

**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

DSM DESOTECH, INC.,)	
)	
Plaintiff,)	
)	
v.)	No. 08 cv 1531
)	
3D SYSTEMS CORPORATION, and)	Judge Sharon Johnson Coleman
3D SYSTEMS, INC.,)	
)	
Defendants.)	

Memorandum Opinion and Order

Coming before the Court is defendants 3D Systems Corporation and 3D Systems, Inc.’s (collectively “3D”) motion for summary judgment on Count IX of DSM Desotech Inc.’s (“Desotech”) Third Amended Complaint arguing non-infringement of Desotech’s patents. Having considered all the submissions of the parties and heard oral argument on the motion, this Court denies 3D’s motion for summary judgment for non-infringement of U.S. Patent Nos. 6,340,297 and 6,733,267, for the reasons stated below.

Background

Most of the basic facts are not in dispute for purposes of the motion.¹ However, ultimate resolution of whether 3D’s accused machines infringe on the patents is a question of fact that requires the testimony of competing expert opinions and thus, is not appropriate for summary judgment.

3D divides the accused machines into two categories, the Original SLA Systems and Pro Systems for reference, but all of the machines create three-dimensional objects on a layer-by-

¹ Throughout most of 3D’s Rule 56.1 Statement of Undisputed Material Facts, 3D does not differentiate whether it is referring to the operation of the Original SLA systems or the Pro systems, yet they use Zephyr recoaters that function differently. For this reason, most of the background is taken from Desotech’s Rule 56.1 Statement of Additional Facts. Another issue with 3D’s Rule 56.1 SOF is that many of the purported factual statements are not facts, but are expert opinions, discovery responses, and other documents that are not facts, which if contested would require resolution by a jury.

layer basis from computer-assisted designs (CAD). The machines use lasers and scanning systems to focus a UV laser on the surface of a photocurable resin contained in a vat to solidify each layer and thereby create a solid part.

Desotech asserts literal infringement and, alternatively, infringement under the doctrine of equivalents for all claims (1-12) of the '297 patent and all claims (1-29) of the '267 patent against the Original SLA line of 3D's stereolithography machines, namely, the SLA 250, SLA 350, SLA 500, SLA 3500, SLA 5000, SLA 7000, Viper SLA, and the Viper HA. Desotech also asserts literal infringement and, alternatively, infringement under the doctrine of equivalents for all claims (1-12) of the '297 patent and all claims (1-29) of the '267 patent against the Pro line of 3D's stereolithography machines, namely, the Viper Pro SLA, iPro 8000 SLA Center, iPro 9000 SLA Center, and the iPro 9000 XL SLA Center.

The Original SLA systems and the Pro SLA systems are all solid imaging apparatuses that include a vessel for containing photoformable composition with a free surface and a movable platform disposed with the vessel. The Zephyr recoating systems used in the Original SLA and Pro SLA is a unit consisting of two or more parts designed to be incorporated into a solid imaging apparatus. 3D disputes whether this description of the Zephyr recoater constitutes a "sub-assembly." The Zephyr recoating system used in the Original SLA and Pro SLA includes two "doctor blades" and also a dispenser that "deals out in portions."

On the Original SLA machines there is a "blade gap," which refers to the small distance between the bottom of the blade and the top of the "gap check" pad made during the blade gap setting procedure. Users of the Original SLA machines with the Zephyr recoater routinely perform blade gap setting procedure themselves without 3D employees. The Zephyr recoater used in the Original SLA systems moves vertically during the blade gap setting procedure using

mechanical actuators. This vertical movement enables it to establish a vacuum during the course of operation and lift resin out of the vat and over the part being built. 3D insists the recoater does not touch the surface of the resin in the vat except through the “meniscus.”² Operation of the Zephyr recoating system used in the Original SLA requires the Zephyr recoater to move vertically using mechanical actuators to set the blade gap as part of the procedure to build parts and. The level of the resin surface in the vat in the Original SLA systems can be adjusted vertically to maintain contact between the resin and the Zephyr recoater’s doctor blades (through the meniscus) to maintain or establish the vacuum required to lift resin out of the vat and over the part being built.

In the Pro SLA systems, the Zephyr recoating system conducts a calibration or mapping procedure before building parts. In the calibration or mapping procedure, the Zephyr recoating system senses the vertical compensation required for the Zephyr recoater to maintain the desired positioning of the recoater as part of a Pro systems operation. The Zephyr recoater on the Pro SLA systems moves vertically with respect to the resin surface during the Zephyr recoating system calibrating or mapping procedure as a sensor measures the changing distance between the Zephyr recoater and the resin surface so that the Zephyr recoating system can maintain the vacuum required to lift the resin out of the vat and over a part being built.

At the beginning of a build, the Zephyr recoater used in the Pro SLA systems is in a “home” position located above the surface of the resin. At the beginning of a build, the Zephyr recoater blade on the Pro SLA systems moves vertically down from the home position to contact the resin surface (through the meniscus) to establish a vacuum for lifting the resin out of the vat and over the top of a part being built. The Zephyr recoater in the Pro SLA systems makes real-

² “Meniscus”: the convex or concave upper surface of a column of liquid, the curvature of which is caused by surface tension.

time vertical adjustments while sweeping over a part to maintain contact with the resin, which enables the Zephyr recoating system to maintain a vacuum for lifting resin from the vat and over the part being built. The Zephyr recoater used in the Pro SLA systems moves vertically up from the resin surface to the home position when a part is complete or an error occurs as part of the build process.

The Zephyr recoater's doctor blades on the Original SLA and the Pro SLA systems make contact with the resin surface during machine operation to establish a vacuum. The doctor blades on the Original SLA and the Pro SLA systems are capable of lifting resin between two doctor blades by vertically moving the Zephyr recoater as necessary to establish a vacuum within the recoater cavity and then using the vacuum to lift the resin to a position above the resin surface. The Zephyr recoater dispensers on the Original SLA and the Pro SLA systems each have an opening and are adapted to both receive and deposit resin through that opening over a part being built using a vacuum.

On March 31, 2000, Desotech filed Application Serial No. 09/541,025 ("the '025 application") that ultimately issued as the '297 patent. Claim 1 of the '025 application stated:

"1. In an apparatus for fabricating an integral three-dimensional object by selectively exposing successive layers of a liquid photoformable composition to actinic radiation, said apparatus including an imaging means for exposing said layers, a vessel for containing a fixed amount of said composition so as to present a free surface at a substantially constant position relative to said imaging means, and a movable platform disposed within said vessel below said free surface, the improvement in said apparatus comprising: a means to transfer a part of said composition above said free surface; and a layering means for contacting the composition transferred above said free surface and moving over said platform to form a layer of said composition."

On December 20, 2000, the examiner issued a first Office Action and rejected claim 1 under 35 U.S.C. § 103 as being obvious of two prior U.S. Patents (U.S. Patent No. 5,076,974 to Modrek and U.S. Patent No. 4,573,330 to Hull) and two prior Japanese patent applications to Morihara

(JP 61-114817 and JP 61-1147818). Following the rejection of claim 1, Decotech submitted an Amendment on March 26, 2001, which cancelled claim 1 and added new claim 2 and dependent claims 3-13:

- “2. (New) A solid imaging apparatus, said apparatus including:
- (i) a vessel for containing a photoformable composition with a free surface;
 - (ii) a movable platform disposed within said vessel; and
 - (iii) a sub-assembly having
 - (a) two doctor blades; and
 - (b) a movable dispenser wherein said movable dispenser is capable of lifting, any position between said two doctor blades, and amount of said photoformable composition to a position above said surface.”

In 2001, Desotech filed the Application No. 10/006,369 (“the ‘369 application”), which eventually issued as the ‘267 patent. On December 10, 2001, Desotech filed an initial preliminary amendment cancelling original claim 1 and adding new claims 2-21. Desotech filed a supplemental preliminary amendment on July 9, 2002, adding new claim 22. Desotech filed another preliminary amendment on January 13, 2003, adding new claims 23-51. The examiner and Desotech elected to prosecute claims 23-38. Claim 23 states:

- “23. (New) A solid imaging apparatus, said apparatus including:
- (i) a vessel containing a photoformable composition;
 - (ii) a movable platform disposed within said vessel; and
 - (iii) a sub-assembly is adapted to both receive and deposit part of said photoformable composition through said opening.”
- Wherein said sub-assembly is adapted to both receive and deposit part of said photoformable composition through said opening.”

3D asserts that claim 33 of the ‘369 application claimed a “dispenser” without the limitation “movable.” Desotech contends that claim 33, though it did not state “movable dispenser,” required the dispenser to be movable based on the following language from claim 33:

- “(iv) a dispenser adapted to lift photoformable composition in the vessel, and
- (v) a dispenser support coupled to the dispenser that moves the dispenser across the support surface of the platform to distribute, above the perimeter of said platform, lifted photoformable composition held in the dispenser.”

The United States Patent and Trademark Office examiner rejected pending application claims 33 and 36-38 of the '369 application as obvious over U.S. Patent No. 5,014,207 issued to Lawton in view of U.S. Patent No. 4,575,330 issued to Hull. The examiner found that the dispenser is a layer forming means such as a "doctor knife" and that the doctor knife will have to be moved across the surface of the material in the vat in order to perform the task of layer forming.

The USPTO examiner listed JP-1147818 ("Moriyama '818"), which discloses a dispenser that is movable, as a reference during prosecution of both Desotech's patents at issue the '297 and the '267. Neither of the Zephyr recoating systems used in the Original SLA system or the Pro SLA system, nor any other vacuum dispenser, were relied upon by the examiner as prior art to either the '025 application, which issued as the '297 patent, or the '369 application, which issued as the '267 patent. The Notice of Allowance for each of the applications stated: for the '297 patent, "The prior art of record fails to teach a photoforming apparatus having a movable platform inside a vessel while a movable dispenser and doctor blades places photoformable composition above the resin surface and a radiation source provides curing," and for the '267 patent, "The prior art of record fails to teach a solid imaging apparatus having a vessel, movable platformed [sic] disposed in the vessel, subassembly comprising a movable dispenser, the movable dispenser defining an opening and sub-assembly adapted to receive and deposit part of the photoformable composition through the opening." The USPTO issued the '297 patent, on January 22, 2002, and the '267 patent, on May 11, 2004.

Following a *Markman* hearing in this case, Judge Lefkow entered an Order on July 10, 2010, construing the various claims in the patents-in-suit. At issue in the instant motion is the application of the Court's construction of "movable dispenser," and "movable platform." The

parties disputed the meaning of “movable dispenser” and the Court construed the claim as “a device that deals out in portions and includes at least a vertical component.” Similarly, the Court construed “movable platform” to mean “a platform that includes at least a vertical component of motion.” The Court explained its reasons for its constructions in an Appendix attached to the Order.

The Court followed the method set forth in *Phillips v. AVH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), for evaluating the scope of claim terms. Under *Phillips*, the Court, as “the person of ordinary skill in the art” focuses on how the patentee used a disputed claim term in the claims and the specification, the prosecution history, and, where useful, refer to extrinsic sources such as dictionaries and reference books. The Patents-in-suit are the ‘297 patent, issued January 22, 2002, and the ‘267 patent, issued May 11, 2004.

Claim 1 of the ‘297 patent describes an apparatus for solid imaging and coating that includes in claim 1:

- “(i) a vessel for containing a photoformable composition with a free surface;
- (i) a moveable platform disposed within said vessel; and
- (ii) a sub-assembly having
 - (a) two doctor blades, and
 - (b) a moveable dispenser; wherein said dispenser is capable of lifting, at a position between said two doctor blades, an amount of said photoformable composition to a position above said surface.”

The ‘267 patent is an apparatus and method patent for the same invention as in the ‘297 patent, with precisely the same illustrations, background of the invention, and summary of the invention as the ‘297 patent. The ‘267 patent identifies the platform and the dispenser (rather than the doctor blades and dispenser) as a sub-assembly; the movable dispenser defining an opening, and the sub-assembly being capable of both receiving and depositing part of the photoformable composition through the opening.

The Court reasoned that: “Although claim 1 of the ‘297 patent and of the ‘267 patent do not explicitly limit the platform to a device that can be raised or lowered, there is no evidence in the specification or prosecution history that the platform of the invention could operate without the vertical movement involved in lowering the object being formed into the composition as each layer is added. Although claim 1 of the ‘267 patent does not claim a dispenser that is capable of lifting³, the ‘297 patent was granted on the specific basis of the use of a dipping and lifting dispenser to distinguish it from prior art. Since the ‘267 patent did not change the invention, it is logical to conclude that claim 1 of the ‘267 patent implicitly claims a dispenser capable of vertical lifting as well.” The Court concluded that the claims “movable platform” and “movable dispenser” necessarily included at least a vertical movement because there was no indication that the invention could function without a vertical motion. Thus, movable necessarily means vertical motion as opposed to some other kind of movement.

Legal Standard

Summary judgment is appropriate where “the pleadings, depositions, answers to interrogatories, and admissions on file, together with affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law.” *Fed. R. Civ. P.* 56(c). When considering a summary judgment motion, the Court construes the facts and all reasonable inferences in the light most favorable to the non-moving party. *Abdullahi v. City of Madison*, 423 F. 3d 763, 773 (7th Cir. 2005). A genuine issue of material fact exists “if the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” *Serednyj v. Beverly Healthcare, LLC*, 656 F.3d 540, 547 (7th Cir. 2011).

Discussion

1) Literal Infringement

³ The plain and ordinary meaning of “lifting” also suggests a vertical motion.

Literal infringement requires that the accused device embody every element of the claim. *Mannesmann Demag Corp. v. Engineered Metal Products Co., Inc.*, 793 F.2d 1279 (Fed. Cir. 1986). 3D argues that the undisputed operation of the machines precludes a finding of infringement. Desotech responds that the parties in fact disagree on the operation of the machines, and thus there is a genuine issue of material fact on the issue of literal infringement. Desotech contends that the Appendix to the Claim Construction Order explains the Court’s reasoning and is not the claim construction itself, and thus, 3D is asking this Court to alter its Claim Construction Order in an effort to narrow the scope of the patents. Further, Desotech argues that the Court granted 3D’s construction of the claim “movable dispenser” and thus 3D should be prohibited from rearguing it now.

3D is effectively asking this Court to reopen and reexamine its Claim Construction Order to include in the claim terms “movable platform” and “movable dispenser” a requirement that the vertical component of motion is a dipping below the surface of the resin to lift the resin. In other words, it is the vertical motion that *causes* the resin to lift above the surface. If the Court intended to include additional language or limitations in its construction, it could have done so. Moreover, 3D could have requested additional language, but did not do so. If there was ambiguity between the Court’s construction and its reasoning, 3D could have sought clarification.⁴ Even when the Court construes the term “vertical component of motion” to mean that the action of vertical motion facilitates or causes the lifting of resin to form the layers of the part being built, there remain questions of material fact as to whether 3D’s Zephyr recoater infringes the patents-in-suit.

a. The Zephyr Recoater’s Vertical Movement

⁴ 3D filed a Motion for Summary Judgment following the *Markman* ruling, but did not seek clarification of the Court’s claim construction.

3D argues that there is no literal infringement because the Zephyr recoater does not include a vertical component of motion for lifting the resin above the surface of the resin in the vat. Although the Court's construction of the terms "movable platform" and "movable dispenser" state only that it is a "platform" or "device that deals out portions" and "includes at least a vertical component," 3D asserts that its interpretation of the Court's Appendix should be included in the construction. In 3D's view of the claim "movable," as it was construed by the Court, "includes at least a vertical component *for lifting the resin above the surface.*"

3D contends that since it is undisputed that all of the accused machines' Zephyr recoater blades stay above the resin surface and none use a vertical motion for lifting the resin above the surface, then none of the accused machines literally infringe on the patents-in-suit. 3D further asserts that the fact that the Zephyr recoater blade moves vertically to position the recoater and to maintain the blade gap on the Pro systems is irrelevant because the vertical component is not "for lifting the resin above the surface." Likewise, 3D argues that on the Original SLA systems once the blade gap is set, the blade remains locked in place relative to the machine frame and remains parallel to the resin surface, but unlike the patents-in-suit, the recoater blade is never dipped into the resin.

Desotech responds that the Court construed the term "movable dispenser" to mean "a device that deals out in portions and includes at least a vertical component of motion," without further limitation. Desotech also argues that 3D's construction of the "movable" as including "for lifting the resin above the surface" does not make sense when applied to the "movable platform" because the movable platform in the claimed invention is not meant for that purpose, and thus, should not be so construed.

Even under 3D's construction of movable, there are material questions of fact whether

the accused machines contain a vertical component of motion for lifting composition above the free surface, and include a vertical motion that makes it *capable* of lifting. Desotech asserts that recoater blade on the Original SLA must come in contact with the resin in order to establish a vacuum and is moved into place with a vertical motion. Desotech argues that on the Original SLA machines the blade gap setting procedure is part of the build process, contrary to 3D's argument that the vertical movement of the blade gap setting procedure is not part of the build process because it merely sets the Zephyr in place. Similarly, Desotech argues that on the Pro machines the calibration procedure that maintains the desired position of the Zephyr recoater relative to the surface of the vat, a vertical motion, is also part of the build process and required to maintain the vacuum during a sweep to lift resin out of the vat and over the part being built. Desotech argues the vacuum effect created by the movement of the Zephyr recoater into place fulfills these claim limitations even under 3D's interpretation.

This Court finds that there are questions of fact as to whether the machines contain a vertical component of motion capable of lifting the resin. The parties dispute whether the Zephyr recoater touches the surface of the resin. Although 3D argues extensively that the Zephyr recoater never touches the resin and remains above the surface, 3D states that some resin must touch the bottom edge of the blade for the vacuum to be effective. (*See* 3D Opening Brief at 12.) 3D contends that the Zephyr stays above the surface of the resin and only touches it through a meniscus. However, meniscus refers to the shape of the surface of the resin and thus, the Zephyr comes into contact with the surface of the resin in the vat. In order to form the meniscus, the Zephyr is moved vertically into place to create a vacuum that lifts the resin over the part being made. Yet, the question of whether and to what extent the Zephyr's vertical motion lifts resin above the surface for a jury to resolve. Even if it did contain that requirement, there is evidence

in the record from which a jury could reasonably find the Zephyr recoater fulfills that requirement through the use of its vacuum component. There is nothing to indicate that the Zephyr could maintain the vacuum and lift resin over a part without the vertical motion that maintains the surface pressure. Thus, a reasonable jury could find that the Zephyr contains a vertical component of motion capable of lifting resin. A jury might reasonably find that the Zephyr recoater is non-infringing based on its failure to dip below the surface of the resin in order to lift the resin, but that is a factual question. Resolution of the question of whether the accused machines are infringing requires weighing the testimony of the experts. Accordingly, the Court denies 3D's motion on this basis.

b. Whether the Zephyr Recoater Meets the "Movable Dispenser" Limitations of the Patents-in-Suit

3D asserts that the four instances of vertical motion attributed to the Zephyr recoater do not meet the "movable dispenser" limitations of the patents-in-suit because each involves a vertical motion above the resin surface. On the Original SLA machines, the only vertical motion is the setting of the blade gap by the technician, who adjusts the Zephyr recoater into position above the resin surface and locks it into place. 3D asserts that this arrangement prevents vertical motion of the recoater below the surface of the resin. The other instances of vertical motion relate to the Pro systems: the automatic adjustment of the Zephyr recoater to maintain the desired gap between the recoater and the part being built, and the movements of the Zephyr to and from its "home" position. 3D argues that none of these vertical motions meet the "movable dispenser" limitation because they occur while parts are not being built or to prevent vertical motion of the Zephyr recoater relative to the resin surface. The crux of 3D's argument is that none of these vertical motions lift the resin above the resin vat surface like the patents-in-suit.

It is undisputed that the accused machines contain a vertical component of motion. Whether the vertical component of motion comes within the meaning of “movable” is a question for the jury. As previously noted there is nothing to indicate that the Zephyr recoater could function without the vertical motions described above. A jury could reasonably conclude that the vertical motions are necessary for the Zephyr to lift the resin over the part being built albeit through the use of a vacuum created by surface tension. Accordingly, 3D is not entitled to summary judgment on this issue.

c. Additional Limitations

i. “Wherein” Clauses in Both Patents-in-Suit

Both the patents-in-suit contain a “wherein” clause that 3D asserts as an independent basis for non-infringement. Claim 1 of the ‘297 patent (and thus all dependent claims) is as follows:

- “1. A solid imaging apparatus, said apparatus including:
- (i) a vessel for containing a photoformable composition with a free surface;
 - (ii) a moveable platform disposed within said vessel; and
 - (iii) a sub-assembly having
 - (a) two doctor blades; and
 - (b) a movable dispenser;*wherein* said movable dispenser is capable of lifting, at a position between said two doctor blades, an amount of said photoformable composition to a position above said surface.”

All the claims of the ‘267 patent also contain a “wherein” clause, for example:

- “1. A solid imaging apparatus, said apparatus including:
- (i) a vessel for containing a photoformable composition;
 - (ii) a movable platform disposed within said vessel;
 - (iii) a sub-assembly comprising a movable dispenser, said movable dispenser defining an opening;
- wherein* said sub-assembly is adapted to both receive and deposit part of said photoformable composition through said opening.”

3D argues that based on the wherein clauses in the claim language of the patents-in-suit, there is no infringement because none of the accused machines lift the photoformable composition above the surface or receive and deposit the composition through the opening in the dispenser. 3D argues that it is the vacuum that does the lifting of the resin not the vertical motion of Zephyr recoater, which moves the recoater into place, to the “home” position, and to maintain the blade gap.

This Court denies 3D’s motion on this basis as well. 3D is essentially arguing that the vacuum component of the Zephyr recoater is something entirely separate from and has no bearing on whether the Zephyr recoater infringes on Desotech’s patents. The vacuum is a component of the Zephyr recoater. There is nothing in the record to indicate that the Zephyr recoater can function without the vacuum or that the vacuum is not part of the recoater. A reasonable jury could find that the Zephyr recoating system on the Original SLA includes a vertical component of motion that makes it capable of lifting, at a position between two doctor blades, an amount of resin to a position above the resin surface through the use of its vacuum system that requires the vertical motion to maintain the vacuum. Similarly, in the Pro systems the vacuum allows the Zephyr recoater to lift resin into the cavity between the two doctor blades. Thus, the question of whether the Zephyr recoater infringes on the wherein clause requirements is one for the jury. The undisputed facts do not establish that 3D is entitled to judgment as a matter of law and Desotech presents evidence from which a jury could reasonably find in its favor.

i. “Sub-Assembly” In the ‘297 Patent

As noted above in claim 1 of the ‘297 patent, there is a “sub-assembly” requirement. The Court construed “sub-assembly” as part of the Claim Construction Order, defining it as “a unit

consisting of two or more separate parts designed to be incorporated into said apparatus.” In the Appendix to the Claim Construction Order, the Court stated, “The sub-assembly is the combination of two doctor blades and a dispenser that can lift a photoformable composition above the free surface of the composition.” 3D argues that the Zephyr recoater does not have a dispenser separate from a pair of doctor blades, having only a one-piece doctor blade⁵, and thus none of the accused machines infringe on the ‘297 patent.

Desotech responds that the “sub-assembly” limitation means “two or more separate parts” and does not mean that the “two doctor blades” and the “movable dispenser” must be those separate parts. Contrary to 3D’s assertion that the separate parts of the sub-assembly are expressly enumerated as (1) two doctor blades and (2) a movable dispenser, the Court did not articulate the sub-assembly in this manner.

Here, once again, 3D is reading requirements into the Court’s construction that are not present. The Court construed the sub-assembly as, “*a unit* consisting of two or more separate parts designed to be incorporated into said apparatus.” For purposes of this motion, 3D does not dispute that the Zephyr recoating system includes two doctor blades. Nor does 3D dispute that the Zephyr recoating system consists of two or more parts designed to be incorporated into a solid imaging apparatus. Thus, 3D’s argument that it is entitled to judgment as a matter of law is unavailing. The undisputed facts suggest the contrary, that the Zephyr recoating system (and there is testimony in the record in the form of expert opinion that it is a sub-assembly) is a unit consisting of two or more separate parts designed to be incorporated into said apparatus.

Accordingly, this Court denies 3D’s motion for summary judgment on direct infringement.

3) *Invalidity under 35 U.S.C. § 112*

⁵ Although 3D argues in its opening brief that the Zephyr recoater has only a one-piece doctor blade, it does not dispute for purposes of this motion that the Zephyr recoater includes two doctor blades and is a unit consisting of two or more parts. See 3D Response to Desotech’s Statement of Additional Facts at ¶¶ 2, 3.

Pursuant to Section 112, a patent must “contain a written description of the invention and the manner and process of making and using it...”. 35 U.S.C. § 112. 3D argues that if this Court finds that the Court’s Claim Construction Order does not require the lifting of resin as part of the vertical motion, then the written description contained in the patents-in-suit would inaccurately reflect the invention and impermissibly broaden the scope of the invention. Desotech responds that 3D has not sought summary judgment for invalidity and, thus, this argument is irrelevant to the infringement issues.

This Court rejects 3D’s argument on this score as well. 3D has not moved for summary judgment on the basis of invalidity and thus, it is immaterial to the question of infringement. Additionally, “[c]ompliance with the written description requirement is a question of fact.” *The Laryngeal Mask Co. Ltd. v. Ambu A/S*, 618 F.3d 1367, 1373 (Fed. Cir. 2010). Issued patents are presumed valid and a challenger must demonstrate by clear and convincing evidence that a claim is invalid for lack of written description. *Id.* at 1373-74. 3D has not sought to invalidate the patents for lack of written description.

4) *The Doctrine of Equivalents*

“The doctrine of equivalents allows the patentee to claim those insubstantial alterations that were not captured in drafting the original patent claim but which could be created through trivial changes. An element in the accused device is equivalent to a claim limitation if the only differences between the two are insubstantial.” *Honeywell International, Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1139 (Fed. Cir. 2004).

3D argues that it is entitled to summary judgment for noninfringement under the Doctrine of Equivalents on three separate bases: (1) prosecution history estoppel; (2) the doctrine of claim

vitation; and (3) the Zephyr recoater does not function “in the same way” as the invention in the patents-in-suit.

a. Prosecution History Estoppel

i. Application of Prosecution History Estoppel Generally

“[P]rosecution history estoppel may bar the patentee from asserting equivalents if the scope of the claims has been narrowed by amendment during prosecution.” *Id.* Whether prosecution history estoppel applies and whether the doctrine of equivalents maybe available for a particular claim limitation, presents a question of law. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 344 F.3d 1359, 1366-67 (Fed. Cir. 2003)(“*Festo IX*”).

3D argues that during the prosecution of both Patents-in-suit, Desotech amended, narrowed and cancelled broader claims for substantial reasons related to patentability in order to obtain allowance of the pending claims, and ended up with the narrowed “movable dispenser” claim element. Therefore, 3D asserts that Desotech cannot assert infringement under the doctrine of equivalents as a matter of law. Desotech asserts that 3D neglects the proper criteria to determine when prosecution history estoppel bars equivalents. Desotech argues that under the appropriate analysis, prosecution estoppel does not bar its infringement claims under the doctrine of equivalents for either the ‘297 patent or the ‘267 patent.

“[T]he *Warner-Jenkinson*⁶ and *Festo* presumptions operate in the following manner: The first question in a prosecution history estoppel inquiry is whether an amendment filed in the Patent and Trademark Office has narrowed the literal scope of the claim. If the amendment was not narrowing, then prosecution history estoppel does not apply. But if the accused infringer establishes that the amendment was a narrowing one, then the second question is whether the reason for that amendment was a substantial one relating to patentability. When the prosecution

⁶ *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997).

history record reveals no reason for the narrowing amendment, *Warner-Jenkinson* presumes that the patentee had a substantial reason relating to patentability; consequently, the patentee must show that the reason for the amendment was not one relating to patentability if it is to rebut that presumption. If the patentee successfully establishes that the amendment was not for a reason of patentability then prosecution history estoppel does not apply.

If, however, the court determines that a narrowing amendment has been made for a substantial reason relating to patentability – whether based on a reason reflected in the prosecution history record or on the patentee’s failure to overcome the *Warner-Jenkinson* presumption – then the third question in a prosecution history estoppel analysis addresses the scope of the subject matter surrendered by the narrowing amendment. At that point *Festo VIII* imposes the presumption that the patentee has surrendered all territory between the original claim limitation and the amended claim limitation. The patentee may rebut that presumption of total surrender by demonstrating that it did not surrender the particular equivalent in question according to the criteria discussed below. Finally, if the patentee fails to rebut the *Festo* presumption, then prosecution history estoppel bars the patentee from relying on the doctrine of equivalents for the accused element. If the patentee successfully rebuts the presumption, then prosecution history estoppel does not apply and the question of whether the accused element is in fact equivalent to the limitation at issue is reached on the merits.” (Internal citations and quotation marks omitted.) *Festo IX*, at 1366-67.

A patentee may rebut the presumption that a narrowing amendment surrendered a particular equivalent by showing that “at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent.” *Id.* at 1369. There are three ways for a patentee to rebut the presumption: (1)

demonstrate that the alleged equivalent would have been unforeseeable at the time of the narrowing amendment; (2) the rationale underlying the narrowing amendment bore no more than a tangential relation to the equivalent in question; or (3) there was “some other reason” suggesting that the patentee could not reasonably have been expected to have described the alleged equivalent.” *Id.* Here, Desotech only asserts the second option to rebut the presumption.

ii. Desotech Narrowed “Means-Plus-Function” Claims in the ‘297 Patent

3D argues that Desotech is precluded as a matter of law from asserting the doctrine of equivalents for the structural elements included in Desotech’s “new” claim 2, including the movable dispenser element at issue.

Desotech filed the ‘297 patent on March 31, 2000, and included one claim with a “means-plus-function” element:

“1. In an apparatus for fabricating an integral three-dimensional object by selectively exposing successive layers of liquid photoformable composition to actinic radiation, said apparatus including an imaging means for exposing said layers, a vessel for containing a fixed amount of said composition so as to present a free surface at a substantially constant position relative to said imaging means, and a movable platform disposed within said vessel below said free surface, the improvement in said apparatus comprising:

a means to transfer a part of said composition above said free surface; and
a layering means for contacting the composition transferred above said free surface and moving over said platform to form a layer of said composition.”

On December 20, 2000, the Patent Examiner rejected claim 1 under 35 U.S.C. § 103 as obvious in view of two U.S. patents combined with two Japanese patent applications. On March 26, 2001, Desotech submitted an amendment in which it cancelled claim 1 and added a new independent claim 2:

- “2. (New) A solid imaging apparatus, said apparatus including:
- (i) a vessel for containing the photoformable composition with a free surface;
 - (ii) a movable platform disposed within said vessel; and
 - (iii) a sub-assembly having
 - (a) two doctor blades; and
 - (b) a movable dispenser

wherein said movable dispenser is capable of lifting, any position between said two doctor blades, an amount of said photoformable composition to a position above said surface.

Desotech argues that it did not amend an existing claim in response to the Patent Office action, but replaced the Original Claim 1 with a new, different claim. Desotech points to the fact that the New Claim 1 does not recite its elements in a “means-plus-function” format and are not restricted to merely the structure disclosed in the patent’s specification as evidence that it is an entirely new claim and the scope of the two claims cannot be compared. However, “the addition of a new claim limitation can give rise to a presumption of prosecution history estoppel, just like an amendment that narrows a preexisting claim limitation.” *Honeywell International*, 370 F.3d at 1141.

Even if the Court finds that Desotech made a narrowing amendment, Desotech argues that the amendment was not a substantial one related to patentability because it was not included to distinguish the invention from the prior art. Even if the Court finds that the amendment was a substantial one related to patentability, Desotech argues it has rebutted the presumption that it surrendered all territory between the Original Claim 1 and the “movable dispenser” element because to the extent the amendment was made to avoid prior art, it was made relative to prior art that had nothing to do with the accused stereolithography machines. Desotech further asserts that even if this Court finds that it cannot rebut the presumption that it surrendered all equivalents between Original Claim 1 and New Claim 1, the Court should find that 3D machines with the Zephyr recoating system fall outside the scope of surrendered equivalents.

This Court finds that Desotech narrowed the claim from “a means to transfer” to “movable dispenser.” Having found that the amendment/cancellation resulted in a narrowed claim, the Court considers whether the amendment was substantially related to patentability.

This Court finds that it was not related to patentability. The prior art that the examiner referenced contained a movable dispenser element, thus Desotech argues it was not that change to the claim that allowed patentability, but the “placing of photoformable composition above the surface of the composition in the vat” that allowed patentability. The Court finds that since the prior art included a movable dispenser, that change to Desotech’s claim could not have been substantially related to patentability. Therefore, prosecution history estoppel does not apply to bar the doctrine of equivalents on the ‘297 patent.

i. Desotech Narrowed Broader Claims Relating to Its Dispenser In the ‘267 Patent

3D argues that all of the ‘267 patent claims that contain the narrower “movable dispenser” limitation, including claims originally presented with that limitation, are subject to prosecution history estoppel. 3D points particularly to claims 23-38, asserting that claim 23 included a “movable dispenser” limitation as well as other structural limitations. In claim 33, Desotech sought broader coverage for the dispenser by excluding the qualifier “movable” and claiming “a dispenser adapted to lift photoformable composition in the vessel.” The Patent Office Examiner rejected claim 33 as being obvious over two prior art references. Desotech filed an amendment on September 26, 2003, cancelling the broader claim 33 (and others) and adding new claims 52-64, all of which included the same narrower “movable dispenser” limitation of claim 23. Desotech’s supplemental amendment adding new claims 65-71, included the “movable dispenser” limitation. Therefore, 3D argues that Desotech is bound by the “movable dispenser” limitation and prosecution history estoppel bars the application of the doctrine of equivalents for the “movable dispenser” limitation in all claims of the ‘267 patent.

Desotech asserts substantially similar arguments for the ‘267 patent, that it cancelled the claims that included a limitation for “a dispenser” and the application was later allowed with

claims featuring a “movable dispenser.” However, Desotech contends that the amendments were not “narrowing amendments” because Claim 33, which 3D points to as a broader claim, shows that the dispenser there described was movable. Desotech did not use the term “movable dispenser,” but instead described “a dispenser support coupled to the dispenser *that moves the dispenser.*” In both incarnations of the claim the dispenser is movable. Accordingly, this Court finds that, though Desotech amended Claim 33 after it was rejected by the examiner, the amendment did not narrow the claim. Moreover, the prior art referenced by the examiner included a movable dispenser and therefore the change would not be substantially related to patentability even if it were a narrowing amendment.

ii. Whether Prosecution History Estoppel Also Applies to the ‘267 Patent Because Once the Narrowing “Moveable Dispenser” Limitation Was Added to the ‘297 Patent, It Carries Over to Continuing Patents

3D argues that since the earlier patent, ‘297, cancelled the “means to transfer limitation” and submitted the new claim to replace it with the “movable dispenser” structural term, the prosecution history estoppel that attached to “movable dispenser” in the ‘297 patent also attaches to the same “movable dispenser” in the continuing patent ‘267. This Court rejects this argument for the reasons discussed above rejecting prosecution history estoppel as a bar to the Doctrine of Equivalents.

c. The “Claim Vitiating Doctrine”

“[U]nder the particular facts of a case, if prosecution history estoppel would apply or if a theory of equivalence would entirely vitiate a particular claim element, partial or complete judgment should be rendered by the court, as there would be no further material issue for the jury to resolve.” *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 39 (1997). 3D argues that Desotech is trying to cover the vertical motion of the Zephyr recoater through the

doctrine of equivalents even though the Zephyr's vertical movement does not dip below the surface of the resin or lift the resin above the surface of the vat of resin. 3D asserts that if the Court so finds, it will vitiate the vertical component of motion for lifting the resin above the surface of the vat of resin as described in the Court's Claim Construction Order (or the Appendix).

Desotech responds that the doctrine of equivalents will not vitiate the central functions of the patent claims because the Zephyr recoating systems on the Original SLA or the Pro SLA systems are equivalent to the "movable dispenser" limitation. Desotech asserts that its expert explained the equivalence as: "[u]sing a vacuum to establish an area of relatively low pressure into which resin flows," as the Zephyr recoating systems use in the Original SLA systems and the Pro systems, "is not substantially different from moving a dispenser vertically to establish an area of low pressure into which resin flows."

This Court rejects this argument as a basis for non-infringement. The vertical component of motion element of the patents-in-suit will not be vitiated by the Doctrine of Equivalents even if this Court finds that using a vacuum to establish an area of low pressure into which resin flows by lowering the Zephyr recoater to the surface of the resin to form the vacuum is substantially similar to the patents-in-suit. The element of vertical motion remains intact.

d. Application of the Doctrine of Equivalents
i. Whether a Vacuum Works in a Substantially Different Way than A Movable Dispenser to Lift the Resin

Lastly, 3D argues that the Zephyr recoater does not infringe the patents-in-suit under the doctrine of equivalents even without applying prosecution history estoppel and claim vitiation because there are substantial differences between the Zephyr recoater that operates using a vacuum and the dipping and lifting dispenser of the patents-in-suit.

Desotech responds that the determination of whether the operation of the Zephyr recoating systems in 3D machines is equivalent to the “movable dispenser” limitation in both the ‘297 patent and the ‘267 patents is a question of fact. This Court agrees. “A finding of equivalence is a determination of fact. Proof can be made in any form: through testimony of experts or others versed in the technology; by documents, including texts and treatises; and, of course, by the disclosures of the prior art. Like any other issue of fact, final determination requires a balancing of credibility, persuasiveness and weight of evidence.” *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 609-610, 70 S. Ct. 854, 857. (U.S. 1950).

Desotech has presented an expert, Professor Wicker, who opined that the Zephyr recoater includes features that are equivalent to the movable dispenser limitation in the patents-in-suit because both perform substantially the same function, in substantially the same way, to achieve substantially the same result. Therefore, this Court finds that there is at least a question of fact as to equivalence since Desotech has offered the testimony of its expert that the Zephyr recoater includes features that are equivalent to the patents-in-suit. Accordingly, 3D’s motion for summary judgment based on the doctrine of equivalents is denied.

Conclusion

Based on the foregoing, the Court denies 3D’s motion for summary judgment on non-infringement.

IT IS SO ORDERED.

Date: November 7, 2012


Entered: _____

Sharon Johnson Coleman