United States District Court,
E.D. Texas, Beaumont Division.

TRINITY INDUSTRIES, INC. and The Texas A & M University System,
Plaintiffs.
v.
ROAD SYSTEMS, INC., Interstate Steel Corp,
and Kaddo Kothman Defendants.

Sept. 20, 2000.

Patentee brought action alleging infringement of patent claiming a safety treatment for the ends of highway guardrails. On patentee's motion for construction of patent, the District Court, Schell, J., held that: (1) "squeezing extruder throat" limitation had to be narrowing but did not require that guardrail be flattened into a relatively flat plate, did not require flattening to occur before bending, and did not require that flattening be the primary or exclusive means of dissipating energy of impacting vehicle; (2) "bending means" limitation had function of bending guardrail laterally away from its longitudinal axis, and its corresponding structure was rigid curvilinear bending chute or member and a support; and (3) "means for releasing" and "releasing means" limitations had function of releasing cable anchor from the guardrail upon advancement of the extruder terminal toward the guardrail, and their corresponding structure included cable anchor and apertures.

Ordered accordingly.

4,928,928. Construed.

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SCHELL**, District Judge.**

MEMORANDUM OPINION AND ORDER CONSTRUING THE CLAIMS OF UNITED STATES PATENT 4,928,928

Before the court is "Plaintiffs' Motion for Construction of the Patent at Issue under *Markman* and Brief in Support" (Dkt.# 30), filed June 22, 1999. The patent at issue is No. 4,928,928 being asserted by Plaintiffs Trinity Industries, Inc. and the Texas A & M University System against Defendants Road Systems, Inc., Interstate Steel Corporation, and Kaddo Kothmann. The constructions and supporting analysis in this opinion are the result of a review and study of the claims, specification, prosecution history and prior art references for the patent, along with consideration of the extensive briefing and exhibits provided by the parties and arguments presented at a hearing on July 22, 1999. Although the court does not expressly address all the arguments made by the parties, all of their arguments have been fully considered.

I. The Rules of Claim Construction

A. Purpose and Scope of Claim Construction

[1] Patent claims are the numbered paragraphs at the end of a patent's specification that define the scope of the patent. *See* Markman v. Westview Instruments, Inc., 517 U.S. 370, 373, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The threshold issue in any patent infringement case is claim construction, *see* Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995), because it is necessary to understand the scope of the patent's claims to determine whether the accused device infringes the patent. *See* Markman, 517 U.S. at 373-74, 116 S.Ct. 1384. Claim construction is a question of law for the court to decide. *See* id. at 372, 116 S.Ct. 1384.

[2] [3] [4] The purpose of claim construction is to interpret or elaborate upon the normally terse claim language in order to explain and understand, but not to change, the scope of the claims. *See* Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F.2d 1565, 1580 (Fed.Cir.1991). The traditional rule is that claims must be construed independently of the accused product, however, it may be practically necessary to consider the accused product because an efficient construction will focus on the construction of only the disputed limitations of the claims. *See id*. It is, therefore, permissible to define claim terms "in light of the mode of action of the accused device." Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478 (Fed.Cir.1998). However, evaluation of the equivalency of the accused limitations, which determines infringement, is outside the scope of claim construction because it is a question of fact. *See* Odetics Inc. v. Storage Technology Corp., 185 F.3d 1259, 1268-69 (Fed.Cir.1999) (regarding statutory equivalents under 35 U.S.C. s. 112, para. 6); Robotic Vision Sys., Inc. v. View Eng'g., Inc., 189 F.3d 1370, 1374 (Fed.Cir.1999) (regarding the doctrine of equivalents).

B. Identification of Claim Limitations

[5] Claim limitations are the words in a patent claim that delineate the necessary elements of the patented invention. Construction of patent claims requires a court to first identify the claims' limitations because the scope of the patentee's right to exclude others from practicing the invention is measured by the limitations of the patent's claims. *See* SmithKline Diagnostics, Inc. v. Helena Labs. Corp., 859 F.2d 878, 882 (Fed.Cir.1988). The federal patent statutes speak of claim "elements." But the Federal Circuit "has moved toward the custom of referring to claim 'limitations,'reserving the word 'elements' for describing parts of the

accused device, though the court on occasion continues to use the words interchangeably." Dawn Equip. Co. v. Kentucky Farms, Inc., 140 F.3d 1009, 1014 n. 1 (Fed.Cir.1998).

[6] [7] Identifying claim limitations is necessary for several reasons. First, the claims do not expressly identify the limitations and a court obviously cannot construe the limitations until they have been identified. Identification is also necessary because, to establish infringement, a patentee must show the presence of every limitation or its substantial equivalent in the accused device. *See* Dawn Equip., 140 F.3d at 1014. This is known as the All Elements or All Limitations rule. *See* Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1259 (Fed.Cir.1989). Obviously, the individual limitations must be identified before a court can determine whether each limitation or its equivalent is present in the accused device. Furthermore, any analysis of equivalence, either statutory equivalence or under the doctrine of equivalents, requires specific identification of claim limitations because the equivalence analysis proceeds on a limitation by limitation basis. *See* Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 520 U.S. 17, 40, 117 S.Ct. 1040, 137 L.Ed.2d 146; Odetics, 185 F.3d at 1267-68.

There are two types of claim limitations. "Means plus function" limitations are stated in terms of their function without claiming specific structure, material, or acts. *See* 35 U.S.C. s. 112, para. 6. "Non-means plus function" limitations recite specific structure, material, or acts that must be included in the invention claimed by the patent. The Federal Circuit has given a clear definition of "limitations" in the means plus function context.

The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the *overall structure corresponding to the claimed function*. This is why structures with different numbers of parts may still be equivalent under s. 112, para. 6, thereby meeting the claim limitation.

Odetics, 185 F.3d. at 1268 (emphasis added). While the definition of non-means plus function limitations is not so clearly delineated, it is clear that identification of the limitations within a claim is a question of law for the court. *See* Markman, 517 U.S. at 372, 116 S.Ct. 1384.

C. The Court Should Rely Primarily on Intrinsic Evidence to Construe the Claims

[8] In construing the scope of a patented invention, a court must first look to the "intrinsic" evidence of record. *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). This includes: (1) the claim; (2) the specification; and (3) the prosecution history. *See id.*

1) Use of the Claim Language in Claim Construction

[9] [10] [11] Claim construction always begins with the language of the claim itself. *See* Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999); Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248 (Fed.Cir.1998). In general, these terms must be given their ordinary and accustomed meaning to one skilled in the art. *See* Johnson Worldwide, 175 F.3d at 989; Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580 (Fed.Cir.1995) (citing Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951 (Fed.Cir.1993)). Unless otherwise compelled, a court should give full effect to the ordinary meaning of claim terms even if the terms are broad. Johnson Worldwide, 175 F.3d at 989. Although a court must consider the patent as a whole, the ultimate focus is on the claim terms. *See* Renishaw, 158 F.3d at 1248.

2) Use of the Specification in Claim Construction

[12] Use of the specification (also called the "written description" or "disclosure") in claim construction has been a subject of some confusion. While claim terms are generally given their ordinary meaning, a court may construe a limitation recited in a claim "in light of the specification." *See* Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1466 (Fed.Cir.1998). The Federal Circuit has instructed that the specification is always highly relevant to construing the claims because "claims must be read in view of the specification, of which they are a part." Vitronics, 90 F.3d at 1582. "The specification is the single best guide to the meaning of a disputed term." *Id*. Thus, it is undisputed that the specification is a useful guide to interpreting claim language.

However, in practice, the extent to which the specification can be used to limit the scope of claims is a complicated matter. *Fromson v. Anitec Printing Plates, Inc*. provides an example of potentially contradictory rules of construction in the same sentence: "While ... a limitation from the body of the specification is not read into the claims unless the limitation is required to sustain patentability, the claims must be construed in light of the specification." 132 F.3d 1437, 1443 (Fed.Cir.1997), *abrogated on other grounds by* Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1456 (Fed.Cir.1998). Nonetheless, there is a general rule that courts should not read limitations from the specification into the claims. This general rule is subject to one statutory exception and other exceptions where courts have found that the circumstances strongly indicate that the specification should limit the claims.

a) General Rule for Using the Specification to Limit the Scope of Claims

[13] [14] Courts should generally focus on the ordinary meaning of claim language and refrain from using the specification to limit the scope of patent claims. *See* Johnson Worldwide, 175 F.3d at 989-90. "In order to overcome this heavy presumption in favor of the ordinary meaning of claim language, it is clear that 'a party wishing to use statements in the written description to confine or otherwise affect a patent's scope, must, at the very least, point to a term or terms in the claim with which to draw in those statements.' " Id. at 989. (quoting Renishaw, 158 F.3d at 1248). It is improper to read a limitation from the specification into a claim apart from any need to interpret what the patentee meant by particular words or phrases in the claim. *See* E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed.Cir.1988). It is particularly inappropriate to import attributes of the preferred embodiment portion of the specification into the claims as limitations. *See* Burke, Inc., v. Bruno, 183 F.3d 1334, 1341 (Fed.Cir.1999) (citing Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed.Cir.1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."); Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed.Cir.1986) ("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.")).

b) Exceptions to the General Rule

i) "Means Plus Function" Claims

[15] [16] There is a statutory exception to the rule that the specification does not limit the scope of the claims. The exception applies only to "means plus function" limitations under 35 U.S.C. s. 112, para. 6. That portion of the statute allows claim limitations to be stated in terms of their function without claiming specific structure, material, or acts. FN1 A patentee who invokes this drafting tool is required to describe in the patent specification some structure which performs the specified function. *See* Valmont Indus., Inc. v.

Reinke Mfg. Co., 983 F.2d 1039, 1042 (Fed.Cir.1993). When a limitation in a claim is stated in means plus function language, the scope of that limitation is narrowed to include only the corresponding structure, material, or acts described in the specification *and their equivalents*. *See* Odetics, 185 F.3d at 1266-67; Valmont, 983 F.2d at 1042. Thus, the scope of a means plus function limitation is confined not only to the disclosure, but also to equivalents of what is disclosed.

FN1. 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.
[17] [18] A court must initially determine whether a particular limitation is stated in means plus function form. If a patentee uses the word "means" in a claim, a presumption arises that he or she used the word to invoke s. 112, para. 6. *See* Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed.Cir.1999), *petition for cert. filed,* 68 U.S.L.W. 3252 (U.S. Oct 1, 1999) (No. 99-57). There are two ways this presumption may be rebutted: 1) if a claim term uses the word "means" but recites no corresponding function; or 2) if the claim recites a function but also recites sufficient structure or material for performing the claimed function. *See id*. It is also possible that a claim limitation that does not recite the word "means" may be construed under s. 112, para. 6, despite a presumption to the contrary. *See* Cole v. Kimberly-Clark Corporation, 102 F.3d 524, 531 (Fed.Cir.1996) (citing Raytheon Co. v. Roper Corporation, 724 F.2d 951, 957 (Fed.Cir.1983)).

[19] Once a court determines that a claim limitation is written in means plus function form, the court must construe the meaning of the limitation. There are two elements to means plus function limitation construction: 1) a determination of the claimed function; and 2) identification of the structure, material, or acts in the specification that correspond to the means clause. *See* Chiuminatta Concrete Concepts v. Cardinal Indus., Inc., 145 F.3d 1303, 1308 (Fed.Cir.1998). Both elements are questions of law. *See id*.

[20] In construing means plus function claims, a court should not read into the claims the functions of a particular embodiment or example appearing in the specification unless such functions are part of the function recited in the means clause. *See Katz v. AT&T Corp.,* 63 F.Supp.2d 583, 592 (E.D.Pa.1999) (citing Seagate Tech., 174 F.3d at 1303). If a structure in the embodiment is defined or elaborated in ways unrelated to the recited function, those additional details should not be read as limiting the scope of the means clause. *See* Chiuminatta, 145 F.3d at 1308-09. Such additional structural aspects are not what the statute contemplates as structure *corresponding* to the recited function and should not be construed as corresponding structure. *See id*.

ii) "Non-Means Plus Function" Claims

The Federal Circuit has also recognized exceptions where the specification may be used to limit the scope of claims in the context of "non-means plus function" claims. Such exceptions tend to be made when it is clear that the patent considered as a whole does not support a broader meaning. "A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." Renishaw, 158 F.3d at 1250.

[21] It is proper to use the specification to narrow the scope of claims if intent to do so is clearly manifested in the specification. In *Gentry Gallery,* the court used the patent specification to limit the scope of patent

claims for a sofa design. The court construed the claims to cover only sofas where the recliner control was located on the console. *See* Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1479 (Fed.Cir.1998). The *Gentry Gallery* court went so far as to say that "claims may be no broader than the supporting disclosure, and therefore that a narrow disclosure will limit claim breadth." *Id*. at 1480. However, the Federal Circuit later narrowed the *Gentry Gallery* decision stating that it was based on "clear statements in the written description that described the location of a claim element-the 'control means'-as 'the only possible location' and that variations were 'outside the stated purpose of the invention' " Johnson Worldwide, 175 F.3d at 993 (quoting Gentry Gallery, 134 F.3d at 1479). The *Johnson Worldwide* court thus limited *Gentry Gallery* to "the situation where the patent's disclosure makes *crystal clear* that a particular (i.e., narrow) understanding of a claim term is an 'essential element of [the inventor's] invention.' " *Id*. (quoting Gentry Gallery, 134 F.3d at 1479) (emphasis added); *see also* Laitram Corp. v. Morehouse Indus., Inc., 143 F.3d 1456, 1463 (Fed.Cir.1998) (holding that a narrow construction was compelled because unambiguous language in the specification made clear that the claim language had only one interpretation).

[22] The specification can also be used to limit the scope of claims if the specification expressly defines terms. "[A] patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." Vitronics, 90 F.3d at 1582 (citation omitted); *see also* Johnson Worldwide, 175 F.3d at 990. Thus, "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. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." *Id*. However, "without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning." York Products, Inc., v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1572 (Fed.Cir.1996).

[23] Ambiguity in claim terms can also justify departure from the normal meaning of claim terms. The *Johnson Worldwide* court stated that a term may be given a definition other than its ordinary meaning if "the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used." Johnson Worldwide, 175 F.3d at 990; *see also* Renishaw, 158 F.3d at 1250 (stating that a court may resort to the specifications if a term lends itself to several common meanings).

[24] Finally, in *Digital Biometrics,* the court held that limiting claims based on the written description was proper when "the claim is susceptible to a broader and a narrower meaning, and the narrower one is clearly supported by the intrinsic evidence, while the broader one raises questions of enablement under s. 112, para. 1." Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1344 (Fed.Cir.1998). "Enablement" is shorthand for the requirement that a patent's specification must set forth a written description and the manner and process of making and using the invention in sufficient detail to allow any person skilled in the art to make and use the invention. *See* 35 U.S.C. s. 112, para. 1. Failure to satisfy this requirement results in invalidity of the patent. *See* Nat'l Recovery Technologies, Inc. v. Magnetic Separation Systems, Inc., 166 F.3d 1190, 1196-98 (Fed.Cir.1999). The rule of *Digital Biometrics* then is merely an extension of the rule that a court should construe claims to sustain their validity, if possible, short of actually redrafting the claims. *See* Quantum, 65 F.3d at 1584 (Fed.Cir.1995); *see also* Fromson, 132 F.3d at 1443 (forbidding importation of limitations from the specification unless required to sustain patentability).

Again, these cases do not alter the general rule, but merely create exceptions to it, as evidenced by the frequent reiteration that "the actual words of the claim are the controlling focus." Digital Biometrics, 149

F.3d at 1344; *see also* Renishaw, 158 F.3d at 1248; Johnson Worldwide, 175 F.3d at 989-90. "The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims." Markman, 52 F.3d at 980.

3) Use of the Prosecution History in Claim Construction

[25] [26] The court may consider the prosecution history in determining the meaning of disputed terms. *See* Vitronics, 90 F.3d at 1582. "This history contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." *Id*. "As such, the record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims." *Id*. "Although the prosecution history can and should be used to understand the language used in the claims, it too cannot 'enlarge, diminish, or vary' the limitations in the claims." Markman, 52 F.3d at 980 (citation omitted).

[27] [28] "The prosecution history limits the construction of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed.Cir.1995). If a patentee takes a position before the Patent and Trademark Office (PTO), such that a "competitor would reasonably believe that the applicant had surrendered the relevant subject matter," the patentee may be barred from asserting an inconsistent position on claim construction. Cybor, 138 F.3d at 1457. If a patentee distinguishes a reference on multiple grounds to the PTO, any one of these grounds may indicate the correct construction of a term. *See* Gentry Gallery, 134 F.3d at 1477 n.*. However, "[u]nless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage." York Products, 99 F.3d at 1575.

The use of prosecution history in claim construction is separate from prosecution history estoppel. *See* Southwall Tech., 54 F.3d at 1578. Prosecution history estoppel "limits later expansion of the protection accorded by the claim to the patent owner under the doctrine of equivalents." Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 862 (1991) (citing Hughes Aircraft Co. v. United States, 717 F.2d 1351, 1362 (Fed.Cir.1983)). Thus, while prosecution history estoppel is concerned solely with determining the limits of equivalence, *see Biodex,* F.2d at 862, claim construction refrains from limiting or otherwise defining the range of equivalents, because what constitutes an equivalent is a question of fact reserved for the jury or the judge in a bench trial. *See* Odetics, 185 F.3d at 1268-69; Robotic Vision, 189 F.3d at 1374.

D. Use of Extrinsic Evidence May be Necessary

[29] [30] Extrinsic evidence is any evidence that is external to the patent and the prosecution history including expert and inventor testimony, dictionaries, and treatises. *See* Markman, 52 F.3d at 981. "In 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." Vitronics, 90 F.3d at 1583. Conversely, reliance on extrinsic evidence may be necessary in determining the meaning or scope of a technical term if ambiguity remains after consideration of the intrinsic evidence.

[31] [32] This is not to say that there must be ambiguity in claim terms for a court to consult or receive extrinsic evidence. Extrinsic evidence may always be considered "for background and education on the technology implicated by the presented claim construction issues ." Key Pharms. v. Hercon Laboratories Corp., 161 F.3d 709, 716 (Fed.Cir.1998). Additionally, a court may rely on technical treatises and dictionaries to a greater degree than other types of extrinsic evidence, either to better understand the technology, or in construing claim terms.

[T]echnical treatises and dictionaries ... are worthy of special note. Judges are free to consult such resources 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.

Vitronics, 90 F.3d at 1584 n. 6. Extrinsic evidence cannot be used to arrive at a construction of the claim that is clearly contrary to the public record. *See* Key Pharmaceuticals, 161 F.3d at 716; Vitronics, 90 F.3d at 1584.

E. Construing Claim Language in Comparison to Other Claims

[33] [34] When construing the claims of a patent, a court may also consider the doctrine of claim differentiation. Under that doctrine, "the scope of each individual claim must be examined on its own merits, apart from that of other claims, even in the same patent." *See* Lemelson v. TRW, Inc., 760 F.2d 1254, 1267 (Fed.Cir.1985). The doctrine presumes there is a difference in scope among the claims of a patent. *See* Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed.Cir.1987). The presumption "is ultimately based on the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed.Cir.1999) (citing Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed.Cir.1998)). This "normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend." *Id.* (citing Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed.Cir.1995)).

This does not mean that one claim in a patent cannot be considered as evidence of the scope of another claim in the same patent. *See* Southwall Tech., 54 F.3d at 1579. The doctrine merely expresses a presumption against any interpretation that would render one of a patent's claims superfluous. *See* United States v. Telectronics, Inc., 857 F.2d 778, 783-84 (Fed.Cir.1988). It also means that "where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad, whether to avoid invalidity or to escape infringement." Id. at 784.

[35] [36] There are limitations to the doctrine of claim differentiation. The doctrine "can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence.... [C]laims that are written in different words may ultimately cover substantially the same subject matter." Multiform Desiccants, 133 F.3d at 1480. Additionally, the doctrine of claim differentiation cannot override 35 U.S.C. s. 112, para. 6, which limits the scope of means plus function claims to the corresponding structure, material or acts described in the specification and equivalents thereof. "[A] means plus function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure." C .R. Bard, Inc. v. M3 Systems, Inc., 157 F.3d 1340, 1364 (Fed.Cir.1998) (citing Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed.Cir.1991)). In other words, a means plus function claim is limited to the corresponding structure disclosed in the specification, despite the fact that the patent contains another claim that specifically recites the same structure, even if the result is that the two claims have the same meaning and scope.

II. Claim Construction Relating to United States Patent 4,928,928

Patent 4,928,928 claims a safety treatment for the ends of highway guardrails. There are three disputed

claim limitations in the patent: 1) "squeezing extruder throat"; 2) "bending means"; and 3) "means for releasing" or "releasing means." The first two limitations are describedin Claim 1, which is reproduced in its entirety here:

1. A highway guardrail system comprising a horizontally extending W-beam type guardrail mounted on a plurality of posts, and an extruder terminal connected to an end of said guardrail for engaging an impacting vehicle at the end of said guardrail, said terminal including a housing having an inlet for receiving the end of said guardrail, a *squeezing extruder throat* within said housing for telescoping over said guard rail [sic] and flattening the guardrail as said terminal is advanced longitudinally along the guardrail by an impacting vehicle, thereby dissipating energy to decelerate the impacting vehicle, and *bending means* extending laterally from said squeezing extruder throat for bending the flattened guardrail laterally away from the longitudinal axis of said guardrail so as to remote the flattened guardrail from the path of an impacting vehicle advancing said terminal along the guardrail.

'928 patent, col. 6, lines 41-57 (emphasis added).

Construction of the limitations in Claim 1 is of paramount importance in this patent infringement suit because Claim 1 is the only independent claim in the '928 patent. FN2 It is basic to patent law that if an independent claim is not infringed, then a claim that is dependent on that independent claim cannot be infringed because a dependent claim encompasses all the limitations of the independent claim it references. *See* Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1552 n. 9 (Fed.Cir.1989). Because Claim 1 is the only independent claim in the '928 patent, if Claim 1 is not infringed, there is no infringement of any claim in the patent.

FN2. An independent claim stands on its own and does not refer to any other claim in the patent. It must therefore be read separately when determining its scope. A dependent claim, on the other hand, includes a reference to at least one other claim in the patent and must be interpreted to encompass each of its own elements as well as any additional elements recited in the referenced claim.

Lampi, LLC v. American Power Products, Inc., 65 F.Supp.2d 757, 761 (N.D.Ill.1999).
The third disputed limitation, "releasing means" or "means for releasing" is included in both Claim 4, which is dependent on Claim 1, and in Claim 5, which is dependent on Claim 4. Claims 4 and 5 are reproduced in their entirety here:

4. The guardrail system of claim 1 which includes a cable anchor on said guardrail for receiving a tension cable, said cable anchor including *means for releasing* said cable anchor from said guardrail upon advancement of said extruder terminal toward said guardrail.

5. The guardrail system of claim 4 wherein said *releasing means* includes a plurality of apertures in said guardrail, said cable anchor including a plurality of lugs, said lugs extending into said apertures, each said lug including an inclined surface engaging a side of each aperture.

'928 patent, col. 6, line 66-col. 7, line 8 (emphasis added).

A. Identification of Separate Limitations in Claims 1, 4, and 5.

Claim 1

In an infringement analysis, the role of a particular limitation is relevant in determining whether an equivalent limitation is present in an accused device. *See* Warner-Jenkinson, 520 U.S. at 40, 117 S.Ct. 1040. Similarly, in claim construction, the role of structures described in a claim sheds light on whether they are separate limitations or merely parts of one limitation. The role of the squeezing extruder throat is to flatten the guardrail. The role of the bending means is to bend the guardrail. Since these structures have different roles, it follows that they are separate limitations. This is further supported by the meaning of the other words in the claim and "the precepts of English grammar." In re Hyatt, 708 F.2d 712, 714 (Fed.Cir.1983); *see also* Credle v. Bond, 25 F.3d 1566, 1571 (Fed.Cir.1994) (noting that the grammatical structure and syntax of a claim may be instructive). Claim 1 describes, in relevant part, "[a] highway guardrail system *comprising* ... an extruder terminal ... said terminal *including* a housing, ... a squeezing extruder throat within said housing ... and a bending means...." '928 patent, col. 6, lines 41-52. The words "comprising" and "including" imply that the things that follow them are all essential to the invention, although other things might be added and still form a construct within the scope of the claim. *See* Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 874 (Fed.Cir.1998). Thus, the grammatical structure of the sentence indicates that the extruder terminal includes one limitation, a housing, that contains two other separate and necessary limitations, a squeezing extruder throat and a bending means.

Claims 4 and 5

The true limitation in a means plus function claim is the overall structure disclosed in the specification that corresponds to the function stated in the claims. *See* Odetics, 185 F.3d. at 1268. Therefore, the court will identify the limitations inherent in "releasing means" or "means for releasing" later in this opinion when the court identifies the structure in the specification that corresponds to these means clauses.

B. Construction of "squeezing extruder throat"

[37] The proper construction of "squeezing extruder throat" is a passageway or channel that 1) has an inlet opening wider than a W-beam guardrail so that the guardrail fits inside the opening; and 2) flattens a W-beam guardrail by using the energy of an impacting vehicle to force the guardrail through the throat, where the flattening is caused by passing through a width of the throat that is narrower, in at least one dimension, than the width of an unflattened guardrail. This construction does not require that the beam be flattened into a relatively flat plate; rather, it only requires that the beam be flattened some as it passes through the throat. This construction also does not require the flattening accomplished by the squeezing extruder throat to be the primary or exclusive energy absorbing mechanism of the terminal. It merely requires that the flattening of the beam dissipate some energy.

The parties' proposed constructions and briefs in support raised four relevant issues regarding the construction of this limitation. The court will address these individually.

1. Must "squeezing extruder throat" mean a tapered, narrowing, funnel-shaped structure?

[38] Defendants assert that the claim language, specification and prosecution history of the patent each require the conclusion that a squeezing extruder throat claims only a narrowing, tapered, funnel-shaped structure. Defendants argue that the word "squeezing" in the claim language requires that conclusion, because "squeezing" incorporates the concept of narrowing described in the specification and the prosecution history. Defendants specifically point to language in the specification describing a terminal that flattens a guardrail by squeezing it between narrowing walls. The summary of the invention describes "an extruder throat that is narrower in width than the feeder chute." '928 patent, col. 2, lines 48-50. The

summary goes on to say "this reduction in width flattens a W-beam guardrail." Id. The preferred embodiment and the referenced drawings include an "extruder chute [that] is funnel shaped and narrows down to an extruder throat." '928 patent, col. 4, lines 44-45; FIG. 3. Defendants also point out that during prosecution, the patent examiner only granted the patent after an interview with the applicants where it was agreed that the "applicant will file an amendment further distinguishing the extrusion terminal having a narrowing channel which flattens the W-beam." *Examiner Interview Summary Record,* dated November 7, 1989, Exhibit D, Tab 12, Defendants' WrittenSubmission Regarding Claim Construction Under *Markman* (Dkt.# 32), filed July 12, 1999. Although the claim language that was later approved did not include the word "narrowing," the patentees did add the limitation "squeezing extruder throat" after the interview, and Defendants argue that this was necessary to satisfy the examiner's requirement that the concept of narrowing be included in the claim.

Plaintiffs argue that there is no need to look to the specification or the prosecution history to interpret the "squeezing extruder throat" limitation because the ordinary meaning of the terms "squeezing," "extruder," and "throat" are known to persons of ordinary skill in the relevant art. Plaintiffs point out that these terms can have various meanings depending on the context and urge that these terms must be given "all [their] correlative meanings." Plaintiffs' Reply to Defendants' Written Submission for Claim Construction Under *Markman* (Dkt.# 34), filed July 22, 1999, at 2. Despite Plaintiffs' urging against consideration of the specification to narrow the scope of this limitation, Plaintiffs rely heavily on one paragraph of the specification to support a broad construction. That paragraph states:

It should be understood, however, that the extruder terminal can be designed to bend the W-beam guardrail without first flattening it. This can be accomplished by the elimination of the extruder throat and designing the extruder chute without a reduction in width so that flattening does not occur. With these changes, the unflattened W-beam guardrail is fed directly into the bending chute.

'928 patent, col. 6, lines 20-27. Regarding the prosecution history, Plaintiffs argue that since the examiner approved the claims without the word "narrowing," despite having included the word in his summary of the interview agreement, the examiner must not have meant to include a "narrowing" limitation in the claims.

Although there is ample support in the specification and prosecution history for a construction of "squeezing extruder throat" that requires narrowing, it is improper to import such a limitation into the claims if the claim language itself does not provide support for such a limitation. *See* Johnson Worldwide, 175 F.3d at 989-90. The claims of the '928 patent do not use the words "narrowing," "tapered," or "funnel-shaped," nor do they recite the terms "extruder throat" or "extruder chute," which are the structures described in the specification as narrow, narrowing, or funnel-shaped. However, Defendants assert that the word "squeezing" in the claims stands for those qualities and absolutely requires narrowing.

The court agrees that the claim language itself, which is the ultimate focus in claim construction, indicates that a squeezing extruder throat must narrow. Claim 1 speaks of a "squeezing extruder throat for telescoping over said guardrail and flattening the guardrail." For the squeezing extruder throat to "telescope" over the guardrail, as Claim 1 expressly requires, it must be wider than the guardrail, and for the squeezing extruder throat to flatten the guardrail merely by the forcing of the guardrail through the throat, it must contain a portion that is narrower than an unflattened guardrail. Hence, by physical necessity, there must be a narrowing between the wider and the narrower portion. Furthermore, while, the inconsistent terminology used in the claims and the specification requires a careful reading of the patent to ascertain its meaning, it is clear that the squeezing extruder throat described in the claims performs the same functions as the structures

in the specification that are described as narrowing or funnel-shaped, and thus, incorporates the concept of narrowing.

[39] Plaintiffs contend that "squeezing" does not imply narrowing and that it is improper to limit the scope of the language "squeezing extruder throat" based on the specification or the prosecution history because the terms "squeezing," "extruder," and "throat" each have an ordinarymeaning that is known to persons skilled in the art relevant to this patent. But Plaintiffs acknowledge that these are broad terms subject to multiple meanings, depending on the context, and yet, in the same breath, urge the court to ignore their context, namely, the specification and the prosecution history. Such an approach would be at odds with the rule that "where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meaning." Renishaw, 158 F.3d at 1250. Plaintiffs would have the court read this limitation word by word so that "squeezing extruder throat" does not claim anything less than every possible meaning of the individual words. This approach ignores the fact that the words are used together to convey the idea of a specific thing. "Extruder" modifies "throat"; "squeezing" modifies "extruder" and "throat." Thus, the limitation "squeezing extruder throat" is a combination of the individual terms that does not have a recognizable ordinary meaning, but instead, takes on a specific technical meaning that can only be properly understood in relation to the description of the operation of this device in the patent specification. Ignoring this would broaden the claims beyond what is patentable, i.e., what is described by the patent in sufficient detail to enable a person of ordinary skill to make the invention. An applicant for a patent bears the burden of particularly pointing out and distinctly claiming the invention he seeks to patent; therefore, when a "claim is susceptible to a broader and a narrower meaning, and the narrower one is clearly supported by the intrinsic evidence while the broader one raises questions of enablement," a court must adopt the narrower meaning. Digital Biometrics, 149 F.3d at 1344. That is exactly the situation presented in the instant case. A squeezing extruder throat could be given a broad meaning to include all the ordinary meanings of the individual terms in the phrase, but there is clearly support in the claims, specification, and prosecution history for limiting the meaning to require narrowing. And choosing a broader construction that does not require a narrowing throat does raise questions of enablement. It is conceded by both sides in this litigation that a squeezing extruder throat must flatten a guardrail by squeezing it. A narrowing throat is the only disclosed structure for accomplishing that squeezing and flattening. Since there is nothing in the specification that would teach a person of ordinary skill in the art to make a squeezing extruder throat that does not include narrowing, a construction that does not include narrowing would raise a serious question of enablement.

[40] Plaintiffs assert that a broader construction of "squeezing extruder throat" is consistent with the specification and does not raise questions of enablement because one paragraph of the specification states that "the extruder terminal can be designed to bend the W-beam guardrail without first flattening it ... by elimination of the extruder throat and designing the extruder chute without a reduction in width." '928 patent, col. 6, lines 21-25. But this paragraph does not enable one to make a squeezing extruder throat without narrowing; rather, it eliminates the squeezing extruder throat entirely. The specification cannot be used in this way to broaden the claims by eliminating one of the express claim limitations. A patentee may not state throughout the specification and claims that an invention includes a particular limitation and then be allowed to avoid that limitation in a later infringement suit by reference to one paragraph in the specification that describes an alternative lacking that limitation. *See* Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562 (Fed.Cir.1991).

Plaintiffs further assert that, since Claim 1 requires "flattening and bending," the claim should be construed broadly enough to read on a device that "flattens in the bending process." Transcript of *Markman* Hearing,

July 22, 1999, at 35, lines 4-6. In other words, Plaintiffs assert that the patent would read on a device that achieves some incidental flattening when it bends the guardrail by forcing it through an arc-shaped structure that does not narrow. Following this logic would effectively delete the "squeezing extruder throat" limitation from the claim. Such reasoning ignores the fact that Claim 1 describes one limitation for bending-a "bending means"-and another limitation for flattening-a "squeezing extruder throat." Flattening caused by bending does not satisfy the claim language, which clearly requires the flattening to be accomplished by squeezing.

The prosecution history is also consistent with requiring a squeezing extruder throat to narrow. It is proper to consider the interview summary in claim construction as it is part of the prosecution history. *See* Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1576 (Fed.Cir.1996). At the conclusion of his November 7, 1989 interview with the '928 patent applicants, the examiner intended for the applicants to amend their claims to include the concept of "narrowing," as evinced by his statement to that effect in the interview summary. Although the applicants did not add the word "narrowing" to the claims, they did insert the limitation "squeezing extruder throat" after the interview. *See Amendment,* filed December 5, 1989, at 2, Exhibit D, Tab 13, Defendants' Written Submission Regarding Claim Construction Under *Markman* (Dkt.# 32), filed July 12, 1999. The exclusion of the words "narrow" or "narrowing" from the approved claim appears likely to indicate that the examiner was satisfied that the insertion of the words "squeezing" and "extruder" incorporated the narrowing concept, not that he had relaxed or eliminated the requirement.

That conclusion is further supported by the ordinary meaning of the individual terms "squeezing" and "extruder," without reference to the specification or prosecution history. The most common dictionary meaning of "extruder" is a device that "shape[s] by forcing through a die." *Merriam Webster's Collegiate Dictionary* (10th ed.1997); *see also McGraw Hill Dictionary of Scientific and Technical Terms* (5th ed.1994) ("a device that forces ductile or semisoft solids through die openings of appropriate shape to produce a continuous film, strip, or tubing"); *Academic Press Dictionary of Science and Technology* (1992) ("a device used to push a semisoft or ductile solid material through a die so that it is molded into a continuous form such as a strip or tubing"). A "die," in this context, is "a perforated block through which metal or plastic is drawn or extruded for shaping." *Merriam Webster's Collegiate Dictionary* (10th ed.1997). The "die" is a necessary component of an extruder, and to impart shape to ductile or semisoft solids the die must be narrower, at least in one dimension, than the width of the mass of solids being forced through it. If the die were wider in all dimensions than the mass of solids being forced through it, the extruded material would not be shaped by the die because the mass would not come into contact with any opposed shaping edges of the die. "Extruder" thus implies the inclusion of a downstream width that is narrower than the upstream width. To accomplish the extrusion, an extruder must have an outlet (equivalent to a die) that contains a width that is narrower than its inlet. Therefore, the ordinary meaning of "extruder" in "squeezing extruder throat" implies forcing the guardrail through a structure that is narrower than the portion that telescopes over the guardrail. The most common meaning of "squeeze" is "to exert pressure, esp. on opposite sides of." *Merriam Webster's Collegiate Dictionary* (10th ed.1997). Thus, the ordinary meaning of "squeezing" is consistent with requiring a structure that uses narrowing walls to exert pressure on opposite sides of a guardrail, particularly in the context of this patent where "squeezing" is used in conjunction with the word "extruder."

[41] Although a squeezing extruder throat must narrow, it is improper to read the limitations "funnel-shaped" or "tapered" into this limitation. It is proper to construe words in the claim using the specification, but not to add limitations to the claims when no words in the claim require such a limitation. *See* Johnson Worldwide, 175 F.3d at 989-90. Neither of these limitations is expressly included or implied by the ordinary

language of the claims. The term "funnel-shaped" connotes a conical shape, *see Merriam Webster's Collegiate Dictionary* (10th Ed.1997) ("usu. a hollow cone"), and while a conical shape may be the best mode to accomplish the narrowing from the inlet to the flattening width of the throat, other shapes that would be apparent to a person of ordinary skill in the art could be employed to accomplish the reduction in width. There is no word in the claims that can reasonably be interpreted as requiring a conical shape, in contrast to, for example, the presence of the words "squeezing" and "extruder," which provide a basis in the claims for a narrowing requirement. The word "tapered" is not even used in the specification and connotes a gradual decrease in size that is not claimed as a limitation. *See Merriam Webster's Collegiate Dictionary* (10th ed.1997) ("to diminish gradually"). While a gradual decrease in size may be in the structure of the preferred embodiment, it is not an inherent limitation of a "squeezing extruder throat," which could just as easily narrow abruptly so long as the guardrail can be forced through it and squeezed in the process.

2. Must a squeezing extruder throat flatten the guardrail into a relatively flat plate?

Defendants contend that a squeezing extruder throat must flatten the guardrail into a "relatively flat plate," relying on that language in the "summary of the invention" portion of the specification. '928 patent, col. 2, lines 22-23. That construction improperly imports a limitation from the specification that does not exist in the claims. Claim 1 says that the squeezing extruder throat is for "flattening the guardrail," '928 patent, col. 6, lines 48-49, with no mention of the degree to which it must flatten. This is analogous to the situation that was presented in *Ekchian v. Home Depot* where the accused infringer sought to limit the construction of "conductive" liquids to a specific range of conductivity disclosed in the specification. 104 F.3d 1299 (Fed.Cir.1997). The *Ekchian* court held that the liquid must merely be sufficiently conductive to perform its function, i.e., to act as a capacitor. *See* id. at 1303. In the instant case, the *function* of the squeezing extruder throat is to employ flattening to dissipate *some* of the energy of an impacting vehicle. As will be discussed in greater detail later, the patent language acknowledges that some energy will necessarily be dissipated by bending as well as flattening. Therefore, in this context, "flattening" means a degree of flattening sufficient to dissipate some of the energy of an impacting vehicle.

Additionally, Defendants' proposed construction would mean that there would be no literal infringement of the '928 patent by a device that exactly copies the '928 patent but merely changes the width of the squeezing extruder throat to flatten the guardrail less than "relatively flat." A patentee should not have to resort to the doctrine of equivalents, under which the patentee would surely succeed, to show that a mere change in the dimensions of a device, without *any* change in the function, way, or result, infringes the patent.

3. Must the flattening of the guardrail occur prior to any bending?

[42] Defendants assert that flattening must occur before bending so that the squeezing extruder throat must be located upstream of the bending means in any device that infringes the '928 patent. Defendants point to the syntax of the specification language, which speaks of "flattening and bending, " '928 patent, col. 2, line 35, and the claim language, which describes a bending means that bends and remotes "the flattened guardrail." '928 patent, col. 6, lines 53-54. Defendants also rely on the description and drawings contained in the preferred embodiment that depict a flattening-before-bending structure. Plaintiffs counter that it is merely in the preferred embodiment that flattening occurs before bending, and that such a requirement is expressly disclaimed by the following language in the specification: "It should be understood, however, that the extruder terminal can be designed to bend the W-beam guardrail without first flattening it. " '928 patent, col. 6, lines 20-22.

The court agrees with Defendants that the language cited by Plaintiffs does not support Plaintiffs' position

because that language describes an embodiment in which a flattening device, a necessary limitation of Claim 1, is eliminated altogether. Nonetheless, the court concludes that flattening before bending is not a limitation of the claims. As discussed earlier, the squeezing extruder throat and bending means are separate limitations. If these and all other claim limitations are found in an accused device, infringement will not be precluded merely because they are found in different locations. *See* Corning Glass Works, 868 F.2d at 1259-60.

4. Must flattening be the primary or exclusive means of dissipating the energy of an impacting vehicle?

[43] Defendants urge the court to adopt a construction of "squeezing extruder throat" that dissipates the energy of an impacting vehicle "by flattening, ... not by shredding or kinking." Defendants' Submission of Joint Proposed Order Regarding Claim Construction Under *Markman* (Dkt.# 45), Exhibit A, at 2. This narrow construction implies that flattening must be the exclusive means of energy dissipation and is not supported by the claims, the specification or the prosecution history. To begin with, a construction that precludes the patent from encompassing devices that shred or kink is inconsistent with the law of infringement. Infringement occurs if all the elements of the claimed device are present in the accused device, regardless of whether additional features are incorporated in the accused device. *See* Amstar Corp. v. Envirotech Corp., 730 F.2d 1476, 1483-84 (Fed.Cir.1984).

[44] [45] [46] It is true that the patent examiner only approved the patent after the patentee distinguished the extrusion terminal as having a narrowing channel that flattens the W-beam. But nothing in the prosecution history indicates that such a device could not also shred or kink the guardrail. Certainly, the terminal in the '928 patent would not be anticipated by, or obvious in view of, devices that dissipated energy by shredding or kinking. The addition of a narrowing channel sufficiently demonstrated the novelty of the invention and distinguished the invention from prior art to overcome the "anticipation" and "obviousness" objections of the examiner, FN3 regardless of other similarities to prior art retained by the invention. This is evidenced by the repeated references to dissipating energy by "flattening *and* bending" in the applicants' arguments that were eventually accepted by the examiner. *See Patentee's Request for Reconsideration,* filed February 16, 1989, at 2-3, Exhibit D, Tab 7, Defendants' Written Submission Regarding Claim Construction Under *Markman* (Dkt.# 32), filed July 12, 1999. The squeezing extruder throat must flatten by squeezing, i.e., by forcing the guardrail through a structure that is narrower than the width of the guardrail, but nothing precludes a squeezing extruder throat from incorporating a design that also shreds, bends or kinks the guardrail.

FN3. One patent anticipates another if each and every element of the claimed invention is disclosed in a single prior art reference or is embodied in a single prior art device or practice. Minnesota Mining and Mfg. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1565 (Fed.Cir.1992). Anticipation requires identity. *See id.* An invention is obvious in view of prior art when the invention combines known components to achieve a new system and the prior art contains some suggestion, motivation, or teaching whereby a person of ordinary skill would have selected the components that the inventor selected and used them to make the new device. *See* C.R. Bard, Inc. v. M3 Systems, Inc., 157 F.3d 1340, 1351 (Fed.Cir.1998). Thus, to overcome the examiner's anticipation and obviousness objections, the applicants for the '928 patent did not need to expunge all similarities to prior art. They merely needed to either introduce a single element that was not included in the prior art, and/or combine known elements in a way that was not suggested or taught by the prior art.

Utilization of other methods for dissipating energy in addition to flattening is also consistent with the patent specification which includes numerous references to "flattening and bending," for example: "A still further object of the present invention is to provide a new and improved method for dissipating the impact energy of a vehicle colliding with an end of a guardrail by flattening and bending the guardrail." '928 patent, col. 4, lines 31-34. An even more explicit reference to dissipation of energy by a means in addition to flattening is: "The radius of the bending chute can be selected to bend the W-beam guardrail, in a circular path, an elliptical path, a spiral or any other configuration desired. It has been determined that different path result [sic] in different rates of dissipation of energy." '928 patent, col. 4, line 65-col. 5, line 1.

C. Construction of the Means Plus Function Claims

The limitations "bending means," "releasing means," and "means for releasing" are stated in means plus function form. The use of the word "means" in these limitations creates a rebuttable presumption that they are means plus function limitations. *See* Seagate Tech., 174 F.3d at 1302. There are no factors in the instant case that are sufficient to rebut this presumption, and the parties agree that the claims are stated in means plus function form. When a claim limitation is stated in means plus function language, the scope of that limitation is narrowed to include only the corresponding structure, material, or acts described in the specification and equivalents thereof. *See* Odetics, 185 F.3d at 1266-67. The appropriate steps in construction of means plus function limitations are 1) a determination of the claimed function; and 2) identification of the structure, material, or acts in the specification that correspond to the means clause. *See* Chiuminatta, 145 F.3d at 1308. Evaluation of the equivalency of the accused limitations is outside the scope of claim construction because it determines infringement and is therefore a question of fact. *See* Odetics, 185 F.3d at 1268-69. Therefore, the court will not determine what accused structures may be equivalent to the corresponding structures set forth below. That is a question of fact and is not a proper subject of claim construction.

1) Construction of "bending means"

a) Determination of the Function

[47] The "bending means" functions to bend the guardrail laterally away from the longitudinal axis of the guardrail, remoting the guardrail from the path of an impacting vehicle.

Defendants argue that bending is fundamentally different from and does not subsume "kinking," and that the bending covered by the '928 patent must bend the guardrail into a smooth curve without sharp breaks or angularity. The court notes that the only corresponding structure disclosed in the specification accomplishes the bending without sharp breaks or angularity. However, this does not amount to a finding by the court that equivalents of the disclosed structure could not contain sharp breaks or angularity.

b) Identification of the Corresponding Structure

The corresponding structure is "a curvilinear bending chute or member" that is "relatively rigid," and that extends "in a curvilinear arc in a direction away from the impacting vehicle," and the "support" that accomplishes the desired rigidity by securing the bending chute to the housing of the extruder terminal. '928 patent, col. 4, lines 55-63; FIG. 3.

Defendants assert that there are three separate structures that correspond to bending means: 1) a forward

curved wall; 2) a rearward similar curved wall; and 3) a support member connected to the rearward wall. This construction is improper to the extent it implies that the court should construe these three components to require three separate equivalents in any infringing device. The claim limitation in a means plus function claim is the overall structure that performs the claimed function, not the individual components of that structure. *See* Odetics, 185 F.3d at 1268. Furthermore, it is improper to analyze a means plus function claim on a component by component basis. *See* Odetics, 185 F.3d at 1267-68. Therefore, a proper claim construction cannot rule out equivalents of the overall structure merely because the components of potentially equivalent structures are combined or arranged in a different way or replaced with substitute components. When a fact finder undertakes the task of determining equivalents in the present case, the walls and the support member are to be considered merely as the necessary components of the overall structure, which consists of a rigid curvilinear bending chute or member and a support.

Defendants also argue that the term "curvilinear" merely means "curved," which requires that the bending chute not contain sharp breaks or angularity as it turns. As noted above in the discussion of the meaning of "bending," the corresponding structure disclosed in the specification does not contain sharp breaks or angularity. However, this does not amount to a finding by the court that equivalents of the disclosed structure could not contain sharp breaks or angularity.

2) Construction of "means for releasing" and "releasing means"

[48] The means clauses "means for releasing" in Claim 4 and "releasing means" in Claim 5 describe an identical limitation notwithstanding that these limitations are included in separate claims. This is true despite the doctrine of claim differentiation, which presumes different scope for different claims. That doctrine cannot be applied to broaden the scope of a means plus function claim beyond the structure disclosed in the specification and equivalents thereof. *See* C.R. Bard, Inc., 157 F.3d at 1364. The language of Claim 5 states some, but not all, of the limitations that are disclosed as corresponding structure in the specification, and thus may have been intended to claim more broadly than the language in the specification. FN4 But regardless of the patentees' intent, both Claim 5 and Claim 4 are limited to the structure disclosed in the specification and its equivalents because they are stated in means plus function language. Furthermore, Claim 5 cannot be broader than Claim 4, because Claim 5 is dependent upon Claim 4. A dependent claim includes all the limitations of the claim on which it depends, and thus, cannot be broader than the claim on which it depends. *See* Wahpeton Canvas Co., 870 F.2d at 1552 n. 9.

FN4. Claim 5 does not specify, as the specification does, that the cable anchor includes "a steel tube," that the lugs are "wedge shaped" or have "lips [that] hook onto the sides of the apertures securely holding the anchor onto the W-beam guardrail," or that the apertures into which the lugs protrude are between "the first post and the second post." '928 patent, col. 5, lines 22-44.

a) Determination of the Function

[49] The function of the "means for releasing" or "releasing means" is to release a cable anchor from the guardrail upon advancement of the extruder terminal toward the guardrail.

b) Identification of the Corresponding Structure

The corresponding structure is: 1) a cable anchor consisting of a steel tube and a plurality of wedge shaped lugs; and 2) apertures in the guardrail between the first and second posts. The components of the lugs are: a)

a lip, which hooks onto the sides of the apertures securely holding the anchor onto the W-beam guardrail; and b) an inclined surface, which, on impact, engages the side of the aperture moving the lug out of the aperture.

Defendants argue that the lugs must be considered as separate structures, whose equivalents must be found in any infringing device. But as discussed earlier, this misapprehends the analysis of equivalents under s. 112, para. 6. The claim limitation is the overall structure that performs the claimed function, not the individual components of that structure. *See* Odetics, 185 F.3d at 1268. Here, the overall structures that perform the releasing are the cable anchor, which includes lugs, and the apertures into which the lugs protrude. Thus, a device is equivalent if it performs the identical function of releasing a cable anchor from the guardrail, and the "way" the structure in the accused device releases the cable anchor and the "result" of that releasing are identical or equivalent to the way and result described for the cable anchor and the apertures in the '928 patent. *See* Odetics, 185 F.3d at 1267. While consideration of the components of the claim limitations is necessary to understand whether an accused device possesses equivalent "ways" and "results," it is not necessary that an equivalent of every component of the patented device be present. *See* id. at 1267-68.

III. Conclusion

For the foregoing reasons, the court construes the disputed terms and limitations of the '928 patent as is set forth above. It is so ORDERED.