader, U.S. Patent No. 6,308,900 (filed Dec. 12, 2000) (issued Oct. 30, 2001).

II. BACKGROUND

A. Factual Background

Plaintiff/Counterclaim-Defendant Highway Equipment Company, Inc. ("HECO") is an Iowa corporation with its principal place of business in Cedar Rapids, Iowa. HECO makes and sells road maintenance equipment. HECO produces various attachments for trucks, including material spreaders and snowplows. The focus of the instant litigation is HECO's XT3-series of dump bodies ("the XT3"). The XT3 is a multi-

purpose "dump body" that is mounted on a truck chassis.

Defendant/Counterclaim-Plaintiff Cives Corporation ("Cives") is a Delaware corporation with its principal place of business in Roswell, Georgia. Defendant/Counterclaim-Plaintiff Monroe Truck Equipment, Inc. ("Monroe") is a Wisconsin corporation with its principal place of business in Monroe, Wisconsin. Cives and Monroe also make and sell road maintenance equipment, including multi-purpose dump bodies.

HECO, Cives and Monroe are competitors. The interests of Cives and Monroe are aligned in the instant litigation, however, because they are the co-owners and assignees of record of the four patents-in-suit.

In late 2002, HECO launched the XT3. In June of 2004, counsel for Cives and Monroe wrote a letter to HECO. In the letter, Cives and Monroe stated that their patents covered the XT3, and any effort by HECO to make or sell the XT3 would constitute patent infringement. HECO's counsel denied any infringement.

B. Procedural Background

On October 29, 2004, HECO filed this declaratory-judgment action against Cives and Monroe, pursuant to 28 U.S.C. s.s. 1338(a), 2201 and 2202. In Counts I and II of its Second Amended Complaint, FN5 HECO seeks declarations that the four patents-in-suit are invalid and unenforceable, respectively. FN6 In Count III, HECO asks for a declaration that it has not infringed, contributorily infringed or induced the infringement of the four patents-in-suit. In Count IV, HECO alleges that Cives and Monroe engaged in patent misuse. HECO also requests attorney fees, costs and an order permanently enjoining Cives and Monroe from threatening patent infringement against HECO, its customers, distributors, dealers, licensees, agents, servants and employees.

FN5. On October 29, 2004, HECO filed a Complaint (docket no. 2). On June 1, 2005, HECO filed an Amended Complaint (docket no. 12). On November 28, 2006, HECO filed a Second Amended Complaint (docket no. 107).

FN6. Hereinafter, invalidity and unenforceability will be referred to simply as invalidity. *See* MedImmune, Inc. v. Genentech, Inc., 549U.S. 118, ---- n. 1, 127 S.Ct. 764, 768 n. 1, 166 L.Ed.2d 604 (2007) (abbreviating same terms).

Cives and Monroe deny HECO's allegations and have counterclaimed for infringement, contributory infringement and inducement of infringement. FN7 Cives and Monroe maintain that HECO's unlawful infringement is willful, intentional and deliberate. Cives and Monroe request permanent injunctive relief, treble damages, prejudgment interest, attorney fees and costs.

FN7. HECO filed its Amended Complaint before Cives and Monroe answered. On June 30, 2005, Cives and Monroe filed an Answer to the Amended Complaint and Counterclaim (docket no. 19). On December 12, 2006, Cives and Monroe filed an Answer to the Second Amended Complaint and Counterclaim (docket no. 113).

On September 29, 2006, the parties filed competing motions for summary judgment on claim construction (docket nos. 69 and 71). Contrary to a prior order of the court, the parties filed separate claim construction charts, instead of a joint claim construction chart ("JCCC"). On October 9 and 10, 2006, respectively, HECO and Cives and Monroe filed responses to the motions for summary judgment.

On October 18, 2006, the parties filed a JCCC.FN8 The JCCC, as modified by the parties' concessions at the Hearing, forms the basis for the instant Order. Although the parties' motions for summary judgment request construction of additional claims, such motions no longer fully represent the parties' respective positions.

FN8. After this action was filed, the court ordered the parties to exchange lists of all claim terms that they believed requires interpretation, with proposed interpretations, by September 1, 2006. HECO complied with the court's order, but Cives and Monroe did not. Cives and Monroe did not provide HECO with its list until September 28, 2006 at 4:53 p.m., the day before dispositive motions on claim construction were due. The failure of Cives and Monroe to comply with the court's orders made a JCCC impossible.

On October 5, 2006, HECO filed a Motion to Preclude Defendants' Proposed Claim Construction ("Motion to Preclude"). HECO alleged that Cives and Monroe had wilfully ignored the court's deadlines, in order to gain an unfair advantage over HECO. On October 11, 2006, Cives and Monroe filed a resistance to the Motion to Preclude.

On October 12, 2006, the court held a hearing on the Motion to Preclude. The court found that Cives and Monroe had failed to comply with the court's orders. During the hearing, counsel for Cives and Monroe agreed to pay the attorneys fees and costs that HECO incurred as a result of counsels' bad faith. The parties agreed to work together and submit a JCCC. The court later denied the Motion to Preclude as moot. On October 20, 2006, the court heard oral argument in a *Markman*FN9 Hearing ("Hearing"). Attorneys Robert E. Browne, Stephen J. Holtman and Thomas C. McDonough represented HECO. Attorneys Timothy J. Haller, George A. Hovanec, Jr. and Frederick C. Laney represented Cives and Monroe.

FN9. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996) (holding that claim construction is a question of law for the court), *aff'g*, 52 F.3d 967 (Fed.Cir.1995) (en banc).

Trial is set for the two-week period beginning on May 21, 2007.

III. JURISDICTION

Neither party questions whether the court has subject-matter jurisdiction. However, the court has a special obligation to determine whether subject-matter jurisdiction exists. *See United States v. Corrick*, 298 U.S. 435, 440, 56 S.Ct. 829, 80 L.Ed. 1263 (1936) (holding that "the lack of jurisdiction of a federal court touching the subject-matter of the litigation cannot be waived by the parties, and the District Court should, therefore, have declined sua sponte to proceed in the cause").

The Declaratory Judgment Act provides that, "[i]n a case of actual controversy within its jurisdiction, ... any court of the United States, upon the filing of an appropriate pleading, may declare the rights and other legal relations of any interested party seeking such declaration, whether or not further relief is or could be sought." 28 U.S.C. s. 2201(a). Until 2007, the Federal Circuit Court of Appeals stated that subject-matter jurisdiction is a question of Federal Circuit Court of Appeals law and developed a two-prong test to determine whether an "actual controversy" exists in a patent case. *See, e.g., Gen-Probe Inc. v. Vysis, Inc.*, 359 F.3d 1376, 1380 (citing *BP Chems. Ltd. v. Union Carbide Corp.*, 4 F.3d 975, 978 (Fed.Cir.1993)). Under the so-called "reasonable-apprehension" test, there is an "actual controversy" if there is

(1) an explicit threat or other action by the patentee, which creates a reasonable apprehension on the part of the declaratory judgment plaintiff that it will face an infringement suit and (2) present activity [by the declaratory judgment plaintiff] which could constitute infringement, or concrete steps taken with the intent

to conduct such activity.

Id. (citations and internal quotation marks omitted).

[1] In *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 127 S.Ct. 764, 166 L.Ed.2d 604 (2007), the Supreme Court abrogated the Federal Circuit Court of Appeals' reasonable-apprehension test. *See, e.g., MedImmune*, 127 S.Ct. at 774 n. 11 (explaining how the reasonable-apprehension test runs afoul of numerous Supreme Court precedents).FN10 "[T]he phrase 'case of actual controversy' in the [Declaratory Judgment] Act refers to the type of 'Cases' and 'Controversies' that are justiciable under Article III" of the Constitution. *MedImmune, Inc. v. Genentech, Inc.*, 127 S.Ct. 764, 771 (2007) (citing *Aetna Life Ins. Co. v. Haworth*, 300 U.S. 227, 240, 57 S.Ct. 461, 81 L.Ed. 617 (1937)). " 'Basically, the question in each case is whether the facts alleged, under all the circumstances, show that there is a substantial controversy, between parties having adverse legal interests, of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.' " *Id.* (quoting *Md. Cas. Co. v. Pac. Coal & Oil Co.*, 312 U.S. 270, 273, 61 S.Ct. 510, 85 L.Ed. 826 (1941)). HECO, as the declaratory judgment plaintiff, bears the burden to prove subject-matter jurisdiction exists. *Cardinal Chem. Co. v. Morton Int'l Inc.*, 508 U.S. 83, 95, 113 S.Ct. 1967, 124 L.Ed.2d 1 (1993).

FN10. The Federal Circuit Court of Appeals has not specifically addressed the scope of *MedImmune*. *See, e.g., Hydril Co. v. Grant Prideco LP*, 474 F.3d 1344, No.2006-1188, 474 F.3d 1344, 1350 (2007) ("This case does not present an occasion to address [*MedImmune*], which dealt with the standard for determining whether a declaratory judgment action satisfies the case-or-controversy requirement of the Declaratory Judgment Act.").

[2] The court finds that there is an "actual controversy" between HECO and Cives and Monroe regarding the four patents-in-suit. HECO makes and sells the XT3. In June of 2004, counsel for Cives and Monroe wrote a letter to HECO and stated that their patents covered the XT3 and any effort by HECO to make or sell the XT3 would constitute patent infringement. HECO denied any infringement. There is no evidence that, before HECO filed this action, Cives or Monroe promised or otherwise represented to HECO that they would not sue HECO over such patents. *Cf. Super Sack Mfg. Corp. v. Chase Packaging Corp.*, 57 F.3d 1054, 1058 (Fed.Cir.1995) (recognizing that "a patentee defending against an action for a declaratory judgment of invalidity can divest the trial court of jurisdiction over the case by filing a covenant not to assert the patent at issue against the putative infringer") (citations omitted).

Even though the court finds that there is an "actual controversy" between HECO and Cives and Monroe as to the four patents-in-suit, the court must still determine whether it should exercise its jurisdiction. The Declaratory Judgment Act confers "unique and substantial discretion" upon district courts "in deciding whether to declare the rights of litigants." *Wilton v. Seven Falls Co.*, 515 U.S. 277, 286, 115 S.Ct. 2137, 132 L.Ed.2d 214 (1995). The Act "provides that a court '*may* declare the rights and other legal relations of any interested party,' 28 U.S.C. s. 2201(a), not that it *must* do so." *MedImmune*, 127 S.Ct. at 776 (emphasis in *MedImmune*). "When all is said and done ... 'the propriety of declaratory relief in a particular case will depend upon a circumspect sense of its fitness informed by the teachings and experience concerning the functions and extent of federal judicial power.' " *Wilton*, 515 U.S. at 287, 115 S.Ct. 2137 (quoting *Pub. Serv. Comm'n of Utah v. Wycoff Co.*, 344 U.S. 237, 243, 73 S.Ct. 236, 97 L.Ed. 291 (1952)). Considering the totality of the circumstances, the court accepts subject-matter jurisdiction over the case.

IV. PRINCIPLES OF CLAIM CONSTRUCTION

A patent is a legal document that describes the exact scope of an invention to "secure to [the patentee] all to which he is entitled, [and] to apprise the public of what is still open to them." *Markman v. Westview*

Instruments, Inc., 517 U.S. 370, 373, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996) (citations omitted). By statute, a patent consists of two different elements: one or more "claims," which "particularly poin[t] out and distinctly clai[m] the subject matter which the applicant regards as his invention," and the "specification," which describes the invention "in such full, clear, concise and exact terms as to enable any person skilled in the art ... to make and use the same." *Id.* (citing 35 U.S.C. s. 112). "It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.' " *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed.Cir.2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed.Cir.2004)). The goal of claim construction is to give proper meaning and scope to claim language. *Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed.Cir.1997).

There is "no magic formula or catechism for conducting claim construction." *Phillips*, 415 F.3d at 1324. However, the Federal Circuit Court of Appeals has developed the following general principles:

A. Claims

Claim construction always starts with the language of the claim itself. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996); *see also* *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344 (Fed.Cir.1998) ("The actual words of the claim are the controlling focus.") (citing *Thermalloy, Inc. v. Aavid Eng'g, Inc.*, 121 F.3d 691, 693 (Fed.Cir.1997)); *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed.Cir.1998) (stating that claim construction "begins and ends in all cases with the actual words of the claim"); *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed.Cir.1985) ("[I]t is the *claims* that measure the invention.") (emphasis in original). "[T]he words of a claim 'are generally given their ordinary and customary meaning.' " *Phillips*, 415 F.3d at 1312 (quoting *Vitronics*, 90 F.3d at 1582). The ordinary rules of grammar and syntax also apply. *In re Hyatt*, 708 F.2d 712, 714 (Fed.Cir.1983).

[3] [4] "[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 (citation omitted). The perspective of a person of ordinary skill in the art is "based on the well-settled understanding that inventors are typically persons skilled in the field of the invention and that patents are addressed to be read by others of skill in the pertinent art." *Id.* (citing, in part, *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1119 (Fed.Cir.2002)). In certain cases, however, the patentee may unequivocally impart a novel meaning to claim terms. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed.Cir.2003) (citations omitted). "It is a well-established axiom in patent law that a patentee is free to be his or her own lexicographer and thus may use terms in a manner contrary to or inconsistent with one or more of their ordinary meanings." *Hormone Research Found., Inc. v. Genentech, Inc.*, 904 F.2d 1558, 1563 (Fed.Cir.1990). Therefore, "it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning." *Vitronics*, 90 F.3d at 1582.

B. Specification

The claims "must be read in view of the specification, of which they are a part." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The specification is "the primary basis for construing the claims." *Phillips*, 415 F.3d at 1315 (quoting *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed.Cir.1985)). "The close kinship between the [specification] and the claims is enforced by the statutory requirement that the specification describe the claimed invention in 'full, clear, concise, and exact terms.' " *Id.* at 1316 (quoting 35 U.S.C. s. 112). The Federal Circuit Court of Appeals recently summarized:

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full

understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Id. (quoting *Renishaw*, 158 F.3d at 1250).

[5] If there is a dispute about the meaning of a claim term, the specification presents "the single best guide to the meaning of the disputed term." *Vitronics*, 90 F.3d at 1582. "[T]he purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so." *Phillips*, 415 F.3d at 1323. It is well-settled, however, that courts should not ordinarily read a limitation into a claim from the specification. As the Federal Circuit makes clear:

[The Federal Circuit] has consistently adhered to the proposition that courts cannot alter what the patentee has chosen to claim as his invention, that limitations appearing in the specification will not be read into claims, and that interpreting what is *meant* by a word *in* a claim is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.

Laitram Corp. v. NEC Corp., 163 F.3d 1342, 1348 (Fed.Cir.1998) (citations omitted, emphasis in original); *accord* *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed.Cir.2000) ("[A]lthough the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.") (quoting *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed.Cir.1994)). To avoid pitfalls, the court must remain focused "on understanding how a person of ordinary skill in the art would understand the claim terms." *Phillips*, 415 F.3d at 1323.

C. Prosecution History

The court should also consider the patent's prosecution history, if it is in evidence. *Phillips*, 415 F.3d at 1317. The prosecution history consists of the record of the patent before the United States Patent and Trademark Office ("PTO"). Id. The prosecution history includes the prior art cited during the examination of the patent. Id.

[6] Although the prosecution history may assist in claim interpretation, as a general rule it may not "enlarge, diminish or vary the limitations in the claims." *Markman*, 52 F.3d at 980 (internal quotations omitted). Moreover, the prosecution history "often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Phillips*, 415 F.3d at 1317.

Nonetheless, the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be. *Vitronics*, 90 F.3d at 1582-83; *see also* *Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed.Cir.2005) ("The purpose of consulting the prosecution history in construing a claim is to 'exclude any interpretation that was disclaimed during prosecution.'"), quoting *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1580 (Fed.Cir.1988); *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed.Cir.1995).

Id.

D. Extrinsic Evidence

[7] The claims, the specification and the patent's prosecution history comprise the so-called "intrinsic" evidence of the meaning of the claim terms. *Vitronics*, 90 F.3d at 1582. The intrinsic evidence is considered

the most important evidence for construing a patent. Id. Other evidence that may be considered in construing a patent is so-called "extrinsic evidence," which is "evidence [that] is external to the patent and file history, such as expert testimony, inventor testimony, dictionaries, and technical treatises and articles." Id. at 1584. For example, the court may

consult dictionaries and technical treatises "at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents."

Phillips, 415 F.3d at 1322-23 (quoting Vitronics, 90 F.3d at 1584 n. 6).

The Federal Circuit Court of Appeals has repeatedly cautioned district courts that, "while extrinsic evidence 'can shed useful light on the relevant art,' ... it is 'less significant than the intrinsic record in determining the legally operative meaning of claim language.'" Phillips, 415 F.3d at 1317 (quoting C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 862 (Fed.Cir.2004)). Extrinsic evidence "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." Id. at 1319. As the Federal Circuit Court of Appeals articulated in Vitronics:

[I]n most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.... The claims, specification and [prosecution] history, rather than extrinsic evidence, constitute the public record of the patentee's claim, a record on which the public is entitled to rely. In other words, competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention. Allowing the public record to be altered or changed by extrinsic evidence introduced at trial, such as expert testimony, would make this right meaningless.

90 F.3d at 1583 (citations omitted); *see also* Georgia-Pacific Corp. v. U.S. Gypsum Co., 195 F.3d 1322, 1332 (Fed.Cir.1999) ("[W]hen intrinsic evidence is unambiguous, it is improper for the court to rely on extrinsic evidence to contradict the meaning of the claims.") (citation omitted).

The court has the discretion to admit extrinsic evidence. Phillips, 415 F.3d at 1319. District courts are not "barred from considering any particular sources or required to analyze sources in any specific sequence, as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence." Id. at 1324 (citations omitted). In exercising its discretion, however, the court should "keep in mind the flaws inherent in each type of evidence and assess that evidence accordingly." Id. at 1319.

E. Means-Plus-Function Construction

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the 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, para. 6. This statute "allows patent applicants to claim an element of a combination functionally, without reciting structures for performing those functions." *Envirco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1364 (Fed.Cir.2000). "Limitations contemplated by s. 112, para. 6, often referred to as means-plus-function or step-plus-function limitations, recite a specified function to be performed rather than the structure, material, or acts for performing that function." *IMS Tech., Inc. v. Haas Automation, Inc.*,

206 F.3d 1422, 1429-30 (Fed.Cir.2000). In other words, "a patentee may define the structure for performing a particular function generically through the use of a means expression, provided that it discloses specific structure corresponding to that means in the patent specification." *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1360 (Fed.Cir.2000) (citations omitted). Where a patent claim includes a means-plus-function element, the construction of the element is "limited to the structure corresponding to the claimed function as 'described in the specification and equivalents thereof.'" *Enviro Corp.*, 209 F.3d at 1365 (quoting 35 U.S.C. s. 112, para. 6); *see also* *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1380-82 (Fed.Cir.1999) (holding the structure supporting a means-plus-function limitation must be disclosed in the specification).

[10] [11] The use of the word "means" in a claim gives rise to a presumption that s. 112, para. 6 applies. *Personalized Media Commc'ns, LLC v. ITC*, 161 F.3d 696, 703-04 (Fed.Cir.1998) (citing *York Prods., Inc. v. Cent. Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1574 (Fed.Cir.1996)). Conversely, failure to use the term "means" creates a presumption that s. 112, para. 6 does not apply. *Id.* (citing *Mas-Hamilton Group v. LaGard, Inc.*, 156 F.3d 1206, 1213 (Fed.Cir.1998)). "These presumptions can be rebutted if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant." *Id.* at 704 (citing *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed.Cir.1996)). "In deciding whether either presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of s. 112, para. 6." *Id.* (citing *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427-28 (Fed.Cir.1997)).

[12] Once a court has determined that a claim limitation is written in means-plus-function format, construction of the means-plus-function limitation proceeds as follows:

[First,] the "court must identify the function of the limitation." *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1375 (Fed.Cir.2003) (citing *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed.Cir.1999)). Next, the court "ascertains the corresponding structure in the written description that is *necessary to perform that function.*" *Id.* (citing *Micro Chem.*, 194 F.3d at 1258) (emphasis added); *accord* *Omega Eng'g. Inc. v. Raytek Corp.*, 334 F.3d 1314, 1321 (Fed.Cir.2003) ("[T]he structure must be necessary to perform the claimed function."). Lastly, "[s]tructure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Altiris*, 318 F.3d at 1375 (quoting *B. Braun Med. v. Abbott Labs.*, 124 F.3d 1419 (Fed.Cir.1997)).

Kinzenbaw v. Case LLC, 179 Fed.Appx. 20, 24 (Fed.Cir.2006) (emphasis in original), *aff'g* 318 F.Supp.2d 778 (N.D.Iowa 2004); *accord* *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1333-34 (Fed.Cir.2004).

V. CONSTRUCTION OF THE '389 PATENT

The parties ask the court to construe clauses in claims 1, 4, 5 and 7 of the '389 Patent.

A. Claim 1

Claim 1 of the '389 Patent reads as follows:

1. A combined dump truck and spreader apparatus for selectively dumping and spreading materials, said apparatus comprising: a truck chassis; a dump body for receiving and dispensing the materials, said body having, a first and a second end and a first and a second side wall, said body being pivotally secured to said chassis about a pivotal axis; hoist means extending between said body and said chassis for selectively pivoting said body about said pivotal axis; a tailgate pivotally secured to said first end of said body about a

further pivotal axis for selectively permitting dumping of the materials therethrough when said body is pivoted about said pivotal axis; endless conveyor means trained over drive means, said *conveyor means being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof for conveying the materials along said body*; *spreader means cooperating with said conveyor means for spreading the materials*; said tailgate defining an opening which co-operates with said conveyor means for permitting the flow therethrough of the materials, the arrangement being such that selective spreading and dumping of the materials from said opening is permitted; and *said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-circular cross sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means along the entire length of said conveyor means*.

'389 Patent, col.7, ll.34-67 (underlining added). The parties urge the court to adopt different constructions of the above-underlined clauses in claim 1. The court addresses each clause, in turn.

1. "being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof"

The parties' first dispute focuses upon the clause "being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof." At the Hearing, the parties agreed that the court should construe "at a bottom of said walls" as "the lowest part" and "within said body" as "inside the dump body." *See, e.g., TI Group Auto. Sys. (N. Am.), Inc., 375 F.3d 1126, 1135-36 (equating "within" with "inside").*FN11

FN11. Although HECO insists that the parties' agreed-upon construction of "within said body" renders the patent indefinite in light of the drawings in the patent, the court need not rule on validity now. *See Phillips, 415 F.3d at 1327* ("[W]e have certainly not endorsed a regime in which validity analysis is a regular component of claim construction."); *see also Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 911 (Fed.Cir.2004)* ("[U]nless the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous, the axiom regarding the construction to preserve the validity of the claim does not apply.").

The parties offer competing constructions of the clause "extending between said first and second ends thereof." HECO construes the clause as "the conveyor ... is located entirely within the end walls, *i.e.*, no part of the conveyor extends beyond the end walls of the dump body." JCCC at 4. Cives and Monroe do not believe the clause needs construing. Alternatively, they construe the clause as "the conveyor extends from the front wall to the back wall." *Id.*

[13] The court construes "extending between said first and second ends thereof" as "extends from the front wall to the back wall." HECO's proposed construction is too restrictive. Nothing in the clause requires that the conveyor be located *entirely* within the first and second ends of the dump body. In common usage, "extending between" is not necessarily used restrictively. For example, Interstate 80 "extends between" Iowa City and Chicago. This does not necessarily mean that Interstate 80 is entirely located between Iowa City and Chicago. Indeed, Interstate 80 stretches from coast to coast.

The specification makes clear that a person of ordinary skill in the art at the time of the invention would not necessarily construe "extends between" restrictively. For example, the specification states:

The hoist means **32** includes hydraulic cylinder means **90** shown in **FIG. 2** which extends between the chassis **14** and the dump body **16** with the hydraulic cylinder means **90** being disposed preferably forwardly relative to the dump body **16** so that the conveyor means **34** extends through the second end **20** of the dump

and extending from the front wall to the back wall."

2. "spreader means cooperating with said conveyor means for spreading the materials"

The parties dispute the construction of the clause "spreader means cooperating with said conveyor means for spreading the materials." The parties agree that such clause is in the means-plus-function format of 35 U.S.C. s. 112, para. 6 and, therefore, must be construed to cover the structure disclosed in the patent specification and its equivalents. They further agree that the function of the clause is "spreading the materials." The parties disagree about what structure the patent discloses to perform such function. This is a question of claim construction for the court. *See* Atmel, 198 F.3d at 1379 ("[A] court's determination of the structure that corresponds to a particular means-plus function limitation is indeed a matter of claim construction") (citing Chiuminatta Concrete Concepts, Inc., 145 F.3d 1303, 1308 (Fed.Cir.1998)).

HECO contends that the patent discloses "[a] single auger-type dispenser with spinners for spreading the materials." JCCC at 5. Cives and Monroe maintain that the patent discloses "a spinner." *Id.*

[14] The court holds that the patent discloses "a single auger-type dispenser with spinners for spreading the materials." In arriving at this conclusion, the court applies the three-part test set forth in *Kinzenbaw*.

First, the court identifies the function. *Kinzenbaw*, 179 Fed.Appx. at 24. As indicated, the parties agree that the function is "spreading the materials."

Second, the court determines the corresponding structure in the written description that is necessary to perform the function. *Id.* The written description of the '389 patent states that "a single type auger dispenser **152** is used at the rear of the truck with spinners **154** and **155** under the tailgate **28**...." '389 Patent, col.7, ll.1-3. Figures 5 and 6 are instructive:

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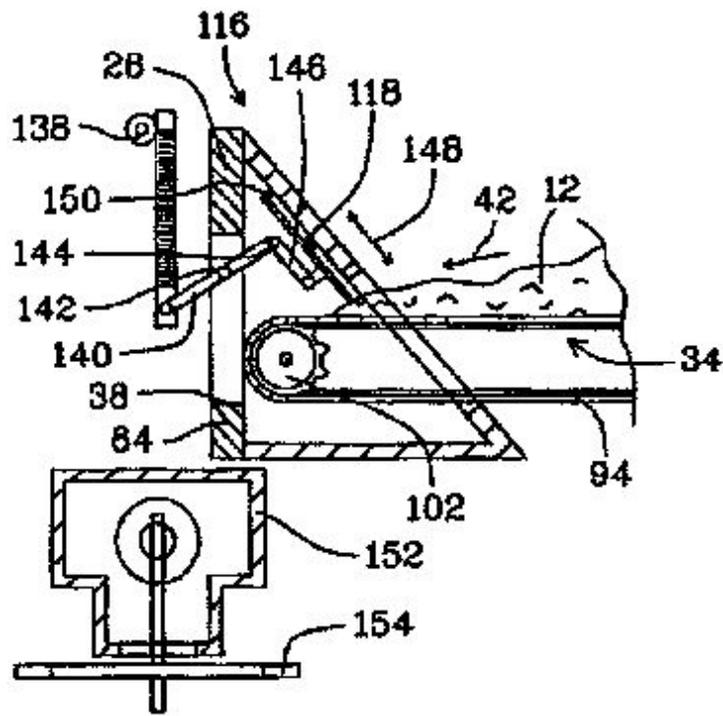


Fig. 5

Fig. 5

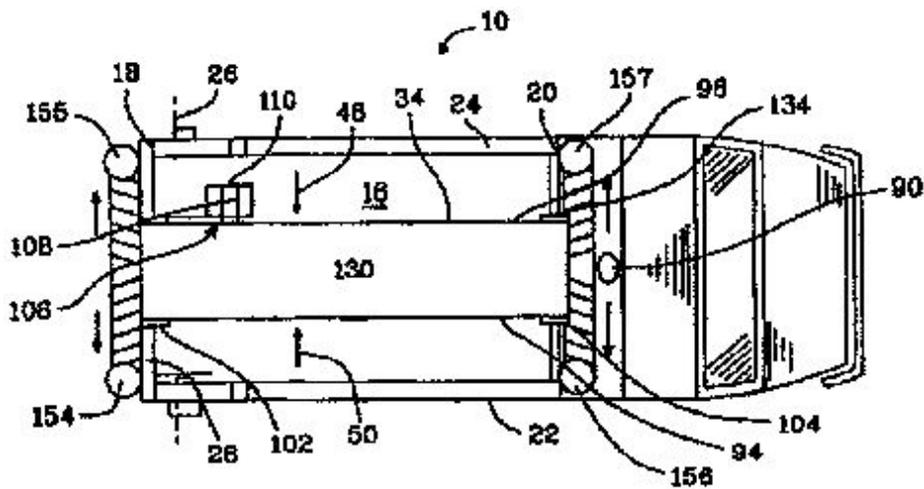


Fig. 6

Fig. 6

Id. figs. 5-6. The specification makes clear that an auger-type dispenser and spinners are necessary to spread the materials. But for the auger-type dispenser and the spinners, the dump body is unable to spread the

materials. The patent does not disclose a spinner that can spread materials without an auger. As the figures confirm, the auger-type dispenser travels the width of the truck and delivers material from the conveyor means to the spinners, which are located on each end. In sum, both the auger-type dispenser and the spinners are necessary to spread the materials.

Third, the court must check and ensure that the structure is truly "corresponding," that is, the court must ensure that the specification clearly links or associates the auger-type dispenser and the spinners to the function of spreading the materials. *Kinzenbaw*, 179 Fed.Appx. at 24. To show that the auger-type dispenser is not corresponding, *Cives and Monroe* seize on the fact that, a mere two paragraphs after the its discussion of Figure 5 and Figure 6, the specification omits mention of the auger-type dispenser. The specification states:

Normally, the materials are fed through the opening **38** so that spreading by spinners **154** and **155** is accomplished. However, if traction difficulties are encountered on an incline, conveyor means **34** is reversed so that sand and salt are spread through aperture **134** ahead of the rear tires towards spinners **156** and **157**.

'389 patent, col.7, ll.11-17. Although this passage does not mention an auger-type dispenser, such passage cannot be wholly divorced from its context. *See Phillips*, 415 F.3d at 1314-15, & 1321-22 (indicating that provisions in the specification must be read in context). In context, the specification clearly links the auger-type dispenser and the spinners to the function of spreading materials. The patent does not disclose any means for "spreading by spinners" without an auger-type dispenser.

Accordingly, the court holds that the '389 patent discloses "[a] single auger-type dispenser with spinners for spreading the materials."

3. "said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-circular cross sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means"

The next clause of claim 1 that the parties ask the court to construe is:

said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-circular cross sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means

'389 patent, col.7, ll.61-67. HECO contends that this clause should be construed as follows:

This claim element requires that the side walls are curved, and that they curve downwardly and inwardly toward the center of the dump body. The dump body cross-section, viewed from either end, is in the shape of a semi-circle (*i.e.*, one half of a geometric shape having every point equidistant from a fixed center). The side walls cannot have flat or straight portions that are not inclined downwardly and inwardly so as to not approximate a part of a circle, or not form any curve that is not downward and inward. Thus, as one travels inward along each side wall, each point along the curved wall becomes closer to the conveyor means and is lower (closer to the ground) than the points that are farther away from the conveyor means.

"Deflecting" in its ordinary meaning, means the sidewalls turn the material from the vertical path caused by gravity.

JCCC at 6-7. In contrast, *Cives and Monroe* construe the clause in this way:

This claim element requires that the side walls are curved, and that they curve downwardly and inwardly

toward the conveyor of the dump body. The requirement that the "dump body defines a substantially semi-circular cross-sectional configuration" means that the dump body, viewed from either end, is approximately in the shape of a semi-circle.

"Substantially" is used to mean "approximately." Thus, the cross section of the dump body must be approximately in the shape of a semi-circle.

"Deflect," in its ordinary meaning, means to change course.

Id.

[15] The court construes the clause in accordance with the proposal that Cives and Monroe offer. The plain and ordinary language of the claim requires that the side walls are curved, and that they curve downwardly and inwardly toward the conveyor of the dump body. "[S]ubstantially" means "approximately." *See, e.g.,* Epcor Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1030 (Fed.Cir.2002) (equating "substantially" with "to a considerable degree"); LNP Eng'g Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354 (Fed.Cir.2001) ("substantially" means "to a considerable degree" or "largely but not wholly that which is specified" (citing, in part, Webster's Ninth New Collegiate Dictionary 1176 (9th ed.1983))); Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1369 (Fed.Cir.2001) ("substantially uniform" means "largely, but not wholly in the same form"). Therefore, the requirement that the "dump body defines a substantially semi-circular cross-sectional configuration" must be construed as "the dump body, viewed from either end, is approximately in the shape of a semicircle."

The court rejects HECO's proposed construction, insofar as it states that the side walls "cannot have flat or straight portions that are not inclined downwardly and inwardly so as to not approximate a part of a circle, or not form any curve that is not downward and inward." The claims themselves do not contain any such restrictions. The only requirement is that the side walls, when viewed cross-sectionally, *approximate* a semicircle. Conceivably, such walls could approximate a semi-circle yet consist of one or more straight, non-curved portions.

Indeed, Figure 4 of the '389 Patent depicts a straight, non-curved portion at the top of the bin walls yet purports to be substantially semi-circular:

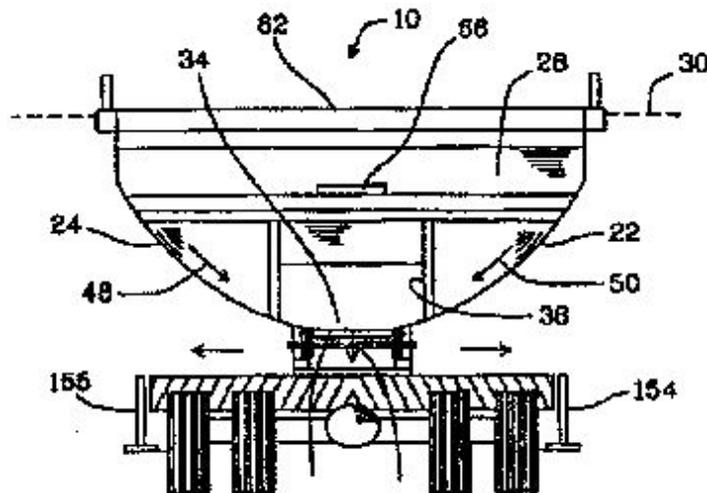


Fig. 4

Fig. 4

'389 Patent, fig.4. Although HECO baldly asserts that such vertical portion is not part of the side wall, it offers the court no reason for such assertion. Again, the court declines to interpret the claim so restrictively as to exclude a preferred embodiment. *See, e.g.*, MBO Labs., Inc., 474 F.3d 1323, 1332-33 (quoting On-Line Techs., Inc., 386 F.3d at 1138).FN12

FN12. HECO also argues that, under such construction, the patent is indefinite. Again, the court need not consider this argument at this time.

The court agrees that "deflect" should be construed as "to change course." HECO's construction, namely, that "[d]eflecting" means "the sidewalls turn the material from the vertical path caused by gravity" is only partially correct. As Cives and Monroe point out, conceivably material could bounce around the dump body and move in a horizontal direction yet be "deflected" toward the conveyor means.

Accordingly, the court adopts the construction proposed by Cives and Monroe, as set forth above. Because Cives and Monroe do not resist HECO's construction of a semicircle, however, the court shall also adopt such construction. A semi-circle is "one half of a geometric shape having every point equidistant from a fixed center."

4. "*along the entire length of said conveyor means*"

Although the parties list "along the entire length of said conveyor means" as a clause requiring construction in the JCCC, the parties do not offer the court competing constructions of such clause. Accordingly, the court shall not directly construe it. The parties' arguments about the clause, however, merit some discussion.

HECO contends that the clause lends further support for its construction of "extending between said first and second ends thereof" as "the conveyor ... is located entirely within the end walls." HECO argues that the plain language of the clause requires the walls of the dump body to evenly deflect all of the materials inside the dump body towards the conveyor means *along the entire length of the conveyor*. Therefore, HECO infers that the conveyor means must be entirely within the dump body. HECO reasons that, if the conveyor means is not entirely within the dump body, it would be impossible for all of the materials to be guided and evenly deflected towards any portion of the conveyor means that sticks out of the dump body. At the Hearing, counsel for Cives and Monroe argued FN13 that HECO's construction requires the court to make a factual determination that the walls could not deflect and evenly guide materials onto portions of the conveyor means-even very small portions-that might extend outside of the dump body.

FN13. The court notes that Cives and Monroe did not respond to HECO's argument in their responsive brief or in the JCCC.

The court adopts the construction offered by Cives and Monroe. The court cannot conclude that the walls cannot deflect and evenly guide materials onto portions of the conveyor means that might extend outside of the dump body. Indeed, HECO has not presented the court with any evidence that such deflection and even guidance is, in fact, impossible. Such factual matters are better left for later proceedings; at the present time, the question is what the claims mean, not whether an embodiment of the claimed invention works. *See, e.g.*, Pfizer, Inc. v. Teva Pharms., USA, Inc., 429 F.3d 1364, 1376 (Fed.Cir.2005) (similar) (citing Phillips, 415 F.3d at 1327).

B. Claim 4

The parties dispute one clause in Claim 4. In full, Claim 4 states:

4. A combined dump truck and spreader apparatus as set forth in claim **1** wherein *said pivotal axis extends normal to said side walls.*

(underline added). HECO does not propose a construction of this claim, but rather contends it is invalid. Cives and Monroe construe the underlined clause as "[t]he pivotal axis extends perpendicular to said side walls."

[16] Again, the court need not decide validity at this time. *See, e.g., Phillips*, 415 F.3d at 1327 ("[W]e have certainly not endorsed a regime in which validity analysis is a regular component of claim construction."). Accordingly, the court construes "[t]he pivotal axis extends perpendicular to said side walls." For present purposes, the words "normal" and "perpendicular" are interchangeable. *See, e.g., Tandon Corp. v. U.S. Int'l Trade Comm'n*, 831 F.2d 1017, 1020 n. 3 (Fed.Cir.1987) (equating same terms); *Bolt, Beranek & Newman, Inc. v. McDonnell Douglas Corp.*, 187 U.S.P.Q. 142, 521 F.2d 338, 342 (8th Cir.1975) (similar in patent case).

C. Claim 5 and Claim 7

HECO asks the court to hold that claim 5 and claim 7 are invalid. Cives and Monroe deny that the claims are invalid. Because the court need not decide validity at this time, *see Phillips*, 415 F.3d at 1327, there is nothing for the court to construe.

VI. CONSTRUCTION OF THE '786 PATENT

The invention in the '786 Patent is a continuation-in-part of the application that eventually led to the '389 Patent. '786 Patent, col. 1, ll.6-8.FN14 Moreover, the ' 786 Patent expressly incorporates by reference the entirety of the application that eventually led to the ' 389 Patent. It states: "[a]ll of the subject matter of U.S. Ser. No. 08/717,511 [(now the '389 Patent)] is incorporated herein by reference." *Id.* at ll.8-9. There are significant similarities between the ' 389 Patent and the ' 786 Patent.

FN14. A continuation-in-part application is an application that has some subject-matter in common with the parent patent but also has new subject matter. Herbert F. Schwartz, *Patent Law & Practice* 26 (5th ed.2006) (emphasis omitted).

Only claims 1 and 3 of the '786 Patent are at issue. The parties agree that many of the clauses in claims 1 and 3 in the '786 Patent should be given the same construction as those in claim 1 of the '389 Patent.

A. Claim 1

Claim 1 of the '786 patent reads as follows:

1. A combined dump truck and spreader apparatus for selectively dumping and spreading materials, said apparatus comprising: a truck chassis; a dump body for receiving and dispensing the materials, said body having a first and a second end and a first and a second side wall, said body being pivotally secured to said chassis about a pivotal axis; hoist means extending between said body and said chassis for selectively pivoting said body about said pivotal axis; a tailgate secured to said first end of said body for selectively permitting dumping of the materials therethrough when said body is pivoted about said pivotal axis; drive

means; *endless conveyor means trained over said drive means, said conveyor means being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof for conveying the materials along said body*; spreader means cooperating with said conveyor means for spreading the materials; said tailgate defining an opening which co-operates with said conveyor means for permitting the flow therethrough of the materials, the arrangement being such that selective spreading and dumping of the materials from said opening is permitted; and *said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-elliptical cross sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means along the entire length of said conveyor means*.

'786 Patent, col. 7, ll. 46-66 and col. 8, ll. 1-17 (underlining added). The court construes the above-underlined portions of claim 1, in turn.

1. "endless conveyor means trained over said drive means, said conveyor means being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof for conveying the materials along said body"

The parties agree that the clause "endless conveyor means trained over said drive means, said conveyor means being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof for conveying the materials along said body" is to be interpreted as a means-plus-function clause under 35 U.S.C. s. 112, para. 6. Furthermore, the parties agree that the function of the clause is to "convey materials along the body." The question is what structure corresponds to this limitation. Again, this issue is a matter of claim construction for the court. *See* Atmel, 198 F.3d at 1379 ("[A] court's determination of the structure that corresponds to a particular means-plus function limitation is indeed a matter of claim construction") (citing Chiuminatta Concrete, 145 F.3d at 1308).

a. "endless conveyor means"

HECO contends that "endless conveyor means" should be construed to cover only an auger structure. HECO points out that the only structure disclosed in the '786 Patent for conveying materials along the dump body is an auger. Figures 1-5 of the patent all show an auger structure. Figures 1 and 3 are instructive:

Fig. 1.

Fig. 1.

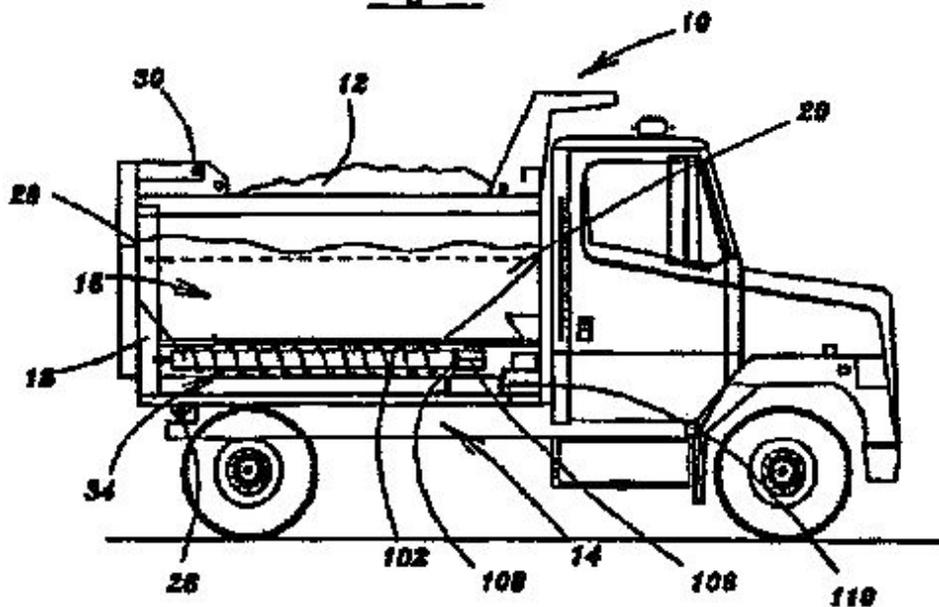
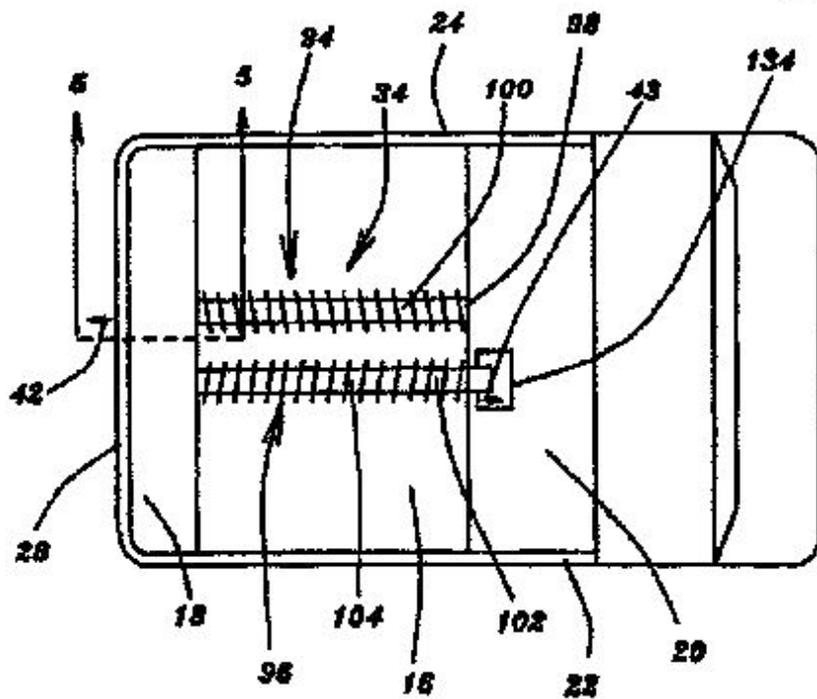


Fig. 1.

Fig. 3



Cives and Monroe maintain that "conveyor means" should be construed to cover an auger structure *and* a slat-and-sprocket conveyor structure. Cives and Monroe point out that the '786 Patent expressly incorporates by reference "[a]ll subject matter" in the '389 Patent application. Because it is not disputed that the '389 Patent discloses a slat-and-sprocket conveyor structure, Cives and Monroe conclude that the '786 Patent discloses a slat-and-sprocket conveyor structure. Cives and Monroe also opine that Figure 6 of the '789 Patent shows "the same type of conveyor means that is disclosed in the '389 patent." Figure 6 follows:

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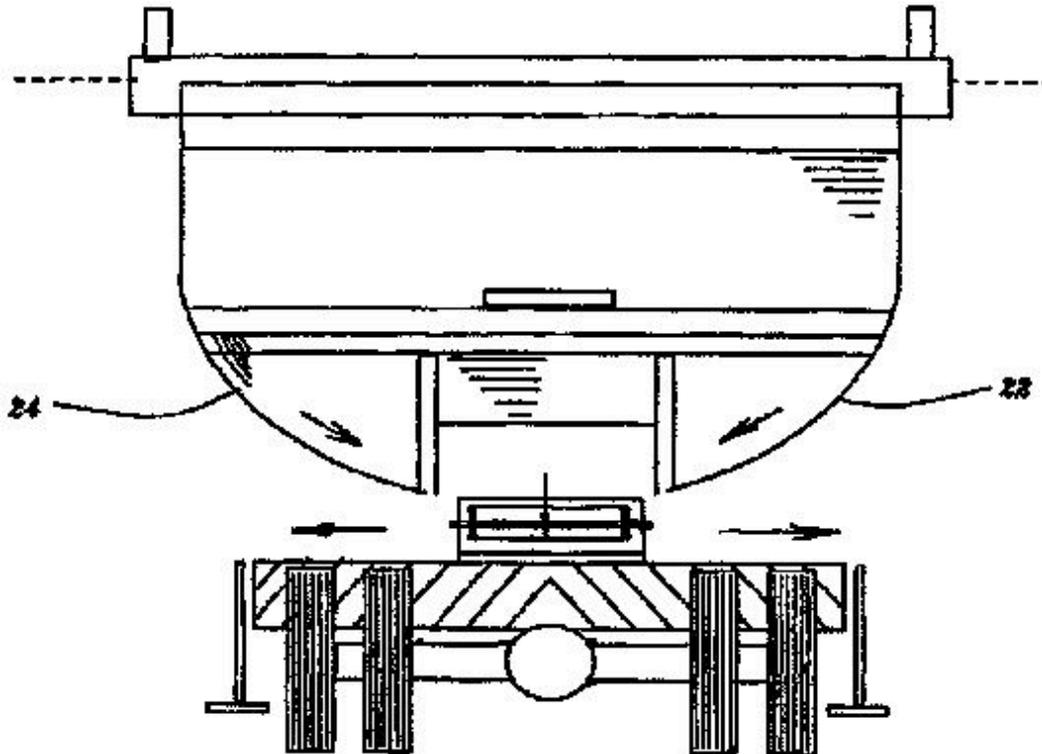


Fig. 6.

Fig. 6.

'786 Patent, fig.6.FN15

FN15. Cives and Monroe do not argue that slat-and-sprocket conveyors and augers are equivalent structures for purposes of 35 U.S.C. s. 112, para. 6.

[17] The court holds that "endless conveyor means" should be construed to cover only an auger structure. First, the court finds that the only structure disclosed in the '786 Patent for conveying materials along the dump body is an auger structure. Figures 1-5 show an auger structure, not a slat-and-sprocket conveyor.

Although Figure 6 does not show an auger structure, it does not fully disclose a slat-and-sprocket conveyor either. Further, the specification makes clear that the patentee intended Figure 6 to present an alternative embodiment of the walls, not an alternate structure for the conveyor means. The patent describes Figure 6 as "a similar view to that shown in FIG. 4 but shows another embodiment of the present invention in which the side walls 22a and 24a curve downwardly and inwardly towards the conveyor means...." '789 Patent, col. 7, ll.14-17. Indeed, Figure 4 lacks the vertical portion of the wall that is found in Figure 6:

*1102

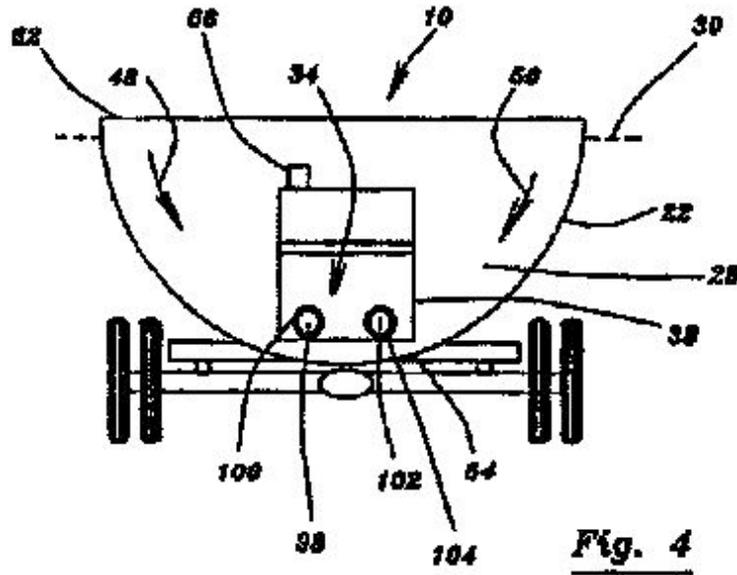


Fig. 4

'786 patent, fig.4.

This foregoing construction of "endless conveyor means" in the '786 Patent is consistent with the extrinsic evidence. Mr. Richard L. Feller, the inventor of the '789 Patent, admitted in a deposition that the '789 Patent does not show a slat-and-sprocket conveyor. Pl.'s Ex. I, p. 140, *passim*. He also testified that the difference between the '786 Patent and the '389 Patent is that the '786 Patent "has an auger in place of a conveyor." Id., p. 111, ll.18-20.

[18] The court holds that the generic, catch-all language at the outset of the '786 patent, which purports to incorporate the entire '389 Patent by reference, is insufficient to disclose a slat-and-sprocket conveyor structure in the '786 Patent. The practice of incorporation by reference has a distinguished pedigree in patent law. *See In re Application of Hawkins*, 486 F.2d 569, 573-74 (C.C.P.A.1973) (citing *Gen. Elec. Co. v. Brenner*, 407 F.2d 1258 (D.C.Cir.1968)). For decades, the PTO has permitted patentees to incorporate "essential material" by reference to another patent or patent application. *See id.* (citing MPEP s. 608.01(p)).FN16 The Federal Circuit Court of Appeals has specifically held, however, that "material incorporated by reference cannot provide the corresponding structure necessary to satisfy the definiteness requirement for a means-plus-function clause." *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1301 (Fed.Cir.2005) (citing *Atmel*, 198 F.3d at 1381). Although definiteness *per se* is not presently before the court, the fighting issue is the same: "whether subject matter absent from the

specification can be incorporated by reference to satisfy the requirement that the corresponding structure be adequately described in the specification." *See* *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1382 (Fed.Cir.2001) (characterizing the issue in *Atmel* as "whether subject matter absent from the specification can be incorporated by reference to satisfy the requirement that corresponding structure be adequately described in the specification").

FN16. Since 2004, 37 C.F.R. s. 1.57 (2004) has expressly permitted a patentee to incorporate a structure by reference for 35 U.S.C. s. 112, para. 6. The regulation states:

(c) "Essential material" may be incorporated by reference, but only by way of an incorporation by reference to a U.S. patent or U.S. patent application publication.... "Essential material" is material that is necessary to:

(3) Describe the structure, material, or acts that correspond to a claimed means or step for performing a specified function as required by the sixth paragraph of 35 U.S.C. [s.] 112.

37 C.F.R. s. 1.57. The regulation, however, cannot apply to the '786 Patent, because the '786 Patent was filed before the regulation was promulgated. There is no indication that the regulation was intended to apply retroactively. *See* *Changes to Support Implementation of the United States Patent and Trademark Office 21st Century Strategic Plan*, 2004 WL 2092623, at *56539, 5669 F.R. 56482, 56539 (Sept. 21, 2004).

Cives and Monroe contend that *Atmel* and its progeny are distinguishable, because in *Atmel* there was a total lack of structure in the patent absent incorporation; in the present case, Cives and Monroe only seek to provide an alternate structure. There is no reason to believe, however, that the same principle does not apply. There is nothing remarkable about alternative or multiple embodiments. *See* *TI Group*, 375 F.3d at 1137 (" 'When multiple embodiments in the specification correspond to the claimed function', proper application of s. 112, para. 6 reads the claim element to embrace each of those embodiments."). Incorporation by reference cannot provide the structure for the second embodiment and thus unduly extend the scope of the patent.

[19] Even if *Atmel* did not govern and it were permissible to incorporate by reference subject matter absent from the specification in a means-plus-function clause to satisfy the requirement that the corresponding structure be adequately described in the specification, the incorporation by reference in the '789 Patent is insufficient for such purpose. "To incorporate material by reference, the host document must identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents." *Advanced Display Sys. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed.Cir.2000). In other words, the host document must include "the specific teaching that is to be incorporated." R. Carl Moy, *Walker on Patents* s. 7:19 (4th ed.2006), at 7-65. Although slat-and-sprocket conveyors were well known in the prior art, nothing in the '789 Patent specifically directs the reader to such conveyors in the '389 Patent as an alternative structure "for convey[ing] materials along [the dump] body." In other words, the '789 Patent does not sufficiently show that the structure is truly corresponding, that is, the specification does not clearly link or associate the slat-and-sprocket conveyor to the function of conveying material along the dump body. *Kinzenbaw*, 179 Fed.Appx. at 24. In contrast, elsewhere in the specification the '789 Patent provides such specific direction to the person skilled in the art that reads it. *See, e.g., '789 Patent*, col.7, ll.34-38.

Accordingly, the court holds that "endless conveyor means" should be construed to cover only an auger structure.

b. "said conveyor means being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof for conveying the materials along said body"

The clause "said conveyor means being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof for conveying the materials along said body" is identical to the language found in claim 1 of the '389 Patent. Moreover, the '786 Patent contains a preferred embodiment that is similar to a preferred embodiment in the '389 Patent. The specification of the '786 Patent states:

The hoist means **32** includes hydraulic cylinder means **90** shown in **FIG. 2** which extends between the chassis **14** and the dump body **16** with the hydraulic cylinder means **90** being disposed preferably forwardly relative to the dump body **16** so that the conveyor means **34** extends through the second end **20** of the dump body **16** with sufficient clearance between the cylinder **90** and the auger means **34** to permit unimpeded hoisting of the dump body **16**.

'786 Patent, col. 6, ll. 10-17 (emphasis in original). Again, the court declines to interpret a claim so restrictively as to exclude a preferred embodiment. *See, e.g.*, MBO Labs., 474 F.3d at 1332-33 (stating that a claim interpretation that excludes the preferred embodiment "is rarely, if ever, correct" (quoting On-Line Techs., 386 F.3d at 1138)). In other words, in a preferred embodiment, the auger means extends *through* the second (front) end of the dump body. Accordingly the court construes this clause again as "being disposed at the lowest part and inside the dump body and extending from the front wall to the back wall."

2. "said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-elliptical cross-sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means"

The clause "said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-elliptical cross-sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means" is nearly identical to the same language found in claim 1 of the '389 Patent. The only difference is that the instant clause refers to "a substantially semi-elliptical cross-sectional configuration" and claim 1 of the '389 Patent refers to "a substantially semi-circular cross-sectional configuration." Accordingly, HECO and Cives and Monroe offer similar constructions to the constructions that the court has already discussed in Part V.A.3 of the instant Order. The only difference is that HECO urges the court to construe "semi-elliptical" as "one-half of a geometric shape where the sum of the distance of each point on the curve from two fixed points remains constant." JCCC at 12-13.

The court construes this claim consistently with its construction of the nearly identical clause in claim 1 of the '389 Patent. The court notes that Figure 6 of the '786 Patent, like Figure 4 of the '389 Patent, contains a straight, non-curved portion at the top of the bin walls. Accordingly, the court construes the instant clause as follows:

This claim element requires that the side walls are curved, and that they curve downwardly and inwardly toward the conveyor of the dump body. The requirement that the "dump body defines a substantially semi-elliptical cross-sectional configuration" means that the dump body, viewed from either end, is approximately in the shape of a semi-ellipse.

"Substantially" is used to mean "approximately." Thus, the cross section of the dump body must be approximately in the shape of a semi-ellipse.

"Deflect," in its ordinary meaning, means to change course.

Id. The court also agrees that some construction of "substantially semi-elliptical" is warranted. It means "approximately a shape of a semi-ellipse, *i.e.*, one half of a geometric shape where the sum of the distance

of each point of the curve from two points remains constant."

3. "along the entire length of said conveyor means"

As was the case with the '389 Patent, neither party asks the court to independently construe the clause "along the entire length of said conveyor means." Accordingly, the court shall not construe it. The court's same general remarks about the clause, which are set forth in Part V.A.4 of the instant Order, apply here with equal force.

B. Claim 3

Claim 3 of the '786 Patent reads as follows:

3. A combined dump truck and spreader apparatus for selectively dumping and spreading materials, said apparatus comprising: a truck chassis; a dump body for receiving and dispensing the materials, said body having a first and a second end and a first and a second side wall, said body being pivotally secured to said chassis about a pivotal axis; hoist means extending between said body and said chassis for selectively pivoting said body about said pivotal axis; a tailgate pivotally secured to said first end of said body about a further pivotal axis for selectively permitting dumping of the materials therethrough when said body is pivoted about said pivotal axis; endless conveyor means trained over drive means, said conveyor means *being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof* for conveying the materials along said body; *spreader means cooperating with said conveyor means for spreading the materials*; said tailgate defining an opening which co-operates with said conveyor means for permitting the flow therethrough of the materials, the arrangement being such that selective spreading and dumping of the materials from said opening is permitted; and *said side walls curving downwardly and inwardly towards said conveyor means for guiding and evenly deflecting all of the materials within said body towards said conveyor means along the entire length of said conveyor means.*

'786 Patent, col. 8, ll.55 -67, col. 9, ll. 1-11 and col. 10, ll. 1-11 (underlining supplied). The parties agree that "being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof" should be construed in the same fashion as the identical clause in claim 1 of the '786 Patent. They also agree that "spreader means cooperating with said conveyor means for spreading the materials" should be construed in the same fashion as the identical clause in claim 1 of the '389 Patent. Accordingly, the court adopts those constructions here.

The last clause in the '786 Patent that requires construction is "said side walls curving downwardly and inwardly towards said conveyor means for guiding and evenly deflecting all of the materials within said body towards said conveyor means along the entire length of said conveyor means." This clause is identical to the clause set forth in Parts V.A.3 and VI.A.2 of the instant Order, except that the instant clause omits the subclause "such that said dump body defines a ... cross-sectional configuration." Accordingly, the court holds, in a manner consistent with its prior discussion, that the instant clause "requires that the side walls are curved, and that they curve downwardly and inwardly toward the conveyor of the dump body." "Deflect," in its ordinary meaning, means "to change course."

VII. CONSTRUCTION OF THE '230 PATENT

Next, the parties ask the court to construe various portions of claims 1, 2, 3, 7 and 9 of the '230 Patent. The '230 Patent concludes with the following:

The embodiments of the invention in which an exclusive property are claimed are as follows:

1. A bin for containing material to be spread by a spreader vehicle having a floor-mounted conveyor

positioned within the bin to extract such material, wherein the bin walls are provided with:

(a) a curved portion that bends inwardly towards the conveyor, commencing from a first height that is above the level of the conveyor, and terminating at a second, lower height that is also above the level of the conveyor;

(b) a terminal region extending to the edge of the conveyor, such terminal region being upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.

2. A bin as in claim 1 wherein the *terminal portion* is elevated at an inclined angle of between 7 to 30 degrees.

3. A bin as in claim 2 wherein the *terminal portion* is elevated at an inclined angle of 14 to 17 degrees.

4. A bin as in claims 1, 2 or 3 wherein the curved portion of the bin has a circular radius of 24 to 48 inches.

5. A bin as in claim 4 wherein the curved portion has a circular radius of 35 to 40 inches.

6. A bin as in claim 5 wherein the curved portion terminates virtually tangentially with a vertical upper bin wall portion.

7. A bin as in claim 1, wherein the curved portion terminates at a *relatively flat terminal region* having a width of from one to 20 inches.

8. A bin as in claim 1, wherein the curved portion terminates at a relatively flat terminal region having a width of from 4 to 6 inches.

9. In a spreader vehicle having a bin with a conveyor disposed along the bottom portion of the bin, a *bin sidewall which is continuously curved from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall, the terminal boundary of the inner portion of the curved sidewall being inclined above the horizontal at an angle sufficient to induce sand contained therein to slide downwardly, in the presence of agitation arising from vehicle motion, into the conveyor.*

'230 Patent, col.4, ll.19-63 (underlining added). Figures 3, 4 and 5 are instructive to visualize the claims:

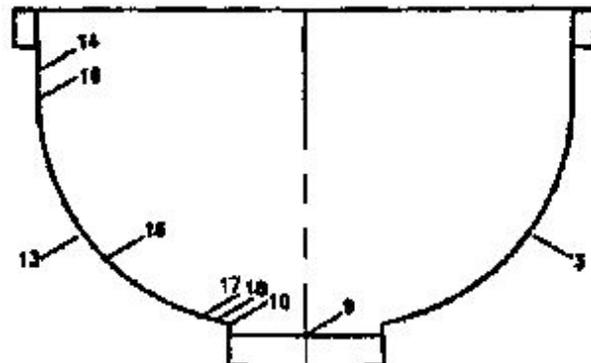


FIGURE 3

FIGURE 3

*1107

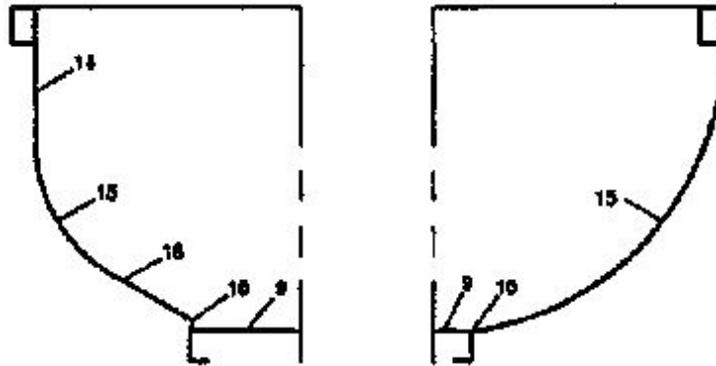


FIGURE 4

FIGURE 5

'230 Patent, figs.3-5. The specification discloses that, in these figures, **9** is a "conveyor platform," **10** is a "conveyor boundary," **13** is a "bin wall," **14** is an "upper vertical portion," **15** is a "curved portion" and **18** is a "terminal portion."

The court now discusses each of the disputed underlined clauses, in turn.

A. Claim 1

HECO proposes the following construction of the underlined portion of claim 1:

The "terminal portion" is an additional portion of each bin wall that is different from the curved portion and begins at the second, lower height where the curved portion terminates. The terminal region must be inclined to the point where the terminal region meets the curved portion is above the point where the terminal region meets the conveyor (with respect to the ground), and this upward inclination must be at least 7 degrees above horizontal.

JCCC at 19. Cives and Monroe do not believe that claim 1 requires construction. In the alternative, they propose the following construction:

Each "bin wall" has a terminal portion that extends to the conveyor. The terminal region is oriented at an upward angle away from the conveyor which enables material to slide to the conveyor by reason of irregular, rapid or violent action resulting from the movement of the vehicle.

Id.

The parties' proposed constructions and arguments to the court reveal two points of disagreement. First, Cives and Monroe object to the portion of HECO's construction that states that "the terminal region meets the curved portion." HECO construes claim 1 to require that the curved portion and terminal portion meet.

Cives and Monroe contend that "there is nothing in the claim that requires the terminal region to begin at the second lower height at which the curved portion terminates" and imply that the inventor claimed that one or more other portions could fit in between the curved and terminal portions. Second, HECO contends that claim 1 is invalid for indefiniteness, unless the court construes "at an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion" as requiring "at least 7 degrees above horizontal."

1. Other portions between the curved and terminal portions?

A critical starting point in determining whether claim 1 permits other portions between the terminal portion and the curved portion is the transitional phrase "provided with" at the outset of the claim. The question is whether "provided with" is an open- or closed-ended transitional phrase.

Certain transitional language has customary meaning in patent law. For example, the word "comprising" means including the elements that follow in the body but not excluding additional, unrecited elements. Claims that use "comprising" are referred to as open claims....

The transitional phrase "consisting of" yields a claim of more limited scope. "Consisting of" basically means including only the elements that follow ... and no more. Claims that use "consisting of" are referred to as closed claims....

Herbert F. Schwartz, *Patent Law & Practice* 149-50 (5th ed.2006) (footnotes omitted). Compare *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed.Cir.1997) (" 'Comprising' is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim."), with *Conoco, Inc. v. Energy & Env'tl. Int'l, L.C.*, 460 F.3d 1349, 1360 (Fed.Cir.2006) ("The phrase 'consisting of' signifies restriction and exclusion of unrecited steps or components.").FN17

FN17. The transitional phrase "consisting essentially of" occupies a middle ground between "consisting of" and "comprising." "By using the term 'consisting essentially of,' the drafter signals that the invention necessarily includes the listed ingredients and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention." *PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1354 (Fed.Cir.1998).

Unfortunately, in this case the drafter of the patent chose the curious transitional phrase "provided with." The parties do not cite, and the court cannot find, any cases construing this transitional phrase as either open-ended or close-ended. The Federal Circuit Court of Appeals has, however, recognized that "comprising" is synonymous with "including," "containing" or "characterized by." *Mars Inc. v. H.J. Heinz Co., L. P.*, 377 F.3d 1369, 1375-76 (Fed.Cir.2004); see also *Amgen v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1345 (equating "comprising" with "including"). At first blush, "provided with" strikes the court as similar to "including" or "containing." For example, a child's toy is "provided with" batteries when it includes or contains batteries. This does not mean, however, that the toy does not have other essential parts.

The structure of the claims also indicates that they should be construed as open-ended. Claim 6, a claim that is dependent on claim 1, claims "a bin as in claim 1, wherein the curved portion terminates virtually tangentially with a vertical upper bin wall portion." '230 Patent, col.4, ll.46-48. Ordinarily, an independent claim has a broader scope than a claim that depends from it. *Free Motion Fitness, Inc. v. Cybex Int'l, Inc.*, 423 F.3d 1343, 1351 (Fed.Cir.2005). Here, the specification makes clear that "a vertical upper bin wall portion" is not a further description or a delimitation of the curved portion or the terminal portion, but rather adds a new element. See '230 Patent, col. 2, ll. 18-31; see also *id.* col. 3, ll.10-32 (discussing Figure 3 and

remarking that "[u]pper vertical portions **14** of the sidewalls are optional: the bin sidewalls **13** may commence with inwardly curved portions **15**"). Because dependent claim 6 adds an additional element to claim 1, it stands to reason that claim 1 is open ended.

The court must consult the specification, however, to determine whether one skilled in the art would read claim 1 as claiming a possible additional portion *between* the terminal and curved portions. *See* Lampi Corp. v. Am. Power Prods., Inc., 228 F.3d 1365, 1376 (Fed.Cir.2000) (requiring the court to consult the specification to determine whether "having" was open-ended or close-ended). Here, the specification makes clear that, even if the phrase "provided with" construed to be an open-ended transitional phrase, the patent does not claim any additional portions between the terminal portion and the curved portion. In the specification, the patentee described the invention as follows:

Each of the sidewalls is provided with a curved configuration that bends inwardly towards the conveyor, commencing from a height that is above the height of the conveyor. The curvature of this surface terminates at a second, lower height that is, as well, above the height of the conveyor. *The bin surface then continues with a relatively flat, terminal region to the edge of the conveyor.* This preferably flat terminal region is upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause the material to be spread contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.

'230 Patent, col.1, l.67, col.2, ll.1-11 (emphasis added). The specification clearly indicates that the terminal portion and the curved portion are together, because the entire surface "continues" from one to the other. Indeed, none of the figures, preferred embodiments or anything else in the specification contradicts such construction of the claim.FN18

FN18. HECO also claims the prosecution history shows that there cannot be a flat portion in between the curved portion and the terminal portion. The prosecution history of the '230 Patent shows that the PTO initially denied claim 1, because it was anticipated by the '389 Patent. The PTO later reconsidered its decision and approved the '230 Patent, because it contained a terminal portion, whereas the '389 Patent did not. HECO posits that, because the inventor of the '230 Patent did not respond to the patent examiner and affirmatively state that the two patents were distinguishable on account of the possibility of putting an additional portion between the terminal portion and the curved portion, the prosecution history proves that no such additional portion is claimed. The court need not reach this argument.

[20] Accordingly, the court shall construe claim 1 to require that "the terminal region meets the curved portion," as HECO suggests.

2. "sufficient to cause"

HECO contends that claim 1 is invalid for indefiniteness, unless the court construes "an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion" as requiring "at least 7 degrees above horizontal." HECO asserts that the specification "teaches that inclination must be at least 7 degrees." Brief at 18 (citing '230 Patent, col.3, ll.21-28). Without any explanation, Cives and Monroe claim that the clause is clear and does not merit construction.

HECO has presented the court with insufficient reasons to construe the clause as requiring an inclination of at least 7 degrees. In support of its argument, HECO only cites to one preferred embodiment of the invention, in which the inventor stated that, under such embodiment, the angle should be "between 7 and 30 degrees, preferably substantially 16 degrees." Moreover, HECO does not explain or cite any legal authority

to show why the clause is indefinite absent such construction. Because of the lack of argument and authority cited, the court declines to construe the clause at this time.

3. Conclusion

The court construes claim 1 as follows:

a terminal region extending to the edge of the conveyor, such terminal region being upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion. The terminal region must be inclined to the point where the terminal region meets the curved portion is above the point where the terminal region meets the conveyor (with respect to the ground).

As should be clear, this is a hybrid of the parties' competing constructions.

B. Claims 2 and 3

HECO asks the court to hold that claims 2 and 3 are "indefinite," because there is no antecedent basis for the term "terminal portion" in claim 1. HECO points out that claim 1 uses the term "terminal region," not "terminal portion." Cives and Monroe maintain that the specification and the structure of the claims make clear that "terminal region" and "terminal portion" are used interchangeably throughout the patent.

This is a claim construction hearing, not an invalidity hearing. To the extent construction of "terminal portion" is required, however, the court agrees with Cives and Monroe that it is synonymous with "terminal region." The court recognizes that, "when an applicant uses different terms in a claim it is permissible to infer that he intended his choice of different terms to reflect a differentiation in the meaning of those terms." *Innova/Pure Water*, 381 F.3d at 1119. In this case, however, the patent uses the two different terms interchangeably. Considering the entire patent, the context does not show that "terminal portion" and "terminal region" should be differentiated. *See id.* at 1120 (reaching similar conclusion based on context). Indeed, HECO does not explain what the two terms would mean if they have different meanings. Accordingly, the court "conclude[s] that this is simply a case where the patentee used different words to express similar concepts, even though it may be confusing drafting practice." *Id.*

C. Claim 7

HECO contends Claim 7 is indefinite, because it is not clear if the "relatively flat terminal region" is the same as the "terminal region" in independent claim 1. HECO does not, however, cite any legal authority or explain to the court why claim 7 is thus indefinite. Cives and Monroe deny that claim 7 is indefinite. They maintain that the court does not need to construe "relatively flat terminal region." Alternatively, Cives and Monroe urge the court to construe "relatively flat" as "substantially or nearly flat." Cives and Monroe do not explain to the court why such a construction would be appropriate and do not cite any legal authority.

Because the parties have not provided the court with arguments or citations to authority, the court declines to rule on HECO's indefiniteness argument or construe "relatively flat terminal region" at this time.

D. Claim 9

The parties disagree about how to construe two clauses of Claim 9: "a bin sidewall which is continuously curved from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall" and "the terminal boundary of the inner portion of the curved sidewall being inclined above the horizontal at an angle sufficient to induce sand contained therein to slide downwardly, in the presence of agitation arising from vehicle motion, into the conveyor."

1. "bin sidewall which is continuously curved from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall"

HECO interprets this clause as follows:

The side wall of the bin is continuously curved; it includes an upper portion that is nearly vertical with respect to ground, and a lower portion that is "near horizontal" with respect to ground. The term "continuously" requires no flat, non-curved portions. "Near horizontal" means the lower portion must have some inclination with respect to ground above the horizontal, as outlined in Claim 1 above. In addition, the lower portion must be curved.

JCCC at 20. Cives and Monroe propose the following construction:

The side wall of the bin is continuously curved from an upper, outer portion that is nearly vertical with respect to the ground to a lower, inner portion that is "near horizontal" with respect to the ground. "Near horizontal" means substantially or approximately horizontal.

Id.

The parties do not expend much effort trying to distinguish between the two constructions, and at first glance it is unclear how they differ. It appears, however, that the difference is as follows: whereas HECO believes that the bin must be continuously curved, Cives and Monroe assert that it must only be continuously curved "from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall." Moreover, Cives and Monroe claim that "near horizontal" may be construed as "substantially" or "approximately" horizontal, whereas the court assumes that, to be consistent with its interpretation of claim 1, HECO believes that "near horizontal" means an inclination of "at least 7 % degrees above horizontal."

[21] Assuming the court has adequately stated the parties' respective positions, the court shall adopt the construction that Cives and Monroe propose. The claim only requires that a certain portion of the side wall of the bin be curved, *i.e.*, "from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall." It does not require the entire sidewall to be curved, as HECO's construction suggests. For example, as the court discussed in Part VII.A.1, the sidewall can have an upper vertical portion. The specification makes clear that these optional upper vertical portions are part of the sidewall. *See, e.g.*, Col.3, ll. 10-20 (discussing figure 3 and stating that "[u]pper vertical portions of the sidewalls are optional: the bin sidewalls may commence with inwardly curved portions") (emphasis added). The court also declines to adopt HECO's construction of "near horizontal" as an inclination of "at least 7 degrees above horizontal" for the same reasons outlined in Part VII.A.2. The plain and ordinary meaning of "near horizontal" is "substantially" or "approximately" horizontal. *Cf. Aero Prods. Int'l, Inc. v. Intex Recreation Corp.*, 466 F.3d 1000, 1008 (Fed.Cir.2006) (noting that the parties had agreed that "substantially hermetic seal" meant "nearly or largely impervious to air").

2. "the terminal boundary of the inner portion of the curved sidewall being inclined above the horizontal at an angle sufficient to induce sand contained therein to slide downwardly, in the presence of agitation arising from vehicle motion, into the conveyor"

HECO asserts that the phrase "the terminal boundary" in this clause is indefinite, because it has no antecedent basis. HECO does not explain to the court what it means for something to be indefinite for lacking an antecedent basis and, once again, does not cite any legal authority for its argument. In the alternative, HECO states without explanation that "[t]o the extent this claim term can be understood, it is

part of the lower inner portion of the curved sidewall." It appears that HECO then incorporates its argument regarding claim 1 to the remainder of the clause, stating that the terminal boundary "must be inclined, as specified in the plain language of the claim, above horizontal, at an angle of at least 7 degrees." Cives and Monroe ask the court to construe the entire clause as follows:

The terminal boundary is an inner, end portion of each of the bin sidewalls which is inclined above the horizontal at an angle which enables material to slide to the conveyor by reason of irregular, rapid or violent action resulting from the movement of the vehicle.

JCCC at 21.

The specification does not explicitly define "terminal boundary." Indeed, the phrase does not appear anywhere in the patent except for claim 9. Without ruling on a potential indefiniteness argument, for the time being the court shall construe "terminal boundary" as equivalent to "terminal region" and "terminal portion." A person skilled in the art would equate "terminal boundary" with "terminal region" and "terminal portion," because the clause in which the phrase "terminal boundary" appears in claim 9 closely tracks the use of "terminal region" in the specification. For example, the specification states:

The bin surface then continues with a relatively flat, terminal region to the edge of the conveyor. This preferably flat terminal region is upwardly angled, proceeding outwardly from the conveyor, *at an inclination that is sufficient to cause the material to be spread contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.*

'230 Patent, col.2, ll.5-11. It appears the drafter of the patent used the term "terminal boundary" in the sense that the terminal portion or terminal region of the sidewall, when viewed cross-sectionally, defines a boundary between the inside and the outside of the wall. Again, the court concludes that "this is simply a case where the patentee used different words to express similar concepts, even though it may be confusing drafting practice." *Innova/Pure Water*, 381 F.3d at 1119.

VIII. CONSTRUCTION OF THE '900 PATENT

The invention in the '900 Patent is a continuation-in-part of the application that eventually led to the '230 Patent. '900 Patent, col. 1, ll.2-4. Claim 1 of the '900 Patent is similar in some respects to claim 1 of the '230 Patent. The parties agree that some of the clauses in the '900 Patent should be given the same construction as those in the '230 Patent. In what follows, then, the court only construes one clause that merits separate discussion. Moreover, the court specifically declines to rule at this time on HECO's argument that the '900 Patent is "clearly invalid over [the '389 patent]" pursuant to 37 C.F.R. 1.131(a). Such a ruling would be premature for reasons the court has already explained. Moreover, HECO has failed to cite any authority or discuss in any detail why the '900 Patent is invalid. The court cannot rule on complicated matters such as invalidity in a vacuum and without adequate briefing.

The '900 Patent concludes with the following claims:

The embodiment of the invention in which an exclusive property are claimed are as follows:

1. A bin for containing material to be spread by a spreader vehicle having a floor-mounted conveyor positioned within the bin to extract such material, wherein the bin walls are curved inwardly towards the conveyor, commencing from a first height that is above the level of the conveyor, and terminating at the edge of the conveyor, *the bin walls having an inclination that is sufficient to cause material which is to be spread when positioned thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.*

2. A bin as in claim 1, wherein the bin walls each have an upper bin wall portion which is virtually vertical.

'900 Patent, col.4, ll.35-48 (emphasis added). The following figures are instructive:

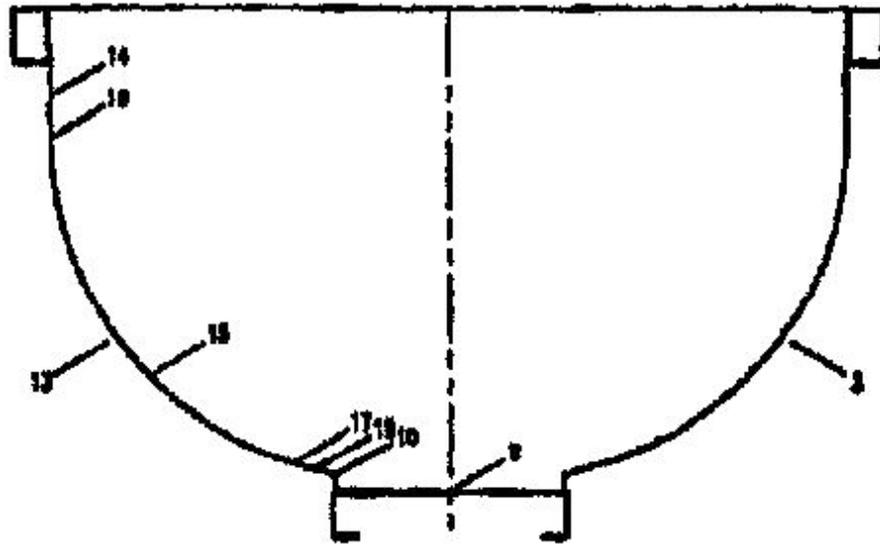


FIGURE 3

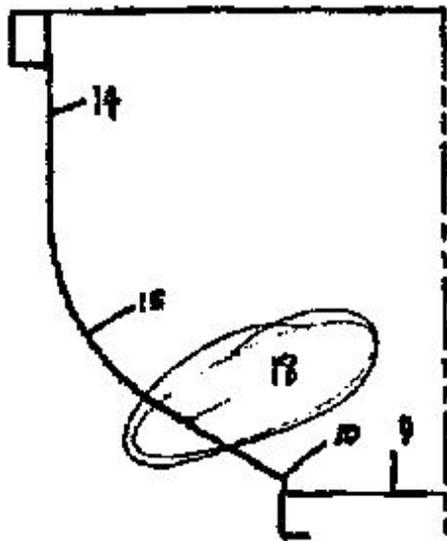


FIGURE 4

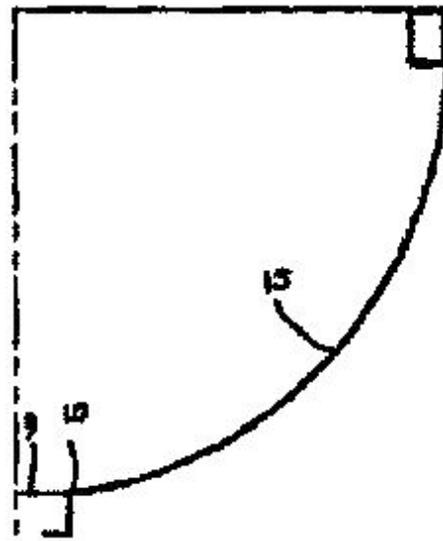


FIGURE 5

'900 Patent, figs. 3-5 (handwritten circle and number 18 in original patent).

HECO urges the court to construe the underlined clause in claim 1 as follows:

The inclination of the bin walls above the horizontal must be sufficient to meet this requirement. Thus, the bin wall cannot have a flat horizontal portion adjacent the conveyor, or any curve that is not downwardly inclined toward the conveyor (i.e., as one travels inward along the bin wall, each point along the bin wall toward the conveyor must be lower than the points farther from the conveyor).

JCCC at 23. Cives and Monroe construe the clause as follows:

The bin walls each have an inclination that is sufficient to cause material on the bin walls to slide spontaneously to the conveyor by reason of irregular, rapid or violent action resulting from the movement of the vehicle.

Id.

[22] The court shall adopt HECO's construction. The specification makes clear that the bin wall cannot have a flat horizontal portion adjacent the conveyor or any curve that is not downwardly inclined toward the conveyor. The specification states:

According to one feature of the invention, a spreader vehicle with a bin for containing material to be spread and having a floor-mounted conveyor positioned within the bin to extract such material, has bin walls of a specially shaped configuration. *Each of the sidewalls is provided with a curved configuration that bends inwardly towards the conveyor, commencing from a height that is above the height of the conveyor. The curvature of this surface terminates at a second, lower height that is, as well, above the height of the conveyor. The bin surface then continues with a relatively flat, terminal region to the edge of the conveyor. This preferably flat terminal region is upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause the material to be spread contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.*

The advantage of this configuration is that a greater amount of sand may be carried than with flat-tapered bottom bins, while both maintaining the center of gravity of the vehicle below a predefined limit, and ensuring that all of the load in the bin will slide spontaneously towards the central conveyor.

A typical bin width for a vehicle is 88 to 96 inches, with a bin depth of approximately 51 inches to the top of the conveyor. It has been found that in such a vehicle, an incline angle of between 15 to 18 degrees, preferably 16 degrees, is suitable for the inclined terminal regions leading up to a 25 inch conveyor width. The width of this region, measured in the transverse plane of the bin may be in the range 4-6 inches, preferable 4 inches. *The curved portion of the bin may then have a circular radius of 35 to 40 inches preferably 37 inches, positioned to terminate virtually tangentially with an optional, vertical, upper bin wall portion (typically 14 inches in height), and virtually tangentially with the inclined, terminal flat region.*

By combining a curved portion to the bin bottom with an inclined terminal region that ends at the conveyor boundary, the capacity of the bin is maximized while ensuring substantially complete discharge of the load into the conveyor.

'900 Patent, col. 1, ll.64-66, col.2, ll.1-42 (emphasis added). In other words, as one travels inward along the bin wall, each point along the bin wall toward the conveyormust be lower than the points farther from the conveyor.

IX. CONCLUSION

The court has construed various disputed claims in the four patents-in-suit, as set forth herein. The court strongly encourages the parties to work together in the future to better focus their disputes. Moreover, the court requests that the parties do their best to stick to the task at hand in future motions. It is the opinion of the court that in their written and oral submissions, the parties wasted time posturing to one another about ultimate issues of infringement and invalidity. As a consequence, the parties left the court to sort out difficult issues of claim construction without adequate argument or briefing.

IT IS SO ORDERED.

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