United States District Court,
N.D. Iowa, Central Division.

IDEAL INSTRUMENTS, INC., a Michigan corporation,
Plaintiff.
v.
RIVARD INSTRUMENTS, INC., a foreign corporation, and Meril Rivard, a foreign national,
Defendants.

No. C 05-3079-MWB

Aug. 10, 2007.

Background: Domestic manufacturer brought suit against Canadian manufacturer for infringement of patents for "detectable" hypodermic needles for livestock.

Holdings: In construing disputed patent claim terms, the District Court, Bennett, J., held that:
(1) term "stainless steel comprising" meant an alloy comprised of a list of specified elements in certain weight percentage ranges wherein the stated values were the outermost bounds (minimum and maximum) for the weight percentage of each element comprising the alloy;
(2) "magnetism" terms in claims of patent for "detectable" heavy duty hypodermic needles for livestock, "is rendered magnetic" and "is magnetized," had same meaning; and
(3) court's independent obligation to construe patent claim terms included construction of terms for which the parties had agreed on a construction.

Claims construed.

6,488,668, 6,960,196. Construed.

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MEMORANDUM OPINION AND ORDER REGARDING CONSTRUCTION OF DISPUTED PATENT CLAIM TERMS

BENNETT, District Judge.

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Although this patent infringement action has been before the court for the disposition of several weighty matters, FN1 this rulingis the first in which the focus is the patents-in-suit themselves, which are for "detectable" hypodermic needles for livestock. Specifically, this matter comes before the court for construction of disputed patent claim terms, *i.e.,* for a ruling after a so-called " Markman hearing." *See* Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995) (*en banc*), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The parties' positions on claim construction appear to be as irreconcilable as their positions have been on nearly every substantive issue so far in this case: The parties have agreed on the construction of only two claim terms, but dispute whether another sixteen claim terms in the two patents require any construction at all, and if so, what construction to give them.

FN1. *See* Ideal Instruments, Inc. v. Rivard Instruments, Inc., 434 F.Supp.2d 598 (N.D.Iowa 2006) (Ideal Instruments I) (ruling on defendants' challenges to the forum in which various claims should be litigated and personal jurisdiction over the individual defendant); Ideal Instruments, Inc. v. Rivard Instruments, Inc., 434 F.Supp.2d 640 (N.D.Iowa 2006) (Ideal Instruments II) (ruling on motion to reconsider and to stay); Ideal Instruments, Inc. v. Rivard Instruments, Inc., 479 F.Supp.2d 968 (N.D.Iowa 2007) (Ideal Instruments III) (ruling on the defendants' motion for preliminary injunction based on the defendants' false advertising counterclaim pursuant to s. 43 of the Lanham Act, codified at 15 U.S.C. s. 1125(a)(1)(B)); Ideal Instruments, Inc. v. Rivard Instruments, Inc., 243 F.R.D. 322 (N.D.Iowa 2007) (Ideal Instruments IV) (ruling on plaintiff's motion for sanctions against defendants for filing the motion for preliminary injunction).

I. INTRODUCTION

A. Procedural History

Pursuant to a scheduling order, as amended, the parties filed a Joint Claim Construction Statement (docket no. 160) on March 21, 2007, setting forth the construction of claim terms, phrases, and clauses on which the parties agree, the parties' proposed constructions of disputed claim terms, and the parts of the patents or prosecution histories of the patents supporting a party's disputed construction. The parties then filed their Markman claim construction briefs on April 24, 2007. *See* Plaintiff's Markman Claim Interpretation Brief (docket no. 171); Defendants' Markman Claim Construction Brief (docket no. 166). The parties filed rebuttal briefs on claim construction on June 15, 2007. *See* Plaintiff Markman Claim Interpretation Rebuttal Brief (docket no. 188); Defendants' Markman Claim Construction Rebuttal Brief (docket no. 191).

In a prior patent case, the court provided the parties with a tentative draft of a ruling on claim construction prior to the Markman hearing. *See* Maytag Corp. v. Electrolux Home Prods., Inc., 411 F.Supp.2d 1008, 1015-16 (N.D.Iowa 2006). The court found that such a procedure was very effective in focusing the parties' arguments on the areas in which there were truly disputes about the construction of claim terms and where the parties believed that the court had gone wrong in its constructions, and the parties in that case agreed. The court followed such a procedure in this case by providing the parties with a 144-page tentative draft ruling on claim construction issues on July 27, 2007. Once again, the court and the parties found that use of a tentative draft dramatically narrowed the number of issues that the parties felt compelled to argue during the Markman hearing. Specifically, the plaintiff requested that the court "revisit" its construction of only one claim term, while the defendant took issue with the court's construction of only four claim terms. Moreover, both parties recommended that the court continue to use such a procedure for Markman decisions in patent cases in the future and expressed their hope that other federal district court judges would become aware of and use such a procedure in patent cases.

The court held the Markman hearing in this case on August 3, 2007. The Markman hearing in this case was the first instance in which this court has conducted a hearing using teleconferencing and "webcasts" of the parties' presentations over the internet. The court and the parties found that this procedure was also extremelyeffective in both presenting the parties' arguments and saving the parties substantial sums in attorney fees and travel costs. FN2

FN2. Owing to the last minute notice by the plaintiff of a desire to present materials using PowerPoint via a webcast and some technical difficulties with working out the procedure to surrender "moderator" rights from one party to the other, the parties actually presented separate, simultaneous webcasts, one for the plaintiff's presentation and one for the defendants' presentation, instead of a single webcast. In fact, the parties used different webcast hosts in this case: one used Netspoke and the other used Webex. The court and the parties each logged in to both webcasts at the beginning of the conference call, then switched between them as the parties made their arguments. Although not as elegant a procedure as a single webcast would likely have been, the simultaneous webcasts procedure was very effective, eliminated the technical difficulties in the short time available, and proved quite workable. One "glitch" that occurred when the plaintiff "timed out" of the defendants' webcast was quickly remedied by the plaintiff logging back in. The parties had also taken the precaution of providing the court and each other with copies of their presentation slides by e-mail prior to the hearing, so that even when the plaintiff temporarily lost the defendant's webcast, the plaintiff was able to follow the defendant's presentation by using the copy that the plaintiff had received. The court heartily recommends requiring such a backup procedure when using technology, whether new or tested and true, even though "Murphy's Law" has not yet been codified into the United States Code.

At the hearing, plaintiff Ideal Instruments, Inc., was represented by Toni L. Harris, who presented Ideal's argument, and Mark R. Fox of Fraser, Trebilcock, Davis & Dunlap, P.C., in Lansing, Michigan. Defendants Rivard Instruments, Inc., and Meril Rivard, were represented by Terence J. Linn, who presented the defendants' argument, and Karl T. Ondersma of Van Dyke, Gardner, Linn & Burkhart, L.L.P., and local counsel Dennis W. Johnson of Dorsey & Whitney, L.L.P., in Des Moines, Iowa. The question of the proper construction of disputed claim terms of the patents-in-suit is now fully submitted.

Although this ruling is the fifth substantial ruling in this case, the new issues of claim construction nevertheless require a statement of some of the pertinent background to the patents-in-suit and to this litigation to put in perspective the court's ruling on claim construction.

B. Factual Background

1. The parties

Plaintiff Ideal Instruments, Inc., (Ideal) is a Michigan corporation with its principal place of business in Lansing, Michigan. FN3 Corporate defendant Rivard Instruments, Inc., is a closely held for-profit Canadian corporation, and individual defendant Meril Rivard is a citizen of Canada, a resident of Winnipeg, Manitoba, and the president and majority, if not sole, shareholder of Rivard Instruments. Unless the context requires otherwise, the court will identify the defendants collectively as "Rivard." Both Ideal and Rivard manufacture "detectable" hypodermic needles for use, for example, in hypodermic syringes for livestock. The needles are "detectable" in the sense that they are made to be easily detected in the carcasses of slaughtered animals by using metal detectors installed in meat processing plants, if they break off or are otherwise inadvertently left behind in the course of injecting the animals.

FN3. For present purposes, the court will not distinguish between Ideal and its parent company, Neogen Corporation.

2. The patents

Two of Ideal's patents are at issue in this lawsuit. Ideal is the assignee of United States Patent No. 6,488,668 (the '668 patent) for a "detectable heavy duty needle." The inventor of the '668 patent is identified as Gordon Prindle, and the patent stems from application number 08/714,041, filed November 16, 2000. The '668 patent originally issued on December 3, 2002, and was upheld on *ex parte* reexamination on December 23, 2004. Ideal is also the assignee of another patent for a "detectable heavy duty needle," United States Patent No. 6,960,196 (the '196 patent), which also identifies the inventor as Gordon Prindle, and stems from application number 10/215,122, filed on August 8, 2002, as a continuation of the application that ripened into the '668 patent. The '196 patent issued on November 1, 2005. Ideal manufactures, sells, and distributes a product exploiting the inventions disclosed in the '668 and '196 patents under the commercial name "D3 Detectable Needles."

3. Common portions of the patents

Because the '668 patent and the '196 patent stem from the same original application, *most portions* of the Abstract, Figures, Background Of The Invention, Summary Of The Invention, and Detailed Description Of The Invention in the two patents are identical. Thus, the Abstract describes the patented invention in each patent as follows:

The present invention provides a detectable heavy duty needle cannula for use in hypodermic syringes and the like. Needle cannula comprises a magnetizable or magnetized stainless steel alloy, which enables needle cannula to be detectable in metal detectors that are commonly used in the meat processing industry to detect broken needle cannulas in the flesh of slaughtered animals. Needle cannula further comprises a sidewall that is thicker than the sidewalls of prior art needle cannulas. The thicker sidewall imparts to needle cannula greater resistance to breakage during the process of injecting animal health products into an animal and greater detectability in a metal detector.

Joint Exhibit 1001 (hereinafter the '668 patent) (component numbers omitted); Joint Exhibit 1003 (hereinafter the '196 patent). The Summary Of The Invention makes clear that the patented inventions have as an object "to provide a needle cannula that is more resistant to breakage during the process of injecting animal health products into an animal" and as another object "to provide a needle cannula comprising a stainless steel alloy that is magnetized to facilitate detection of the broken needle cannula in the flesh of the animal using the metal detectors that are commonly used in the meat processing industry." The '668 patent, Col. 3, *ll*. 19-27; the '196 patent, Col. 3, *ll*. 21-29.

To understand the patented inventions, the court finds it helpful to pair figures from the patents with the pertinent parts of the Detailed Description Of The Invention. Figure **1,** as shown in the '196 patent, FN4 and described as "a longitudinal cross-sectional view of the needle assembly comprising the detectable heavy duty needle of the present invention," is the following:

FN4. Figure **1** of the '668 patent differs only in that it does not include numbers **17A, 17B,** or **34.**

***1139**

FIG. 1

The Detailed Description Of The Invention in both patents explains Figure **1** as follows:

FIG. **1** schematically illustrates a needle assembly **10** adapted for detachably mounting on a luer collar of a hypodermic syringe or the like comprising the detectable heavy duty needle cannula **12** having proximal end **14,** distal end **16,** and a sidewall **17** with an outer sidewall **17A** and inner sidewall **17B** therebetween having a lumen **18** extending therethrough defining a longitudinal axis. Distal end **16** of the needle cannula **12** preferably includes sharpened tip **20.** A mounting hub **22** is securely affixed to the proximal end **14** of needle cannula **12** and includes projections **24** extending therefrom for threaded engagement with a luer collar or like attachment means. Thus, needle assembly **10** is mountable on a hand-held hypodermic syringe barrel. However, needle assembly **10** can also be mounted on a catheter device or mounted on automatic injection devices.

The '668 patent, Col. 4, ll. 16-30; the '196 patent, Col. 4, ll. 17-31. It should be added, for the sake of completeness, that the Detailed Description later explains, "FIG. **1** shows a particular embodiment of needle assembly **10** comprising needle cannula **12;** however, the detectable needle cannula of the present invention is not limited to that particular embodiment." The '668 patent, Col. 4, *l*. 67, to Col. 5, *l*. 4; the '196 patent, Col. 5, *ll*. 4-7.

Figure **2,** as shown in the '196 patent, FN5 and described as "an isometric view of the detectable heavy duty needle of the present invention," is the following:

FN5. Figure **2** of the '668 patent differs only in that it does not include number **18.**

***1140**

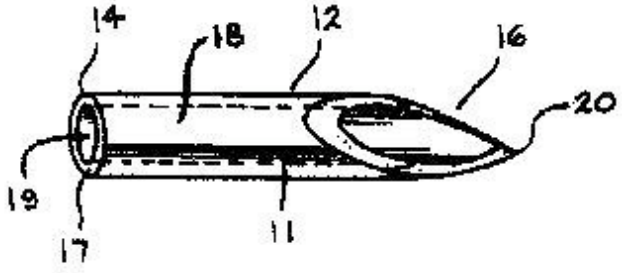


FIG. 2

FIG. 2

The pertinent portion of the Detailed Description Of The Invention in both patents explains this figure as follows:

As shown in FIG. **2** in greater detail, needle cannula **12** is tubular with proximal end **16,** distal end **14,** and a

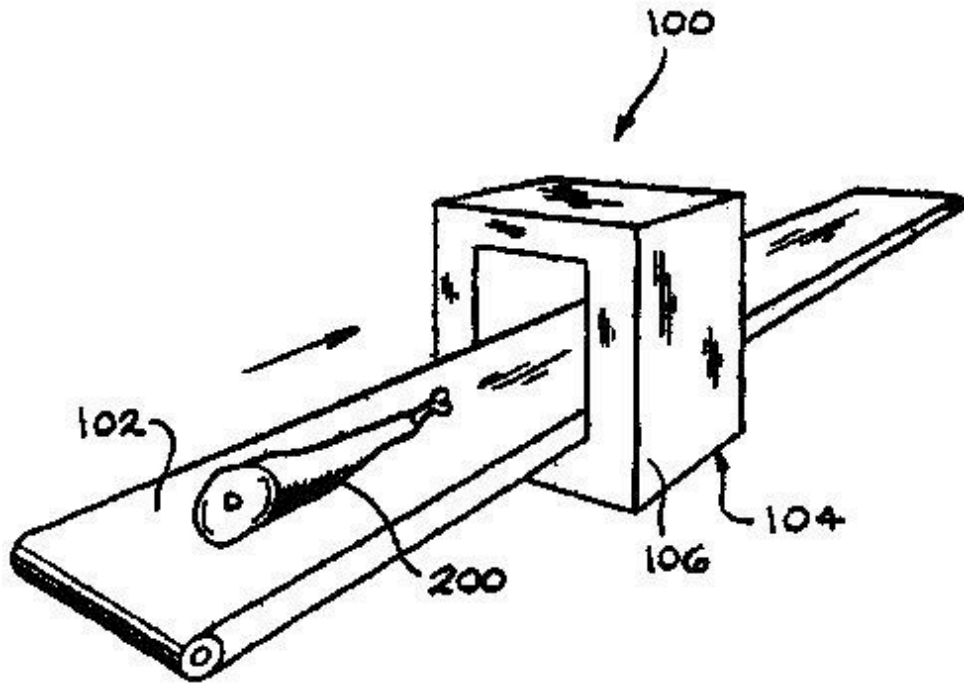
sidewall **17** therebetween. The needle cannula **12** has a lumen **18** defining a cannula longitudinal axis **19.** Preferably, needle **12** has a sharpened tip **20** at distal end **16** and is blunt at proximal end **14.**

The '668 patent, Col. 4, *ll*. 49-54; the '196 patent, Col. 4, *ll*. 50-55.

Figure **3,** as shown in both the '668 patent and the '196 patent, and described as "a perspective view of an apparatus comprising a metal detector for detecting a part of the detectable heavy duty needle of the present invention broken off in the flesh of an animal and a conveyor for transporting the flesh through the metal detector," is the following:

FIG. 3

FIG 3



The pertinent portion of the Detailed Description explains this figure as follows:

FIG. **3** shows one embodiment for an apparatus for detecting metal in the flesh of an animal after slaughter. Shown is apparatus **100** comprising a conveyor means **102** for transporting animal flesh or meat products after slaughter **200** through metal detector **104** for detecting whether animal flesh contains a broken piece of needle cannula **12** of the present invention. Metal detector **104,** comprises a coil arrangement **110** (shown in FIG. **4**) inside a metal case **106.**

The '668 patent, Col. 6, *ll*. 20-27; the '196 patent, Col. 6, *ll*. 24-31.

Figure **4,** as shown in both the '668 patent and the '196 patent, "shows a balanced three-coil system commonly used in the metal detectors that are used in the meat packing industry," as follows:

***1142**

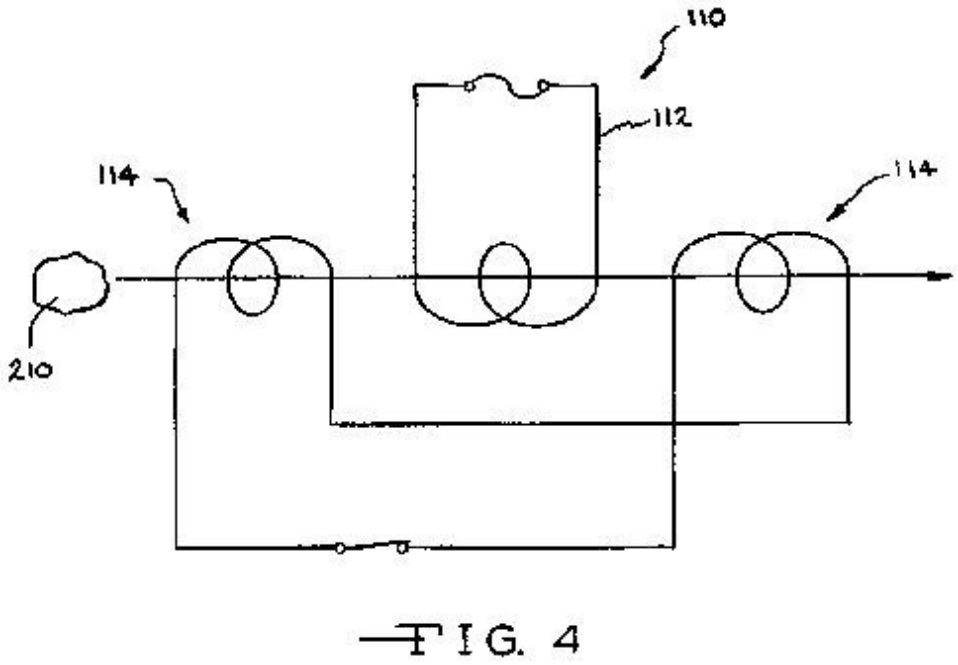


FIG. 4

FIG. 4

The Detailed Description describes Figure **4,** and also explains the essence of how metal detectors detect needles or other metallic objects left behind in the carcasses of slaughtered animals, as follows:

The metal detector preferably uses a balanced three-coil system **110** (FIG. **4**), which is a configuration that is commonly used in the meat processing industry to detect metal in the flesh of animals after slaughter. The three coils are wound on a non-metallic frame or former, each exactly parallel with the other. The center transmitter coil **112** is connected to a high frequency radio transmitter. The two receiver coils **114** on each side of the coil **112** act as radio receivers or aerials. Because receiver coils **114** are identical and the same distance to transmitter coil **112,** they pick up the same signal and an identical voltage is induced in each. When coils **114** are connected in opposition, they cancel out resulting in zero output.

When a piece of metal in animal flesh or meat product after slaughter **210** passes through coil arrangement **110,** the high frequency field is disturbed under one coil, changing the voltage generated by a few microvolts. The perfect state of balance is lost and the output is no longer zero. The resulting signal output is sent to a receiver where it is processed and amplified. The processed signal is then sent to a computer processing unit or other device. It is this frequency disturbance phenomenon that is used to detect the presence of unwanted metal in the flesh of an animal after slaughter. A magnetized or magnetic piece of metal will also induce a change in voltage that can be measured by the metal detector.

Preferably, coil arrangement **110** is mounted inside a metal case **106** with a hole in the center to allow passage of animal flesh or meat product after slaughter **200** (FIG. **3**). Metal case **106** provides rigidity to

coil arrangement **110** and acts as a screen, preventing airborne electrical signals, or nearby metal items and machinery from disturbing the detector. Aluminum is frequently used for metal case **106** but where frequent washdown is required such as in meat processing plants, stainless steel is generally used.

The '668 patent, Col. 6, *l.* 49, to Col. 7, *l.* 16; the '196 patent, Col. 6, *l.* 53, to Col. 7, *l.* 20.

The court believes that the illustrations and portions of the Detailed Description quoted here provide sufficient context, at least for the moment, for the specific claims of each patent. The court will return to the Summary of the Invention, the Detailed Description, and the prosecution history of the '668 and the '196 patents, as appropriate, in its analysis of the parties' competing constructions of claim terms. For present purposes, however, the court will pass on to the pertinent claims of the two patents.

4. Pertinent claims of the '668 patent

The pertinent claims of the '668 patent for purposes of this ruling on claim construction, and apparently for purposes of Ideal's claims of infringement by Rivard, are **claims 1, 5, 6, 7, 11, 12, 13,** and **15.** Those claims are quoted below, with italics indicating claim terms for which the parties dispute the construction:

I claim:

1. In a method of injecting flesh of a living food animal which comprises:

(a) providing an injection means comprising a tubular needle defined by at least one wall forming the tube and supported on a hub and mounted on a device for injecting a dosage of a material in an animal, where in the needles is made of *stainless steel* which *comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % Al, 0.01-1.0 wt % Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 wt % Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V,* and which is *rendered magnetic to a level that enables detection of the magnetism of the needle* if the needle is broken off in the flesh of the living animal during injecting the animal; and

(b) injecting the living animal with the dosage using the needle, wherein if the needle breaks in the animal during injection, the needle, which has been rendered magnetic prior to injecting the living animal or while in the flesh of the animal after slaughter, can be detected in the flesh of the animal upon slaughter and processing into the food.

* * *

5. The method of claim **1** or **2** wherein *the wall has a thickness of greater than 0.018 inch.*

6. The method of claim **1** or **2** wherein *the needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic].*

7. In a slaughtering method of slaughter and processing of animals for food while conveying the flesh of the animal, the improvement which comprises detecting a broken *stainless steel* tubular needle in the flesh wherein the *stainless steel comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % Al, 0.01-1.0 wt % Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0. 5 wt % Cu, less than 0.01 wt % Pb, 0.02-0. 5 wt % Bi, 0. 5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V,* and wherein the needle has at least one wall and is supported on a hub for mounting on a device for injectinga dosage of a material into an animal, wherein *the needle is magnetized to a level which enables detection of the magnetism of the needle* when the needle is broken off

from the hub and is in the flesh of the animal when the animal is slaughtered and processed.

* * *

11. The method of claim **7** or **8** wherein *the wall has a thickness of greater than 0.018 inch*.

12. The method of claim **7** or **8** wherein *the needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic]*.

13. In a method of detecting and removing a broken injection needle in a slaughtered animal resulting from injecting the flesh of a living food animal, the improvement which comprises:

(a) providing an injection means comprising a tubular needle defined by at least one wall forming the tube and supported on a hub and mounted on a device for injecting a dosage of a material in an animal, wherein the needles is made of *stainless steel comprising Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % Al, 0.01-1.0 wt % Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0. 5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 wt % Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V,* which is *rendered magnetic at a level that enables detection of the magnetism of the needle* if the injection needle is broken off in the flesh of the living animal during the injection;

(b) injecting the living animal with the dosage using the needle, whereby when the needle breaks in the animal during the injection, the needle can be detected in the flesh of the animal upon slaughter and processing into the food; and

(c) detecting and removing the broken needle in the slaughtered animal during processing into the food.

* * *

15. In a slaughtering method for slaughter and processing of animals for food while conveying the flesh of the animal, the improvement which comprises:

(a) detecting a broken *stainless steel* tubular injection needle in the flesh, wherein the injection needle has at least one wall and is supported on a hub for mounting on a device for injecting a dosage of a material into an animal and which *comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % Al, 0.01-1.0 wt % Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 wt % Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V,* wherein *the injection needle is magnetized to a level which enables detection of the magnetism of the needle* when broken off in the flesh of the animal when the animal is slaughtered and processed; and

(b) removing the broken needle from the flesh.

The '668 patent, Claims **1, 3, 6, 7, 11, 12, 13,** and **15.**

5. Pertinent claims of the '196 patent

The pertinent claims of the '196 patent for purposes of this ruling on claim construction, and apparently for purposes of Ideal's claims of infringement by Rivard, are **claims 1, 3, 4, 5, 8, 10,** and **11.** Those claims are quoted below, with bold indicatingclaim terms for which the parties have agreed on a construction, italics indicating claim terms for which the parties dispute the construction, and underlining indicating corrections

stated in the November 1, 2005, Certificate of Correction, Joint Appendix at 534:

I claim:

1. In a method of injecting an animal health product into flesh of a living food animal which comprises:

(a) providing an injection means comprising a **needle assembly** which includes a *gauge* of needle cannula having an outer diameter and a lumen with a lumen diameter and which is mounted on a device for injecting a dosage of the product into the living food animal, wherein the needle cannula is made of *stainless steel* which is *magnetic or magnetizable,* and *the outer diameter is greater than an outer diameter of a standard needle* cannula *and the lumen diameter is identical to a lumen diameter of the standard needle* cannula *between 14 and 27 gauge* so that the needle cannula has a sidewall thickness which renders the needle cannula resistant to breakage during the injection and *increases detectability in a metal detector over the standard needle* cannula *such that the magnetism and the sidewall thickness enables [sic] detection of the magnetism of the needle* cannula *or piece thereof* in the flesh of the animal upon slaughter and processing into a food if the needle cannula or piece thereof were to break off in the flesh of the living animal during the injection; and

(b) injecting the living food animal with the dosage using the injection means, whereby if the needle cannula or piece thereof breaks off in the living animal during the injection, *the needle* cannula *or piece thereof can be detected by a metal detector when the standard needle* cannula *of the same gauge cannot be detected* in the flesh of the animal upon slaughter and processing into food.

* * *

3. The method of claim **1** or **2** where in the sidewalls **flanking the lumen** has [sic] a combined thickness of greater than 0.018 inch.

4. The method of claim **1** or **2** where in *the sidewalls flanking the lumen has [sic] a combined thickness of about 0.025 inch*.

5. The method of claim **1** or **2** wherein *the stainless steel comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % Al, 0.01-1.0 wt % Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 wt % Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V*.

* * *

8. In a slaughtering method for slaughter and processing of animals for food while conveying the flesh of the animal through a detector for detecting needle cannulas or pieces thereof in the flesh, the improvement which comprises detecting in the flesh of the animal a broken *stainless steel* tubular needle cannula or piece thereof which has broken off of a **needle assembly** of an injection means for injecting a dosage of an animal health product into the animal while it is living, wherein the needle cannula is of a *gauge,* has an outer diameter, and a lumen with a lumen diameter and wherein *the outer diameter is greater than the outer diameter of a standard needle* cannula *and the lumen diameter is identical to a lumen diameter of the standard needle* cannula *between 14 and 27 gauge* so that the needle cannula has a sidewall thickness which renders the needle cannula resistant to breakage during the injecting *and increases detectability of the needle* cannula *in a metal detector over the standard needle* cannula *while being conveyed through the detector so that it can be detected when the standard needle* cannula *of the same gauge cannot be detected,* and wherein *the needle* cannula *or piece thereof is magnetized to a level which enables detection of the magnetism of the needle* cannula *or piece thereof* when the needle cannula or piece thereof is broken off in the flesh of an

animal while the flesh of the animal is being conveyed through the detector during the slaughter and processing.

* * *

10. The method of claim **8** or **9** wherein the sidewalls **flanking the lumen** has [sic] a combined thickness of greater than 0.018 inch.

11. The method of claim **8** or **9** wherein *the sidewalls **flanking the lumen** has [sic] a combined thickness of about 0.025 inch*.

The '196 patent, Claims **1, 3, 4, 5, 8, 10,** and **11.**

C. Agreed Constructions

As the court noted at the outset of this decision, the parties have agreed on the construction of only two claim terms, both of which appear in the '196 patent: "needle assembly," which appears in claims **1** and **8,** and "flanking the lumen," which appears in claims **3, 10,** and **11.** These terms appear in bold in the quotation of the pertinent claims, above. The claim terms and the parties' agreed proposed constructions are as follows:

Claim Term	Parties' Proposed Construction
Needle assembly	A hub and a tubular needle cannula having a proximal end, a distal end, and a sidewall with an outer sidewall and inner sidewall there between having a lumen extending there through defining a longitudinal axis.
Flanking the lumen	The combined thickness of the sidewalls opposing each other across the lumen

The court will consider below whether it is required to or will accept either or both of these agreed constructions.

D. Constructions In Dispute

As also noted above, Ideal contends that no other claims terms require construction, while Rivard contends that numerous claim terms in each of the patents require construction. The following chart shows the claim terms identified by Rivard as requiring construction, Rivard's proposed construction for each term, and Ideal's alternative construction for each term, if any, which Ideal offers if the court deems it necessary to construe the term in question. The disputed terms are quoted here in the way that they are stated in the patents, rather than the way that they are stated in the Joint Claim Construction Statement or the parties' briefs, where there is a difference.

THE '668 PATENT		
Claim Term	Rivard's Proposed Definition	ideal's Alternative definition (if any definition is required)
Claim 1		
a. Stainless steel (Also in claims **7, 13,** and **15**)	A large group of corrosion resistant steels that contain 10% or more of	Corrosion resistant steel

	chromium and may contain other elements.	
b. The stainless steel comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % A1, 0.01-1.0 Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V. (Also in claims **7, 13,** and **15**)	The stainless steel includes iron (Fe) and each of the following elements within the listed ranges, measured by percentage of overall weight of the metal sample: Silicon (Si) = at least 0.01% and no more than 3.0%; Phosphorus (P) = less than 0.03%; Chromium (Cr) = at least 4% and no more than 25%; Aluminum (Al) = at least 0.003% and no more than 7.0%; Manganese (Mn) = at least 0.01% and no more than 1.0%; Sulfur (S) = at least 0.001% and no more than 0.03%; Molybdenum (Mo) = at least 0.01% and no more than 5.0%; Titanium (Ti) = at least 0.01% and no more than 1.0%; Carbon (C) = at least 0.003% and no more than 0.08%; Nickel (Ni) = at least 0.01% and no more than 5.0%; Copper (Cu) = at least 0.01% and no more than 0.5%; Lead (Pb) = less than 0.01%; Bismuth (Bi) = at least 0.02% and no more than 0.5%; Niobium (Nb) = at least 0.5% and no more than 1.0%; Zirconium (Zr) = at least 0.02% and no more than 1.0%; Vanadium (V) = at least 0.05% and no more than 1.0%.	The stainless steel comprises Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0.5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium).
c. [The needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle (Also in claim **13**)	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet. It is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat.	Prior to use of the needle or after the needle has broken off in the flesh of an animal which has then been killed for slaughter, the needle is magnetized to be a permanent magnet that produces a magnetic field or has been magnetized to produce a magnetic field for a period of time, whereby the magnetism of the magnetic needle facilitates locating a needle or needle fragment in the flesh of a slaughtered animal.
	Claim 5	
d. The wall has a thickness of greater than 0.018 inch (Also in claim **11**)	The metal making up the needle wall on one side of the needle hole has a thickness greater than 0.018 inch.	Needle wall thickness greater than 0.018 inch

Claim 6		
e. The needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic]. (Also in claim **12**)	The hole through the needle is between 0.0455 and 0.0465 inches in diameter and the outside diameter of the needle is 0.018 inch.	The needle has a lumen diameter of about 0.046 inch and an outside diameter of 0.018 inch.
Claim 7		
f. The needle is magnetized to a level which enables detection of the magnetism of the needle (Also in claim **15**)	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet. It is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat.	The needle is magnetized, or the magnetism of the needle is enhanced, to a level which facilitates locating a needle or needle fragment in the flesh of a slaughtered animal

THE '196 PATENT

	Rivard's Proposed	Ideal's Alternative
Claim Term	**Definition**	**Definition (if any)**
Claim 1		
a. Gauge (Also in claim **8**)	A size measurement of needles determined by the outer diameter of the needle. The smaller the gauge number the larger the needle outer diameter.	[None offered.]
b. Stainless steel (Also in claim **8**)	A large group of corrosion resistant steels that contain 10% or more of chromium and may contain other elements.	Corrosion resistant steel
c. Magnetic or magnetizable	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet.	[None offered.]
d. The outer diameter is greater than an outer diameter of a standard needle cannula and the lumen	A needle represented to be a gauge between 14 and 27 has an inside diameter (I.D.) within the	[None offered.]

	diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge (Also in claim **8**)	I.D. range of the corresponding gauge on Exhibit A* and an outside diameter (O.D.) greater than the O.D. range on Exhibit A for the corresponding gauge. (*Exhibit A to Amendment under 37 C.F.R. s. 1.111, page 17, mailed April 17, 2003.)	
		For example, a 16 gauge needle has an inside diameter identical to the inside diameter of the 16 gauge needle listed on Exhibit A and an outer diameter greater than the outer diameter of the 16 gauge needle listed on Exhibit A.	
e.	The magnetism and the sidewall thickness enables [sic] detection of the magnetism of the needle cannula or piece thereof	It is the permanent or residual magnetism that must be detected by the metal detector in order to determine a needle or piece is present in the meat. The sidewall thickness must materially contribute to the detection of the needle magnetism.	[None offered.]
f.	The needle cannula or piece thereof can be detected by a metal detector when the standard cannula of the same gauge cannot be detected	The permanent magnetism or residual magnetism of the broken cannula is strong enough for that magnetism to be detected by a metal detector when a cannula having dimensions within the range of Exhibit A for the corresponding gauge cannot be detected.	[None offered.]
		Claim 4	
g.	The sidewalls flanking the lumen has [sic] a combined thickness of about 0.025 inch. (Also in claim **11**)	The combined thickness of the sidewalls opposing each other across the lumen have a combined thickness of between 0.0245 and 0.0255 inches.	[None offered.]
		Claim 5	
h.	The stainless steel comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % Al, 0.01-1.0 wt % Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 wt % Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V.	The stainless steel includes iron (Fe) and each of the following elements within the listed ranges, measured by percentage of overall weight of the metal sample: Silicon (Si) = at least 0.01% and no more than 3.0%; Phosphorus (P) = less than 0.03%; Chromium (Cr) = at least 4% and no more than 25%; Aluminum (Al) = at least 0.003% and no more than 7.0%; Manganese (Mn) = at least 0.01% and no more than 1.0%; Sulfur (S) = at least 0.001% and no more than 0.03%; Molybdenum (Mo) = at least	The stainless steel comprises Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0.5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium).

	0.01% and no more than 5.0%; Titanium (Ti) = at least 0.01% and no more than 1.0%; Carbon (C) = at least 0.003% and no more than 0.08%; Nickel (Ni) = at least 0.01% and no more than 5.0%; Copper (Cu) = at least 0.01% and no more than 0.5%; Lead (Pb) = less than 0.01%; Bismuth (Bi) = at least 0.02% and no more than 0.5%; Niobium (Nb) = at least 0.5% and no more than 1.0%; Zirconium (Zr) = at least 0.02% and no more than 1.0%; Vanadium (V) = at least 0.05% and no more than 1.0%.	
Claim 8		
i. It can be detected when the standard needle cannula of the same gauge cannot be detected	The permanent magnetism or residual magnetism of the broken cannula is strong enough for that magnetism to be detected by a metal detector when a cannula having dimensions within the range of Exhibit A for the corresponding gauge cannot be detected.	[None offered.]
j. The needle cannula or piece thereof is magnetized to a level which enables detection of the magnetism of the needle cannula or piece thereof	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet. It is the permanent or residual magnetism that must be detected by the metal detector in order to determine a needle or piece is present in the meat.	The needle is magnetized, or the magnetism of the needle is enhanced, to a level which facilitates locating a needle or needle fragment in the flesh of a slaughtered animal

II. LEGAL ANALYSIS

A. Principles Of Patent Claim Construction

In construing patent claims, courts follow the methodology set forth in the recent *en banc* decision of the Federal Circuit Court of Appeals in Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir.2005) (*en banc*). *See, e.g.,* Intamin, Ltd. v. Magnetar Techs. Corp., 483 F.3d 1328, 1334 (Fed.Cir.2007) ("This court construes claims according to the principles set forth by this court in [Phillips]."); CytoLogix Corp. v. Ventana Med. Sys., Inc., 424 F.3d 1168, 1172 (Fed.Cir.2005); Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1347 (Fed.Cir.2005). The court will, therefore, summarize that methodology and review key canons of

patent claim construction.

1. The Phillips methodology

a. The starting point

As the court explained in Phillips, "[i]t 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.' " 415 F.3d at 1312 (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 (Fed.Cir.2004)). Consequently, before and since the decision in Phillips, the Federal Circuit Court of Appeals has reiterated that courts must "begin [their] claim construction analysis with the words of the claim." Nystrom v. TREX Co., Inc., 424 F.3d 1136, 1142 (Fed.Cir.2005) (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996)); Biagro Western Sales, Inc. v. Grow More, Inc., 423 F.3d 1296, 1302 (Fed.Cir.2005) ("It is elementary that claim construction begins with, and remains focused on, the language of the claims."). "The construction of claims," the Federal Circuit Court of Appeals has explained, "is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims." Terlep v. Brinkmann Corp., 418 F.3d 1379, 1382 (Fed.Cir.2005) (internal quotation marks and citations omitted).

b. Hierarchy of evidence

The Federal Circuit Court of Appeals has explained that the process of claim construction begins with "intrinsic" evidence:

The words of the claim are generally given their ordinary and customary meaning. [Vitronics Corp., 90 F.3d] at 1582. The 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." Phillips, 415 F.3d at 1313. The person of ordinary skill in the art views the claim term in the light of the entire intrinsic record. *See* id. Thus, 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) (*en banc*). " '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.' " Phillips, 415 F.3d at 1316 (quoting Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed.Cir.1998)). In addition to the written description, "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." Id. at 1317.

Nystrom, 424 F.3d at 1142; *accord* Bass Pro Trademarks, L.L.C. v. Cabela's, Inc., 485 F.3d 1364, 1369 (Fed.Cir.2007) (the goal of claim construction is "to implement the invention described in the specification and prosecution history, within the confines of the prior art") (citing Phillips); Intamin, Ltd., 483 F.3d at 1334 (under Phillips, "the court consults primarily the claims themselves in context, with much of that context supplied by the specification and the prosecution history"); Biagro Western Sales, 423 F.3d at 1302 (explaining that "prosecution history, ... like the patent itself, has been designated as part of the 'intrinsic evidence' " for claim construction) (quoting Phillips, 415 F.3d at 1317).

[1] [2] When examining such "intrinsic" evidence, "dependent claims can supply additional context for construing the scope of the independent claims associated with those dependent claims." Intamin, Ltd., 483 F.3d at 1335 (citing Phillips, 415 F.3d at 1314). This is so, because "[a]n independent claim impliedly embraces more subject matter than its narrower dependent claim." Id. For example, a dependent claim may demonstrate what distinctions the patentee perceived and what the independent claim impliedly embraced. Id. More specifically, under the doctrine of claim differentiation, " '[t]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the

independent claim.' " Acumed L.L.C. v. Stryker Corp., 483 F.3d 800, 806 (Fed.Cir.2007) (quoting Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed.Cir.2004)). " 'That presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim.' " Id. (quoting SunRace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1303 (Fed.Cir.2003)). More generally, the doctrine of claim differentiation "is 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.' " Andersen Corp. v. Fiber Composites, L.L.C., 474 F.3d 1361, 1369 (Fed.Cir.2007) (quoting Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed.Cir.1999)). Thus, " '[t]o the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant.' " Id. at 1369-70 (quoting Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed.Cir.1987)).

[3] The Federal Circuit Court of Appeals has explained that the "central importance" of the specification of the patent, another form of "intrinsic" evidence, in claim construction is "because 'the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.' " AquaTex Indus., Inc. v. Techniche Solutions, 419 F.3d 1374, 1380 (Fed.Cir.2005) (quoting Phillips, 415 F.3d at 1313); Research Plastics, Inc. v. Federal Packaging Corp., 421 F.3d 1290, 1295 (Fed.Cir.2005) ("It is presumed that the person of ordinary skill in the art read the claim in the context of the entire patent, including the specification, not confining his understanding to the claim at issue."). Indeed, "[w]here ... the disputed claim term is technical or a term of art, '[t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.' " AquaTex, 419 F.3d at 1380 (quoting Phillips, 415 F.3d at 1315). The specification is not only "highly relevant" to claim construction, "[u]sually, it is dispositive." Phillips, 415 F.3d at 1314 (adding that the specification "is the single best guide to the meaning of a disputed term").

The court may also consult the prosecution history as "intrinsic" evidence to determine the proper construction of claim terms. *See* Phillips, 415 F.3d at 1317. " 'The purpose of consulting the prosecution history in construing a claim is to "exclude any interpretation that was disclaimed during prosecution." ' " Research Plastics, 421 F.3d at 1296 (quoting Rhodia Chimie v. PPG Indus., 402 F.3d 1371, 1384 (Fed.Cir.2005), in turn quoting ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed.Cir.1988)). This is so, because "the prosecution history can reveal instances where the inventor limited the invention in the course of prosecution and thus narrowed the scope of the claim." Id. (citing Phillips, 415 F.3d at 1317-18).

[4] In addition to "intrinsic" evidence, consisting of the claim language, the specification, and the prosecution history, "extrinsic" evidence can also be useful in claim construction. Terlep, 418 F.3d at 1382 ("Extrinsic evidence ... also 'may be considered if the court deems it helpful in determining the true meaning of the language used in the patent claims.' ") (quoting Phillips, 415 F.3d at 1318). For example, " 'technical dictionaries may provide [help] to a court "to better understand the underlying technology" and the way in which one of skill in the art might use the claim terms.' " AquaTex, 419 F.3d at 1380 (quoting Phillips, 415 F.3d at 1315, in turn quoting Vitronics Corp., 90 F.3d at 1584). Indeed, "[i]n some cases, it is possible to construe a claim term by applying 'the widely accepted meaning of commonly understood words.' " Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1359 (Fed.Cir.2005) (quoting Phillips, 415 F.3d at 1314). Therefore, "a judge who encounters a claim term while reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term." Phillips, 415 F.3d at 1324.

However, the Federal Circuit Court of Appeals has recently reevaluated the usefulness of dictionaries to determine the meaning of claim terms:

Our en banc decision in Phillips clarified the appropriate use of dictionaries in claim construction, rejecting the view that dictionary definitions govern unless contradicted by intrinsic evidence. Phillips, 415 F.3d at 1320. Nonetheless Phillips confirms that courts may " 'rely on dictionary definitions when construing claim terms' " and that "[d]ictionaries ... are often useful to assist in understanding the commonly understood meaning of words." Id. at 1322 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n. 6 (Fed.Cir.1996)). The court must ensure that any reliance on dictionaries accords with the intrinsic evidence: the claims themselves, the specification, and the prosecution history. Id. at 1314. Under Phillips, the rule that "a court will give a claim term the full range of its ordinary meaning," Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir.2001), does not mean that the term will [*1349] presumptively receive its broadest dictionary definition or the aggregate of multiple dictionary definitions, Phillips, 415 F.3d at 1320-1322. Rather, in those circumstances where reference to dictionaries is appropriate, the task is to scrutinize the intrinsic evidence in order to determine the most appropriate [dictionary] definition. Id. at 1322-23, 1324.

Free Motion Fitness, Inc., 423 F.3d at 1348-49. Thus, while standard and specialized dictionaries have their place in patent claim construction, the court must choose the proper dictionary definition in light of the "intrinsic" evidence of the meaning of patent terms, consisting of the patent description and the prosecution history, not merely choose a dictionary definition over the definition suggested by such "intrinsic" evidence. *See also* Terlep, 418 F.3d at 1382 (dictionaries are useful, "provided the court 'attach[es] the appropriate weight ... to those sources in light of the statutes and policies that inform patent law.' ") (quoting Phillips, 415 F.3d at 1324). Thus, "[w]hat Phillips now counsels is that in the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public- *i.e.*, those of ordinary skill in the art-that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source." Nystrom, 424 F.3d at 1145; *see also* Acumed L.L.C., 483 F.3d at 813 (in Phillips, the en banc court expressly rejected construing claim terms in accordance with the broader of two dictionary definitions, where there was no express disavowal of claim scope in the specification). FN6

FN6. The Nystrom decision demonstrates how the impact of dictionary definitions of claim terms has changed after Phillips. In a pre- Phillips opinion in that case, Nystrom v. Trex Co., Inc., 374 F.3d 1105 (Fed.Cir.2004), the court relied heavily on dictionary definitions to construe claim terms, such as "board" and "convex." *See* Nystrom, 374 F.3d at 1111-13 & 1115. However, the panel withdrew that opinion following the issuance of the *en banc* decision in Phillips and issued a second opinion. *See* Nystrom, 424 F.3d at 1138. In the post- Phillips opinion, instead of beginning with dictionary definitions of "board," the court began its analysis by looking at the patent itself. Id. at 1143-46. Such reorientation of the court's analysis led to a different, narrower construction of the claim term "board." Id. It is possible that, in light of the emphasis on the language of the patent, rather than dictionary definitions, as required by Phillips and applied in Nystrom, patent claims will be construed more narrowly in many future case. As two commentators noted, "[I]f the result of Phillips/ Nystrom is that the courts more often confine the scope of [a] patent claim to the embodiments disclosed in the patent, patents will become less valuable, but their scope perhaps more predictable." James J. Foster and Adam Kessel, '*Phillips*' *leads to a different result in 'Nystrom,*' THE NATIONAL LAW JOURNAL/ WWW. NLJ. COM, Dec. 5, 2005, at S.9. The wisdom of such a change, and whether or not it was the intended result of the policy shift in Phillips, of course, is for the Federal Circuit Court of Appeals to determine.

[5] Extrinsic evidence that may be useful in claim construction also includes "expert testimony," but such testimony should also be considered in the context of intrinsic evidence. Biagro, 423 F.3d at 1302; Phillips, 415 F.3d at 1318-19. More specifically, "a court should discount any expert testimony that is clearly at odds with the claim construction mandated by ... the written record of the patent." Phillips, 415 F.3d at 1318

(internal quotation marks and citation omitted); *accord* Network Commerce, Inc., 422 F.3d at 1361 (citing Phillips for the proposition that "expert testimony at odds with the intrinsic evidence must be disregarded").

2. Other canons of claim construction

[6] Apart from the evidence upon which claim construction may be based, claim construction involves various "canons." One canon of claim construction is that "claim terms are presumed to be used consistently throughout the patent, such that the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Research Plastics, Inc., 421 F.3d at 1295 (citing Phillips, 415 F.3d at 1313-14, and Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir.2001)). On the other hand, "[w]hen different words or phrases are used in separate claims, a difference in meaning is presumed." Nystrom, 424 F.3d at 1143 (citing Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed.Cir.1987)); *see also* Andersen Corp., 474 F.3d at 1369 (describing this presumption as the doctrine of claim differentiation). Similarly, the court must interpret claims so that no term becomes "superfluous." *See* Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed.Cir.2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."); Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396, 1410 (Fed.Cir.2004) (stating that interpretations of claims rendering claim terms superfluous is generally disfavored).

Another canon of patent claim construction is that the patentee may act as "lexicographer." *See* Phillips, 415 F.3d at 1316. In other words, "the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess," and when that happens, the patentee's definition must govern. Id. Nevertheless, the authority of the specification as a source for definitions for claim terms is not limitless. Rather, "[t]he court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description. It must use the written description for enlightenment and not to read a limitation from the specification [into the construction of the term]." Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 906 (Fed.Cir.2005) (citing Comark Communications v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed.Cir.1998)). To put it another way, " '[i]t is axiomatic that claims, not the specification embodiments, define the scope of protection.' " Id. (quoting Dow Chem. Co. v. Sumitomo Chem. Co., 257 F.3d 1364, 1378 (Fed.Cir.2001) (internal citation omitted)). FN7

FN7. The Federal Circuit Court of Appeals has, itself, recognized the difficulty of looking to the specification to construe claim terms without reading limitations in the specification into the claims and has offered some guidance:
"We recognize that there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186, 48 USPQ2d 1001, 1005 (Fed.Cir.1998). In locating this "fine line" it is useful to remember that we look "to the specification to ascertain the meaning of the claim term as it is used by the inventor in the context of the entirety of his invention," and not merely to limit a claim term. Id. at 1187, 156 F.3d 1182, 48 USPQ2d at 1005.

Interactive Gift Exp., Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331-32 (Fed.Cir.2001).
With these principles in mind, the court turns to construction of the disputed claim terms in this case, patent-by-patent and claim-by-claim. However, the court must first resolve the question of the role that the parties' proffered constructions play in the court's construction of claim terms.

3. The court's independent obligation to construe terms

[7] In a recent patent case, this court asked the parties to brief the question of whether the court is bound by

the parties' competing definitions in its claim construction process, that is, whether the court must choose only between the parties' competing definitions or is, instead, free to construe the claim terms for itself. *See* Maytag Corp. v. Electrolux Home Prods., Inc., 411 F.Supp.2d 1008, 1042-43 (N.D.Iowa 2006). Based on the agreements of the parties in that case and the authorities that they cited, this court concluded that it is not bound to make a "binary" choice between the parties' proffered constructions, but must, instead, independently construe disputed claim terms. Id. Indeed, the Federal Circuit Court of Appeals has expressly held that the court is free to adopt a construction independent of those suggested by the parties. Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1555 (Fed.Cir.1995). Thus, the court reiterates its conclusion that it has an obligation to construe the patent terms independently, applying the Phillips methodology, and is not bound to adopt either party's proffered construction of any claim term.

The court now turns to its independent construction of the claim terms, but in construing disputed claim terms, the court will use the parties' proffered constructions as its starting point.

B. Terms Of The '668 Patent

Although Ideal contends that none of the terms of the '668 patent require construction, because all are unambiguous and well known and understood by one skilled in the art, Rivard contends that six terms of the '668 patent require construction by the court. Some of the same or similar terms are also in dispute in the '196 patent, where the parties contend that they should be given the same constructions. The court will consider the disputed terms of the '668 patent in turn. Because Rivard is the party asserting that the terms require construction, and most of Ideal's arguments in its Markman brief are devoted to explanations of why Rivard's proffered constructions are wrong, the court will begin each summary of the parties' arguments concerning constructions of disputed terms with Rivard's arguments.

1. "Stainless steel"

[8] The term "stainless steel" is used in claims **1, 7, 13,** and **15** of the ' 668 patent. The parties have offered the following constructions of this term:

THE '668 PATENT		
Claim Term	**Rivard's Proposed Definition**	**ideal's Alternative definition (if any definition is required)**
a. Stainless steel (In claims **1, 7, 13,** and **15**)	A large group of corrosion resistant steels that contain 10% or more of chromium and may contain other elements.	Corrosion resistant steel

a. Arguments of the parties

Rivard contends that "stainless steel" is ambiguous, in part, because "stainless steel" is sometimes specified in the patent as comprising, *inter alia*, 4-25 % by weight of chromium, but Rivard asserts that an alloy containing as little as 4% chromium is not "stainless steel" within the ordinary meaning of the term or within the meaning disclosed by the specification. Rivard points out that the specification states that "[t]he stainless steel alloy can comprise any corrosion-resistant magnetic material with an elemental composition within the range set forth in" certain specified patents. *See* the '668 patent, Co. 5, *ll*. 24-28. Rivard asserts that the patents referred to specify that chromium in excess of 8 % is required to obtain the corrosion resistance desired, not as little as 4 % as elsewhere stated in the claims and specification of the '668 patent, and those patents suggest other conflicts with the percentages of other components expressly stated in the

'668 patent. Rivard acknowledges that the patent states that, in case of conflict between the specification and patents incorporated therein by reference, "the present description, including definitions, will control," *see* the '668 patent, Col. 3, *ll*. 44-48, but apparently contends that this statement does not dispel the ambiguity. Rivard also notes that one of the patents for "stainless steel" incorporated by reference in the Detailed Description, U.S. Patent No. 4,969,963 to Honkura, is described contrariwise in the prosecution history to the '668 patent as "completely unsuitable for the needle of the method claimed in the ['668 patent]." Joint Exhibit 1002, Joint Appendix at 492. Rivard also points out that the prosecution history reveals that the patentee confirmed that the properties of stainless steel are dependant upon the constituents of the steel. Finally, Rivard cites extrinsic evidence in the form of ordinary and technical dictionary definitions defining "stainless steel" as having at least 10 percent chromium. Consequently, Rivard argues that the ordinary meaning of "stainless steel" is "a large group of corrosion resistant steels that contain 10 % or more of chromium and may contain other elements." In the alternative, Rivard argues that the patents sufficiently redefine "stainless steel" to mean alloys limited to the compositions disclosed in the patents. Indeed, in its rebuttal brief, Rivard argues that the use of "stainless steel" in the specifications and claims of the patents-in-suit results in defining five particular formulations of stainless steel. Rivard then contends that only one of those formulations is explicitly claimed in independent claims **1, 7, 13,** and **15** of the '668 patent and claims **5** and **12** of the '196 patent, while any of the five formulations could apply to references to "stainless steel" without specification of a chemical composition in claims **1-4, 7-11,** and **14** of the '196 patent.

Ideal, on the other hand, contends that the meaning of "stainless steel" is well known to one of ordinary skill in the art. Ideal also asserts that Rivard's attempt to narrow the definition is improper, because it lacks even an iota of support in the intrinsic evidence, and the extrinsic evidence that Rivard cites is irrelevant. More specifically, Ideal argues that both the patentee and the examiner recognized that "stainless steel needles" were well known in the prior art, but that nowhere in the prosecution history was there any reference to or unmistakable limitation of "stainless steel" to an alloy comprised of 10% or more of chromium. Ideal contends that the extrinsic evidence on which Rivard relies is irrelevant, because resort to such evidence cannot overcome the ordinary and customary meaning of the term in the context of the claim term and the embodiments described in the patents-in-suit. In the alternative, Ideal asserts that "corrosion-resistant steel" is an appropriate construction of "stainless steel" that is found in, and well-supported by, the intrinsic evidence, stays true to the claim language, and naturally aligns with the description of the invention.

b. Analysis

The appropriate place to begin construction of claim terms is with the words of the claims. Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"); *see also* Playtex Prods., Inc., 400 F.3d at 906 ("It is axiomatic that claims, not the specification embodiments, define the scope of protection."). The court notes that the term "stainless steel" is *never* used in the claims of the '668 patent without specification of its chemical composition. *See* the '668 patent, Claim **1** ("stainless steel which comprises" certain elements in ranges of percentages by weight); Claim **7** ("stainless steel comprises" certain elements in ranges of percentages by weight); Claim **13** ("stainless steel comprising" certain elements in ranges of percentages by weight); Claim **15** ("stainless steel tubular injection needle, wherein the injection needle ... comprises" certain elements in ranges of percentages by weight). Consequently, the court concludes that it is unnecessary to construe the term "stainless steel" in isolation.

More specifically, "comprising" is an "open-ended" term, which raises a presumption that the list of elements is nonexclusive. Dippin' Dots, Inc. v. Mosey, 476 F.3d 1337, 1343 (Fed.Cir.2007). Nevertheless, it " 'is not a weasel word with which to abrogate claim limitations.' " Id. (quoting Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1380 (Fed.Cir.1998)). As the Federal Circuit Court of Appeals has explained,

"Comprising" appears at the beginning of the claim-"comprising the steps of"-and indicates here that an infringing process could practice other steps in addition to the ones mentioned. Those six enumerated steps

must, however, all be practiced as recited in the claim for a process to infringe. The presumption raised by the term "comprising" does not reach into each of the six steps to render every word and phrase therein open-ended-especially where, as here, the patentee has narrowly defined the claim term it now seeks to have broadened.

Dippin' Dots, Inc., 476 F.3d at 1343.

Similarly, here, "comprising" is "open-ended" only to the extent that it indicates that the alloy may be comprised of *other* elements not specified. *Cf.* id. Indeed, the Detailed Description demonstrates the correctness of such an interpretation, because it specifies, first, that the alloy comprises several elements in specified weight percentage ranges, then adds that preferred embodiments may include *additional* elements in specified weight percentage ranges. *See* the '668 patent, Col. 5, *ll.* 23-44. On the other hand, "comprising" cannot be used as a "weasel word" to abrogate the express claim limitations requiring that the "stainless steel" be comprised of specific elements. *Cf.* Dippin' Dots, Inc., 476 F.3d at 1343 ("[Comprising] 'is not a weasel word with which to abrogate claim limitations.' ") (quoting Spectrum Int'l, Inc., 164 F.3d at 1380). Thus, from the plain language of the claim term, whatever the term "stainless steel" might mean, standing alone, in other contexts, in the context of the '668 patent claims, "stainless steel" necessarily "comprises" specified elements. That being so, the court declines to construe the term "stainless steel" in isolation. Instead, the court will pass on to the question of the proper construction of "stainless steel comprising" specified elements, which is the second term in the ' 668 patent for which the parties dispute the proper construction.

2. "Stainless steel" comprising certain elements

[9] Claims **1, 7, 13,** and **15** of the '668 patent use the claim term "stainless steel comprising" a list of elements in certain weight percentage ranges. The parties dispute the proper construction of the specification of that chemical composition, as shown in the following chart:

THE '668 PATENT		
Claim Term	**Rivard's Proposed Definition**	**ideal's Alternative definition (if any definition is required)**
b. The stainless steel comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % A1, 0.01-1.0 Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V. (In claims **1, 7, 13,** and **15**)	The stainless steel includes iron (Fe) and each of the following elements within the listed ranges, measured by percentage of overall weight of the metal sample: Silicon (Si) = at least 0.01 % and no more than 3.0%; Phosphorus (P) = less than 0.03 %; Chromium (Cr) = at least 4 % and no more than 25 %; Aluminum (Al) = at least 0.003 % and no more than 7.0%; Manganese (Mn) = at least 0.01 % and no more than 1.0%; Sulfur (S) = at least 0.001% and no more than 0.03 %; Molybdenum (Mo) = at least 0.01 % and no more than 5.0%; Titanium (Ti) = at least 0.01 % and no more than 1.0 %; Carbon (C) = at least 0.003 % and	The stainless steel comprises Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0.5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium).

	no more than 0.08%; Nickel (Ni) = at least 0.01 % and no more than 5.0 %; Copper (Cu) = at least 0.01% and no more than 0.5%; Lead (Pb) = less than 0.01%; Bismuth (Bi) = at least 0.02 % and no more than 0.5%; Niobium (Nb) = at least 0.5 % and no more than 1.0%; Zirconium (Zr) = at least 0.02% and no more than 1.0%; Vanadium (V) = at least 0.05% and no more than 1.0%.

As the chart indicates, Rivard includes both the full name of each element, in addition to its symbol in the periodic table, and construes the weight percentage ranges as "at least ... and no more than ...," while Ideal includes in its alternative construction, if any construction is required, only the full name of each element in addition to its symbol in the periodic table.

a. Arguments of the parties

The court construes the arguments that the parties made concerning the meaning of "stainless steel," in isolation, to be incorporated into their arguments concerning the meaning of "stainless steel comprising" a list of elements. Thus, the court will summarize here only the parties' additional arguments about the meaning of the latter term.

Rivard argues that there is no dispute as to the meaning of the element abbreviations in these claims. On the other hand, Rivard argues that there is a dispute about the import of the stated weight percentage ranges for each element. Rivard asserts that each stated weight percentage range provides the upper and lower range values as strict end points, citing Jeneric/Pentron, Inc. v. Dillon Co., 205 F.3d 1377, 1381 (Fed.Cir.2000). Rivard argues that considering the range values as strict end points is consistent with the disclosure of the '668 patent and its prosecution history, where the latter demonstrates that certain compositional ranges were added to distinguish prior art. Rivard also points out that the patent uses the term "about" when numerical values are only approximations, so that it is clear that the patentee knew how to indicate an approximation. Moreover, Rivard asserts that the lack of specification for the range of Fe (Iron) demonstrates that the patentee knew how to identify an element for which no fixed numerical value was intended. Finally, Rivard argues that the percentage ranges were added to distinguish prior art and that the examiner allowed the claims, because the prior art failed to suggest the claimed ranges for constituent elements. Rivard reiterates these arguments in its rebuttal brief. Indeed, in its rebuttal brief, Rivard contends that only one of the five formulations identified in the specifications of the patents-in-suit is explicitly claimed in independent claims **1, 7, 13,** and **15** of the '668 patent and claims **5** and **12** of the '196 patent, while any of the five formulations could apply to references to "stainless steel" without specification of a chemical composition in claims **1-4, 7-11,** and **14** of the '196 patent.

Ideal, on the other hand, argues that the meaning of the ranges is clear to anyone skilled in the art and, indeed, clear to any layperson. Thus, Ideal argues that Rivard's narrowing and limiting interpretation of clear and unambiguous language is unnecessary and unsupported by the patent, its prosecution history, or extrinsic evidence. If any more elaborate construction is required, Ideal contends that the elaboration should consist only of identification of the elements by name as well as by symbol from the periodic table.

b. Analysis

As noted above, the term "stainless steel" is never used in the claims of the '668 patent without specification

of its chemical composition. *See* the '668 patent, Claim **1** ("stainless steel which comprises" certain elements in ranges of percentages by weight); Claim **7** ("stainless steel comprises" certain elements in ranges of percentages by weight); Claim **13** ("stainless steel comprising" certain elements in ranges of percentages by weight); Claim **15** ("stainless steel tubular injection needle, wherein the injection needle ... comprises" certain elements in ranges of percentages by weight). All four references in these claims of the '668 patent are to an alloy comprising the identical elements in the identical weight percentage ranges. The question is how the term "stainless steel comprising" these elements should be construed.

i. Characterization of the material. Although the court declined, above, to construe "stainless steel," standing alone, because the term never stands alone in the claims of the '668 patent, the court does find that some characterization of the material comprising certain elements may be appropriate, particularly if that characterization is a term directed to characteristics of the material, rather than a term, such as "stainless steel," which might have a different general meaning concerning the elements or percentages of those elements of which it is comprised.

The court notes that both parties characterize "stainless steel" generally as "corrosion resistant steel." Specifically, as an alternative construction of "stainless steel," standing alone, Ideal offered "corrosion resistant steel," while the portion of Rivard's construction of "stainless steel" that makes no reference to the quantity of chromium in the alloy is "a large group of corrosion resistant steels."

The court acknowledges that construction of "stainless steel," even "stainless steel comprising" a list of elements, as "a corrosion resistant steel" is consistent with language in the specification. *See* Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's definition must govern). For example, the pertinent part of the Detailed Description defining what the patentee meant by "stainless steel" is the following:

The stainless steel alloy can comprise *any corrosion-resistant magnetic material* with an elemental composition within the range set forth in U.S. Pat. No. 5,601,644 to Kosa et al and U.S. Pat. No. 4,969,963 to Honkura et al. In general, the magnetized stainless steel comprises 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % Al, 0.01-1.0 wt % Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, and the remainder Fe.

The '668 patent, Col. 5, *ll*. 23-34 (emphasis added showing the location of the language that Ideal puts forward). The Detailed Description continues with preferred embodiments, specifying additional chemical components later specified in the pertinent claims of the '668 patent. Id., Col. 5, *ll*. 34-44. Thus, a characterization of the alloy in question as "corrosion resistant steel" is appropriate, recognizing that such "corrosion resistant steel" is always expressly claimed in the '668 patent to comprise certain specified elements in certain weight percentage ranges.

To put it another way, the parties' definition of "stainless steel," standing alone, as "corrosion resistant steel" is consistent with only *part* of the language of the Detailed Description and the claims of the '668 patent defining "stainless steel," because the claim term at issue in the '668 patent is always "stainless steel comprising" a list of elements. Thus, the next question is how that list of elements is to be construed.

ii. Identification of elements. As to the elements in the list of elements comprising the stainless steel, the court notes that the parties agree that it would be proper to include the elements by name as well as by symbol from the periodic table. The court finds that such a course is correct as a matter of claim construction, because one of ordinary skill in the art would find that the symbols from the periodic table that appear in the claims unambiguously refer to specific elements by name. Such a course is doubly appropriate

for the understanding of a lay jury, which could be bewildered by use of periodic table symbols alone. Therefore, the court will incorporate into any construction of this claim term the names of the elements referred to only by symbols from the periodic table.

iii. Chromium content and other alleged ambiguities. Turning to the weight percentage ranges of elements comprising the "stainless steel," Rivard argues, in the section of its brief concerning the meaning of "stainless steel," standing alone, that "stainless steel" must contain at least 8% chromium, based on patents incorporated by reference in the Detailed Description, or at least 10% of chromium, based on extrinsic definitions. Such a construction is unacceptable, however, when one begins with the words of the claim "stainless steel comprising" a list of elements. *See* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"). Again, the court finds that none of the uses of the term "stainless steel comprising" a list of elements in claims **1, 7, 13,** and **15** of the '668 patent specifies that the alloy must contain at least 8% (or 10%) of chromium. Thus, the words of the claims themselves belie Rivard's construction.

Nor does the court read parts of the specification on which Rivard relies to create any ambiguity about the percentage of chromium, for example, of which the "stainless steel comprising" a list of elements must be comprised. Rivard is correct that the Detailed Description explains that "[t]he stainless steel alloy can comprise any corrosion-resistant magnetic material with an elemental composition within the range set forth in U.S. Pat. No. 5,601,644 to Kosa et al. and U.S. Pat. No. 4,969,963 to Honkura et al." *See* the '668 patent, Col. 5, *ll*. 24-28. The Detailed Description then specifies, however, that, " *[i]n general,* the magnetized stainless steel comprises 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % A1, 0.01-1.0 Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, and the remainder Fe." Id., Col. 5, *ll*. 28-34 (emphasis added). This is the same list of elements by the same weight percentage ranges that is stated in the claims, with the exception that this part of the Detailed Description does not include specification of 0.02-0.5 wt % Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V as claimed in each of the pertinent claims of the '668 patent. *Compare* id., Col. 5, *ll*. 28-34, *with* Claims **1, 7, 13,** and **15.** The "missing" elements are, however, described in the Detailed Description as comprising preferred embodiments of the invention. *See* id., Col. 5, *ll*. 34-44. Specification of the chemical components generally "comprising" the "stainless steel" in the specification must be understood as the patentee acting as his own lexicographer, defining "stainless steel" to mean an alloy comprising the specified chemical components within the specified weight percentage ranges. *See* Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's definition must govern). Nevertheless, what is ultimately claimed in the pertinent claims of the '668 patent is an alloy comprising the full list of elements identified only as a preferred embodiment in the Detailed Description, Col. 5, *ll*. 28-34.

Rivard has not demonstrated that the elemental composition within the range set forth in the two patents incorporated by reference into the Detailed Description would *not* fall within the range set forth in either the Detailed Description or claims of the '668 patent. Thus, no ambiguity is actually created by references in the specification to patents that specify a higher minimum weight percentage for chromium or a different weight percentage or weight percentage ranges for other elements for "stainless steel" than the specification or claims of the '668 patent specify. Moreover, to read into the claims of the '668 patent limitations found in the patents referred to in the Detailed Description of the '668 patent would be contrary to the disclaimer in the Detailed Description, itself, which states that, in case of conflict between the specification and patents incorporated therein by reference, "the present description, including definitions, will control."*See* the '668 patent, Col. 3, *ll*. 44-48. By the same token, Rivard's "extrinsic" dictionary definitions showing that "stainless steel" is generally more narrowly defined as an alloy having 10% or more of chromium demonstrates only that the patentee's definition is different, so that the patentee's definition must govern. Phillips, 415 F.3d at 1316. Indeed, it appears that the patentee's definition would include every alloy

recognized as "stainless steel" under Rivard's narrower definition, as well as additional alloys. The specification of the percentage ranges of the components of the "stainless steel," including chromium, in the specification and claims of the ' 668 patent are, thus, controlling here.

iv. Weight percentage ranges. The remaining question is whether the weight percentage ranges for each element in the list require any further construction, as Rivard contends, as "at least ... and no more than...." The court finds that the proper construction of weight percentage ranges was settled by the Federal Circuit Court of Appeals in Jeneric/Pentron, Inc. v. Dillon Co., 205 F.3d 1377, 1381 (Fed.Cir.2000). In that case, involving chemical components for dental porcelain, the court rejected the patentee's argument that the composition ranges of the patent could vary from the recited values, affirming the district court's conclusion that specified ranges "limit [ed] the ranges of compositions to 'the exact weight percentage ranges.' " Jeneric/Pentron, Inc., 205 F.3d at 1381 (quoting the lower court's decision). The court explained,

As the district court correctly stated, the claim language "indicates that the invention's chemical components should be limited to the precise ranges set forth therein." Jeneric[/Pentron Inc. v. Dillon Co., Inc.], 1999 WL 66537, at *10[(D.Conn. Feb 03, 1999)]. The district court's claim interpretation finds support in claim construction principles enunciated by this court in other cases. In general, "[a] term such as 'about' is not subject to [ ] a precise construction ... but is dependent on the factual situation presented." W.L. Gore & Assocs., Inc. v. Garlock, Inc., 842 F.2d 1275, 1280, 6 USPQ2d 1277, 1282 (Fed.Cir.1988). Without broadening words that ordinarily receive some leeway, *see* Modine Manufacturing Co. v. United States International Trade Commission, 75 F.3d 1545, 1554, 37 USPQ2d 1609, 1615 (Fed.Cir.1996), the precise weight ranges of claim 1 do not "avoid [ ] a strict numerical boundary to the specified parameter," Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217, 36 USPQ2d 1225, 1229 (Fed.Cir.1995).

This construction, assigning numerical precision to composition ranges, is particularly appropriate when other variables in the same claims explicitly use qualifying language. *See* Modine Mfg., 75 F.3d at 1551.

Jeneric/Pentron, Inc., 205 F.3d at 1381. In short, the court concluded, "Under the correct reading of the claims, the porcelain composition ranges represent the outermost bounds of the disclosed embodiments." Id. at 1382. The court then found that this reading was also consistent with the prosecution history, which demonstrated that the patentee had relied on precise ranges to distinguish prior art, and therefore, could not assert that the ranges should be construed more broadly during an infringement action. Id.

Here, the court finds that the weight percentage ranges for the elements comprising the "stainless steel" are, likewise, properly construed as "strict numerical boundar[ies]" for the specified elements. *See* id. at 1381. There are no words indicating that the specified ranges are not subject to a precise construction, although elsewhere in the patent claims, specified values are prefaced by such words as "about" a certain value. *See, e.g.,* the '668 patent, Claims **6** and **12;** *see also* Jeneric/Pentron, Inc., 205 F.3d at 1381 ("In general, a term such as 'about' is not subject to a precise construction, but is dependent on the factual situation presented. Without broadening words that ordinarily receive some leeway, the precise weight ranges of claim 1 do not avoid a strict numerical boundary to the specified parameter.") (internal citations and quotation marks omitted). Thus, the specified minimum and maximum values for the weight percentages of certain elements comprising the "stainless steel" in the '668 patent "represent the outermost bounds of the disclosed embodiments." Jeneric/Pentron, Inc., 205 F.3d at 1382. For example, the court agrees with Rivard that an alloy with 4% by weight of Silicon (Si) would not be encompassed in a claimed alloy comprising, *inter alia,* "0.01-3.0 wt % Si," as the amount of Silicon exceeds the upper bound specified for that element.

This construction of the weight percentage ranges is appropriate, even though "comprising" is an "open-ended" term, raising a presumption that the list of elements is nonexclusive. Dippin' Dots, Inc., 476 F.3d at 1343. Again, "[comprising] 'is not a weasel word with which to abrogate claim limitations.' " Id. (quoting Spectrum Int'l, Inc., 164 F.3d at 1380). Here, "comprising" is "open-ended" only to the extent that it

indicates that the alloy may be comprised of *other* elements not specified. *Cf.* id. Again, the Detailed Description demonstrates the correctness of such an interpretation, because it specifies, first, that the alloy comprises several elements in specified weight percentage ranges, then adds that preferred embodiments may include *additional* elements in specified weight percentage ranges. *See* the '668 patent, Col. 5, *ll.* 23-44. On the other hand, "comprising" cannot be used as a "weasel word" to abrogate the specified weight percentage range for each such element. *Cf.* Dippin' Dots, Inc., 476 F.3d at 1343. This is particularly true when Jeneric/Pentron settled the reading of a list of elements "comprising" a composition, identified by weight percentage ranges, as specifying precise value ranges for the elements "comprising" the composition. Jeneric/Pentron, Inc., 205 F.3d at 1379 & 1382.

It is not clear to the court how Ideal believes that Rivard's construction of the stated weight percentage ranges as "at least ... and no more than ..." is "narrowing" or otherwise improper in light of Jeneric/Pentron. Nevertheless, the court agrees that Rivard's construction is cumbersome. Consistent with Jeneric/Pentron, the same construction of weight percentage ranges as *exact* weight percentage ranges can be conveyed by stating that the weight percentage range for each element states "the outermost bounds," or minimum and maximum, for the weight percentage of that element in the alloy. Id.

v. The court's construction. Upon the foregoing, the court concludes that the proper construction of the claim term "stainless steel comprising" a list of elements in claims **1, 7, 13,** and **15** of the '668 patent is the following: "Corrosion resistant steel comprising Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0.5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium),wherein the stated values are the outermost bounds (minimum and maximum) for the weight percentage of each element comprising the alloy."

3. "Rendered magnetic" or "is magnetized"

[10] Next, the parties dispute the meaning of the terms "[the needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle," which appears in claims **1** and **13** of the '668 patent, and "the needle is magnetized to a level which enables detection of the magnetism of the needle," which appears in claims **7** and **15** of the '668 patent. The parties competing constructions of these terms are shown in the following chart:

THE '668 PATENT		
Claim Term	**Rivard's Proposed Definition**	**ideal's Alternative definition (if any definition is required)**
c. [The needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle (In claims **1** and **13**)	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent	Prior to use of the needle or after the needle has broken off in the flesh of an animal which has then been killed for slaughter, the needle is magnetized to be a permanent magnet that produces a magnetic field or has been magnetized to produce a magnetic field for a period of time, whereby the magnetism of the magnetic needle facilitates locating a needle or needle fragment in the flesh of a slaughtered animal.

	magnet. It is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat.	
f. The needle is magnetized to a level which enables detection of the magnetism of the needle (In claims **7** and **15**)	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet. It is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat.	The needle is magnetized, or the magnetism of the needle is enhanced, to a level which facilitates locating a needle or needle fragment in the flesh of a slaughtered animal.

As the chart above reveals, Rivard argues that the same proposed construction applies to the pertinent language in claims **1** and **13** and to the slightly different language in claims **7** and **15** of the '668 patent. Indeed, Rivard contends that the same proposed construction should apply to the term "magnetic or magnetizable" in claim **1** of the '196 patent, and to the term "the needle cannula or piece thereof is magnetized to a level which enables detection of the magnetism of the needle cannula or piece thereof" in claim **8** of the '196 patent. *See* Chart of Constructions In Dispute, *supra* beginning on page 1147, the '196 patent, disputed claim terms c. and h. Ideal, on the other hand, contends that all four claim terms must be given different constructions. For now, the court will confine its analysis to the "magnetism" terms of the '668 patent.

a. Arguments of the parties

Rivard argues that the claims and specification demonstrate that these claim phrases require (1) that the needle be magnetized so as to act as a magnet prior to the use of a metal detector, and (2) that it is the magnetism that is detected. Rivard argues that, during prosecution of the patents, the patentee argued that the invention did not encompass needles that merely had stainless steel metallurgy with the capacity to be magnetized, and that, instead, the needle had to be made into a magnet, and on that basis, distinguished prior art. Rivard surmises that Ideal is now arguing that no construction of these claims is required, so that Ideal can argue that the claims read on a needle that could be made into a magnet, but is not yet one. Implicit in Rivard's argument is a contention that there is no difference between "rendered magnetic," "is magnetized," "magnetic," and "magnetizable." Rivard points out that the Summary of the Invention repeatedly refers to a needle that "is magnetized" or that is "permanently magnetizable or magnetic." Similarly, Rivard points out that the Detailed Description recites that the invention uses either a permanently magnetic or magnetizable alloy or an alloy that can be magnetized for a period of time, *i.e.*, made a residual magnet, prior to use of a metal detector, and also describes an embodiment in which a magnetizing device is located in the conveyor line ahead of the metal detector in order to magnetize any needle parts located in processed meat. Rivard also cites portions of the prosecution history, including the examiner's rejection of newly added independent claim 30 as incomplete, pursuant to 35 U.S.C. s. 112, because it recited that the needle was magnetizable, but omitted the step of magnetizing the needle. Rivard asserts that, in response to

this rejection, the patentee amended the patent to add the step requiring that the needle be magnetized, and then distinguished prior art on the basis that the prior art did not teach use of magnetized needles. Rivard contends that the prosecution history reveals that the examiner and patentee understood that the needle must, itself, be made into a magnet. As extrinsic evidence, Rivard points out that Ideal's vice president confirmed that Ideal was initially magnetizing the detectable needles in a separate operation.

Ideal argues that Rivard's construction cannot be correct, precisely because Rivard has offered the same construction for four different claim terms, in violation of well established canons of patent claim differentiation. For its own part, Ideal argues that neither the "rendered magnetic" nor the "is magnetized" term requires any construction, because the ordinary meanings of these terms are unambiguous and well known to one skilled in the art. Ideal acknowledges that, during prosecution of the '668 patent, the examiner rejected application claims 30 through 35 as incomplete, pursuant to 35 U.S.C. s. 112, for failure to include the essential step of magnetizing the magnetizable needle, and that Ideal responded by adding the "rendered magnetic" language to what became claims **1** and **13.** Ideal asserts, nevertheless, that the addition of this language does not require the court to adopt Rivard's construction. Ideal contends that Rivard's proposed interpretation comprises language that represents an embodiment described in the specification rather than language expressly or implicitly disclaiming or disavowing claim scope. In summary, Ideal contends that Rivard's proposed interpretation of the "rendered magnetic" term is improper for the following reasons: (1) the language of the claim is clear and unambiguous, and thus, requires no interpretation; (2) the language that Rivard uses, which is the same language Rivard uses to interpret "magnetic or magnetizable," would reincorporate language that was amended out of the '668 patent; (3) the language that Rivard uses is the same as the language that Rivard uses for several entirely different claim terms; and (4) the language that Rivard uses would effectively negate the amendment to overcome the s. 112 rejection. If some construction of the "rendered magnetic" term is required, Ideal offers an alternative, shown in the chart above, which Ideal contends, without explanation, is well supported by the intrinsic evidence.

Ideal also argues that the "is magnetized" term in claims **7** and **15** requires no construction, because its meaning is clear and unambiguous to one of ordinary skill in the art. Again, Ideal asserts that Rivard's construction of this term is wrong, because Rivard uses the identical construction for the completely different term "magnetic or magnetizable" in the '196 patent. Ideal also contends that the language of the "is magnetized" term in the '668 patent is obviously different from the "rendered magnetic" language in the same patent, as well as the "magnetic or magnetizable" language in the '196 patent, but does not explain the difference in meaning between "rendered magnetic" and "is magnetized." If the court deems some construction to be necessary, Ideal again offers an alternative construction, shown in the chart above, which Ideal contends, without explanation, is well supported by the intrinsic evidence.

In its rebuttal brief, Rivard again asserts that the constructions of all of the "magnetism" terms in the two patents should be similar, because they have a common import and associated meaning in the patents-in-suit. Rivard contends that Ideal's claim differentiation argument is overcome here by the presence of only minor differences in language and the requirement in both of the patents that the magnetism of the needles must be what is detected, so that the claim terms must be interpreted consistently. Rivard also argues that it is a critical and necessary aspect of the claims that the magnetism be brought to such a level prior to detection that it enables detection of the needle or piece thereof. Rivard argues that Ideal's response to rejections by the examiners demonstrates that Ideal conceded that the needle must be magnetized, so that the claim language cannot be construed to cover a needle that is merely capable of being magnetized, and must, instead, be construed to require that the needle be magnetized prior to the metal detector, not in the metal detector, as Ideal argues. Rivard also argues that the prosecution histories of both patents are relevant to construction of these related claim terms, because they are interwoven, with cancelled claims of the '668 patent application later reasserted in the '196 patent application.

In its rebuttal brief, on the other hand, Ideal argues that Rivard is slyly attempting to narrow construction of

this term to require that the needle be rendered magnetic "prior to the detector" or "before the detection process," when the claim term and intrinsic evidence refer to rendering the needle magnetic "prior to detection." Ideal contends that this subtle difference is important, because the detector may itself include a means for magnetizing or enhancing the magnetism of the needle, as such a product and such a practice is commonly used in the industry. Ideal also contends that Rivard's constructions would send the court off on a red-herring attempt to determine when the "detection process" begins. Ideal contends that the prosecution history provides no indication of when the needle is either magnetized or rendered magnetic, other than before detection. Ideal also argues that absolutely nothing in the prosecution history could be construed as a disavowal of needles capable of being magnetized, when the prosecution history specifically states that the patentee identified needles that either are or are capable of being magnetized.

The time at which the needle is rendered magnetic or is magnetized was one of only four issues that Rivard addressed in the Markman hearing in light of the court's tentative ruling. The court will summarize Rivard's Markman argument on this issue below, in the pertinent part of the court's analysis.

b. Analysis

i. Difference in words or difference in meaning? Starting with the words of the two claim terms in the '668 patent presently at issue, *see* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), the court agrees that there are obvious differences between the *language* of the claim term "[the needle] *is rendered magnetic* at [or to] a level that enables detection of the magnetism of the needle" in claims **1** and **13** and the *language* of the claim term "the needle *is magnetized* to a level which enables detection of the magnetism of the needle" in claims **7** and **15** of the '668 patent. The court is considerably less convinced, however, that there is any *difference in meaning* between "is rendered magnetic" and "is magnetized."

Consultation of an ordinary dictionary, to assist in understanding the commonly understood meaning of words, *see* Free Motion Fitness, Inc., 423 F.3d at 1348 (recognizing such use of a dictionary as appropriate, citing Phillips, 415 F.3d at 1320); Phillips, 415 F.3d at 1324 ("[A] judge who encounters a claim term while reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term."), reveals that "rendered," in the sense appropriate here in light of intrinsic evidence, *see* id., means "to cause to be or become: MAKE." MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 990 (10th ed.1995); OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com) ("render" means "to make, to cause to be or become, of a certain nature, quality, etc."). Thus "rendered magnetic" would mean "is made magnetic" or "is magnetized." Indeed, as the chart of proposed claim constructions, above, reveals, Ideal's alternative construction actually equates "is rendered magnetic" with "is magnetized," because Ideal construes the term "[the needle] *is rendered magnetic* ..." to mean "the needle *is magnetized* ...."

The intrinsic evidence of the Summary of the Invention and the Detailed Description confirm the appropriateness of equating "is rendered magnetic" with "is magnetized." *See* Phillips, 415 F.3d at 1314 (the specification is "highly relevant" to claim construction, "[u]sually, it is dispositive," and it "is the single best guide to the meaning of a disputed term"). The Summary of the Invention uses *only* "is magnetized" to describe the process of making the needle magnetic at a level that enables detection of the magnetism of the needle, *see* the '668 patent, Col. 2, *ll*. 28-29, 42-43, 57-58; *see also* id., Col. 3, *ll*. 24-25 (needle cannula comprising a stainless steel alloy that "is magnetized"), and nothing else in the specification suggests a different meaning. The court finds the obvious equating of "is rendered magnetic" and "is magnetized" in the '668 patent overcomes any presumption that the different words were intended to have different meanings. *Compare* Andersen Corp., 474 F.3d at 1369 (different words used in separate claims are presumed to indicate that the claims have different meanings and scope).

Ideal is correct, however, that claim terms "rendered magnetic" and "is magnetized" not only use *different language* but have *different meanings* from the claim term "magnetic or magnetizable," which appears only in the '196 patent, precisely because the former terms from the '668 patent require that something be done to the needle in question to make it become magnetic, while the latter term from the '196 patent does not. *Compare* OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com) ("render" means "to make, to cause to be or become, of a certain nature, quality, etc.," so that "rendered magnetic" means "to be made magnetic"), *with* OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com) ("magnetic" means, *inter alia,* "having the properties of a magnet," and "magnetizable" means "capable of being magnetized."). The court will return to the meaning of "magnetic or magnetizable" in the '196 patent, below, but for now, concentrates on the meaning of the "is rendered magnetic" and "is magnetized" terms in the '668 patent.

ii. Permanent and residual magnetism. The court turns to the question of what "is made magnetic" or "is magnetized" means in the context of the '668 patent. It is clear from both parties' constructions, and more importantly, clear from the intrinsic evidence, that "is made magnetic" or "is magnetized" would be understood by one of ordinary skill in the art, reading the patent, to mean that the needle must be made into or become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time. For example, the Detailed Description identifies a preferred embodiment as one in which the "stainless steel alloy is an alloy that is permanently magnetic or magnetizable before detection," but also notes that, "[a]lternatively, the needle cannula of the present invention can comprise a stainless steel alloy that is not a permanent magnetic [sic] but is capable of being magnetized in a magnetic field to maintain a residual magnetism." *See* the '668 patent, Col. 5, *ll*. 46-59. Rivard contends that the construction of this phrase must state that it "does not refer to stainless steel which is merely attractable to a permanent magnet." The court finds, however, that such a construction, while accurate, is superfluous, where the claim term unambiguously requires that the needle *be* or *be made* magnetic, not merely that it be attracted or attractable to a magnet.

At the Markman hearing, Rivard contended that the court's tentative construction of "residual magnet" should be modified to add that a residual magnet is a magnet that retains its magnetic field for a period of time "when the magnetizing field is removed." Ideal contended that this construction improperly requires the magnetization of the needle and withdrawal of the magnetizing field before the needle enters the metal detector, a matter of timing of the magnetization of the needle addressed below. The court finds it unnecessary to add the language that Rivard proposes and potentially improper to do so, because the court has found nothing in the record that disavows a construction that permits the needle to be rendered a residual magnet as it is detected, *i.e.,* a circumstance in which the residual magnetism of the needle is detected *before* the magnetizing field is removed.

iii. Capacity to be magnetized. The parties' arguments concerning the "is renderedmagnetic" and "is magnetized" language in the '668 patent, and indeed, their arguments concerning "magnetic or magnetizable" in the ' 196 patent, also suggest concerns about the "capacity" or "capability" of the needle to be so magnetized. Rivard contends that, based on the specification and prosecution history, the "magnetism" terms of both patents do not apply to a stainless steel needle that merely has the capacity to be magnetized, but only to a needle that has been made into a magnet. Ideal argues that the claims, specification, and prosecution history make clear that the invention applies to a needle that merely has the capacity to be magnetized until it is rendered magnetic, as well as to a needle that is magnetic.

The words of the claims, *see* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), suggest that the needle must be magnetized either *prior to injecting* the animal *or after slaughter*. Specifically, claim **1**(a) claims an injection means wherein the needle, not otherwise identified as already magnetic or made from a magnetic alloy, "is rendered magnetic to a level

that enables detection of the magnetism of the needle," and claim **1**(b) claims injecting a living animal with "the needle, which has been rendered magnetic prior to injecting the living animal or while in the flesh of the animal after slaughter." The '668 patent, Claim **1.** Because the claim permits rendering the needle magnetic as late as *after slaughter,* it clearly contemplates that the needle was, until that time, only capable of being magnetized. Indeed, logic dictates that something that "is rendered magnetic" is capable of being magnetized until it is "rendered magnetic."

The intrinsic evidence from the specification also supports this construction. *See* Phillips, 415 F.3d at 1314 (the specification is "highly relevant" to claim construction, "[u]sually, it is dispositive," and it "is the single best guide to the meaning of a disputed term"). While there are numerous references in the specification to the needle being made from a magnetized or magnetic stainless steel alloy, there are also references to a needle or alloy that is "capable of being magnetized" or "magnetizable." For example, one alternative embodiment describes a needle cannula that is comprised of "a stainless steel alloy that is not a permanent magnetic [sic] but is capable of being magnetized in a magnetic field to maintain a residual magnetism." The '668 patent, Col. 5, *ll*. 56-59. Similarly, the Detailed Description includes a description of a particular embodiment in which the detection apparatus "can further comprise a means for producing a high magnetic field (not shown) to magnetize or enhance the magnetism of the stainless steel comprising needle cannula **12** or piece thereof in animal flesh or meat product after slaughter **200** before it enters metal detector **104.**" *Id.,* Col. 6, *ll*. 42-48. Thus, the patent contemplates a needle that is capable of being magnetized, but is not actually rendered magnetic until after slaughter of the animal in which it has broken off, as well as a needle that is a permanent magnet or that is rendered magnetic at some time prior to use to inject a live animal.

Rivard, nevertheless, argues that the prosecution history reveals that the patentee disavowed a needle that was only capable of being magnetized or only had the capacity to be magnetized, citing a portion of the June 2, 2002, amendment to the application for what became the '668 patent. *See* Joint Appendix at 47-53. Rivard characterizes the patentee's argument therein as (1) asserting that the invention requires the needle to be magnetized, not just to have the capability to be magnetized, and (2) distinguishing prior art that was merely capable of being magnetized but not actually magnetized, because such non-magnetized prior art needles did not provide increased detectability. Although prosecution history certainly can be relevant to the construction of claim terms, *see* Nystrom, 424 F.3d at 1142 ("In addition to the written description, '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.' ") (quoting Phillips, 415 F.3d at 1317), the court finds Rivard's characterization of this portion of the prosecution history to be strained at best.

Specifically, the cited portions of the amendment distinguish two prior art references, one for reusable stainless steel needles and one for Martensitic stainless steel, explaining,

[N]either suggests that the stainless steel be rendered magnetic and neither suggests that a magnetic stainless steel needle be used to inoculate animals because the magnetism of the magnetic needle would facilitate locating the a broken needle fragment in the flesh of a slaughtered animal in the event the needle should break during inoculation of the animal prior to slaughter. Thus, neither prior art reference on its own teaches or suggests the applicant's claimed method for detecting broken needles in the flesh of slaughtered animals, which is using a needle comprised of a stainless steel that is magnetic.

Joint Appendix at 48-49. The amendment then argues that the combination of the two prior art references also would not render the claimed invention obvious, because there was no reason why one of ordinary skill in the art would have combined them. *Id*. at 49. At most, the patentee asserted that the two prior art references would have suggested making reusable needles from Martensitic steel, but would not have suggested rendering Martensitic steel needles permanently or temporarily magnetic to improve detectability. *Id*. at 49-52. The patentee certainly did not expressly or even implicitly disavow needles only capable of

being magnetized by observing that nothing taught magnetizing needles made of an alloy capable of being magnetized.

In its rebuttal brief, Rivard again argues that, in response to a prior art rejection of application claims 16 and 23, Ideal argued "that the claim language itself already required that the needle be magnetized and did not cover a needle that merely had the capability of being magnetized." Rivard's Rebuttal Brief at 18 (citing Joint Appendix at 51-52). Rivard also argues that the patentee's contention that Martensitic stainless steel in the Hultin-Stigenberg prior art must be made permanently or temporarily magnetic in order for it to have a magnetic field that would render it more detectable means that the patentee disavowed needles that were only capable of being magnetized, because the Martensitic stainless steel of Hultin-Stigenberg would be capable of being magnetized. Rivard's Rebuttal Brief at 24-25. Such an argument completely mischaracterizes the patentee's argument, which was precisely that the prior art did not teach magnetizing needles made of alloys capable of being magnetized to improve detectability. *See* Joint Appendix at 51-52 ("There is nothing in the prior art that would have suggested that it would have been desirable to make Martensitic stainless steel permanently or temporarily magnetic for the purpose of making needles, the fragments of which would be more readily detected in the flesh of a slaughtered animal by a metal detector than would be non-magnetic fragments."). Moreover, the patentee argued, "The applicant discovered that the ability of the detector to detect stainless steel needle fragments is enhanced by using needles which are magnetic *or capable of being rendered magnetic* in an electric field." Joint Appendix at 52 (emphasis added). Thus, the patentee expressly asserted that the invention was magnetizing needles capable of being rendered magnetic, as well as using magnetic needles, and an attempt to construe these statements as conveying exactly the opposite meaning, as express or implicit disavowals of needles capable of being rendered magnetic, is wholly unpersuasive.

Thus, the court finds no comments in the cited prosecution history expressly or implicitly disavowing needles made of stainless steel that had the capacity to be magnetized, even in the express assertions that what made the invention patentable was rendering the claimed needle magnetic. The proper construction does not require exclusion of needles capable of being magnetized, because the patent clearly contemplates needles with the capacity to be magnetized until they are rendered magnetic, as well as needles that are magnetic.

iv. Time at which the needle is rendered magnetic. The parties' arguments concerning the "is rendered magnetic" and "is magnetized" language in the ' 668 patent, and indeed, their arguments concerning "magnetic or magnetizable" in the '196 patent, also suggest concerns about the time at which the needle must be, become, or be made a permanent or residual magnet. Rivard argues that the needle must be rendered magnetic "prior to use of a [metal] detector." Indeed, this contention was one of only four arguments that Rivard asserted during the Markman hearing. Ideal argues that the claims, specification, and prosecution history make clear that the needle must be made magnetic prior to use to inject animals or after it has broken off in the flesh of an animal which has then been killed for slaughter, *i.e., before detection,* not *before the detector*.

Rivard may be on better ground when it asserts that the needle must be magnetized "prior to use of a detector." Logic suggests that, in order for the magnetism of the needle to be detectable, the needle must be rendered magnetic or magnetized before whatever does the detecting is used. Any uncertainty about what does the detecting is rapidly dissipated by copious intrinsic evidence that what does the detecting is a metal detector or a magnetic detector. *See, e.g.,* the '668 patent, Summary of the Invention, Col. 1, *l.* 67, to Col. 2, *l.* 1 ("which enables the needle cannula to be detected in a metal detector"); Detailed Description, Col. 5, *l.* 46, to Col. 6, *l.* 19 (describing detection of magnetized needles by metal detectors or magnetic detectors, but suggesting that a drawback of a magnetic detector is that it cannot detect non-magnetizable metals). Indeed, no other method of detection is described anywhere in the patent. Furthermore, as noted above, the Detailed Description includes a description of a particular embodiment in which the detection "apparatus **100** can

further comprise a means for producing a high magnetic field (not shown) to magnetize or enhance the magnetism of the stainless steel comprising needle cannula **12** or piece thereof in animal flesh or meat product after slaughter **200** *before it enters metal detector* **104,**" *id.,* Col. 6, *ll.* 42-48 (emphasis added), which appears to support Rivard's argument, at least by describing the time at which the needle *could be* rendered magnetic as "before it enters metal detector **104.**"

On the other hand, the court cannot simply import what is clearly a particular embodiment in the specification, *see id.,* Col. 6, *ll.* 41-42 (stating that the apparatus described in *ll.* 42-48 is "[i]n particular embodiments"), into the construction of the claim term. *See* Playtex Prods., Inc., 400 F.3d at 906 ("The court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description. It must use the written description for enlightenment and not to read a limitation from the specification [into the construction of the term]," and "[i]t is axiomatic that claims, not the specification embodiments, define the scope of protection.") (internal citations and quotation marks omitted). Therefore, it is inappropriate to use the description of an embodiment in which the needle is magnetized by a high magnetic field before it enters the metal detector to limit the time at which the needle *must* be magnetized. *See* the '668 patent, Col. 6, *ll.* 41-48.

More importantly, the words of the claim, *see* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), suggest that the needle must be magnetized more generally either *prior to injecting* the animal *or after slaughter*. Specifically, claim **1**(a) claims an injection means wherein the needle (albeit not otherwise identified as already magnetic or magnetizable or made from a magnetic or magnetizable alloy) "is rendered magnetic to a level that enables detection of the magnetism of the needle," and claim **1**(b) claims injecting a living animal with "the needle, which has been rendered magnetic *prior to* injecting the living animal *or* while in the flesh of the animal after slaughter." The '668 patent, Claim **1** (emphasis added). None of the other claims in which either of the two claim terms at issue is used specifies precisely when the needle is magnetized, although each suggests that the detection of the magnetism of the needle occurs "when the animal is slaughtered and processed." *See* id., claim **7,** Col. 9, *ll.* 39-42; claim **13,** Col. 10, *ll.* 22-24; claim **15,** Col. 10, *ll.* 47-49.

In the tentative draft, the court concluded that the specification sheds no particular light on this question, either, despite its usual importance. *See* Phillips, 415 F.3d at 1314 (the specification is "highly relevant" to claim construction, "[u]sually, it is dispositive," and it "is the single best guide to the meaning of a disputed term"). The court found that this was so, because the specification refers once to a preferred stainless steel alloy "that is permanently magnetic or magnetizable *before detection,*" *see id.,* Col. 5, *ll.* 46-57 (emphasis added), and once, as noted above, to a preferred embodiment of the detection apparatus in which the stainless steel of the needle is magnetized " *before it enters metal detector* **104.**" *Id.,* Col. 6, *ll.* 42-48 (emphasis added). The court found in the tentative draft that the specification does not otherwise specify when magnetism must be imparted to the needle or steel of which the needle is comprised.

Therefore, in light of the words used in the claim, the court concluded in the tentative draft that a proper construction of the "timing" aspect of these terms requires that the needle is magnetic or is made magnetic "either prior to injecting the living animal or while in the flesh of the animal after slaughter," as this language " 'stays true to the claim language and most naturally aligns with the patent's description of the invention.' " Nystrom, 424 F.3d at 1142 (quoting Phillips, 415 F.3d at 1316, in turn quoting Renishaw P.L.C., 158 F.3d at 1250); *see also* the '668 patent, claim **1**(a) (claiming an injection means wherein the needle "is rendered magnetic to a level that enables detection of the magnetism of the needle"); id., claim **1**(b) (claiming injecting a living animal with "the needle, which has been rendered magneticprior to injecting the living animal or while in the flesh of the animal after slaughter").

At the Markman hearing, however, Rivard argued that the patents-in-suit and their prosecution histories make clear that the needle must be magnetized *before the metal detector,* not just *before detection*. First,

Rivard takes issue with this court's observation, in a footnote in the tentative draft, that one portion of the Detailed Description-which describes a particular embodiment in which the detection "apparatus **100** can further comprise a means for producing a high magnetic field (not shown) to magnetize or enhance the magnetism of the stainless steel comprising needle cannula **12** or piece thereof in animal flesh or meat product after slaughter **200** *before it enters metal detector* **104,**" *id.,* Col. 6, *ll*. 42-48 (emphasis added)-demonstrates that, contrary to Rivard's contention, the specification *does* describe an embodiment in which the needle is magnetized using the metal detector, or at least, is magnetized in an "apparatus for detecting metal" comprising a means for magnetizing the needle as well as the metal detector. *See id*. Col. 6, *ll*. 20-21 (describing the "apparatus **100**" as "an apparatus for detecting metal in the flesh of an animal after slaughter"). Rivard argues that "apparatus **100**" does not disclose an embodiment in which the needle is magnetized in the same device used for detecting metal, because "apparatus **100**" is not a single component, but an assembly of multiple components. *See* the '668 patent, Col. 6, *ll*. 20-27 ("apparatus **100** compris[es] a conveyor means **102** for transporting animal flesh or meat products after slaughter **200** through metal detector **104** for detecting whether animal flesh contains a broken piece of needle cannula **12** of the present invention"). Indeed, Rivard argues that "apparatus **100**" does not include any device for magnetizing a needle, although other embodiments of the assembly may include such a device for magnetizing the needle *before* it enters the metal detector **104.** *See id.,* Col. 6, *ll*. 41-47. As a matter of specificity, Rivard is correct: The description does not describe a *single component* that both magnetizes and detects the magnetized needle. Nevertheless, Ideal argues that a metal detector itself may generate sufficient magnetic field to magnetize a needle as the detector detects the needle. While Ideal's contention may be true, the court does not find evidence either supporting it or disproving it in the record. Ultimately, however, whether or not the patent discloses a method for magnetizing the needle with a metal detector is beside the point. The pertinent question is what the patent discloses about *when* the needle must be magnetized.

Rivard argued at the Markman hearing that, because the needle can be magnetized to retain residual magnetism, and residual magnetism is magnetism that persists after a magnetic field is removed, and because the magnetized needle is described as detectable by a metal detector or a magnetic detector, it must be magnetized *before* the metal detector or magnetic detector, and if it is not, it will not be detectable by *both* kinds of detectors. FN8 Finally, Rivard argued that, because the patentee argued that the prior art does not disclose that the detectability of Martensitic needles would be improved by magnetizing the needles, and indeed, the patentee argued that Martensitic needles that had not been magnetized would not have improved the detectability of fragments from the needles, the claimed needles must be magnetized prior to the metal detector.

FN8. A large portion of Rivard's argument concerning the time at which the needle is magnetized was illustrated using the Horita patent incorporated into the '668 patent by reference. Rivard attempted to add the Horita patent to the record, but Ideal resisted its inclusion. The court finds it unnecessary to address Rivard's arguments based specifically on the Horita patent, as they are only illustrations of arguments otherwise summarized above in reference to the description and prosecution history of the '668 patent.

These arguments are unpersuasive, however, because they fall well short of demonstrating that, in either the specification or the prosecution history, the patentee disavowed magnetizing the needles at any time other than "prior to the metal detector." *See, e.g.,* Research Plastics, 421 F.3d at 1296 (" 'The purpose of consulting the prosecution history in construing a claim is to "exclude any interpretation that was disclaimed during prosecution," ' " quoting Rhodia Chimie, 402 F.3d at 1384, in turn quoting ZMI Corp., 844 F.2d at 1580, and noting that "the prosecution history can reveal instances where the inventor limited the invention in the course of prosecution and thus narrowed the scope of the claim."). To put it another way, the court cannot find that language of the claims themselves-that is, language of claim **1**(a) which claims an injection means wherein the needle (albeit not otherwise identified as already magnetic or magnetizable or made from a magnetic or magnetizable alloy) "is rendered magnetic to a level that enables detection of the magnetism

of the needle," and language of claim **1**(b), which claims injecting a living animal with "the needle, which has been rendered magnetic *prior to* injecting the living animal or while in the flesh of the animal after slaughter," the '668 patent, Claim **1** (emphasis added)-is contrary to the portions of the specification or prosecution history on which Rivard relies. Thus, the court reiterates its conclusion that a proper construction of the "timing" aspect of these terms requires that the needle is magnetic or is made magnetic "either prior to injecting the living animal or while in the flesh of the animal after slaughter," as this language " 'stays true to the claim language and most naturally aligns with the patent's description of the invention.' " Nystrom, 424 F.3d at 1142 (quoting Phillips, 415 F.3d at 1316, in turn quoting Renishaw P.L.C., 158 F.3d at 1250); *see also* the ' 668 patent, claim **1.**

v. Magnetized to a level that enables detection. The remaining question for these claim terms is the appropriate construction, if any is required, for the phrase requiring that the needle be magnetized "at [or to] a level that enables detection of the magnetism of the needle." Rivard contends that the construction of this phrase must state that "it is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat." Again, the court finds this part of Rivard's construction to be superfluous, because the claim term itself clearly and unambiguously states that what must be detected is "the magnetism of the needle."

Ideal, on the other hand, contends that, if any construction is required, the phrase "at [or to] a level that enables detection of the magnetism of the needle" should be construed to mean "whereby the magnetism of the magnetic needle facilitates locating a needle or needle fragment in the flesh of a slaughtered animal" or "to a level which facilitates locating a needle or needle fragment in the flesh of a slaughtered animal." The problem with Ideal's construction of this phrase, in the court's view, is that "enables" and "facilitates" do not have the same ordinary meaning, and nothing in the patent suggests that a specialized meaning of "enables" to mean "facilitates" is appropriate. *See* Free Motion Fitness, Inc., 423 F.3d at 1348 (recognizing such use of a dictionary as appropriate, citing Phillips, 415 F.3d at 1320); Phillips, 415 F.3d at 1324 ("[A] judge who encounters a claim term while reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term."). As to ordinary meaning, in the sense appropriate here from the intrinsic evidence of the patent, "enable" means "to make possible, practical, or easy," or "to cause to operate." *See* MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 380 (10th ed.1995). "Facilitate," on the other hand, means "to make easier" or "help bring about." *Id*. at 415; *see also* Free Motion Fitness, Inc., 423 F.3d at 1348 ("The court must ensure that any reliance on dictionaries accords with the intrinsic evidence."). While the definitions of "enable" and "facilitate" overlap at the broadest definition of "enable," the one defining "enable" as "to make easy," it is inappropriate to select the broadest of the dictionary meanings as a matter of course. *See* id., 423 F.3d at 1348-49 (noting that use of the fullest range of a terms ordinary meaning does not mean that the term will presumptively receive its broadest dictionary definition or the aggregate of multiple dictionary definitions). The court also believes that "enable" in the context of the patent means "to make possible," not merely "to make easy." *See, e.g.,* the ' 668 patent, Detailed Description, Col. 5, *ll*. 63-66 ("Thus, a needle cannula or piece thereof comprising a residual magnetism, which is embedded in the flesh of an animal or meat product, *can be detected* in a metal detector or magnetic detector ....") (emphasis added).

vi. The court's construction. In light of the foregoing, the court concludes that the proper construction of both "[the needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle," which appears in claims **1** and **13** of the '668 patent, and "the needle is magnetized to a level which enables detection of the magnetism of the needle," which appears in claims **7** and **15** of the '668 patent, is the following: "Either prior to injecting the living animal or while in the flesh of the animal after slaughter, the needle is magnetized to become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time, to a level that makes it possible for the magnetism of the needle to be detected by a metal detector or magnetic detector."

4. "The wall has a thickness of greater than 0.018 inch"

[11] The next claim term for which the parties dispute the proper construction is "the wall has a thickness of greater than 0.018 inch," which is found in claims **5** and **11** of the '668 patent. The parties' competing constructions of this claim term are shown in the following chart:

THE '668 PATENT		
Claim Term	**Rivard's Definition**	**ideal's Alternative definition (if any definition is required)**
d. The wall has a thickness of greater than 0.018 inch (In claims **5** and **11**)	The metal making up the needle wall on one side of the needle hole has a thickness greater than 0.018 inch.	Needle wall thickness greater than 0.018 inch

a. Arguments of the parties

Rivard's argument in support of its construction of this claim term is comparatively concise. Rivard contends that the pertinent claims recite thickness of the needle "wall" using the singular form, while claims **4** and **11** of the '196 patent, in contrast, specify "combined" thickness of the needle "sidewalls." This difference in language leads Rivard to the conclusion that only one "wall" is at issue in claims **5** and **11** of the '668 patent. Rivard also points out that the Detailed Description refers to "inner" and "outer" sidewalls, suggesting that these inner and outer surfaces would establish a thickness that is measured on one side of the lumen, not both. Thus, in Rivard's view, the claims and specification establish that the thickness of the wall is measured on one side of the lumen, not by adding together the thickness of the wall on both sides of the lumen.

Ideal contends that this claim term is clear and unambiguous, and that its meaning is readily apparent within the context of the '668 patent. Ideal also argues that the prosecution history establishes that the examiner and the patentee understood this claim phrase to have its customary meaning, and that the scope of the term was not expressly limited during patent prosecution. Ideal argues that Rivard's proposed construction improperly narrows and rewrites the claim language by reference to the '196 patent. Ideal points out that the pertinent claims of the '668 patent, and the independent claims from which they depend, refer only to "the wall" or "at least one wall." Consequently, Ideal argues that the plain language of the claim is not limited to only one wall having a thickness of 0.018 inch, because the language of the related independent claims states "at least one wall." In light of this language, Ideal argues that restricting the claim term to one wall being more than 0.018 inch thick is not permitted. Ideal also points out that none of the phrases that Rivard uses to define this claim term can be found anywhere in the prosecution history. If any construction is required, Ideal contends that its construction of the term as "needle wall thickness greater than 0.018 inch" is well supported by the claim language and intrinsic evidence.

b. Analysis

i. Relationship to independent claims. In construing this claim term, the court finds that it must not only begin with the words of the claim term presently at issue, *see* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), but with the words of the independent claim from which depend the dependent claims in which that claim term is found. This is so, because dependent claims are to be construed to incorporate by reference all the limitations of the independent claim from which they depend. *See, e.g.,* Robotic Vision Sys., Inc. v. View Eng'g, Inc., 189 F.3d 1370, 1376 (Fed.Cir.1999) ("Claims 11 and 12 are dependent claims of claim 1 and are to be construed

to incorporate by reference all the limitations of claim 1," citing 35 U.S.C. s. 112 (1994)).

Dependent claim **5,** in which the claim term at issue is found, depends from independent claim **1** (or independent claim **2,** which is not at issue in this litigation), while dependent claim **11,** in which the claim term at issue is also found, depends from independent claim **7** (or independent claim **8,** which also is not at issue in this litigation). Claim **1** claims, *inter alia,* "an injection means comprising a tubular needle defined by at least one wall forming the tube...." Dependent claim **5** then claims "[t]he method of claim **1** or **2** whereinthe wall has a thickness of greater than 0.018 inch." Similarly, claim **7** claims, *inter alia,* a "needle [that] has at least one wall...." Dependent claim **11** then claims "[t]he method of claim **7** or **8** wherein the wall has a thickness of greater than 0.018 inch." The Federal Circuit Court of Appeals has explained that "[t]he phrase 'at least one' in patent claims typically is construed to mean 'one or more.' " Biagro Western Sales, Inc., 423 F.3d at 1304. Thus, the pertinent independent claims claim a needle with "one or more" walls. Logic suggests that "the wall" referred to in the dependent claims is *each and every one* of the walls comprising "at least one wall" of the needle claimed in the independent claims. Consequently, the thickness of "the wall" referred to in the dependent claims is the thickness of *each and every one* of the walls comprising "at least one wall" of the needle.

ii. Other intrinsic evidence. Other intrinsic evidence suggests the correctness of this construction. In reference to Figure 1, which "schematically illustrates a needle assembly," the Detailed Description states that the needle cannula, inter alia, has "a sidewall **17** with an outer sidewall **17A** and inner sidewall **17B** therebetween having a lumen **18** extending therethrough defining a longitudinal axis." The '668 patent, Detailed Description, Col. 4, *ll*. 20-22. Rivard is correct that Figure **1** to the '668 patent does not show numbers **17A** and **17B,** but Figure **1** to the '196 patent, which is otherwise identical, does show numbers **17A** and **17B** near the distal end **16** of the needle cannula. FN9 Figure **1** illustrates a cylindrical tubular needle cannula, which has one and only one, and therefore "at least one," sidewall forming the tube. Indeed, the description of Figure **2** FN10 in the Detailed Description explains that, "[p]referably, the needle cannula of the present invention has a circular cross-section," suggesting a cylindrical tubular needle. The ' 668 patent, Detailed Description, Col. 4, *ll*. 59-61. The thickness of this sidewall is necessarily the distance between the inner sidewall **17B** and the outer sidewall **17A.** Even in the absence of numbers **17A** and **17B,** the same conclusion could be drawn from Figure **2,** as shown in the ' 668 patent, which illustrates the sidewall **17,** and the companion description in the ' 668 patent, which explains that, for a 16 gauge embodiment, "the sidewall **17** has a thickness greater than 0.46 mm (0.018 inch), preferably a thickness of 0.64 mm (0.025 inch)." Id., Col. 4, *ll*. 55-57. As illustrated, the "thickness" of sidewall **17** is the distance from the inner sidewall, that is, the wall of the lumen **18,** to the outer sidewall of the needle cannula. It is equally clear that, if the needle cannula were not a cylindrical tube, and could, therefore, have more than one sidewall, the thickness of each sidewall would still be the distance between the inner sidewall **17B,** that is, the wall of the lumen **18,** and the outer sidewall **17A** for each such sidewall. No other reference to the thickness of the sidewall elsewhere in the Detailed Description appears to the court to suggest any other manner for measuring the "thickness" of the one or more sidewalls of the needle cannula.

FN9. Figure **1,** as shown in the '196 patent, is found in this opinion at page 1139.

FN10. Figure **2** is found in this opinion at page 1140.

Ideal appears to argue, however, that the thickness of the wall necessarily refers to the combined thickness of all sidewalls, when Ideal argues that, because the language of the related independent claims states "at least one wall," restricting the claim term to one wall being more than 0.018 inch thick is not permitted. The court does not find such an argument persuasive, however.

Such a construction would make the claim term "the wall has a thickness of greater than 0.018 inch" in claims **5** and **11** of the '668 patent synonymous with the quite different language in claims **3** and **10** of the '196 patent, which claim "the sidewalls flanking the lumen has [sic] a combined thickness of greater than 0.018 inch." One of the few differences between the specification of the '668 patent and the specification of the '196 patent is precisely in the description of sidewall thickness. The Summary of the Invention in the '668 patent states, "the sidewall has a thickness greater than 0.46 mm," and twice states, "the wall ha[s] a thickness of greater than 0.018 inch." The '668 patent, Col. 2, *ll*. 18, 32-33, 61-62. The comparable portions of the Summary of the Invention in the '196 patent, however, state "the two opposed sidewalls flanking the lumen have a combined thickness greater than 0.46 mm," and "the two opposed sidewalls flanking the inside diameter have a combined thickness greater than 0.018 inch." The '196 patent, Col. 2, *ll*. 18-19, 33-35, 62-64. Similarly, the Detailed Description in the '668 patent describes the 16 gauge embodiment of the claimed needle as a needle in which "the sidewall **17** has a thickness greater than 0.46 mm (0.018 inch), and preferably a thickness of 0.64 mm (0.025 inch)," the '668 patent, Col. 4, *ll*. 55-57, while the comparable portion of the Detailed Description of the ' 196 patent describes the 16 gauge embodiment of the claimed needle as a needle in which "the sidewalls **17** flanking (opposite each other) the lumen **18** have a combined thickness which is greater than 0.46 mm (0.018 inch), preferably a combined thickness of 0.64 mm (0.025 inch)." The '196 patent, Col. 4, *ll*. 56-59.

The court concludes that the quite different language in the two patents means different things. For the reasons stated above, reading the dependent claims in the '668 patent in light of the independent claims from which they depend, the language of the '668 patent unambiguously refers to the thickness of "the sidewall," meaning "each and every sidewall," not to the "combined thickness" of "the sidewalls flanking the lumen." Just as clearly, the '196 patent refers to "combined thickness" of "the sidewalls flanking the lumen."

Ideal might, nevertheless, argue that the Detailed Description supports its interpretation by pointing out that it describes the "outer diameter" as the sum of the "lumen diameter" and the "sidewall thickness," not as the sum of the "lumen diameter" and *twice* the "sidewall thickness," as would be the case if the "thickness greater than 0.018 inch" were meant to refer to the thickness of each and every sidewall, rather than to the combined thickness of all sidewalls. Specifically, the Detailed Description of the '668 patent explains how the "outer diameter" is derived, as follows:

In the case of the 16 gauge embodiment of the needle of the present invention, the sidewall **17** has a thickness greater than 0.46 mm (0.018 inch), preferably a thickness of 0.64 mm (0.25 inch) and the diameter of the lumen **18** is about 1.19 mm (0.047 inch). *Thus, the outer diameter of needle **12** is about 1.8 mm (0.072 inch)* [*i.e.,* 0.64 mm (0.025 inch) + 1.19 mm (0.047 inch) = 1.83 mm (0.072 inch)].

The '668 patent, Detailed Description, Col. 4, *ll*. 54-59. The short answer to this argument is that the quoted portion of the Detailed Description simply contains an error, where it is otherwise clear from the claims and specification of the '668 patent that the "thickness of the sidewall" means the thickness of each and every sidewall, so that "outer diameter" should have been the sum of the "lumen diameter" and the sum of the combined thickness of the sidewalls on opposite sides of the lumen. Indeed,the Detailed Description of the '196 patent derives the same "outer diameter" for the claimed needle as the '668 patent, but based on the sum of the "lumen diameter" and the "combined thickness of the sidewalls on opposite sides of the lumen." *See* the '196 patent, Col. 4, *ll*. 55-61.

The upshot of this analysis of the differences in language between the two patents is that the sidewalls of the needle claimed in the '668 patent are *twice as thick* as the sidewalls of the needle claimed in the '196 patent. Although this difference may be an unintentional mistake of the patentee, it is nevertheless the result of the unambiguous language of the two patents, and hence, not a matter open to other construction.

iii. The court's construction. Thus, in light of the analysis of the proper construction of the claim term "the

wall has a thickness of greater than 0.018 inch," found in claims **5** and **11** of the '668 patent, the court construes that term to mean the following: "Each and every one of the one or more sidewalls of the needle cannula has a thickness, measured from the inner sidewall (wall of the lumen) to the outer sidewall, of greater than 0.018 inch."

5. "The needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch"

[12] The last claim term of the '668 patent for which the parties dispute the proper construction is "the needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic]" in claims **6** and **12.** The parties' competing constructions for this claim term are shown in the chart below:

THE '668 PATENT		
Claim Term	**Rivard's Definition**	**ideal's Alternative definition (if any definition is required)**
e. The needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic]. (In claims **6** and **12**)	The hole through the needle is between 0.0455 and 0.0465 inches in diameter and the outside diameter of the needle is 0.018 inch.	The needle has a lumen diameter of about 0.046 inch and an outside diameter of 0.018 inch.

This claim term presents a paradox, at least for those of us unable to conceptualize objects beyond three or four dimensions, because, as Rivard points out, it defines a needle with an inner diameter that is *greater* than its outer diameter. Leaving aside for now the question of whether claims **6** and **12** are invalid as impossible and, therefore, not enabling, the court turns to a summary of the parties' arguments for their competing constructions of this claim term.

a. Arguments of the parties

Rivard argues that, to the extent that this obviously impossible and, therefore, invalid claim term is susceptible to construction, the meaning of "about" depends upon the technological facts of the particular case. Here, Rivard contends that, in prosecution of the '196 patent, Ideal submitted an exhibit that purported to represent standardized dimensions of hypodermic needles showing tolerances for inside diameters of plus or minus 0.0005 inch for a 16 gauge needle. Thus, Rivard contends that the range of the approximate inside diameter claimed should be from 0.0455 to 0.0465 inch.

Apparently not recognizing or simply not acknowledging the impossibility of this claim term, Ideal argues that its meaning is clear and unambiguous and that there is simply no basis for Rivard's limitations on the scope of the "about" measurement, not least because Rivard relies on an exhibit offered in support of the prosecution of the '196 patent, not in support of the prosecution of the '668 patent in which the claim term is found. Ideal also argues that such an approximation term as "about" a certain diameter does not need to be construed with numerical exactitude. Ideal argues, further, that it is clear from the context that the "inside diameter" referred to is the diameter of the lumen. Thus, in the alternative, Ideal asserts that a proper construction, well supported by the intrinsic evidence, is "the needle has a lumen diameter of about 0.046 inch and an outside diameter of 0.018 inch."

b. Analysis

i. Source of the error in the impossible claim. As noted above, this claim term claims an impossibility, at least as this court understands three- and four-dimensional physics, an object with an inside diameter that is greater than its outside diameter. The court believes that it has discovered the source of the error, a none-

too-surprising mix up of measurements in millimeters and inches and measurements of different features. For example, the Detailed Description includes the following:

In the case of the 16 gauge embodiment of the needle of the present invention, the sidewall **17** has a thickness greater than 0.46 mm (0.018 inch), preferably a thickness of 0.46 mm (0.025 inch) and the diameter of the lumen **18** is about 1.19 mm (0.047 inch). Thus, the outer diameter of needle **12** is about 1.8 mm (0.072 inch).

The '668 patent, Detailed Description, Col. 4, *ll*. 54-59. It seems readily apparent that, in the claim term presently at issue, the inside diameter was properly stated in inches, but the outside diameter was misstated as 0.018 inches, when it probably should have been stated as 0.072 inches or 1.8 mm. Moreover, the thickness of the sidewall of the claimed needle, in a 16 gauge embodiment, is described as having "a thickness greater than 0.46 mm (0.018 inch)," *see* the '668 patent, Col. 4, *ll*. 55-56, and is likewise claimed to have "a thickness of greater than 0.018 inch" in claims **5** and **11,** so that the sidewall thickness in these instances is identical to the "outside diameter" claimed in claims **6** and **12,** and one measurement was inadvertently transposed with the other.

The problems with the measurement of the "outside diameter" in the ' 668 patent do not stop with a mix up of measurements or measurement units, however. In the preceding section, the court construed the term "the wall has a thickness of greater than 0.018 inch," found in claims **5** and **11** of the ' 668 patent, to mean that "each and every one of the one or more sidewalls of the needle cannula has a thickness, measured from the inner sidewall (wall of the lumen) to the outer sidewall, of greater than 0.018 inch." A consequence of this construction is that the "outer diameter" of 0.072 inch, as described in the Detailed Description of the '668 patent, Col. 4, *ll*. 54-59, cannot be correct, because it does not include the thickness of the sidewall on opposite sides of the lumen (0.047 inch + 0.25 inch + 0.25 inch = 0.097 inch), just the thickness of the sidewall on one side of the lumen (0.047 inch + 0.25 inch = 0.072 inch).

The court has some reluctance to construe a claim term that obviously claims a physical impossibility, such as an object with an inside diameter that is larger than its outside diameter. The disputed aspect of the claim term, however, is not the clearly erroneous outer diameter, but the construction of the language stating an approximate inside diameter in terms of "about 0.046 inch." Therefore, the court will consider the proper construction of that portion of the claim term.

ii. Construction of the approximation. Claims **6** and **12** of the '668 patent claim a needle with an "inside diameter of about 0.046 inch," which Rivard asserts must be construed to mean "between 0.0455 and 0.0465 inches." FN11 Ideal contends that the "about" term does not need to be construed with mathematical exactitude.

FN11. Although the '668 patent claims a needle with an "inside diameter of about 0.046 inch," the Detailed Description explains that an ordinary, prior art 16 gauge needle has "a lumen diameter of about 1.19 mm (0.047 inch)." *See* the '668 patent, Col. 4, *ll*. 61-63. Consequently, Rivard's construction of "about 0.046 inch" could mean that any 16 gauge needle that has "a lumen diameter of about 1.19 mm (0.047 inch)" does not infringe claims **6** and **12** of the '668 patent, because such a needle could fall outside the range of possible diameters defined by "about 0.046 inch."

The Federal Circuit Court of Appeals provides some guidance on the construction of such an approximation:

This court has looked at the meaning of the term "about," and similar qualifying words or phrases, in other cases and has developed an approach to the interpretation of such terms:

[T]he word "about" does not have a universal meaning in patent claims, ... the meaning depends upon the technological facts of the particular case.

* * *

The use of the word "about," avoids a strict numerical boundary to the specified parameter. Its range must be interpreted in its technological and stylistic context. We thus consider how the term ... was used in the patent specification, the prosecution history, and other claims. It is appropriate to consider the effects of varying that parameter, for the inventor's intended meaning is relevant. Extrinsic evidence of meaning and usage in the art may be helpful in determining the criticality of the parameter....

Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217 (Fed.Cir.1995) (citations omitted). *See also* Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1554 (Fed.Cir.1996) (stating that "the usage [of the term 'about'] can usually be understood in light of the technology embodied by the invention"); Conopco, Inc. v. May Dep't Stores Co., 46 F.3d 1556 (Fed.Cir.1994) (discussing the criticality of the claimed ratio to the invention and whether or not one of ordinary skill in the art would have read the modifier "about" expansively in light of the intrinsic evidence).

Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Inc., 476 F.3d 1321, 1326-27 (Fed.Cir.2007) (in light of the kinds of evidence identified, concluding that the claim term defining a ratio of tramadol to acetaminophen of "about 1:5" should be construed to mean "approximately 1:5, encompassing a range of ratios no greater than 1:3.6 to 1:7.1").

Rivard's sole authority for its construction of "approximately 0.046 inch" as "between 0.0455 and 0.0465 inches" is an exhibit offered in the prosecution of the '196 patent, which is a different, albeit related, patent. The court has considerable doubt that this evidence is on a par with "how the term ... was used in the patent specification, the prosecution history, and other claims" *of the* '668 patent, notwithstanding the relationship between the applications of the '668 patent and the '196 patent. *See* id. at 1326 (quoting Pall Corp., 66 F.3d at 1217). The exhibit may, however, be extrinsic evidence of the meaning and usage in the art of the criticality of approximations of inside diameters of hypodermic needles. *See* id. The question is whether the court has any need of recourse to extrinsic evidence to construe the term in question.

Unfortunately, the court finds little in other claims or the specification of the '668 patent that is illuminating, and no party has pointed to anything in the prosecution history *of the* '668 patent that is on point. The court notes that the specification simply refers to "inside diameter" or "lumen diameter" for a 16 gauge needle, either the claimed invention or a prior art needle, as being "about 1.19 mm (0.047 inch)." *See* the '668 patent, Col. 4, *ll*. 58-64. The limits of the approximation indicated by "about" are not explained in the Detailed Description. It is apparent from the same portion of the specification, however, that the goal of claims **6** and **12** was to claim a needle with an inside diameter comparable to the inside diameter of "standard" or "prior art" 16 gauge needles. That being so, the court cannot explain from the intrinsic evidence why the claimed "inside diameter" is not precisely the same approximation as the "inside diameter" described in the Detailed Description, *i.e.*, why what is claimed is an inside diameter of "about 0.046 inch," where what is described is a needle with an inside diameter of "about 0.047 inch." FN12

FN12. The court notes that 1.19 mm would "round" to 0.047 inch rather than 0.046 inch, where 1.19 mm, converted to seven decimal places, is 0.0468503 inch.

Thus, as a last resort, the court turns to the evidence of the needle dimensions exhibit in the prosecution history of the '196 patent, cited by Rivard, and found in the Joint Appendix at 787-88, to see what it reveals about how the common inventor of the '668 patent and the '196 patent understood the invention and, in

particular, the scope of the approximation of inside diameter of hypodermic needles. *See* Nystrom, 424 F.3d at 1142 ("In addition to the written description, '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.' ") (quoting Phillips, 415 F.3d at 1317). The court explained, above, that it deems this evidence to be, if anything, the sort of "extrinsic" evidence contemplated by the court in Ortho-McNeil Pharm., Inc., 476 F.3d at 1326. Nevertheless, Ideal is hardly in a position to dispute the validity of this exhibit as extrinsic evidence of the understanding of one skilled in the art concerning permissible tolerances for inside diameters of hypodermic needles, because the exhibit was offered essentially for that purpose by the same patentee in the prosecution of the '196 patent.

Rivard contends that this exhibit demonstrates that the understanding of one skilled in the art was that the inside diameter of a 16 gauge hypodermic needle is defined in terms of tolerances of 0.0005 inch, leading Rivard to assert that "about 0.046 inch" must mean "between 0.0455 and 0.0465 inches." Rivard's analysis based on this evidence is flawed, however. The exhibit, purporting to be "Syringe Needle Dimensions-Technical Notes," actually defines the "nominal inside diameter" of a 16 gauge syringe needle as 0.047 inch, FN13 and the tolerance, in inches, for the inside diameter of a 16 gauge needle to be plus or minus 0.0015 inch, not plus or minus 0.0005 inch, as Rivard would have it. *See* Joint Appendix 787, Nominal ID, Tolerance (in), Needle Gauge 16. Thus, the evidence upon which Rivard relies would suggest that "about 0.046 inch" should be construed to mean "between 0.0445 and 0.0475 inches." FN14 Therefore, the court construes the phrase "about 0.046 inch" to mean "about 0.046 inch, encompassing a range of diameters no greater than 0.0445 to 0.0475 inch." *Cf.* Ortho-McNeil Pharm., Inc., 476 F.3d at 1327 (in light of the kinds of evidence cited, concluding that the claim term defining a ratio of tramadol to acetaminophen of "about 1:5" should be construed to mean "approximately 1:5, encompassing a range of ratios no greater than 1:3.6 to 1:7.1").

FN13. To be precise, the exhibit shows the nominal inside diameter of a 16 gauge syringe needle to be 0.470 inch, but that is clearly a misprint, based on the conversion of the stated nominal inside diameter of a 16 gauge needle from millimeters (stated as 1.194) to inches (0.047 inch), and a comparison to the stated nominal inside diameters for 15 and 17 gauge needles (0.0540 inch and 0.0420 inch, respectively). *See* Joint Appendix at 787.

FN14. Moreover, both the "inside diameter" of the claimed needle ("about 0.046 inch"), as claimed in claims **6** and **12** of the '668 patent, and the "inside diameter" of a 16 gauge embodiment of the claimed needle, as described in the Detailed Description of the '668 patent ("about 0.047 inch"), would fall within the permissible tolerance suggested by this evidence, mitigating some of the concerns that the court expressed above, in note 11, that the approximate inside diameters of 16 gauge needles as described and as claimed do not match.

iii. Inside diameter. What the specification does reveal is that "inside diameter" is properly understood to mean the "lumen diameter," as the two phrases are used interchangeably: The claims use "inside diameter" and "outside diameter," while the Detailed Description refers to "lumen diameter" and "outer diameter." *Compare* the '668 patent, claims 6 and 12, *with* id., Detailed Description, Col. 4, *ll*. 58-64. Although Rivard refers to the diameter of the "hole" in its proposed construction, rather than to the diameter of the "lumen," it is apparent that Rivard recognizes that the "inside diameter" means the "lumen diameter."

iv. The court's construction. Upon the foregoing, the court concludes that the proper construction of the term "the needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic]" in claims **6** and **12**-recognizing that the stated outside diameter is doubtless an error-is the following: "The

needle has a lumen diameter of about 0.046 inch, encompassing a range of diameters no greater than 0.0445 to 0.0475 inch, and an outside diameter of 0.018 inch."

C. Terms Of The '196 Patent

The court turns next to the terms of the '196 patent. The parties have agreed to the constructions for two of the claim terms in this patent, but they dispute the proper constructions of several other terms. Some of those disputed terms, however, are identical or similar to claim terms of the '668 patent construed above.

1. Agreed constructions

As the court noted above, the parties have agreed to the construction of two claim terms of the '196 patent. First, they have agreed that "needle assembly" should be construed as "a hub and a tubular needle cannula having a proximal end, a distal end, and a sidewall with an outer sidewall and inner sidewall there between having a lumen extending there through defining a longitudinal axis." Second, they have agreed that "flanking the lumen" should be construed as "the combined thickness of the sidewalls opposing each other across the lumen."

[13] The court believes, however, that its independent obligation to construe patent claim terms includes construction of terms for which the parties have agreed on a construction. *See* Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1555 (Fed.Cir.1995) (holding that the court is free to adopt a construction independent of those suggested by the parties). The court readily accepts the parties' agreed construction of "needle assembly" as "a hub and a tubular needle cannula having a proximal end, a distal end, and a sidewall with an outer sidewall and inner sidewall there between having a lumen extending there through defining a longitudinal axis." Such a construction is fully in accord with the intrinsic evidence in the Detailed Description of Figure **1,** which explains that Figure **1** illustrates "a needle assembly **10** ... comprising the detectable heavy duty needle cannula **12** having proximal end **14,** distal end **16,** and a sidewall **17** with an outer sidewall **17A** and inner sidewall **17B** therebetween having a lumen **18** extending therethrough defining a longitudinal axis." The '196 patent, Col. 4, *ll*. 17-23.

The court is unwilling to accept the parties' agreed construction of the second term, however, because the parties' agreed construction of "flanking the lumen" as "the combined thickness of the sidewalls opposing each other across the lumen" clearly includes inapposite language. While it is true that the ' 196 patent states that it is the "sidewalls" of the needle cannula that are "flanking the lumen," and claims the "combined thickness" of the "sidewalls flanking the lumen" is a certain number, *see* the '196 patent, claims **3** and **10,** the thickness of the sidewalls plays no part in the position of the "sidewalls" as "flanking the lumen." Thus, the reference to "the combined thickness of the sidewalls" in the parties' proposed definition of the term "flanking the lumen" is inaccurate and confusing, and only the phrase "opposing each other across the lumen" is a proper construction of the claim term "flanking the lumen." That much of the parties' agreed construction is well supported by intrinsic evidence. *See* the '196 patent, Summary of the Invention, Col. 2, *ll*. 18-19 ("the two opposed sidewalls flanking the lumen"); *ll*. 33-34 (same); *ll*. 62-64 (same); Detailed Description, Col. 4, *ll*. 56-57 ("the sidewalls **17** flanking (opposite each other) the lumen **18**"); *ll*. 66-67 ("the sidewalls flanking (opposite each other) the lumen").

The court, therefore, adopts the parties' first agreed construction and adopts the second agreed construction as amended.

2. Disputed constructions

a. "Gauge"

[14] The first claim term of the '196 patent for which the parties dispute the proper construction is "gauge,"

as used in claims **1** and **8** of the ' 196 patent. Ideal does not propose an alternative construction for this claim term, because Ideal believes it to be unambiguous and well known to one of ordinary skill in the art. The claim term and Rivard's proposed construction are shown below in the following chart.

THE '196 PATENT		
	Claim Term	**Rivard's Definition**
a.	Gauge (In claims **1** and **8**)	A size measurement of needles determined by the outer diameter of the needle. The smaller the gauge number the larger the needle outer diameter.

i. Arguments of the parties. In support of its construction, Rivard argues that "gauge" refers to the outer diameter of the needle, despite Ideal's contention that it refers to the diameter of the inside or lumen of the needle. Rivard points out that the patent specification explicitly states that the outer diameter dictates the gauge of the needle. Rivard asserts, further,that this definition was recited by the examiner in rejecting the pertinent claims and that the patentee acquiesced in this definition. Rivard argues, further, that extrinsic evidence from the American Society of Testing Materials (ASTM), defining gauge by outer diameter and minimum wall thickness, confirms the correctness of its construction.

Ideal argues that Rivard's construction ignores claim language, which claims "a gauge of needle cannula having an outer diameter and a lumen with a lumen diameter." In light of this language, Ideal argues that Rivard is improperly "reading out" the lumen diameter as a determinant of the gauge of a needle, based solely on language of the specification disclosing *an embodiment* whereby "the outer diameter of the needle determines gauge." Ideal also asserts that, in prosecuting the '196 patent, the patentee provided illustrations of lumen diameter and outer diameter of various gauges of needles. Ideal contends that Rivard's extrinsic evidence is simply irrelevant under applicable law.

ii. Analysis. Starting, as always, with the words of the claim term presently at issue, *see* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), the court notes that claim **1** of the '196 patent does claim, *inter alia,* a needle assembly "which includes a gauge of needle cannula *having an outer diameter and a lumen with a lumen diameter,*" and further, that "the outer diameter is greater than an outer diameter of a standard needle cannula and the lumen diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge." The '196 patent, claim **1** (emphasis added). Similarly, claim **8** of the '196 patent claims, in pertinent part, a needle assembly "wherein the needle cannula is of a gauge, has an outer diameter, and a lumen with a lumen diameter and wherein the outer diameter is greater than the outer diameter of a standard needle cannula and the lumen diameter is identical to the lumen diameter of the standard needle cannula between 14 and 27 gauge." The '196 patent, claim **8.** Thus, the words of the patent claims at issue make clear that comparisons are made between the claimed needle and a prior art needle in terms of both the outer diameter and the lumen diameter of a needle of a particular gauge. These words, therefore, strongly suggest that "gauge" should be construed to include both outside diameter *and* lumen diameter.

Other intrinsic evidence from the specification of the '196 patent supports such a construction. *See* AquaTex, 419 F.3d at 1380 ("Where ... the disputed claim term is technical or a term of art, '[t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.' ") (quoting Phillips, 415 F.3d at 1315); Phillips, 415 F.3d at 1314 (the specification is not only "highly relevant" to claim construction, "[u]sually, it is dispositive," and "is the single best guide to the meaning of a disputed term"). Specifically, the Detailed Description states, in part, the following:

In the case of the 16 gauge embodiment of the needle of the present invention, the sidewalls **17** flanking (opposite each other) the lumen **18** have a combined thickness which is greater than 0.46 mm (0.018 inch), preferably a combined thickness of 0.64 mm (0.025 inch) and the diameter of the lumen **18** is about 1.19

mm (0.047 inch). Thus, the outer diameter of needle **12** is about 1.8 mm (0.072 inch). Preferably, the needle cannula of the present invention has a circular cross-section. In contrast, a 16 gauge prior art needle has an outside diameter of about 1.65 mm (0.065 inch) and a lumen diameter of about 1.19 mm (0.047 inch). Therefore, the combined thickness of the sidewalls flanking (opposite each other) the lumen of the prior art needle is about 0.46 mm (0.018 inch), which is somewhat more likely to break.

The '196 patent, Col. 4, *l*. 55, to Col. 5, *l*. 2. This portion of the Detailed Description, again, makes comparisons between a prior art needle and the claimed needle ostensibly of the same "gauge" on the basis of outer diameter, lumen diameter, and indeed, thickness of the sidewall, further supporting Ideal's contention that "gauge" should be defined in terms of both inner and outer diameter.

The fly in the ointment, as Rivard contends, is another portion of the Detailed Description, which states the following:

[T]he needle cannula of the present invention includes, but is not limited to, gauges between 14 and 27. It should be understood that because the sidewall of the needle cannula of the present invention is thicker than the sidewall of prior art needle cannulas *and the outer diameter of the needle* cannula *determines the gauge,* a 16 gauge needle cannula of the present invention has an outer diameter similar to the outer diameter of a 15 gauge needle cannula.

The '196 patent, Detailed Description, Col. 5, *ll*. 18-26 (emphasis added). This portion of the specification, thus, appears to define "gauge" solely in terms of the outer diameter of a needle. Ideal contends that this language merely discloses an embodiment, *i.e.,* an embodiment of a 16 gauge needle that has an outer diameter similar to the outer diameter of a 15 gauge prior art needle cannula, but an inside diameter similar to the inside diameter of a 16 gauge prior art needle cannula. While Ideal's description of this language as merely part of the disclosure of an embodiment is not entirely satisfactory, it is clear that this language comes on the heels of the extensive comparison, quoted above, of the claimed needle in a 16 gauge embodiment with a prior art 16 gauge needle in which the comparisons are made on the basis of *both* inside and outer diameters, so that the reference solely to outer diameter determining gauge quoted just above simply illustrates one factor in the comparison of the claimed needle and the prior art, for the specific purpose of showing that the outer diameter of a 16 gauge embodiment of the claimed needle is similar to the outer diameter of a 15 gauge prior art needle. The court does not find the language on which Rivard relies to be dispositive of the question of whether the gauge of a needle is determined solely from its outer diameter or on the basis of its inside diameter and outer diameter, because it does not amount to the patentee acting as its own lexicographer, *see* Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's definition must govern), nor does it amount to a statement of the understanding of one of ordinary skill in the art concerning determination of the gauge of a needle.

Turning to the prosecution history to see whether it reveals that the inventor limited the meaning of "gauge" to outside diameter in the course of prosecuting the patent, *see* Research Plastics, 421 F.3d at 1296 (citing Phillips, 415 F.3d at 1317-18), the court finds that the examiner did reject application claims 16 and 23, which recited "the outer diameter is greater than an outer diameter of a standard needle cannula of identical gauge" on the ground that "[i]t is unclear how a cannula of a particular gauge can have a larger outer diameter than a cannula of identical gauge, given Applicant's disclosure on Page 9, lines 25 and 26, which recites that 'the outer diameter of the needle cannula determines the gauge.' " Joint Appendix at 745, Exhibit 1004 (Office Action of July 14, 2003). The examiner noted that "[t]hese statements appear to be contradictory and therefore make the claim language indefinite." *Id*. The patentee responded by deleting the "of identical gauge" language from application claims 16 and 23. *Id*. at 735 & 739. The court also finds, however, that the patentee subsequently asserted, in its October 28, 2004, appeal, that a needle gauge has an outer diameter and a lumen with a lumen diameter, *see id*. at 594, and also submitted the exhibit of technical

notes for fabrication of syringe needles discussed above defining the dimensions of needles of various gauges in terms of outer diameter, inner diameter, and wall thickness. *See id*. at 787.

Taken together, the intrinsic evidence of the patent claims, specification, and prosecution history convince the court that needle gauge is determined from the inner or lumen diameter as well as the outer diameter. In the alternative, the court reads the claims and specifications to show that the patentee acted as its own lexicographer in defining "gauge" in terms of inner or lumen diameter as well as outer diameter. *See* Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's definition must govern). While Rivard was eager to rely on the patentee's exhibit of needle dimensions at page 787 of the Joint Appendix when arguing that the patentee had restricted the scope of the patent to define required inner diameters, within certain tolerances, for syringe needles, Rivard takes the inconsistent position that a different, extrinsic, statement of industry standards, from the American Society for Testing and Materials (ATSM), should be controlling, because it defines "gage or size" of needle tubing in terms of "outside diameter and minimum wall thickness." *See* Defendants' Appendix at 37. Such extrinsic evidence is far from sufficient to impose such a definition over the patentee's definition of "gauge" in terms of both inside diameter and outer diameter in the intrinsic evidence of the ' 196 patent.

iii. The court's construction. In light of the foregoing, the court construes "gauge" as used in claims **1** and **8** of the '196 patent to mean "a size measurement of needles determined by the outer diameter and the inner or lumen diameter."

b. "Stainless steel"

[15] The parties dispute the proper construction of "stainless steel" in claims **1** and **8** of the '196 patent, just as they disputed the construction of this term in claims **1, 7, 13,** and **15** of the '668 patent. Indeed, they rely on precisely the same proposed constructions and arguments for the meaning of this term in the '196 patent as they asserted concerning the meaning of this term in the '668 patent. The court, therefore, will not reiterate those arguments here. However, this claim term was the focus of Ideal's arguments during the Markman hearing, in light of the court's tentative construction, and one of the claim terms that Rivard also addressed in some detail during the Markman hearing. Therefore, the court will summarize those additional arguments in its analysis. First, however, the court will reiterate the claim term and the parties' proposed constructions in the chart that follows.

THE '196 PATENT		
Claim Term	**Rivard's Proposed Definition**	**ideal's Alternative definition (if any definition is required)**
b.Stainless steel (In claims **1** and **8**)	A large group of corrosion resistant steels that contain 10% or more of chromium and may contain other elements.	Corrosion resistant steel

The court declined to construe this term, in isolation, in the context of the '668 patent, because the term was never used in isolation in the claims of that patent, but only in the claim term "stainless steel comprising" a list of elements. The term "stainless steel" does, however, appear in isolation, that is, without a specification of the elements of which the stainless steel is comprised, in claims **1** and **8** of the '196 patent. Therefore, the court must now determine whether the term "stainless steel," without a specification of elements of which it is comprised, requires any construction and, if so, what construction is appropriate.

i. Analysis. In the tentative draft, the court concluded that the words of the patent claims in which the term "stainless steel" is used without specification of the elements of which the "stainless steel" is comprised do not provide any illumination of the meaning of "stainless steel." *See* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"). Although Ideal took issue with this conclusion at the Markman hearing, the court will address Ideal's argument on this point below. In the tentative draft, in light of the court's conclusion that the words of the patent were not illuminating, the court turned to the specification for whatever guidance it may provide. *See* AquaTex, 419 F.3d at 1380 ("Where ... the disputed claim term is technical or a term of art, '[t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.' ") (quoting Phillips, 415 F.3d at 1315); Phillips, 415 F.3d at 1314 (the specification is not only "highly relevant" to claim construction, "[u]sually, it is dispositive," and "is the single best guide to the meaning of a disputed term"). For the same reason stated above, in Section II.B.2.b., the court concluded in the tentative draft that, at least as an initial matter, pertinent portions of the specification suggest that "stainless steel," standing alone, is properly construed to be "corrosion resistant steel," as both parties suggest. *See* Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's definition must govern); *see also* the '196 patent, Col. 5, *ll*. 28-30 ("The stainless steel alloy can comprise *any corrosion-resistant magnetic material* with an elemental composition ....") (emphasis added). The parties did not dispute this part of the court's tentative ruling at the Markman hearing, and the court now reiterates this determination. This determination is only the beginning of the court's construction of the term "stainless steel," however.

The next question is whether "stainless steel," standing alone, must be comprised of at least 10 % Chromium, as Rivard initially contended, or for that matter, any other specific elements in any specific weight percentages or weight percentage ranges. The court concluded in the tentative draft, and reiterates here, that, in the context of the '196 patent specification, "stainless steel" does not have to be comprised of at least 10% Chromium, nor does the specification create any ambiguity about the percentage of Chromium, for example, of which the "stainless steel" must be comprised, but it *does* specify that the alloy must be comprised of certain elements in certain weight percentage ranges.

More specifically, the court once again acknowledges that Rivard is correct that the Detailed Description of the '196 patent, like the detailed description of the '668 patent, explains that "[t]he stainless steel alloy can comprise any corrosion-resistant magnetic material with an elemental composition within the range set forth in U.S. Pat. No. 5,601,644 to Kosa et al. and U.S. Pat. No. 4,969,963 to Honkura et al." *See* the '196 patent, Col. 5, *ll*. 28-32. The Detailed Description then specifies, however, that, "[i]n general, the magnetized stainless steel comprises 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % A1, 0.01-1.0 Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, and the remainder Fe." Id., Col. 5, *ll*. 32-38. The court found in the tentative draft that specification of the chemical components "in general ... compris[ing]" the "stainless steel" in the specification must be understood as the patentee acting as his own lexicographer, defining "stainless steel" to mean an alloy comprising the specified chemical components within the specified weight percentage ranges. *See* Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's definition must govern).

Although the court suggested in its tentative draft that Rivard had not demonstrated that the elemental composition within the ranges set forth in the two patents incorporated by reference into the Detailed Description would *not* fall within the ranges set forth in Col. 5, *ll*. 32-38, of the Detailed Description of the '196 patent, Rivard did demonstrate at the Markman hearing that the weight percentage ranges for some of the elements specified in the incorporated patents would *not* fall within the weight percentage ranges specified in the pertinent portion of the specification of the '196 patent. Consequently, also contrary to the court's finding in its tentative draft, the patentee's definition would *not* include every alloy recognized as

"stainless steel" under Rivard's narrower definition, as well as additional alloys, although it would doubtless include many alloys recognized as "stainless steel" under Rivard's definition, as well as many other alloys.

Nevertheless, Rivard conceded at the Markman hearing that any conflict in the weight percentages of certain specified elements only confirms that the patentee acted as its own lexicographer in defining "stainless steel" within the meaning of the '196 patent. This is so, the court suggested in its tentative ruling, and now confirms, because to read into the claims of the '196 patent limitations found in the patents referred to in the Detailed Description of the '196 patent would be contrary to the disclaimer in the Detailed Description, itself, which states that, in case of conflict between the specification and patents incorporated therein by reference, "the present description, including definitions, will control." *See* the '196 patent, Col. 3, *ll*. 52-56. By the same token, Rivard's "extrinsic" dictionary definitions showing that "stainless steel" is generally more narrowly defined as an alloy having 10 % or more of chromium demonstrates only that the patentee's definition is different, so that the patentee's definition must govern. Phillips, 415 F.3d at 1316. Thus, specifications of the weight percentage ranges of the components of the "stainless steel," including Chromium, in the specification of the '196 patent, Col. 5, *ll*. 32-38, are controlling here ("0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % A1, 0.01-1.0 Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, and the remainder Fe."). Moreover, based on Jeneric/Pentron, Inc., 205 F.3d at 1379 & 1382, those weight percentage ranges must be construed as specifying precise value ranges for each element "comprising" the "stainless steel."

In the tentative draft, the court reasoned that pertinent dependent claims provide further "intrinsic" evidence of the correctness of this construction, and the court reiterates that conclusion now. *See* Intamin, Ltd., 483 F.3d at 1335 ("[D]ependent claims can supply additional context for construing the scope of the independent claims associated with those dependent claims," because "[a]n independent claim impliedly embraces more subject matter than its narrower dependent claim.") (citing Phillips, 415 F.3d at 1314). Here, the pertinent dependent claims demonstrate what distinctions the patentee perceived and what the independent claim impliedly embraced. Id. They also add particular limitations, thereby raising a presumption that those limitations are not found in the independent claims. *See* Acumed, L.L.C., 483 F.3d at 806.

Specifically, claim **5** of the '196 patent depends from claim **1** and claims that "the stainless steel comprises" the full list of chemical elements by weight percentage ranges also found in claims **1, 7, 13,** and **15** of the '668 patent. In particular, claim **5** claims that the "stainless steel" comprises all of the elements by the weight percentage ranges identified as "in general" comprising the "stainless steel" in the Detailed Description, *see* the '196 patent, Col. 5, *ll*. 32-38 ("0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % A1, 0.01-1.0 Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, and the remainder Fe."), *plus* other elements ("0.02-0.5 Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V"), which are described in the Detailed Description as constituents only of a preferred embodiment. *Compare* the '196 patent, claim **5,** *with* id., Detailed Description, Col. 5, *ll*. 38-41. Because claim **1,** the independent claim, impliedly embraces more subject matter than its dependent claim, claim **5,** the distinction perceived by the patentee is apparently the inclusion in claim **5** of these additional specific elements in specific weight percentage ranges, which thus claim as a narrower dependent claim what is described in the Detailed Description as a preferred embodiment. *See* Intamin, Ltd., 483 F.3d at 1335; Acumed, L.L.C., 483 F.3d at 806 (a dependent claim that adds limitations raises a presumption that those limitations are not found in the independent claim). Therefore, claim **5** confirms that "stainless steel," when unelaborated by a specification of elements comprising the alloy in independent claim **1** (and independent claim **8**), means the "general" definition of the term given by the patentee acting as lexicographer and set out in the Detailed Description, Col. 5, *ll*. 32-38, but does *not* require that the stainless steel comprise the additional elements, in the specified weight percentage ranges, identified in the Detailed Description, Col. 5, *ll*. 38-41, and expressly claimed in dependent claim **5.**FN15

FN15. Dependent claim **6,** which is not otherwise at issue in this litigation, also expressly claims "stainless steel" that "contains," not merely "comprises," the elements identified in the preferred embodiment described in the Detailed Description at Col. 5, *ll*. 44-48, thus confirming that "stainless steel" has a more general meaning in independent claim **1,** from which claim **6** also depends.

At the Markman hearing, Ideal took issue with the court's initial premise, in the tentative draft, that the words of claims **1** and **8** of the '196 patent, in which the term "stainless steel" is used without specification of the elements of which the "stainless steel" is comprised, do not provide any illumination of the meaning of "stainless steel." *See* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"). Ideal requested that the court "revisit" its construction of the term in these two claims in light of its contention that the term "stainless steel" is not used "in isolation" in these two claims, but is instead claimed as "stainless steel which is magnetic or magnetizable" in claim **1** and as a "stainless steel tubular needle cannula or piece thereof ... wherein the needle cannula or piece thereof is magnetized to a level which enables detection of the magnetism of the needle cannula or piece thereof...." Ideal argued at the Markman hearing that, if "stainless steel" is construed to mean only an alloy comprising the elements in the weight percentage ranges identified in the Detailed Description, Col. 5, *ll*. 32-38, then the "stainless steel" would necessarily be only magnetic or only magnetizable, making the "magnetic or magnetizable" language of claim **1** and the "magnetized" language of claim **8** surplusage. Ideal also argued that, like the district court in Intamin, Ltd. v. Magnetar Technologies Corp., 483 F.3d 1328 (Fed.Cir.2007), this court has improperly narrowed the construction of the claim term by reading an embodiment from the specification into construction of the term, where in Ideal's view, Col. 5, *ll*. 32-38, of the Detailed Description describes only an embodiment, not a definition disavowing either a magnetic or magnetizable option for the "stainless steel." Although Ideal's arguments at the Markman hearing have some initial appeal, the court ultimately is not persuaded by either of them.

First, in the course of the Markman hearing, the court asked the following question: Because the steel is "comprised" of certain elements, which means it could include other elements, is it possible that the other unspecified elements that could be included would determine whether the steel is magnetic or only magnetizable? In response, Ideal's counsel conceded that elements that are added into the composition of any stainless steel can affect that stainless steel, as can how the stainless steel is manufactured, so that both elemental composition and manufacturing process are critical elements that go into whether or not a stainless steel is magnetic or magnetizable on a permanent or temporary basis. This answer is consistent with the patentee's acknowledgments in the prosecution of the '196 patent that "[s]tainless steel compositions are complex and small variations produce different properties which are difficult to predict." Joint Exhibit 1004, Joint Appendix at 741. This answer is also fatal to Ideal's argument.

Specifically, Ideal did not demonstrate at the Markman hearing or otherwise that a stainless steel comprising the specified elements in the specified weight percentage ranges would be *only* magnetic or *only* magnetizable, notwithstanding the addition of any other elements in any weight percentage or weight percentage range, even assuming that every stainless steel comprised of the specified elements in any of the specified weight percentages would otherwise always be only magnetic or only magnetizable. Indeed, Ideal did not demonstrate that all stainless steel comprising *only* the specified elements in any of the possible weight percentages within the specified ranges, without the addition of any other elements, would necessarily be *only* magnetic or *only* magnetizable. For example, Ideal has not shown that an alloy comprised of only the minimum weight percentages of the specified elements and an alloy composed of only the maximum weight percentages of the specified elements would both be magnetic or would both be magnetizable, let alone that every alloy comprised of the specified elements in any of the permissible weight percentages would share the same magnetic property. In short, because Ideal concedes that the magnetic properties of stainless steel may vary unpredictably, based on elemental composition and manufacturing process, and Ideal has not shown that the specification of elements comprising the stainless steel specified at

Col. 5, *ll*. 32-38, of the Detailed Description forecloses either magnetic or magnetizable alloys, Ideal's initial premise that the court's construction eliminates either magnetic or magnetizable alloys fails.

Moreover, the further descriptions of what are undoubtedly preferred embodiments in the '196 patent, Col. 5, *ll*. 38-49, with reference to modifications of the "general" formula for the stainless steel by specification of substitutions of elements, addition of elements, or fixed weight percentages of elements, refer to both "magnetic" and "magnetized" stainless steels, and ways to improve the "magnetic properties" of the alloy. *See* id., Col. 5, *ll*. 38-49 ("Preferably, instead of Pb, the *magnetized* stainless steel comprises 0.02-0.5 Bi. Preferably, the *magnetic* stainless steel further comprises 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V, *which improve the toughness and magnetic properties* of the stainless steel. In a preferred embodiment, the *magnetized* stainless steel comprises, based on a chemical test where the test results conform to UNS S32900, 0.36 wt % Si, 0.02 wt % P, 24.68 wt % Cr, 0.01 wt % Al, 0.90 wt % S, 1.80 wt % Mo, less than 0.01 wt % Ti, 0.08 wt % C, 4.98 wt % Ni, 0.10 wt % Cu, and less than 0.01 wt % Pb. The remainder comprises Fe.") (emphasis added). Thus, the "general" formula apparently does not limit the possible alloys to only magnetic or only magnetizable alloys, as Ideal contends. For this further reason, Ideal's initial premise that the court's construction eliminates either magnetic or magnetizable alloys fails.

As to Ideal's second argument at the Markman hearing, this case is distinguishable from Intamin. In Intamin, which involved a patent for a magnetic braking system for amusement park rides, Intamin, 483 F.3d at 1330, the court was called on to construe the term "intermediaries," which were spacers filling the gaps between magnet elements, id. at 1331, and more specifically, to determine whether the "intermediaries" could be magnetic or nonmagnetic. Id. at 1334. The pertinent part of the district court's construction and the error therein perceived by the Federal Circuit Court of Appeals were explained as follows:

[T]he overall context of claim 1 does not limit the broad language to non-magnetic intermediaries. At one point, the '350 patent describes an embodiment of the invention with a "non-magnetic" intermediary. '350 patent col. 4 *ll*. 16-18. The district court seized on this disclosure to limit the term "intermediary" to nonmagnetic substances only. *Initial Decision,* slip op. at 4. As this court has repeatedly noted, *see* SRI Int'l v. Matsushita Electric Corp., 775 F.2d 1107, 1121 (Fed.Cir.1985) (en banc) (plurality opinion), a narrow disclosure in the specificationdoes not necessarily limit broader claim language. Phillips, 415 F.3d at 1323. The overall context of the patent, in this case, does not specifically disavow magnetic intermediaries. *See e.g.,* SciMed Life Sys. Inc. v. Advanced Cardiovascular Systems Inc., 242 F.3d 1337, 1341 (Fed.Cir.2001). The single reference does not expressly limit the entire invention but only describes a single embodiment. Moreover, the term "intermediary," like the term "baffle" in Phillips, embraces more than the limited specification disclosure.

Thus, this court finds that the term "intermediary" can embrace magnetic substances, albeit only if the additional term requirement of "alternating polarity" allows for it. Accordingly, this court vacates the district court's construction of this term.

Intamin, Ltd., 483 F.3d at 1335. Ideal argues that here, as in Intamin, the language on which this court has seized as the patentee's definition of "stainless steel" describes only a single embodiment. The court disagrees.

Ideal is correct to the extent that the patent specification and claims make clear that there is no disavowal of either a "magnetic" or "magnetizable" alloy, but repeated references to and claims that the alloy in question could be either "magnetic" or "magnetizable." *See, e.g.,* the '196 patent, claim **1** (claiming "stainless steel which is magnetic or magnetizable"). As explained above, however, construing "stainless steel" to mean an alloy comprising the elements in the weight percentage ranges specified in Col. 5, *ll*. 32-38, of the Detailed Description has not been shown to exclude either "magnetic" or "magnetizable" alloys. Thus, the court has not seized upon language that improperly excludes one claimed alternative concerning magnetic properties

of the stainless steel.

More importantly, here, the court has not seized upon a single reference describing only a single embodiment to limit the entire invention. *Compare* Intamin, Ltd., 483 F.3d at 1335. Rather, the language of the specification makes clear that the patentee was acting as its own lexicographer, defining "stainless steel" to mean an alloy comprising the specified chemical components within the specified weight percentage ranges. *See* Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's definition must govern). Specifically, the pertinent part of the specification defines "stainless steel" as "[i]n general" comprised of specified elements in specified weight percentage ranges. *See* '196 patent, Col. 5, *ll*. 31-32. Three other compositions, plainly defined as preferred embodiments, are then described by reference to substitution of certain elements, addition of certain elements, or limitations of the weight percentage of certain elements as compared to the list of elements and weight percentage ranges in the "general" definition. *See* id., Col. 5, *ll*. 38-49 (" *Preferably,* instead of Pb, the magnetized stainless steel comprises 0.02-0.5 Bi. *Preferably,* the magnetic stainless steel further comprises 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V, which improve the toughness and magnetic properties of the stainless steel. In a *preferred embodiment,* the magnetized stainless steel comprises, based on a chemical test where the test results conform to UNS S32900, 0.36 wt % Si, 0.02 wt % P, 24.68 wt % Cr, 0.01 wt % Al, 0.90 wt % S, 1.80 wt % Mo, less than 0.01 wt % Ti, 0.08 wt % C, 4.98 wt % Ni, 0.10 wt % Cu, and less than 0.01 wt % Pb. The remainder comprises Fe.") (emphasis added). Thus, in this case, it is clear that the "general" specification of elements comprising the "stainless steel" was intended as a "general" definition, not merely as an embodiment.

Moreover, as Rivard points out, in the course of prosecuting the '196 patent, the examiner made the following objection:

The disclosure is objected to because of the following informalities: On Page 5, line 12 and Page 10, line 1, Applicant recites "... steel comprises ..., less than 0.03 wt % P ...", however on Page 5, line 17-18, Applicant recites "preferably, a stainless steel alloy comprising ..., 0.20 wt % P ..." and on Page 10, lines 10-13 Applicant recites "In a preferred embodiment, the magnetized stainless steel comprises ..., 0.20 wt % P ...", which both fall outside the previously disclosed range. The Examiner is unsure if the intended range is incorrect, or if the preferred embodiment is incorrect.

Appropriate correction is required.

Joint Appendix at 634 (Office Action of July 14, 2004). The patentee responded,

The specification was amended to correct for the typographical error in the weight percentage of phosphorus. The value of "0.20" should read 0.02 in the preferred embodiments. The correct value of 0.02 wt % P falls within the range disclosed in the specification.

Joint Appendix at 630 (Reply to Office Action of July 14, 2004). As Rivard contends, neither the Examiner's objection nor the patentee's response would have been necessary, had it not been clear that both the Examiner and the patentee understood the "general" formulation of the "stainless steel" in Col. 5, *ll*. 32-38, of the Detailed Description to be a definition of "stainless steel" for purposes of the patent.

The final issue concerning the construction of "stainless steel" in claims **1** and **8** of the '196 patent is raised by Rivard's proposal at the Markman hearing of a modification of the court's tentative construction. Rivard contends that the court should add, after the list of specific elements in specific weight percentage ranges, a caveat that the alloy "may include 0.02-0.5 wt % Bi (Bismuth), 0.05-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium)." Rivard argues that such an addition is appropriate to

foreclose any possibility that anyone, including jurors, could read the "remainder Fe" language as excluding any elements other than those listed. The court does not agree. First, the elements and weight percentage ranges that Rivard seeks to include are drawn from what are plainly descriptions of preferred embodiments, and thus, cannot properly be incorporated into the construction of the claim term. *See* Intamin, Ltd., 483 F.3d at 1335 (it is improper to read into the construction of a claim term language that describes only a single embodiment). Certainly, the court finds nothing in the specification or prosecution history that constitutes an express or implicit disavowal of any elements other than those expressly identified in the general definition or preferred embodiments in the specification of the ' 196 patent. Second, use of the term "comprises" indicates a nonexclusive list of elements, *see* Dippin' Dots, Inc., 476 F.3d at 1343 ("comprising" is an "open-ended" term, raising a presumption that the list of elements is nonexclusive), and the court does not believe that use of "remainder Fe" after such a nonexclusive list could be read (or misread) to limit the possible elements to elements expressly listed; rather, "remainder Fe" indicates only that the remaining component of the alloy *after the nonexclusive list of elements* is Fe (Iron). Thus, the court finds that no further modification is required of its construction of "stainless steel" in the '196 patent where the term is not otherwise limited by a list of elements "comprising" the steel.

ii. The court's construction. In summary, the appropriate construction of "stainless steel" within the meaning of the '196 patent, when that term is not otherwise limited by a list of elements "comprising" the "stainless steel," is "any corrosion resistant steel comprising 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % Al (Aluminum), 0.01-1.0 wt % Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), and the remainder Fe (Iron), wherein the stated values are the outermost bounds (minimum and maximum) for the percentage of each element comprising the alloy."

c. "Magnetic or magnetizable"

[16] The parties next dispute the construction of the term "magnetic or magnetizable" in claim **1** of the '196 patent. Ideal asserts that no construction of this unambiguous term is required, even as an alternative to Rivard's proposed construction. Therefore, the chart that follows shows only the claim term and Rivard's proposed construction.

THE '196 PATENT		
	Claim Term	**Rivard's Proposed Definition**
c.	Magnetic or magnetizable	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet.

i. Arguments of the parties. Rivard argues that claim 1 refers to stainless steel that is "magnetic or magnetizable," then thereafter refers to the "magnetism" of the needle. Rivard argues that, to be grammatically and substantively consistent, the term "magnetism" must relate back to and be produced by the stated "magnetic or magnetizable" feature of the needle cannula, and that the term "magnetism" does not refer to the mere capacity to be magnetized, but to something that actually operates as a magnet. Rivard also argues that the specification repeatedly refers to a magnetic needle or one that is magnetized before detection and to "magnetic stainless steel." From this language, Rivard apparently infers that "magnetic or magnetizable" means already made a magnet, not merely capable of becoming a magnet. Similarly, Rivard

argues that the prosecution history shows (1) that the invention requires the needle to be magnetized not just to have the capability to be magnetized, and (2) that the patentee distinguished prior art that was merely capable of being magnetized and not actually magnetized because non-magnetized prior art needles did not provide increased detectability. Rivard's arguments in its rebuttal brief concerning the "magnetism" terms of the two patents, which were discussed in reference to construction of the "magnetism" terms of the '668 patent, are also asserted as to the "magnetic or magnetizable" terms of the '196 patent. Ideal, however, argues that "magnetic or magnetizable" is unambiguous and that the prosecution history reveals no intent to disavow any scope to the term.

ii. Analysis. Beginning with the words of the claim, Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), it is apparent that "magnetic or magnetizable" refers to two possible, and different, conditions. *See* Merck & Co., 395 F.3d at 1372 (the court must construe claims so that no term becomes "superfluous," and "[a] claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."). The first problem with Rivard's construction, in the court's view, is that it improperly conflates the two stated conditions into a single condition, "magnetic."

The second problem with Rivard's construction of this phrase, in the court's view, is that "magnetic" and "magnetizable" do not have the same ordinary meaning, and nothing in the patent suggests that a specialized meaning conflating the latter term into the former one is appropriate. *See* Free Motion Fitness, Inc., 423 F.3d at 1348 (recognizing such use of a dictionary as appropriate, citing Phillips, 415 F.3d at 1320); Phillips, 415 F.3d at 1324 ("[A] judge who encounters a claim term while reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term."). More specifically, as to ordinary meaning, in the sense appropriate here from the intrinsic evidence of the patent, *see* Free Motion Fitness, Inc., 423 F.3d at 1348 ("The court must ensure that any reliance on dictionaries accords with the intrinsic evidence."), "magnetic" means "magnetized or capable of being magnetized," and "magnetize" means "to induce magnetic properties in." *See* MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 700 (10th ed.1995). Thus, "magnetic" means having been induced with magnetic properties, *see* OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com) ("magnetic" means, *inter alia,* "having the properties of a magnet"), and "magnetizable" means "capable of being magnetized." *See* OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com). While the definitions of "magnetic" and "magnetizable" overlap at the broadest definition of "magnetic" as "capable of being magnetized," Rivard argues that the appropriate meaning for *both* "magnetic" and "magnetizable" is the *narrowest* meaning of "magnetic" as "magnetized," which is a meaning that the term "magnetizable" simply will not bear. Moreover, in a context where both terms are used in succession, it is appropriate to read them to have different meanings. *See* Merck & Co., 395 F.3d at 1372 (the court must construe claims so that no term becomes "superfluous," and "[a] claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."). Thus, applying ordinary meanings, "magnetic" means "magnetized" or "induced with magnetic properties," and "magnetizable" means "capable of being magnetized" or "capable of being induced with magnetic properties."

Returning to intrinsic evidence, the court is unpersuaded by Rivard's argument that the subsequent references to "magnetism" in claim **1** mean that "magnetic or magnetizable" must refer to something that actually operates as a magnet, not to something that merely has the capacity to be magnetized. It is true that claim **1** does not include any limitation requiring that the "magnetic or magnetizable" needle *actually be magnetized,* even though it later refers to the "magnetism" of the needle. *See* the '196 patent, claim **1.**FN16 The subsequent references to "magnetism"in claim **1** are in an extended "so that" clause, which "simply expresses the intended result of a process step positively recited"; consequently, that clause is not given weight and does not state a material limitation in the method claim. *Cf.* Hoffer v. Microsoft Corp., 405 F.3d 1326, 1329 (Fed.Cir.2005) (explaining that a "whereby" clause is given "no weight" when it "simply

expresses the intended result of a process step positively recited" in a method claim, but "when the 'whereby' clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention"). Here, the method claim is "a method of injecting an animal health product into flesh of a living food animal." The ' 196 patent, claim **1,** Col. 8, *ll*. 58-60. The "process" step is "providing an injection means comprising a needle assembly ... wherein the needle cannula is made of stainless steel which is magnetic or magnetizable ..." *Id*., Col. 8, *ll*. 61-67. The intended result is "so that ... the magnetism ... enables detection of the magnetism of the needle cannula or piece thereof in the flesh of the animal upon slaughter and processing into a food if the needle cannula or piece thereof were to break off in the flesh of the living animal during the injection." *Id*., Col. 9, *ll*. 4-12. The fact that this intended result may not actually follow if a "magnetizable" needle is not also claimed to be "rendered magnetic" is beside the point; the references to "magnetism" in the "so that" clause cannot alter the meaning of the limitation actually claimed, that "the needle cannula is made of stainless steel which *is magnetic or magnetizable*." *Id*., Col. 8, *ll*. 66-67 (emphasis added). Moreover, the Summary of the Invention repeatedly refers to a "magnetic or magnetizable" needle, not merely one that "is magnetic" or "is magnetized." Consequently, it cannot be said that a "magnetic" needle is the fundamental invention to the exclusion of a "magnetizable" needle, such that the references to "magnetism" in the "so that" clause limit the claimed method in claim **1.** *Compare* Hoffer, 405 F.3d at 1330 (the condition stated in the "whereby" clause was part of the "fundamental invention," based on the specification, and did limit the method claimed). FN17

FN16. On the other hand, independent claim **8** does not include a "magnetic or magnetizable" limitation, but nevertheless expressly claims an invention "wherein the needle cannula or piece thereof *is magnetized* ...." The '196 patent, Claim **8,** *ll*. 13-5 (emphasis added). Similarly, claims **1, 7, 13,** and **15** of the '668 patent expressly claim that the needle is "rendered magnetic" or "is magnetized," even though they do not include a "magnetic or magnetizable" limitation.

FN17. The court will return to the question of the weight to be given a "so that," "such that," or "whereby" clause in more detail infra, beginning at page 1206.

The specification also supports distinguishing between the meanings of the two words "magnetic" and "magnetizable." *See* AquaTex, 419 F.3d at 1380 ("Where ... the disputed claim term is technical or a term of art, '[t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.' ") (quoting Phillips, 415 F.3d at 1315); Phillips, 415 F.3d at 1314 (the specification is not only "highly relevant" to claim construction, "[u]sually, it is dispositive," and "is the single best guide to the meaning of a disputed term"). The Summary of the Invention repeatedly refers to a needle that is "magnetizable or magnetic," *see* the '196 patent, Col. *ll*. 10, 29, 43, and Col. 4, *l*. 2, thereby reinforcing the notion that the two terms have different meanings and that both conditions that the terms describe are intended to be fundamental to the invention.

The court turns, next, to the question of what is meant by "magnetic or magnetizable," in the context of the patent. Again, as with other "magnetism" terms in the '668 patent, it is clear from the intrinsic evidence that "magnetic" or "magnetizable"would be understood by one of ordinary skill in the art reading the patent to mean that the needle is or is capable of becoming a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time. For example, the Detailed Description identifies a preferred embodiment as one in which the "stainless steel alloy is an alloy that is permanently magnetic or magnetizable before detection," but also notes that, "[a]lternatively, the needle cannula of the present invention can comprise a stainless steel alloy that is not a permanent magnetic [sic] but is capable of being magnetized in a magnetic field to maintain a residual magnetism." *See* the '196 patent, Col. 5, *ll*. 50-63.

Rivard contends, as it did with other "magnetism" terms of the '668 patent, that the construction of this

phrase must state that it "does not refer to stainless steel which is merely attractable to a permanent magnet." The court finds, however, that such a construction, while accurate, is superfluous, where the claim term unambiguously requires that the needle *be* or *be capable of being made* magnetic, not merely that it be attracted or attractable to a magnet.

Also as with the "magnetism" terms of the '668 patent, Rivard argued at the Markman hearing that the court's tentative construction of "residual magnet" in the '196 patent should be modified to add that a residual magnet is a magnet that retains its magnetic field for a period of time "when removed from the magnetizing field" and that the court should add to its tentative construction "that [the magnetism] makes it possible for the magnetism to be detected in a metal detector and magnetic detector." Ideal contended that the first proposed addition improperly requires the magnetization of the needle and withdrawal of the magnetizing field before the needle enters the metal detector, a matter of timing of the magnetization of the needle addressed above. Again, the court finds it unnecessary to add that a "residual magnet" is one that retains its magnetism for a period of time "when removed from a magnetic field," as Rivard proposes, and potentially improper to do so, because the court has found nothing in the record that disavows a construction that permits the needle to be rendered a residual magnet as it is detected, *i.e.,* a circumstance in which the residual magnetism of the needle is detected before the needle is removed from the magnetizing field. The court finds it improper to add to the construction of "magnetic or magnetizable" that "[the magnetism] makes it possible for the magnetism to be detected in a metal detector and magnetic detector," because enabling detection is not a limitation in claim **1,** but only language appearing in a "such that" clause, as explained more fully below, beginning on page 1206.

iii. The court's construction. In summary, the court concludes that "magnetic or magnetizable" in claim 1 of the '196 patent must be construed as follows: "Is or is capable of becoming a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time."

d. Comparison to dimensions of "the standard needle cannula"

[17] The parties dispute the construction of a term in claims **1** and **8** of the '196 patent comparing the dimension of the claimed needle cannula with "the standard needle cannula," of various gauges. Ideal asserts that no construction of this unambiguous term is required, even as an alternative to Rivard's proposed construction. Therefore, the chart that follows shows only the claim term and Rivard's proposed construction.

THE '196 PATENT		
	Claim Term	**Rivard's Proposed Definition**
d.	The outer diameter [of the needle cannula] is greater than an outer diameter of a standard needle cannula and the lumen diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge (In claims **1** and **8**)	A needle represented to be a gauge between 14 and 27 has an inside diameter (I.D.) within the I.D. range of the corresponding gauge on Exhibit A* and an outside diameter (O.D.) greater than the O.D. range on Exhibit A for the corresponding gauge. (*Exhibit A to Amendment under 37 C.F.R. s. 1.111, page 17, mailed April 17, 2003.)
		For example, a 16 gauge needle has an inside diameter identical to the inside diameter of the 16 gauge needle listed on Exhibit A and an outer diameter greater than the outer diameter of the 16 gauge needle listed on Exhibit A.

i. Arguments of the parties. Rivard contends that the word "standard" was added to the patent by

amendment to distinguish prior art and that, to make this amendment, the patentee represented that the dimensions listed in an exhibit, found in the Joint Appendix at 787-88, were "standard" dimensions of needles of various gauges. Rivard contends that Ideal is now bound by this exhibit as defining "standard" gauges for "standard" needles. Notwithstanding its prior argument that "gauge" is determined only by reference to outer diameter, Rivard now argues that the claimed needle must be compared to the outside and inside diameters of a single gauge size "standard" needle, so that the claimed needle is not compared to the outside diameter of one gauge size and the lumen diameter of a different gauge size. Rivard also notes that, while the specification refers to "prior art needles," the specification references "standard" dimensions only once, as follows: "The standard 16 gauge needle used for injecting animal health products into an animal is about 19.0 mm in length." The '196 patent, Col. 8, *ll*. 16-18. Rivard points out that the specification compares prior art needles of a certain gauge with the represented gauge size number of the claimed needle, not the actual gauge size number of the claimed needle based on outer diameter. Rivard also points out that the prosecution history reveals that the patentee represented the dimensions in the exhibit provided to the examiner as "the" standardized dimensions, rather than as "a" set of dimensions among possible alternatives, and then compared the "standard" dimensions of a prior art needle of a certain gauge to the dimensions of the claimed needle of a represented gauge, arguing that the inventive aspect was thicker sidewalls. Absent the exhibit of "standardized" dimensions, Rivard argues that the claims would have been rejected as providing insufficient description, definiteness, or enablement.

Ideal counters that, notwithstanding the amendment of the claims to refer to "standard" needles of certain gauges, the claim term in question requires no construction, because it is unambiguous. Ideal contends that the patentee used the exhibit of needle dimensions to which Rivard claims the patent must now be restricted to *illustrate* the patentee's contention that needle dimensions for various gauges are standardized, but did not thereby restrict itself to the dimensions in the exhibit as constituting "the" standard dimensions. Instead, Ideal argues that, within the context of the '196 patent and its prosecution history, a person of ordinary skill in the art would understand the embodiments and the dimensions for syringe needles stated in the exhibit to be merely exemplary in nature. Ideal also contends that Rivard's references to the "represented" gauge of the claimed needle are not supported by any evidence, intrinsic or extrinsic. Likewise, Ideal argues that Rivard's use of "correspondinggauge" is improper, because the patentee amended out the phrase "of identical gauge." Ideal also contends that the plain language of the patent claims and the prosecution history belie Rivard's construction, because they make clear that what Rivard relies on is an *illustration,* not a disavowal of any claim scope.

In its rebuttal brief, Rivard focuses again on the meaning of "standard" needle gauges, asserting that Chimie v. PPG Industries, Inc., 402 F.3d 1371 (Fed.Cir.2005), demonstrates that the sole evidence upon which Ideal relied to show "standard" needle gauge dimensions, the exhibit of dimensions submitted to the examiner, limits the claims of the '196 patent to the dimensions in that exhibit. In its rebuttal brief, Ideal, likewise, focuses on this contention, reiterating that the prosecution history demonstrates that the patentee did not restrict the scope of this patent claim term to the exhibit on which Rivard relies, but used that exhibit only to illustrate the fact that standardized needles are generally known in the art. Ideal also reiterates in its rebuttal brief that there is no basis on which to assert that the comparison at issue is between a claimed needle "represented to be a gauge" and "standard" needles illustrated in the exhibit on which Rivard relies.

ii. Analysis. The court has already construed the term "gauge" in the same claims of the '196 patent to mean the following: "A size measurement of needles determined by the outer diameter and the inner or lumen diameter." The parties' arguments concerning the claim term now at issue suggest the parties' recognition that, at least for purposes of the '196 patent, "gauge" is determined by both the outer diameter and the inner or lumen diameter. Moreover, looking first at the words of the patent claims, *see* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), it is apparent that the comparisons being made between the claimed needle and "the standard needle cannula" are, likewise, between the outer diameter (claimed to be "greater" for the claimed needle) and the inner or lumen diameter

(claimed to be "identical to a lumen diameter of the standard needle cannula"), and hence, the claimed needle has a thicker sidewall. *See also* '196 patent, claim 1, Col. 9, *ll*. 4-12 (explaining that the claimed needle cannula has a sidewall thickness that increases detectability over standard needle cannulas). The claim language reveals that this comparison applies to "standard needle cannula between 14 and 27 gauge," so that the embodiment of the claimed needle in each gauge would have the same lumen diameter as a "standard needle cannula" in that gauge, but a greater outer diameter. The question is whether the points of reference, "the standard needle cannulas" of certain gauges, against which the claimed needle cannulas are compared, have been specifically limited to the dimensions stated in the exhibit that accompanied the patentee's assertion that dimensions of needle gauges are "standardized." Nothing in the claim language answers that specific question.

Therefore, the court turns to the specification for guidance. *See* AquaTex, 419 F.3d at 1380 ("Where ... the disputed claim term is technical or a term of art, '[t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.' ") (quoting Phillips, 415 F.3d at 1315); Phillips, 1314 (the specification is not only "highly relevant" to claim construction, "[u]sually, is dispositive," and "is the single best guide to the meaning of a disputed term"). The first portion of the Detailed Description that is pertinent to interpretation of the claim term presently before the court is the following:

In the case of the 16 gauge embodiment of the needle of the present invention, the sidewalls **17** flanking (opposite each other) the lumen **18** have a combined thickness which is greater than 0.46 mm (0.018 inch), preferably a combined thickness of 0.64 mm (0.025 inch) and the diameter of lumen **18** is about 1.19 mm (0.047 inch). Thus, the outer diameter of needle **12** is about 1.8 mm (0.072 inch). Preferably, the needle cannula of the present invention has a circular cross-section. In contrast, a 16 gauge prior art needle has an outside diameter of about 1.65 mm (0.065 inch) and a lumen diameter of about 1.19 mm (0.047 inch). Therefore, the combined thickness of the sidewalls flanking (opposite each other) the lumen of the prior art needle is about 0.46 mm (0.018 inch), which is somewhat more likely to break....

While the 16 gauge embodiment is shown herein, the needle cannula of the present invention includes needle cannulas of other gauges and needle assemblies comprising needle cannulas of other gauges. For example, needle cannulas that are useful for medical and veterinarian purposes generally include those gauges within the range 14 to 26. Thus, the needle cannula of the present invention includes, but is not limited to, gauges between 14 and 27. It should be understood that because the sidewall of the needle cannula of the present invention is thicker than the sidewall of prior art needle cannulas and the outer diameter of the needle cannula determines the gauge, a 16 gauge needle cannula of the present invention has an outer diameter similar to the outer diameter of a 15 gauge needle cannula.

The '196 patent, Col. 4, *l*. 55, to Col. 5, *l*. 26. This portion of the Detailed Description confirms not only that the points of comparison for an embodiment of the claimed needle of a certain gauge and "prior art" needle cannulas of the same gauge are the outside diameter and the inside or lumen diameter, but that the outside diameter of the embodiment of the claimed needle of that gauge is greater. This portion of the specification also clarifies that the claimed needle is not "represented to be" of a certain gauge; rather, an "embodiment" of the claimed needle of a certain gauge has a greater outer diameter than the "prior art" needle cannula of the same gauge, but the same inner or lumen diameter. Finally, this portion of the specification strongly suggests that a 16 gauge "standard needle cannula" has an outside diameter of about 1.65 mm (0.065 inch) and a lumen diameter of about 1.19 mm (0.047 inch), although the Description is cast in terms of "a 16 gauge prior art needle," rather than "a 16 gauge standard needle." A person of ordinary skill in the art is likely to understand that "prior art needles" are, in fact, "standard needles," from which the claimed invention is distinguished.

The second portion of the Detailed Description that might be illuminating on the construction of the present

claim term is the following:

Thus, in order to detect a length of a stainless steel 16 gauge prior art needle cannula, which has a diameter of about 1.65 mm, the length of the needle that is embedded in the flesh of the animal must be at least about 8 mm to be detected free of orientation effects at a sensitivity of 1.5 mm or at least about 24 mm to be detected free of orientation effects at a sensitivity of 2.0 mm. The standard 16 gauge needle used for injecting animal health products into an animal is about 19.0 mm in length.

In contrast, the length of the magnetized heavy duty stainless steel needle cannula of the present invention that can be detected free of orientation effects at a sensitivity of 1.5 mm and 2.0 is about 7.0 mm. and 21.0 mm, respectively.

The '196 patent, Col. 8, *ll*. 10-23. This portion of the Detailed Description refers to *both* a "16 gauge prior art needle cannula" and a "standard 16 gauge needle," suggesting that the two terms are synonymous.

At best, however, the Detailed Description suggests the "standard" dimensions of only a 16 gauge "standard needle cannula." Thus, the court turns to the prosecution history to see what it reveals. *See* Nystrom, 424 F.3d at 1142 ("In addition to the written description, '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.' ") (quoting Phillips, 415 F.3d at 1317); Research Plastics, 421 F.3d at 1296 (" 'The purpose of consulting the prosecution history in construing a claim is to "exclude any interpretation that was disclaimed during prosecution." ' ") (quoting Rhodia Chimie, 402 F.3d at 1384, in turn quoting ZMI Corp., 844 F.2d at 1580). The prosecution history reveals that, in the exhibit provided by the patentee showing "Syringe Needle Dimensions," Joint Appendix at 787-88, the outside diameter of a 16 gauge needle is, indeed, shown as 1.651 mm (0.0650 inch), or "about 1.65 mm (0.065 inch)," as stated in the Detailed Description, and the inner or lumen diameter is shown as 1.194 mm (0.047 inch), or "about 1.19 mm (0.047 inch)," as stated in the Detailed Description.FN18 Thus, there is a correlation between the dimensions of a 16 gauge needle, as shown in the exhibit, and the 16 gauge "prior art needle" described in the Detailed Description. This is a long way, however, from evidence that the patentee intended to or did exclude any interpretation of "standard" needle dimensions during prosecution other than an interpretation based on the exhibit simply by offering the exhibit in the course of prosecuting the patent. *See* Research Plastics, 421 F.3d at 1296 (" 'The purpose of consulting the prosecution history in construing a claim is to "exclude any interpretation that was disclaimed during prosecution." ' ") (quoting Rhodia Chimie, 402 F.3d at 1384, in turn quoting ZMI Corp., 844 F.2d at 1580).

FN18. Again, to be precise, the exhibit shows the nominal inside diameter of a 16 gauge syringe needle to be 0.470 inch, but that is clearly a misprint, based on the conversion of the stated nominal inside diameter of a 16 gauge needle from millimeters (stated as 1.194) to inches (0.047 inch), and the stated nominal inside diameters for 15 and 17 gauge needles (0.0540 inch and 0.0420 inch, respectively). *See* Joint Appendix at 787.

Other portions of the prosecution history shed more light on what was meant by "standard needle cannulas" and the role that the exhibit played in the prosecution history. The prosecution history demonstrates clearly that the patentee meant "standard needle" to mean "standard needle of the prior art," *i.e.*, to equate "standard needle cannula," as stated in the patent claim, with "prior art needle," as stated in the first portion of the Detailed Description discussing needle gauge quoted above. This is so, because the patentee's Reply To Office Action of February 3, 2003, expressly states, "For example, the 16 gauge *standard needle of the prior art* has an outside diameter of about 0.065 inches and a lumen diameter of about 0.047 inches." Joint Appendix at 772 (emphasis added). The prosecution history also reveals that the patentee used the exhibit at

issue to *illustrate* that gauges for syringe needles are standardized, not to disclaim any dimensions of gauges otherthan those shown in the exhibit as representing "standardized" dimensions. This is so, because the patentee asserted the following:

The paragraph bridging pages 8-9, illustrates the difference in wall thickness between the applicant's 16 gauge needle compared to a 16 gauge needle of the prior art. Support for the term "standard" with respect to prior art needle cannulas can be found on page 15, lines 28-30, which discusses the length of a "standard" 16 gauge needle for injecting animal health products into an animal. *It is generally known in the art that the gauges for syringe needles are standardized. This is illustrated in the attached Exhibit A which shows the outer diameter, inner diameter, and sidewall thickness for syringe needles ranging from gauge 10 to gauge 33.*

Joint Appendix at 774 (emphasis added). The examiner allowed the claim, as amended, thus indicating acceptance of the patentee's contention that needle gauges are "standardized," but not thereby binding the patentee to the exhibit illustrating standardized dimensions for needles of various gauges.

Although Rivard argues that Chimie v. PPG Industries, Inc., 402 F.3d 1371 (Fed.Cir.2005), is on point and requires the court to construe "standard" needles of various gauges to have the dimensions set out in the exhibit submitted by the patentee, the court does not agree. In Chimie, the court reviewed claim construction for a patent for essentially spheroidal precipitated silica particles and the process for manufacturing them. Chimie, 402 F.3d at 1374. The specification of the patent contained examples of silica products and the results of several tests making comparisons among those products, including "flowability" and "dusting properties." Id. The specification described a test of the level of dust formed by the various silica particulates, including a test using the DIN 53 583 standard (the DIN test), based on a German standard to measure certain physical properties of carbon black by determining the fines (dust) and weight loss by abrasion according to a defined procedure. Id. at 1374-75. The court construed the claim term "dust-free and non-dusting" to mean "a level of dust formation associated with the silica particulates of the [patent in suit], as measured in percentage weight according to DIN 53 583, that has a fines content value less than or equal to 13 and weight loss by abrasion value less than or equal to 0.5." Id. at 1375. In doing so, the court concluded that the term was ambiguous, because it could not be read literally to mean that the invention creates no dust at all, but the patentee's proffered definition, "very low dust," was a relative phrase that would not meet the standards of 35 U.S.C. s. 112 para. 2 that a patent claim must "particularly point out and distinctly claim the subject matter which the applicant claims as his invention." Id. Therefore, "[i]n order to resolve the perceived ambiguity of the claim term in a manner that preserved the term's validity, the court adopted 'a construction based upon the only meaningful guidance provided in the patent,' namely the DIN test." Id. (quoting the decision below).

On appeal, the Federal Circuit Court of Appeals found that, of the ten examples of silica products referenced in the written description, Example 5 was repeatedly described as the invention itself. Id. at 1378. The appellate court also found that the only measurement of the dust produced by Example 5 was articulated in terms of the DIN 53 583 standard, so that the district court properly incorporated that articulation into its construction of the term "dust-free and non-dusting." Id. The appellate court concluded that the reference to the DIN test results for Example 5, as provided in the written description of the patent, reconciled the ambiguous claim language with the inventor's disclosure and, as such, did not contravene the basic teaching that limitations from the specification should not be imported to the claims. Id. The court also concluded that this construction was consistent with the proposition that, when the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment. Id. at 1379 (citing Modine Mfg., 75 F.3d at 1551). Although the patentee identified alternative means for assessing the dust production of a product, the appellate court found that the only articulation of the dustiness of the claimed invention was made with reference to the DIN 53 583 standard. Id. at 1379-80. Therefore, the court concluded as follows:

[The patentee] chose to define the term "dust-free and non-dusting" solely by reference to characteristics of the prior art and the only comparison of those characteristics was explained according to the DIN 53 538 standard. It was not improper for the district court to limit the scope of this relative term to the only disclosure on the subject made in the patent.

Chimie, 402 F.3d at 1380.

The circumstances here are distinguishable. First, unlike the patent at issue in Chimie, the claims and the specification of the '196 patent do not make any reference to the exhibit illustrating "standard" needle dimensions on which Rivard relies. *See* id. at 1374-75 & 1378. Instead, the exhibit is only found in the prosecution history of the '196 patent where the court found, above, that it only *illustrates* the patentee's contention that "[i]t is generally known in the art that the gauges for syringe needles are standardized." Joint Appendix at 774. Second, while the claim term at issue here may be "relative," as was the disputed claim term in Chimie, the "relative" term in the '196 patent is not ambiguous for lack of a comparator, as was the case in Chimie, where the dimensions of the claimed needle are expressly compared to the dimensions of "standard" needles of the same gauge. *Compare* id. at 1375 & 1380. The comparator in the '196 patent, a "standard" needle, is not itself ambiguous, because one of ordinary skill in the art would understand that gauges for hypodermic needles are standardized, as the patentee contended, *see* Joint Appendix at 774, and the examiner accepted. In other words, the reference to dimensions of "standard" needle gauges is the "meaningful guidance" for the comparison in the '196 patent that was lacking in Chimie in the absence of the reference to the DIN 58 583 standard in the patent at issue in that case. *Compare* id. at 1375. Although Rivard apparently contends that the only "meaningful guidance" for what is meant by "standard" needles is the patentee's exhibit, the court does not agree, in the absence of any evidence that the dimensions of "standard" needles are not actually "standardized," so that the "standard" is unknown or subject to genuine dispute.FN19 Thus, Chimie does not require a different construction incorporating the exhibit illustrating "standardized" needle gauge dimensions.

FN19. Extrinsic evidence submitted by Rivard from the American Society of Testing Materials (ASTM), Defendants' Appendix at 38 (Defendants' Exhibit E), suggests that dimensions for needle gauges are, indeed, standardized, even though it provides "sizes and tolerances" only for outer diameters and nominal wall thicknesses, but not inner diameters. For example, it shows that the outer diameter of a 16 gauge needle is approximately 0.065 inch, which is consistent with the patentee's exhibit, and a wall thickness of about 0.009 inch, which would result in a lumen diameter of approximately 0.047 inch (0.065-0.009-0.009 = 0.047, where the thickness of the sidewall on both sides of the lumen must be subtracted), which is also consistent with the patentee's exhibit. Thus, there is absolutely no evidence in the record to rebut the patentee's contention in the prosecution history that "[i]t is generally known in the art that the gauges for syringe needles are standardized." Joint Appendix at 774.

Thus, in light of the intrinsic evidence, the court tentatively construed the term in question to mean the following: "For an embodiment of the claimed needle cannula between 14 and 27 gauge, the outer diameter is greater than the outer diameter of the standard needle cannula of the prior art of the same gauge and the lumen diameter is identical to the lumen diameter of the standard needle cannula of the prior art of the same gauge."

At the Markman hearing, Rivard took issue with this construction on two grounds. First, Rivard contended that the claimed needle must be construed to be "represented to be" of a certain gauge, not simply to be "an embodiment" of a certain gauge. Rivard argues, for example, that a needle with outer diameter of 0.0200 inch and inner diameter of 0.0095 inch may not meet the court's tentative construction if called a "25 gauge," but might meet the court's tentative construction if called a "26 gauge," where the exhibit offered by

the patentee as illustrating standardized needle dimensions, Joint Appendix 787, indicates that a 25 gauge needle has an outer diameter of 0.0200 inch and an inner diameter of 0.0095 inch, but a 26 gauge needle has an outer diameter of 0.0180 inch and an inner diameter of 0.0095 inch. Perhaps the court simply misses Rivard's point, but a claimed needle with an outer diameter of 0.0200 inch and an inner diameter of 0.0095 inch presumably would not be an embodiment of a 25 gauge needle for the simple reason that not only is the inner or lumen diameter of such a needle identical to the inner or lumen diameter of a 25 gauge "standard" needle, at least as illustrated in Joint Appendix 787, but the outer diameter of such a needle is also identical to the outer diameter of a 25 gauge "standard" needle, rather than *greater* than the outer diameter of a 25 gauge "standard" needle, as claimed in the patent. Such a claimed needle could, however, be an embodiment of a 26 gauge needle, because it has a *greater* outer diameter than an outer diameter of a "standard" needle and an inner or lumen diameter that is identical to an inner or lumen diameter of a "standard" needle, as claimed in the patent. In other words, Rivard's perceived problem is simply resolved by reference to the claim language, and the court's construction of the pertinent claim term as an "embodiment" of the claimed needle of a certain gauge rather than a claimed needle "represented to be" of a certain gauge " 'stays true to the claim language and most naturally aligns with the patent's description of the invention.' " Nystrom, 424 F.3d at 1142 (quoting Phillips, 415 F.3d at 1316, in turn quoting Renishaw P.L.C., 158 F.3d at 1250).FN20

FN20. Rivard makes a similar argument concerning a needle with an outer diameter of 0.0280 inch and an inner diameter of 0.0055 inch as compared to the exhibit showing a 22s gauge needle has an outer diameter of 0.0280 inch and an inner diameter of 0.0055 inch, while a 25s gauge needle has an outer diameter of 0.0200 inch and an inner diameter of 0.0055 inch. The answer is also the same: The needle in question could be an embodiment of a 25s gauge needle, but not an embodiment of a 22s gauge needle, because only as an embodiment of a 25s gauge needle would it satisfy the claim requirement that it have a greater outer diameter than a "standard" needle of the same gauge.

Next, Rivard reiterated at the Markman hearing its contention that the dimensions set forth in the exhibit at Joint Appendix 787-88 must be construed to be "the" standard dimensions of "standard" needles. Rivard contended that, otherwise, the public does not receive adequate notice of the "standards." Rivard is correct that in Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335 (Fed.Cir.1998), the Federal Circuit Court of Appeals explained that "[n]otice is an important function of the patent prosecution process, as reflected by the statute itself." Digital Biometrics, Inc., 149 F.3d at 1347 (citing 35 U.S.C. s. 112, para. 2, and Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997)). Nevertheless, the court reiterates its tentative conclusion, above, that the exhibit at Joint Appendix 787-88 was offered by the patentee to *illustrate* its contention that "[i]t is generally known in the art that the gauges for syringe needles are standardized," Joint Appendix at 774, not to indicate "the" standards for needle dimensions. The court also reiterates its tentative conclusion, above, that the reference to dimensions of "standard" needle gauges is the "meaningful guidance" for the comparison in the '196 patent that was lacking in Chimie in the absence of the reference to the DIN 58 583 standard in the patent at issue in that case. Chimie, 402 F.3d at 1375. Rivard apparently contends that the only "meaningful guidance" for what is meant by "standard" needles-and, hence, the only way that the public has adequate notice of those "standards"-is the patentee's exhibit. The court does not agree, in the absence of any evidence that the dimensions of "standard" needles are not actually "standardized," so that the "standard" is unknown or subject to genuine dispute, and Rivard still has not presented any evidence generating such a genuine dispute. To the contrary, Rivard's own evidence from the American Society of Testing Materials (ASTM), Defendants' Appendix at 38 (Defendants' Exhibit E), suggests that dimensions for needle gauges are, indeed, "standardized," as explained *supra* in note 19. To put it another way, the reference to "standard" needles is sufficient public notice of the comparator in the absence of any evidence that the dimensions of "standard" needles are not actually "standardized," are unknown, or are subject to genuine dispute.

iii. The court's construction. In light of the intrinsic evidence, the court construes the term in question to

mean the following: "For an embodiment of the claimed needle cannula between 14 and 27 gauge, the outer diameter is greater than the outer diameter of the standard needle cannula of the prior art of the same gauge and the lumen diameter is identical to the lumen diameter of the standard needle cannula of the prior art of the same gauge."

e. Terms in "whereby," "so that," or "such that" clauses

[18] Rivard contends that the court must construe the term "the magnetism and the sidewall thickness enables [sic] detection of the magnetism of the needle cannula or piece thereof," in claim **1** of the '196 patent, the term "the needle cannula or piece thereof can be detected by a metal detector when the standard cannula of the same gauge cannot be detected," in claim **1** of the '196 patent, and the similar term "it [the needle cannula] can be detected when the standard needle cannula of the same gauge cannot be detected," in claim **8** of the '196 patent. Ideal, on the other hand, contends that these terms do not require construction, because they appear in "whereby," "such that," or "so that" clauses, and consequently, the terms add nothing to patentability or substance of the claims. To put this dispute in context, the chart below shows each term, Rivard's proposed construction, and the language that Ideal contends renders construction unnecessary.

THE '196 PATENT		
	Rivard's Proposed	**Ideal's Nullifying**
Claim Term	**Definition**	**Language**
e. The magnetism and the sidewall thickness enables [sic] detection of the magnetism of the needle cannula or piece thereof (In claim **1**(a))	It is the permanent or residual magnetism that must be detected by the metal detector in order to determine a needle or piece is present in the meat. The sidewall thickness must materially contribute to the detection of the needle magnetism.	... such that the magnetism and the sidewall thickness....
f. The needle cannula or piece thereof can be detected by a metal detector when the standard cannula of the same gauge cannot be detected (In claim **1**(b))	The permanent magnetism or residual magnetism of the broken cannula is strong enough for that magnetism to be detected by a metal detector when a cannula having dimensions within the range of Exhibit A for the corresponding gauge cannot be detected.	... whereby if the needle cannula or piece thereof breaks off in the living animal during the injection, the needle cannula or piece thereof....
i. It can be detected when the standard needle cannula of the same gauge cannot be detected (In claim **8**)	The permanent magnetism or residual magnetism of the broken cannula is strong enough for that magnetism to be detected by a metal detector when a cannula having dimensions within the range of Exhibit A for the corresponding gauge cannot be detected.	... so that it can be detected when the standard....

i. Arguments of the parties. Rivard argues that claim term e. in the chart above corresponds to the phrase "rendered magnetic or magnetized to a level which enables detection of the magnetism of the needle" and other "magnetism" terms elsewhere in the '196 patent, so that this term must be interpreted in part as "it is the permanent or residual magnetism that must be detected by the metal detector in order to determine a needle or piece is present in the meat." Rivard adds, however, that this term is further limited by the language "the magnetism and the sidewall thickness," so that the needle cannula or piece thereof is only

detectable as a result of *both* the magnetization and the sidewall thickness of the needle. Rivard argues that the patentee repeatedly argued to the examiner that it was the combination of magnetism and sidewall thickness that constituted the patentable invention. As to claim terms f. and i. in the chart above, Rivard argues that the two claim terms were presented in the same amendment and, therefore, should be interpreted together. Rivard argues that these terms must be construed to mean that it is the magnetism that is detected and that the claimed needle or piece thereof must be detectable when a standard needle cannula of the same gauge cannot be detected. Rivard argues that these terms were critical to securing allowance of claims **1** and **8.** Therefore, Rivard argues that these phrases must be interpreted to mean "the permanent magnetism or residual magnetism of the broken cannula is strong enough for that magnetism to be detected by a metal detector when a cannula having dimensions within the range of AmendmentExhibit A [Joint Appendix at 787-88] for the corresponding gauge cannot be detected."

Ideal, on the other hand, contends that there is no need to construe these terms, because each appears in a "whereby," "so that," or "such that" clause. Ideal contends that the law is well settled that a "whereby" clause, "thereby" clause, or the like, is given no weight where the clause only expresses necessary or inherent results of what is recited in the claim. Here, Ideal contends that each clause in question merely states the result of the limitations in the claim and adds nothing to the patentability or substance of the claim, because it indicates that the elements previously enumerated will necessarily give the result that follows "whereby," "so that," or "such that." Thus, according to Ideal, these terms imply no further limitations and add no further steps to the method claimed.

In its rebuttal brief, Rivard rejects Ideal's contention that the language in question is of no moment, because it appears in "whereby," "so that," or "such that" clauses. Rivard argues that the limitations stated in these clauses were material to patentability and, if ignored, would improperly extend the scope of the patents-in-suit to products not properly covered by the claims. Indeed, Rivard argues that these terms impact the validity of the '196 patent relative to prior art needles, including Rivard's own United States patent for needles. Rivard also disputes Ideal's assertion that a "so that" clause can be equated with a "whereby" clause. More specifically, Rivard argues that the specification and prosecution history are replete with descriptions of the alleged invention as "detectable" needles, so that the language in the "whereby" and "so that" clauses is an integral part of the invention. Rivard also contends that the clauses in question were added to overcome the examiner's rejections of the application claims (16 and 23) that were eventually allowed as claims **1** and **8** of the '196 patent. Thus, the phrases must be presumed to be, and in context are, material.

ii. Analysis. Starting with the words of the patent, *see* Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), Ideal is correct that a "whereby" clause is given "no weight" when it " 'simply expresses the intended result of a process step positively recited' " in a method claim. Hoffer v. Microsoft Corp., 405 F.3d 1326, 1329 (Fed.Cir.2005) (quoting Minton v. National Ass'n of Sec. Dealers, Inc., 336 F.3d 1373, 1381 (Fed.Cir.2003); *accord* Texas Insts., Inc. v. U.S. Int'l Trade Comm'n, 988 F.2d 1165, 1172 (Fed.Cir.1993); *see also* Lockheed Martin Corp. v. Space Sys./Loral, Inc., 324 F.3d 1308, 1319 (Fed.Cir.2003) (the function of a claim was properly identified as the language after the "means for" clause and before the "whereby" clause, "because a whereby clause that merely states the result of the limitations in that claim adds nothing to the substance of the claim," citing Texas Insts., Inc., 988 F.2d at 1172).) On the other hand, "when the 'whereby' clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention." Hoffer, 405 F.3d at 1329-30 (specifically noting that, based on the specification, the condition stated in the "whereby" clause at issue was part of the "fundamental invention" and, therefore, did limit the method claimed).

Here, claim **1** is a method claim, specifically, "a method of injecting an animal health product into flesh of a living food animal." The '196 patent, claim **1,** Col. 8, *ll*. 59-60. The "process" step at issue in claim **1**(a) is "providing an injection means comprising a needle assembly ... wherein the needle cannula is made of

stainless steel which is magnetic or magnetizable, and the outer diameter is greater than an outer diameter of a standard needle cannula and the lumen diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge." *Id.,* Col. 8, *l.* 61 to Col. 9, *l.* 4. The intended results are " *so that* the needle cannula has a sidewall thickness which renders the needle cannula resistant to breakage during the injection," *i.e.,* the result of a needle cannula with a greater outer diameter and the identical lumen diameter is a needle cannula with a thicker sidewall, *id.,* Col. 9, *ll.* 4-6 (emphasis added), and " *so that* the needle cannula has a sidewall thickness which ... increases detectability in a metal detector over the standard needle cannula *such that* the magnetism and the sidewall thickness enables [sic] detection of the magnetism of the needle cannula or piece thereof," *i.e.,* the results of both thicker sidewalls and magnetic or magnetizable material is increased detectability and enabling detection. *Id.,* Col. 9, *ll.* 4-8 (as corrected by Certificate of Correction, Joint Appendix at 534) (emphasis added).

Similarly, in claim **1**(b), the "process" step is "injecting the living food animal with the dosage using the injection means," that is, the "injection means" comprising a needle cannula with thicker sidewalls and made from a magnetic or magnetizable material. *Id.,* Col. 9, *ll.* 13-14. The intended result is " *whereby* if the needle cannula or piece thereof breaks off in the living animal during the injection, the needle cannula or piece thereof can be detected by a metal detector when the standard cannula of the same gauge cannot be detected," *i.e.,* the result of using the injection means comprising a needle cannula with thicker sidewalls and made from magnetic or magnetizable material is that the claimed needle cannula can be detected when a standard needle cannula of the same gauge cannot. *Id.,* Col. 9, *ll.* 14-17 (as corrected by Certificate of Correction, Joint Appendix at 534) (emphasis added).

Likewise, claim **8** of the '196 patent is a method claim for a "slaughtering method for slaughter and processing of animals for food while conveying the flesh of the animal through a detector for detecting needle cannulas or pieces thereof in the flesh." *Id.,* claim **8,** Col. 9, *l.* 42 to Col. 10, *l.* 2. The "process" step is "detecting in the flesh of the animal a broken stainless steel tubular needle cannula or piece thereof which has broken off of a needle assembly of an injection means for injecting a dosage of an animal health product into the animal when it is living," *id.,* Col. 10, *ll.* 3-7, and more specifically, such a needle assembly "wherein the outer diameter [of the needle cannula] is greater than the outer diameter of a standard needle cannula and the lumen diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge." *Id.,* Col. 10, *ll.* 9-12. The intended result is " *so that* it [the needle cannula or piece thereof] can be detected when the standard needle cannula of the same gauge cannot be detected," *i.e.,* the result of a needle cannula with thicker sidewalls is that it can be detected when a standard needle cannula of the same gauge cannot be detected. *Id.,* Col. 10, *l.* 14 (as corrected by Certificate of Correction, Joint Appendix at 534 (emphasis added)).FN21

FN21. Indeed, this is one of several results of the "process" step in the "wherein" clause at Col. 10, *ll.* 9-12, because that "wherein" clause is followed immediately by another "so that" clause apparently not at issue here, " *so that* the needle cannula has a sidewall thickness which renders the needle cannula resistant to breakage during the injecting and increases detectability of the needle cannula in a metal detector over the standard needle cannula while being conveyed through the detector." *Id.,* Col. 10, *ll.* 12-14 (as corrected by Certificate of Correction, Joint Appendix at 534) (emphasis added). The "so that" clause that Rivard asserts requires construction follows immediately thereafter, thus indicating another result of the same "process" step.

Each of these "whereby," "such that," or "so that" clauses is a "laudatory one characterizing the result of the executing step," and as such, does not state a claim limitation. Minton, 336 F.3d at 1381. This is true, whether the specific words initiating the result clause are "such that," "so that," or "whereby."

Moreover, the specification, including the Summary of the Invention, makes clear that it is the thicker

sidewall as compared to prior art needles and the magnetic or magnetizable material from which the claimed needle is made that are the "fundamental inventions," while the desired *result* of the invention is increased detectability. *Cf*. Hoffer, 405 F.3d at 1330 (considering whether the "whereby" clause was part of the "fundamental invention," based on the specification); *see* the '196 patent, Summary of the Invention, Col. 1, *l*. 66 (needle cannula comprised of a magnetic stainless steel alloy); Col. 2, *ll*. 5-6 (needle cannula comprises a sidewall that is thicker than prior art needle cannulas); *ll*. 1-11 (needle assembly comprising a permanently magnetizable or magnetic stainless steel needle cannula); *ll*. 19-20 (specifying thickness of the sidewalls of a preferred embodiment); *ll*. 28-30 (the needle is magnetizable or magnetic); *ll*. 33-36 (specifying sidewall thickness in a preferred embodiment); *ll*. 44-45 (magnetizable or magnetic); *ll*. 57-58 (the needle is magnetized); *ll*. 63-66 (specifying sidewall thickness in a preferred embodiment); Col. 3, *ll*. 1-2 (the needle can be permanently magnetizable or magnetic); *ll*. 21-30 (stating objects of the invention to be to provide a needle cannula that is more resistant to breakage and magnetized to facilitate detection). Thus, the court cannot find that terms e., f., and i. in the chart above add anything to the substance of the claims. Lockheed Martin Corp., 324 F.3d at 1319 ("[A] whereby clause that merely states the result of the limitations in that claim adds nothing to the substance of the claim."). Therefore, they require no construction.

Rivard nevertheless contends that the prosecution history demonstrates that these claim terms were material to patentability of the claimed invention over prior art, citing the patentee's March 17, 2004, amendment in reply to the Office Action of December 22, 2003. The application claims as amended are as follows, with underlining showing added language, italics showing the location of "whereby," "so that," and "such that" language, and bold showing the disputed claim terms:

16. (Currently amended): In a method of injecting an animal health product into flesh of a living food animal which comprises:

(a) providing an injection means comprising a needle assembly which includes a gauge of needle cannula having an outer diameter and a lumen with a lumen diameter and which is mounted on a device for injecting a dosage of the product into the living food animal, wherein the needle cannula is made of stainless steel which is magnetic or magnetizable, and the outer diameter is greater than an outer diameter of a standard needle cannula and the lumen diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge *so that* the needlecannula has a sidewall thickness which renders the needle cannula resistant to breakage during the injection and *increases detectability in a metal detector over the standard needle* cannula *such that* **the magnetism and the sidewall thickness enables [sic] detection of the magnetism of the needle** cannula **or piece thereof** in the flesh of the animal upon slaughter and processing into a food if the needle cannula or piece thereof were to break off in the flesh of the living animal during the injection; and

(b) injecting the living food animal with the dosage using the injection means, *whereby* if the needle cannula or piece thereof breaks off in the living animal during the injection, **the needle** cannula **or piece thereof can be detected *by a metal detector when the standard needle*** cannula ***of the same gauge cannot be detected*** in the flesh of the animal upon slaughter and processing into food.

* * *

23. (Currently amended): In a slaughtering method for slaughter and processing of animals for food while conveying the flesh of the animal through a detector for detecting needle cannulas or pieces thereof in the flesh, the improvement which comprises detecting in the flesh of the animal a broken stainless steel tubular needle cannula or piece thereof which has broken off of a needle assembly of an injection means for injecting a dosage of an animal health product into the animal while it is living, wherein the needle cannula is of a gauge, has an outer diameter, and a lumen with a lumen diameter and wherein the outer diameter is

greater than the outer diameter of a standard needle cannula and the lumen diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge *so that* the needle cannula has a sidewall thickness which renders the needle cannula resistant to breakage during the injecting *and increases detectability of the needle* cannula *in a metal detector over the standard needle* cannula *while being conveyed through the detector so that* ***it can be detected when the standard needle*** cannula ***of the same gauge cannot be detected,*** and wherein the needle cannula or piece thereof is magnetized to a level which enables detection of the magnetism of the needle cannula or piece thereof when the needle cannula or piece thereof is broken off in the flesh of an animal while the flesh of the animal is being conveyed through the detector during the slaughter and processing.

Joint Appendix at 649-50, 652-53 (underlining in the original, italics and bold added). This quotation demonstrates that the first claim term presently at issue was *not* added in response to any prior art rejection, because it was already part of application claim 16(a), although the second and third claim terms at issue were part of the amendments to application claims 16(b) and 23 in response to the prior art rejection.

Rivard is correct that, by amending a patent claim in response to a patentability rejection, a patentee recognizes and emphasizes the difference between the unamended phrase and the amended phrase, and that " '[t]he difference which [the patentee] thus disclaimed must be regarded as material.' " Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 734, 122 S.Ct. 1831, 152 L.Ed.2d 944 (2002) (quoting Exhibit Supply Co. v. Ace Patents Corp., 315 U.S. 126, 136-37, 62 S.Ct. 513, 86 L.Ed. 736 (1942)). Rivard is incorrect in arguing that this principle is applicable here, however, either because the claim terms were not part of amendmentsto overcome prior art or did not disclaim any differences, as the patentee's argument in support of the March 17, 2004, Amendment demonstrates. *See* id. (differences disclaimed by the patentee in amending a claim must be regarded as material); *see also* Research Plastics, 421 F.3d at 1296 (" 'The purpose of consulting the prosecution history in construing a claim is to "exclude any interpretation that was disclaimed during prosecution." ' ") (quoting Rhodia Chimie 402 F.3d at 1384 in turn quoting ZMI Corp., 844 F.2d at 1580).

More specifically, this principle has no application to the claim term "the magnetism and the sidewall thickness enables [sic] detection of the magnetism of the needle cannula or piece thereof" in claim **1**(a) of the '196 patent, term e. in the chart above, because that claim term simply was not added to the claim in the March 17, 2004, Amendment in response to the prior art rejection, as shown by the quotation of the amendment above showing added language underlined and language in dispute in bold. Rather, it was part of the pre-existing "so that" clause explaining the results of a needle cannula made of stainless steel which is magnetic or magnetizable, and that has an outer diameter that is greater than an outer diameter of a standard needle cannula and a lumen diameter that is identical to a lumen diameter of the standard needle cannula. *See* Joint Appendix at 649-50 (application claim 16, quoted above indicating amendments and claim terms at issue).

This principle is equally inapplicable to the other claim terms presently at issue, claim terms f. and i. in the chart above, even though they were added in the March 17, 2004, Amendment in response to the prior art rejection, because addition of those claim terms did not disclaim any material. Rather, the patentee argued in response to the examiner's prior art rejection that none of the prior art cited by the examiner, either alone or in combination, showed or suggested using thick sidewalls or the use of magnetic needles with thick sidewalls to increase detectability of the needle cannula in a metal detector over the standard needle cannula so that the needle can be detected when the standard needle cannula of the same gauge cannot be detected in the flesh of a slaughtered animal, *i.e.,* that "[n]one of the references teach all of the elements of the present invention," which *result* in needles that are more detectable than standard needles. Joint Appendix at 658 (" *Humphrey,* taken alone or in combination with the cited references, does not show or suggest using thick sidewalls to increase detectability of the needle cannula in a metal detector over the standard needle cannula so that it can be detected when the standard needle cannula of the same gauge cannot be detected in the

flesh of a slaughtered animal."); 660-61 ("The cited prior art taken alone or in combination does not recognize the particular characteristics necessary for the detectability of the needle of the claimed method."); 661 ("There is no suggestion or motivation to combine the prior art outside of the patentee's disclosure in this case. None of the prior art references show or suggest using thick sidewalls for increased detectability of the needle cannula in a metal detector over the standard needle cannula so that it can be detected when the standard needle cannula of the same gauge cannot be detected in the flesh of a slaughtered animal."); 661-62 ("None of the prior art references teach or suggest the use of magnetic needles with thick sidewalls to increase detectability of the needle cannula in a metal detector over the standard needle cannula so that it can be detected when the standard needle cannula of the same gauge cannot be detected in the flesh of a slaughtered animal."); 662 ("The mere fact that needles with thick walls that reduce the possibility of deformation are known in the art [does] not render a method of using a magnetic stainless steel hypodermic needle with thick sidewalls to enable detection when the standard needle cannula of the same gauge cannot be detected in the flesh of a slaughtered animal obvious. There is no suggestion in the prior art that the combination is desirable. There is no suggestion in the references that thick sidewalled magnetic needles would enable detection in a metal detector when the standard needle cannula of the same gauge cannot be detected."); 663 ("None of the references teach all of the elements of the present invention."). To put it another way, the patentee argued that the examiner's prior art rejection was simply wrong, although the patentee did amend the claim to reinforce the *result* of a patentable combination of limitations.

Consequently, in the chart at the end of the tentative ruling setting forth the court's tentative constructions of disputed claim terms, for each term in a "whereby," "so that," or "such that" clause, the court stated, "None required, because the term appears in a ["whereby," "so that," or "such that"] clause," then identified the specific nullifying clause in question, and added, "As such, it does not state limitations, but the intended result of claimed limitations." At the Markman hearing, Rivard contended that the court should modify this "construction" to add at the end of the last sentence, "and is given no weight." Rivard contended that this addition was necessary to tell the jury how to consider the clause. The court does not agree that any such modification is necessary. The court's language is not a "construction," but an explanation *for the parties* of why the court concludes that *no construction* is required of the pertinent terms in "whereby," "so that," or "such that" clauses. The jury simply will not be given any indication that the construction of these terms was ever in dispute or any indication of what the parties' competing constructions might have been. In the event that the parties believe that the jury should be told how to consider these terms, the parties may submit appropriate jury instructions.

iii. The court's conclusion. Thus, the court finds that, even in light of cited prosecution history, these claim terms in "whereby," "so that," and "such that" clauses, which merely state results of claimed limitations, do not require construction.

f. "The sidewalls flanking the lumen has [sic] a combined thickness of about 0.025 inch"

[19] The parties dispute the construction of a term in claims **4** and **11** of the '196 patent stating the "combined thickness" of the sidewalls of the claimed needle cannula. Ideal asserts that no construction of this unambiguous term is required, even as an alternative to Rivard's proposed construction. Therefore, the chart that follows shows only the claim term and Rivard's proposed construction.

THE '196 PATENT		
	Claim Term	**Rivard's Proposed Definition**
g.	The sidewalls flanking the lumen has [sic] a combined thickness of about 0.025 inch. (In claims 4 and 11)	The combined thickness of the sidewalls opposing each other across the lumen have a combined thickness of between 0.0245 and 0.0255 inches.

i. Arguments of the parties. Rivard argues that the specification does not disclose any range associated with the 0.025 inch value, but that the chart of "standardized" needle dimensions provided by the patentee indicates wall thickness tolerances of plus or minus 0.0005 inch. Thus, Rivard argues that its construction of the approximate value is supported by the intrinsic evidence.

Ideal concedes that, owing to the agreed definition of "flanking the lumen," the claim term in question should be construed to mean "the combined thickness of the sidewalls opposing each other across the lumen have a combined thickness of about 0.025 inch." However, Ideal argues that no construction of "about 0.025 inch" is required, because such a term does not need to be construed with numerical exactitude. Ideal asserts, further, that the '196 patent is devoid of language that disclaims tolerances other than those in the range asserted by Rivard.

ii. Analysis. The court agrees with the parties that the proper construction of the "sidewalls flanking the lumen" portion of this claim term is the agreed construction, as modified by the court, "opposing each other across the lumen." The court also agrees with Ideal that nothing in the ' 196 patent itself suggests limitations on the value "about 0.025 inch." The limits of the approximation indicated by "about" are not explained anywhere in the Detailed Description. On the other hand, the court finds that the exhibit of needle dimensions that the patentee submitted to the examiner, Joint Appendix at 787-88 is intrinsic evidence from the prosecution history of the ' 196 patent of the "standard" tolerances for wall thickness of hypodermic needles. *See* Ortho-McNeil Pharm., Inc., 476 F.3d at 1326. As the court explained above, in reference to dimensions of "standard" needles, use of the exhibit in an illustrative manner did not limit the patentee to the dimensions stated therein. *See supra,* page 1202. Nevertheless, Ideal is hardly in a position to dispute the validity of this exhibit as evidence of the understanding of one skilled in the art concerning permissible tolerances for sidewall thicknesses of hypodermic needles, just as Ideal is hardly in a position to dispute the validity of this exhibit as extrinsic evidence of the understanding of one skilled in the art concerning permissible tolerances for inside diameters of hypodermic needles, for purposes of the '668 patent, because the chart was offered essentially for the purpose of illustrating that hypodermic needle dimensions are "standardized," as explained above beginning on page 1182.

Rivard contends that this exhibit demonstrates that the understanding of one skilled in the art was that the sidewall thickness measurements have a tolerance range of plus or minus 0.0005 inch, leading Rivard to assert that "about 0.025 inch" must mean "between 0.0245 and 0.0255 inches." The exhibit, which purports to be "Syringe Needle Dimensions-Technical Notes," does indeed define the tolerances for "nominal wall" thickness as plus or minus 0.0005 inch for gauges 15 through 19. *See* Joint Appendix 787, Nominal Wall, Tolerance (in), Needle Gauges 15-19. The embodiments of the claimed needle are generally compared to "standard" needles of 16 gauge in the Detailed Description. *See* the '196 patent, Col. 4, *l*. 50 to Col. 5, *l*. 2. Indeed, dependent claims **4** and **11** expressly claim the sidewall thickness that is described in the Detailed Description as a preferred embodiment of the 16 gauge embodiment of the claimed needle. *See* id., Col. 55-60. The Detailed Description and the claims of the ' 196 patent, however, refer to "standard needles" or "prior art needles" or "needle cannulas that are useful for medical and veterinarian purposes" as including gauges 14 through 27. *See id.,* Detailed Description, Col. 5, *ll*. 16-19; claim **1,** Col. 9, *ll*. 3-4; claim **8,** Col. 10, *ll*. 11-12. The chart shows the same tolerance of plus or minus 0.0005 inches for wall thickness for gauges 20 through 27, but tolerances of plus or minus 0.0010 inches for gauges 10 through 14. The competing chart of needle dimensionsoffered by Rivard, *see* Defendants' Appendix at 38, which must be considered, at best, extrinsic evidence under Ortho-McNeil Pharm., Inc., 476 F.3d at 1326, likewise shows wall thickness tolerances of plus or minus 0.0010 inches for gauges 6 through 14, plus or minus 0.0005 inches for gauges 15 through 19, and plus 0 and minus 0.0005 for gauges 20 through 27. From the two charts, the court concludes that one of ordinary skill in the art would understand that a thickness for the sidewall of a hypodermic needle of gauges 14 through 27 stated as "about" a certain fraction of an inch would have a tolerance of plus or minus 0.0005 inches.

iii. The court's construction. In light of the foregoing, the court concludes that this claim term in claims **4** and **11** of the '196 patent is properly construed as follows: "The sidewalls opposing each other across the lumen have a combined thickness of about 0.025 inch, encompassing a range of thicknesses no greater than 0.0245 to 0.0255 inches." *See* Ortho-McNeil Pharm., Inc., 476 F.3d at 1326-27 (in light of the kinds of evidence cited, concluding that the claim term defining a ratio of tramadol to acetaminophen of "about 1:5" should be construed to mean "approximately 1:5, encompassing a range of ratios no greater than 1:3.6 to 1:7.1").

g. "Stainless steel comprising" certain elements

Like claims **1, 7, 13,** and **15** of the '668 patent, claim **5** of the '196 patent claims "stainless steel comprising" certain elements. Indeed, the list of elements and the weight percentage ranges of those elements are identical in all of these claims. The parties assert that the same construction of this term is appropriate in both patents, and the court agrees. Therefore, this claim term will also be construed as follows: "The corrosion resistant steel comprises Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0.5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium), wherein the stated values are the outermost bounds (minimum and maximum) for the weight percentage of each element comprising the alloy."

h. "*The needle* cannula *or piece thereof is magnetized....*"

[20] The last claim term purportedly requiring construction in this case, in claim **8** of the '196 patent, is also similar to claim terms in claims **1, 7, 13,** and **15** of the '668 patent, which the court construed above. The parties assert that essentially the same construction should apply to the similar claim terms in the two patents. The court agrees.

More specifically, the court concluded, above, at page 1175, that the proper construction of both "[the needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle," which appears in claims **1** and **13** of the '668 patent, and "the needle is magnetized to a level which enables detection of the magnetism of the needle," which appears in claims **7** and **15** of the '668 patent, is the following: "Either prior to injecting the living animal or while in the flesh of the animal after slaughter, the needle is magnetized to become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time, to a level that makes it possible for the magnetism of the needle to be detected by a metal detector or magnetic detector." The claim term in claim **8** of the '196 patent now at issue is the following: "The needle cannula *or piece thereof* is magnetized to a level which enables detection of the magnetism of the needle cannula *or piece thereof*." *See* the '196 patent, claim **8,** Col. 10, *ll*. 14-17 (emphasis added). The italics indicate the only apparent differences in language between the claim term in claim **8** of the '196 patent and the term in claims **7** and **15** of the '668 patent. The proper construction of the claim term now at issue should account for that difference. Therefore, the proper construction of the claim term in claim **8** of the '196 patent now at issue is the following: "Either prior to injecting the living animal or while in the flesh of the animal after slaughter, the needle cannula or piece thereof is magnetized to become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time, to a level that makes it possible for the magnetism of the needle cannula or piece thereof to be detected by a metal detector or magnetic detector."

III. CONCLUSION

Perhaps the most effective way to present the court's conclusions concerning claim construction is to present

a side-by-side comparison of the claim language that the court finds is actually in dispute with each party's proffered construction and the court's own construction. Such a comparison follows:

THE '668 PATENT			
Claim Term	**Rivard's Proposed Definition**	**Ideal's Alternative Definition (if any definition is required)**	**The Court's Construction**
Claim 1			
a. Stainless steel (Also in claims **7, 13,** and **15**)	A large group of corrosion resistant steels that contain 10% or more of chromium and may contain other elements.	Corrosion resistant steel	The court declines to construe this term in isolation, because it never appears in isolation in the claims of the '668 patent. Rather, it is always used in the claim term "stainless steel comprising" specified elements.
b. The stainless steel comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % A1, 0.01-1.0 Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V. (Also in claims **7, 13,** and **15**)	The stainless steel includes iron (Fe) and each of the following elements within the listed ranges, measured by percentage of overall weight of the metal sample: Silicon (Si) = at least 0.01% and no more than 3.0%; Phosphorus (P) = less than 0.03%; Chromium (Cr) = at least 4% and no more than 25%; Aluminum (Al) = at least 0.003% and no more than 7.0%; Manganese (Mn) = at least 0.01% and no more than 1.0%; Sulfur (S) = at least 0.001% and no more than 0.03%; Molybdenum (Mo) = at least 0.01% and no more than 5.0%; Titanium (Ti) = at least 0.01% and no more than 1.0%; Carbon (C) = at least 0.003% and no more than 0.08%; Nickel (Ni) = at least 0.01% and no more than 5.0%; Copper (Cu) = at least 0.01% and no more than 0.5%; Lead (Pb) = less than 0 .01%; Bismuth (Bi) = at least 0.02% and no more than	The stainless steel comprises Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0.5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium).	The corrosion resistant steel comprises Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0.5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium), wherein the stated values are the outermost bounds (minimum and maximum) for the weight percentage of each element comprising the alloy.

	0.5%; Niobium (Nb) = at least 0.5% and no more than 1.0%; Zirconium (Zr) = at least 0.02% and no more than 1.0%; Vanadium (V) = at least 0.05% and no more than 1.0%.		
c. [The needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle. (Also in claim **13**)	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet. It is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat.	Prior to use of the needle or after the needle has broken off in the flesh of an animal which has then been killed for slaughter, the needle is magnetized to be a permanent magnet that produces a magnetic field or has been magnetized to produce a magnetic field for a period of time, whereby the magnetism of the magnetic needle facilitates locating a needle or needle fragment in the flesh of a slaughtered animal.	Either prior to injecting the living animal or while in the flesh of the animal after slaughter, the needle is magnetized to become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time, to a level that makes it possible for the magnetism of the needle to be detected by a metal detector or magnetic detector.
Claim 5			
d. The wall has a thickness of greater than 0.018 inch. (Also in claim **11**)	The metal making up the needle wall on one side of the needle hole has a thickness greater than 0.018 inch.	Needle wall thickness greater than 0.018 inch.	Each and every one of the one or more sidewalls of the needle cannula has a thickness, measured from the inner sidewall (wall of the lumen) to the outer sidewall, of greater than 0.018 inch.
Claim 6			
e. The needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic]. (Also in claim **12**)	The hole through the needle is between 0.0455 and 0.0465 inches in diameter and the outside diameter of the needle is 0.018 inch.	The needle has a lumen diameter of about 0.046 inch and an outside diameter of 0.018 inch.	The needle has a lumen diameter of about 0.046 inch, encompassing a range of diameters no greater than 0.0445 to 0.0475 inch, and an outside diameter of 0.018 inch.
Claim 7			
f. The needle is magnetized to a level which enables detection of the magnetism of the needle. (Also in claim **15**)	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that	The needle is magnetized, or the magnetism of the needle is enhanced, to a level which facilitates locating a needle or needle fragment in the flesh of a slaughtered animal.	Either prior to injecting the living animal or while in the flesh of the animal after slaughter, the needle is magnetized to become a permanent magnet or a residual magnet, that is, a

	produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet. It is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat.		magnet that retains its magnetic field for a period of time, to a level that makes it possible for the magnetism of the needle to be detected by a metal detector or magnetic detector.

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Claim Term	Rivard's Proposed Definition	Ideal's Alternative Definition (if any definition is required)	The Court's Construction
Agreed Constructions			
a. Needle assembly (In claims **1** and **8**)	A hub and a tubular needle cannula having a proximal end, a distal end, and a sidewall with an outer sidewall and inner sidewall there between having a lumen extending there through defining a longitudinal axis.	Same	
b. Flanking the lumen (In claims **3** and **10**)	The combined thickness of the sidewalls opposing each other across the lumen	Opposing each other across the lumen	
Disputed Constructions			
Claim 1			
a. Gauge (Also in claim **8**)	A size measurement of needles determined by the outer diameter of the needle. The smaller the gauge number the larger the needle outer diameter.		A size measurement of needles determined by the outer diameter and the inner or lumen diameter.
b. Stainless steel (Also in claim **8**)	A large group of corrosion resistant steels that contain 10% or more of chromium and may contain other elements.	Corrosion resistant steel	Any corrosion-resistant steel comprising 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % Al (Aluminum), 0.01-1.0 wt % Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-

				5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), and the remainder Fe (Iron), wherein the stated values are the outermost bounds (minimum and maximum) for the percentage of each element comprising the alloy.
c.	Magnetic or magnetizable	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet.	[None offered.]	Is or is capable of becoming a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time.
d.	The outer diameter [of the claimed needle cannula] is greater than an outer diameter of a standard needle cannula and the lumen diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge. (Also in claim **8**)	A needle represented to be a gauge between 14 and 27 has an inside diameter (I.D.) within the I.D. range of the corresponding gauge on Exhibit A* and an outside diameter (O.D.) greater than the O.D. range on Exhibit A for the corresponding gauge. (*Exhibit A to Amendment under 37 C.F.R. s. 1.111, page 17, mailed April 17, 2003.)	[None offered.]	For an embodiment of the claimed needle cannula between 14 and 27 gauge, the outer diameter is greater than the outer diameter of the standard needle cannula of the prior art of the same gauge and the lumen diameter is identical to the lumen diameter of the standard needle cannula of the prior art of the same gauge.
		For example, a 16 gauge needle has an inside diameter identical to the inside diameter of the 16 gauge needle listed on Exhibit A and an outer diameter greater than the		

		outer diameter of the 16 gauge needle listed on Exhibit A.		
e.	The magnetism and the sidewall thickness enables [sic] detection of the magnetism of the needle cannula or piece thereof	It is the permanent or residual magnetism that must be detected by the metal detector in order to determine a needle or piece is present in the meat. The sidewall thickness must materially contribute to the detection of the needle magnetism.	[None offered.]	None required, because the term appears in a "such that" clause: "... *such that* the magnetism and the sidewall thickness ...." As such, it does not state limitations, but the intended result of claimed limitations.
f.	The needle cannula or piece thereof can be detected by a metal detector when the standard cannula of the same gauge cannot be detected.	The permanent magnetism or residual magnetism of the broken cannula is strong enough for that magnetism to be detected by a metal detector when a cannula having dimensions within the range of Exhibit A for the corresponding gauge cannot be detected.	[None offered.]	None required, because the term appears in a "whereby" clause: "... *whereby* if the needle cannula or piece thereof breaks off in the living animal during the injection, the needle cannula or piece thereof ...." As such, it does not state limitations, but the intended result of claimed limitations.
		Claim 4		
g.	The sidewalls flanking the lumen has [sic] a combined thickness of about 0.025 inch. (Also in claim **11**)	The combined thickness of the sidewalls opposing each other across the lumen have a combined thickness of between 0.0245 and 0.0255 inches.	[None offered.]	The sidewalls opposing each other across the lumen have a combined thickness of about 0.025 inch, encompassing a range of thicknesses no greater than 0.0245 to 0.0255 inches.
		Claim 5		
h.	The stainless steel comprises Fe and 0.01-3.0 wt % Si, less than 0.03 wt % P, 4-25 wt % Cr, 0.003-7.0 wt % Al, 0.01-1.0 wt % Mn, 0.001-0.03 wt % S, 0.01-5.0 wt % Mo, 0.01-1.0 wt % Ti, 0.003-0.08 wt % C, 0.01-5.0 wt % Ni, 0.01-0.5 wt % Cu, less than 0.01 wt % Pb, 0.02-0.5 wt % Bi, 0.5-1.0 wt % Nb, 0.02-1.0 wt % Zr, and 0.05-1.0 wt % V.	The stainless steel includes iron (Fe) and each of the following elements within the listed ranges, measured by percentage of overall weight of the metal sample: Silicon (Si) = at least 0.01% and no more than 3.0%; Phosphorus (P) = less than 0.03%; Chromium (Cr) = at least 4% and no more than 25%; Aluminum (Al) = at least 0.003% and no more than 7.0%; Manganese (Mn) = at least 0.01% and no more than 1.0%; Sulfur (S) = at least 0.001% and no more than 0.03%; Molybdenum (Mo) = at least 0.01% and no	The stainless steel comprises Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0 .5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and	The corrosion resistant steel comprises Fe (Iron) and 0.01-3.0 wt % Si (Silicon), less than 0.03 wt % P (Phosphorous), 4-25 wt % Cr (Chromium), 0.003-7.0 wt % A1 (Aluminum), 0.01-1.0 Mn (Manganese), 0.001-0.03 wt % S (Sulfur), 0.01-5.0 wt % Mo (Molybdenum), 0.01-1.0 wt % Ti (Titanium), 0.003-0.08 wt % C (Carbon), 0.01-5.0 wt % Ni (Nickel), 0.01-0.5 wt % Cu (Copper), less than 0.01 wt % Pb (Lead), 0.02-0.5 Bi (Bismuth), 0.5-1.0 wt % Nb (Niobium), 0.02-1.0 wt % Zr (Zirconium), and 0.05-1.0 wt % V (Vanadium), wherein the stated values are the outermost

	more than 5.0%; Titanium (Ti) = at least 0.01% and no more than 1.0%; Carbon (C) = at least 0 .003% and no more than 0.08%; Nickel (Ni) = at least 0.01% and no more than 5.0%; Copper (Cu) = at least 0.01% and no more than 0.5%; Lead (Pb) = less than 0.01%; Bismuth (Bi) = at least 0.02% and no more than 0.5%; Niobium (Nb) = at least 0.5% and no more than 1.0%; Zirconium (Zr) = at least 0.02% and no more than 1.0%; Vanadium (V) = at least 0.05% and no more than 1.0%.	0.05-1.0 wt % V (Vanadium).	bounds (minimum and maximum) for the weight percentage of each element comprising the alloy.
Claim 8			
i. [The needle cannula] can be detected when the standard needle cannula of the same gauge cannot be detected.	The permanent magnetism or residual magnetism of the broken cannula is strong enough for that magnetism to be detected by a metal detector when a cannula having dimensions within the range of Exhibit A for the corresponding gauge cannot be detected.	[None offered.]	None required, because the term appears in a "so that" clause: "... *so that* it can be detected when the standard...." As such, it does not state limitations, but the intended result of claimed limitations.
j. The needle cannula or piece thereof is magnetized to a level which enables detection of the magnetism of the needle cannula or piece thereof	The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet. It is the permanent or residual magnetism that must be detected by the metal detector in order to determine a needle or piece is present in the meat.	The needle is magnetized, or the magnetism of the needle is enhanced, to a level which facilitates locating a needle or needle fragment in the flesh of a slaughtered animal.	Either prior to injecting the living animal or while in the flesh of the animal after slaughter, the needle cannula or piece thereof is magnetized to become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time, to a level that makes it possible for the magnetism of the needle cannula or piece thereof to be detected by a metal detector or magnetic detector.

The court hereby adopts the foregoing as its constructions of the patent claim terms in dispute at this time.

IT IS SO ORDERED.

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