United States Court of Appeals for the Federal Circuit

2007-1443

CAT TECH LLC (successor to Cat Tech, Inc.),

Plaintiff-Appellant,

v.

TUBEMASTER, INC.,

Defendant-Appellee.

David M. Gunn, Beck, Redden & Secrest, LLP, of Houston, Texas, and B. Todd Patterson, Patterson & Sheridan, LLP, of Houston, Texas, argued for plaintiff-appellant. With them on the brief was Henry M. Pogorzelski Patterson & Sheridan, LLP, of Houston, Texas.

Dennis D. Murrell, Middleton Reutlinger, of Louisville, Kentucky, argued for defendant-appellee. With him on the brief was Robert J. Theuerkauf.

Appealed from: United States District Court for the Southern District of Texas

Judge Keith P. Ellison

United States Court of Appeals for the Federal Circuit

2007-1443

CAT TECH LLC (successor to Cat Tech, Inc.),

Plaintiff-Appellant,

v.

TUBEMASTER, INC.,

Defendant-Appellee.

Appeal from the United States District Court for the Southern District of Texas in case no. 05-CV-3050, Judge Keith P. Ellison.

DECIDED: May 28, 2008

Before MAYER and SCHALL, Circuit Judges and YOUNG*, District Judge.

MAYER, Circuit Judge.

Cat Tech LLC ("Cat Tech") appeals the judgment of the United States District Court for the Southern District of Texas holding that none of four configurations of loading devices manufactured by TubeMaster, Inc. ("TubeMaster") infringes U.S. Patent No. 6,905,660 (the "'660 patent"). We conclude that the district court correctly construed the "spacing" element of claims 3-7 of the '660 patent and that the dispute

---

* The Honorable William G. Young, District Judge for the District of Massachusetts, sitting by designation.

was sufficiently real and immediate to warrant a declaratory judgment of non-infringement. We therefore affirm.

Background

The relevant facts are largely undisputed. The '660 patent describes a method for using loading devices to place catalyst particles into multi-tube chemical reactors. Multi-tube reactors typically contain thousands of long vertical tubes which are held together at either end by a perforated plate called a tube sheet. Cat Tech's claimed method uses a plurality of plates that are positioned to cover the upper tube-sheet of a chemical reactor. Catalyst is poured over these plates and then swept into the reactor tubes.

Catalyst must be loaded into reactor tubes evenly to prevent catalyst particles from wedging together or "bridging." Bridging occurs when particles enter the reactor tube simultaneously and then "wedge together part way down the tube and leave a void space below them—resulting in unevenly and incompletely loaded tubes." '660 patent col. 1, ll.38-41. The '660 patent teaches a method of loading reactor tubes that minimizes bridging and can be reconfigured to load reactor tubes of varying sizes.

The '660 patent calls for "a spacing between adjacent plates having a width not greater than the smallest dimension of a single particle to be loaded into the multi-tube reactor." Id. col.6 ll.57-60, col.7 ll.9-22. This spacing is designed "for collecting dust and partial particles." Id. col.6 ll.60-61, col.7 ll.22-23. Independent claims 3 and 4 and dependent claims 5, 6 and 7 provide:

> 3. A method for loading solid particles into a multi-tube reactor, comprising:
>
> a) positioning a plurality of discrete plates on top of an upper tube sheet of the multi-tube reactor, whereby the plates

rest on and substantially cover at least a portion of the upper tube-sheet and provide a spacing between adjacent plates having a width not greater than the smallest dimension of a single particle to be loaded into the multi-tube reactor, the spacing for collecting dust and partial particles, wherein each plate comprises: an aperture that corresponds to a corresponding reactor tube and has a diameter not greater than 95% of the inner diameter of the corresponding reactor tube and not smaller than 1.1 times the greatest dimension of a single particle to be loaded into the corresponding reactor tube; and means for holding the aperture in correspondence with the corresponding reactor tube;

b) pouring the particles over at least a portion of the plurality of plates covering the tube-sheet;

c) sweeping the particles through the apertures in the plates into the corresponding reactor tubes, whereby the particles fill the reactor tubes in a uniform manner and bridging is avoided;

d) removing residual particles and any dust remaining on the plates and in the spacing between adjacent plates; and

e) removing the plurality of plates.

4. A method for loading solid particles into a multi-tube reactor, comprising:

a) positioning a plurality of discrete plates on top of an upper tube sheet of the multi-tube reactor, whereby the plates substantially cover at least a portion of the upper tube-sheet and each plate has a shape that provides a spacing between adjacent plates having a width not greater than the smallest dimension of a single particle to be loaded into the multi-tube reactor, the spacing for collecting dust and partial particles;

b) pouring the particles over at least a portion of the plurality of plates covering the tube-sheet;

c) sweeping the particles through apertures in the plates into reactor tubes of the multi-tube reactor, whereby a size of the apertures is selected for filling the reactor tubes with the particles in a uniform manner and avoiding bridging;

d) removing residual particles and any dust remaining on the plates and in the spacing between adjacent plates; and

e) removing the plurality of plates.

5. The method of claim 4, wherein the positioning the plurality of plates comprises inserting fixing means of the plates into a top of reactor

> tubes of the multi-tube reactor to provide for alignment of apertures in the plates with corresponding reactor tubes.
>
> 6. The method of claim 4, wherein the sweeping the particles is performed mechanically.
>
> 7. The method of claim 4, wherein the sweeping the particles is performed manually.

'660 patent col.6 ll.52-67, col.7 ll.1-23, col.8 ll.1-21.

The '660 patent is a divisional of a parent application which was issued as U.S. Patent No. 6,409,977 (the "'977 patent"). Initially, the independent claims of the '977 patent did not contain a spacing element. Instead, a single dependent claim contained a limitation requiring the distance between neighboring plates to be "smaller than the greatest dimension of a single particle to be loaded." In addition to rejecting the independent claims, the examiner rejected the dependent claim stating:

> [P]roviding a distance between the neighboring segmented plates was well known in the analogous art at the time of the invention for the purpose of allowing for plate expansion. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a distance between the neighboring polygonal plates, for the purpose of allowing for plate expansion. As the specification is silent to unexpected results it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide any distance between the neighboring plates, including a distance being smaller than the greatest dimension of a single particle to be loaded.

Office Action of the Patent and Trademark Office 8 (May 23, 2000).

Cat Tech then canceled the dependent claim and amended the independent claims to include a limitation requiring "an inter-plate spacing having a width not greater than the smallest dimension of a single particle to be loaded into said reactor, said inter-plate spacing effective in collecting dust and partial particles." In distinguishing its invention from the prior art, Cat Tech stated:

> Adjacent plates do not touch fully, but are separated by a gap, each gap having a width that is less than the smallest dimension of a particle to be loaded. The gaps are highly effective in collecting dust and partial particles, both of which are undesirable . . . .
>
> None of the prior art teach or disclose dust collection. . . . The present invention is able to collect dust and chips because multiple channels are formed when the plates are pieced together. The smaller the plates, the greater the number of channels per template.

Remarks Accompanying Preliminary Amendment 3 (Aug. 20, 2001).

The claims were thereafter allowed. In explaining the reason for allowance, the examiner stated: "The prior art neither teaches nor suggests a loading device, as claimed, wherein each plate is displaced from adjacent plates by spacing having a width not greater than the smallest dimension of a single particle to be loaded wherein said spacing function [is] to collect dust and partial particles."

When Cat Tech filed its application for the '660 patent, it was preliminarily amended to contain four independent claims, each containing a requirement for spacing having a width "not greater than the smallest dimension of a single particle." The examiner allowed one independent claim, which limited the loading device to a polygonal shape, but rejected the remaining independent claims, stating that the "specification, while being enabling for a loading device having a polygonal shape, does not reasonably provide enablement for any shape." In response, Cat Tech argued:

> [T]he claims define the invention based on spacing between adjacent plates and not whether the shape of the plate used to achieve this spacing is, or is not, polygonal. . . . [T]he present application contemplates this aspect of the invention by stating that "a small inter-plate space is convenient for ease of handling and for accommodating the dust which inevitably develops during the loading work, thus avoiding that the dust is swept into the reactor pipes." Additionally, the specification . . . states that "the gap was sufficiently small as not to allow any whole catalyst particles to enter, but allow small chips and broken pieces of catalyst." Moreover, Applicants note that the

> Examiner has indicated in the reasons for allowance that this spacing is not taught or suggested by the prior art.

Response to Aug. 16, 2004 Patent and Trademark Office Action 7 (Nov. 11, 2004).

Thereafter, the application was allowed. The ’660 patent issued on June 14, 2005.

I. TubeMaster’s Accused Method

TubeMaster has developed a method of putting catalyst into reactor tubes using loading devices known as Outage Loading Equipment (“OLE’™”). TubeMaster has designed four different configurations for its OLE’™ devices, and has generated AutoCAD® drawings for each of its configurations. While all four configurations employ circular plates, two of the configurations use circular plates with tab-like projections. In each of the four configurations, some of the spaces between adjacent plates are large enough to allow whole pieces of catalyst to fall between the plates.

In May 2005, one month prior to the issuance of the ’660 patent, TubeMaster used configuration 3 to load catalyst. This is the only instance in which the accused device has been used. When it was used, whole pieces of catalyst fell into the spaces between the plates.

Each reactor is different because the tube diameter, the spacing between tubes and the size and shape of catalyst particles can vary significantly. Because TubeMaster’s OLE’™ loading devices are customized based upon the dimensions of each customer’s reactor, it does not manufacture its devices until it receives an order from a customer specifying the appropriate dimensions.

TubeMaster’s four loading device configurations are designed “to cover virtually all of the reactor configurations that might be encountered at customers’ facilities.”

Declaration of TubeMaster President Cliff Johns 2 (Mar. 7, 2007) (emphasis added). When TubeMaster used its loading device in May 2005, it selected a loading device configuration after it received the dimensions of the reactor from its customer. TubeMaster asserts that "[a] similar process would be undertaken again if and when TubeMaster receives another order for catalyst loading services." Id. at 3.

II. Cat Tech's Infringement Action

On August 30, 2005, Cat Tech brought suit against TubeMaster, alleging infringement of the '660 patent by TubeMaster's OLE'™ loading devices. TubeMaster counterclaimed, seeking a declaration that its devices did not infringe the '660 patent and that the patent was invalid and unenforceable. Cat Tech subsequently amended its complaint, seeking a declaratory judgment of infringement.

The district court held a hearing to construe disputed claim language, see Cat Tech LLC v. TubeMaster, Inc., No. H-05-3050 (S.D. Tex. Oct. 30, 2006), and the parties then filed cross-motions for summary judgment. The court granted TubeMaster's motion for a declaration of non-infringement as to configurations 1, 2 and 4. Cat Tech Inc v. TubeMaster., Inc., No. H-05-3050, slip op. at 3-6 (S.D. Tex. May 22, 2007) ("Summary Judgment Decision"). The court concluded that a "live controversy" existed as to those configurations because TubeMaster was prepared to produce devices using those configurations as soon as it received an order with the appropriate dimensions. Id. Although configuration 3 was the only configuration that had been commercially implemented, the court determined that it had authority to grant declaratory relief because "TubeMaster ha[d] taken sufficient concrete steps to conduct loading activity with Configurations 1, 2 and 4." Id. at 5.

The district court also concluded that use of configuration 3 did not infringe the '660 patent. It determined that the spacing limitation of the relevant claims requires a "spacing that is not large enough to allow whole particles to fall through." Id. at 9. Because TubeMaster's configuration 3 uses spacing that allows whole catalyst particles to fall through, it does not meet this spacing limitation.

After the trial court certified its judgment for immediate appeal pursuant to Federal Rule of Civil Procedure 54(b), Cat Tech timely appealed to this court. We have jurisdiction under 28 U.S.C. § 1295 (a)(1).

Discussion

We turn first to the issue of whether the district court could issue a declaratory judgment of non-infringement as to TubeMaster's configurations 1, 2 and 4. Whether an actual controversy exists under the Declaratory Judgment Act, 28 U.S.C. § 2201(a), is a question of law that is subject to plenary appellate review. Teva Pharms. USA, Inc. v. Novartis Pharms. Corp., 482 F.3d 1330, 1336 (Fed. Cir. 2007); Amana Refrigeration, Inc. v. Quadlux, Inc., 172 F.3d 852, 855 (Fed. Cir. 1999).

I. Declaratory Judgment Jurisdiction

The Declaratory Judgment Act can prevent patent owners from "brandishing a Damoclean threat with a sheathed sword." Arrowhead Indus. Water, Inc. v. Ecolochem, Inc., 846 F.2d 731, 735 (Fed. Cir. 1988). Before declaratory relief was available, "competitors were 'victimized' by patent owners who engaged in 'extra-judicial patent enforcement with scare-the-customer-and-run tactics that infect[ed] the competitive environment of the business community with uncertainty and insecurity.'" Teva Pharms.,

482 F.3d at 1336 n.2 (quoting Arrowhead, 846 F.2d at 735). The Declaratory Judgment Act, in relevant part, provides:

> In a case of actual controversy within its jurisdiction . . . any court of the United States, upon the filing of an appropriate pleading, may declare the rights and other legal relations of any interested party seeking such declaration, whether or not further relief is or could be sought.

28 U.S.C. § 2201(a) (2000).

Passage of the Act was intended "to prevent avoidable damages from being incurred by a person uncertain of his rights and threatened with damage by delayed adjudication." Minn. Mining & Mfg. Co. v. Norton Co., 929 F.2d 670, 673 (Fed. Cir. 1991). The Act is not, however, an independent basis for jurisdiction. Skelly Oil Co. v. Phillips Petroleum Co., 339 U.S. 667, 671-72 (1950). Its remedy may lie only if the court has jurisdiction from some other source. Aetna Life Ins. Co. v. Haworth, 300 U.S. 227, 240 (1937); Genentech, Inc. v. Eli Lilly & Co., 998 F.2d 931, 943 (Fed. Cir. 1993).

The availability of declaratory relief is limited, moreover, by Article III of the Constitution, which restricts judicial power to the adjudication of "Cases" or "Controversies." U.S. Const. Art. III, § 2; see Aetna Life Ins., 300 U.S. at 240 (emphasizing that the Declaratory Judgment Act extends only "to controversies which are such in the constitutional sense"). Because of this case or controversy requirement, a court may not adjudicate "a difference or dispute of a hypothetical or abstract character" or "one that is academic or moot." Aetna Life Ins., 300 U.S. at 240.

There is, however, no facile, all-purpose standard to police the line between declaratory judgment actions which satisfy the case or controversy requirement and those that do not. See Teva Pharms., 482 F.3d at 1338-39; Arrowhead, 846 F.2d at

736. To the contrary, "[t]he difference between an abstract question and a 'controversy' contemplated by the Declaratory Judgment Act is necessarily one of degree, and it would be difficult, if it would be possible, to fashion a precise test for determining in every case whether there is such a controversy." Md. Cas. Co. v. Pac. Coal & Oil Co., 312 U.S. 270, 273 (1941). Accordingly, the analysis must be calibrated to the particular facts of each case, with the fundamental inquiry being "'whether the facts alleged, under all the circumstances, show that there is a substantial controversy, between parties having adverse legal interests, of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.'" MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118, 127 S.Ct. 764, 771 (2007) (quoting Md Cas. Co., 312 U.S. at 273).

Until recently, this court applied a two-prong test for determining the existence of declaratory judgment authority. See, e.g., Teva Pharms. USA, Inc. v. Pfizer Inc., 395 F.3d 1324, 1332 (Fed. Cir. 2005); Super Sack Mfg. Corp. v. Chase Packaging Corp., 57 F.3d 1054, 1058 (Fed. Cir. 1995). But see Teva Pharms., 395 F.3d at 1339-42 (Mayer, J., dissenting) ("We have never said that the traditional two-part test must be satisfied in every instance to find a justiciable case or controversy."). The first prong examined whether conduct by the patentee created a "reasonable apprehension" of suit on the part of the declaratory judgment plaintiff. Super Sack, 57 F.3d at 1058. The second prong focused on the declaratory judgment plaintiff's conduct, and examined whether there had been "meaningful preparation" to conduct potentially infringing activity. Arrowhead, 846 F.2d at 736; DuPont Merck Pharm. Co. v. Bristol-Myers Squibb Co., 62 F.3d 1397, 1401 (Fed. Cir. 1995).

In MedImmune, the Supreme Court rejected the first prong of our declaratory judgment standard, concluding that the "reasonable apprehension of suit test" was unduly restrictive. 127 S.Ct. at 770-77. The Court explained that whether a declaratory judgment action contains an Article III controversy must be determined based on "all the circumstances," not merely on whether the declaratory judgment plaintiff is under a reasonable apprehension of suit.[1] Id. at 771-77.

In the wake of MedImmune, several opinions of this court have reshaped the contours of the first prong of our declaratory judgment jurisprudence. See e.g., Caraco Pharm. Labs., Ltd. v. Forest Labs., Inc., No. 2007-1404, 2008 U.S. App. LEXIS 6838 (Fed. Cir. Apr. 1, 2008); Micron Tech., Inc. v. Mosaid Techs., Inc., No. 2007-1080, 2008 U.S. App. LEXIS 4387 (Fed. Cir. Feb. 29, 2008); Adenta GmbH v. OrthoArm, Inc., 501 F.3d 1364 (Fed. Cir. 2007); Sony Elecs., Inc. v. Guardian Media Techs., Ltd., 497 F.3d 1271 (Fed. Cir. 2007); Teva Pharms. USA, Inc. v. Novartis Pharms. Corp., 482 F.3d 1330 (Fed. Cir. 2007); SanDisk Corp. v. STMicroelectonics, Inc., 480 F.3d 1372, 1380 (Fed. Cir. 2007). The present dispute, however, involves the second rather than the first

[1] The declaratory judgment plaintiff in MedImmune was a patent licensee who sought a declaratory judgment of non-infringement, patent invalidity and patent unenforceability. The licensee, however, continued to pay royalties under its license agreement with the patent owner and therefore had no "reasonable apprehension" of suit. 127 S.Ct. at 772. The Supreme Court determined that the case presented a justiciable controversy, specifically rejecting the notion that Article III jurisdiction is defeated when a declaratory judgment plaintiff voluntarily stops or avoids the allegedly infringing activity. Id. at 772-74. The Court made clear that "[t]he dilemma posed by . . . putting the challenger to the choice between abandoning his rights or risking prosecution . . . is 'a dilemma that it was the very purpose of the Declaratory Judgment Act to ameliorate.'" Id. at 773 (quoting Abbott Labs. v. Gardner, 387 U.S. 136, 152 (1967)).

prong of our declaratory judgment test.[2] This court has yet to fully consider MedImmune's impact on this prong.[3] See SanDisk, 480 F.3d at 1380 n.2 ("We . . . leave to another day the effect of MedImmune, if any, on the second prong.").

We conclude that although MedImmune articulated a "more lenient legal standard" for the availability of declaratory judgment relief in patent cases, Micron Tech., 2008 U.S. App. LEXIS 4387 at *12, the issue of whether there has been meaningful preparation to conduct potentially infringing activity remains an important element in the totality of circumstances which must be considered in determining whether a declaratory judgment is appropriate. See Teva Pharms., 482 F.3d at 1339 (MedImmune requires that a court look at "all the circumstances" to determine whether a justiciable Article III controversy exists.). If a declaratory judgment plaintiff has not taken significant, concrete steps to conduct infringing activity, the dispute is neither "immediate" nor "real" and the requirements for justiciability have not been met. See Lang v. Pac. Marine & Supply Co., 895 F.2d 761, 764 (Fed Cir. 1990) (emphasizing that

[2] The first prong of our pre-MedImmune declaratory judgment test is not at issue here because there is no dispute that it was met. Summary Judgment Decision, slip op. at 5. Cat Tech "sued TubeMaster for infringement and [sought] a declaratory judgment that TubeMaster's use of its OLE'™ loading devices infringes the '660 patent." Id. at 2-3; see also Cat Tech's Opposition to TubeMaster's Motion for Partial Summary Judgment 7 n.5 (Feb. 12, 2007) (stating that the reasonable apprehension of suit prong "is not disputed in the present litigation"). "If defendant has expressly charged a current activity of the plaintiff as an infringement, there is clearly an actual controversy, certainty has rendered apprehension irrelevant, and one need say no more." Arrowhead, 846 F.2d at 736.

[3] Benitec Austl., Ltd. v. Nucleonics, Inc., 495 F.3d 1340, 1343-44 (Fed. Cir. 2007), a decision issued after MedImmune, determined that a dispute was not "of sufficient immediacy and reality" to warrant declaratory relief, but did not directly address the continued viability of the second prong of this court's pre-MedImmune test.

the test for justiciability "looks to the accused infringer's conduct and ensures that the controversy is sufficiently real and substantial").

A. Immediacy

A party may not "obtain a declaratory judgment merely because it would like an advisory opinion on whether it would be liable for patent infringement if it were to initiate some merely contemplated activity." Arrowhead, 846 F.2d at 736. Thus, although a party need not have engaged in the actual manufacture or sale of a potentially infringing product to obtain a declaratory judgment of non-infringement, there must be a showing of "meaningful preparation" for making or using that product. Id.; DuPont Merck Pharm., 62 F.3d at 1401; see also BP Chems. Ltd v. Union Carbide Corp., 4 F.3d 975, 978 (Fed. Cir. 1993) (requiring "present activity which could constitute infringement or concrete steps taken with the intent to conduct such activity"); Goodyear Tire & Rubber, Co. v. Releasomers, Inc., 824 F.2d 953, 955-56 (Fed. Cir. 1987) (requiring that the plaintiff "actually have either produced the device or have prepared to produce that device"). In general, the greater the length of time before potentially infringing activity is expected to occur, "the more likely the case lacks the requisite immediacy." Sierra Applied Scis., Inc. v. Advanced Energy Indus., Inc., 363 F.3d 1361, 1379 (Fed. Cir. 2004).

In Benitec Austl., Ltd. v. Nucleonics, Inc., 495 F.3d 1340, 1346-50 (Fed. Cir. 2007), we affirmed the dismissal of a declaratory judgment counterclaim where a party who sought declaratory relief had professed plans to engage in human gene-therapy treatment, but such activities could not be considered infringing until a new drug application ("NDA") was filed with the Food and Drug Administration ("FDA"). The plaintiff, who sought declaratory relief in 2005, did not anticipate filing an NDA until "at

least 2010-2012, if ever," and its current activities consisted entirely of developing and submitting preliminary information to the FDA. Id. at 1346. Because it was uncertain when, if ever, the declaratory plaintiff would engage in potentially infringing activity, the dispute did not present a case or controversy of sufficient immediacy to support a declaratory judgment. Id. at 1346-47.

Similarly, Sierra, 363 F.3d at 1378-81, concluded that a dispute lacked sufficient immediacy where the declaratory plaintiff presented no evidence that it had built a prototype of its "Billings 150 kW power supply" until at least a year after the commencement of suit. And Telectronics Pacing Sys., Inc. v. Ventritex, Inc., 982 F.2d 1520, 1527 (Fed. Cir. 1992), affirmed a dismissal of a defibrillator component manufacturer's claim for future patent infringement where clinical trials of the accused product had just begun and it was "years away" from potential FDA approval. See also Lang, 895 F.2d at 764 (The accused infringing ship hull would not be ready for at least nine months after the complaint was filed); Jervis B. Webb Co. v. S. Sys., Inc., 742 F.2d 1388, 1399 (Fed. Cir. 1984) (The accused device had never been used and there was insufficient evidence to show it would be used in the future).

In the present case, by contrast, TubeMaster has taken significant, concrete steps to conduct loading activity with configurations 1, 2 and 4. It has developed two basic loading device designs—one with circular plates and one with circular plates with tabs—and has developed four loading device configurations. TubeMaster has generated AutoCAD® drawings for each of its four configurations.

Each reactor is different because the tube diameter, the spacing between tubes and the size and shape of catalyst particles can vary significantly. Because

TubeMaster's loading device designs are customized based upon the dimensions of each customer's reactor, it can take no further steps toward manufacturing its loading devices until it receives an order from a customer with the appropriate dimensions.

TubeMaster has already successfully manufactured and delivered a loading device using configuration 3. See Interdynamics, Inc. v. Wolf, 698 F.2d 157, 169-74 (3d Cir. 1982) (Declaratory relief appropriate where the manufacturer of a rear window defroster had produced a prior version of its product.); see also Super Prods. Corp. v. D P Way Corp., 546 F.2d 748, 754-55 (7th Cir. 1976) (Declaratory relief appropriate where the plaintiff had a business enterprise specifically directed to the manufacture and sale of a potentially infringing product.). It is prepared to produce loading devices using configurations 1, 2 and 4 as soon as it receives an order with the appropriate dimensions. Furthermore, it expects that it can produce devices using these configurations "within a normal delivery schedule" once it receives an order. Constitutionally mandated immediacy requirements have been satisfied because once the threat of liability to Cat Tech has been lifted, it appears likely that TubeMaster can expeditiously solicit and fill orders for loading devices using configurations 1, 2 and 4.

B. Reality

The dispute between TubeMaster and Cat Tech also meets constitutionally mandated "reality" requirements. In the context of patent litigation, the reality requirement is often related to the extent to which the technology in question is "substantially fixed" as opposed to "fluid and indeterminate" at the time declaratory relief is sought. Sierra, 363 F.3d at 1379. Accordingly, "[t]he greater the variability of the subject of a declaratory-judgment suit, particularly as to its potentially infringing

features, the greater the chance that the court's judgment will be purely advisory, detached from the eventual, actual content of that subject—in short, detached from eventual reality." Id.; see also Int'l Harvester Co. v. Deere & Co., 623 F.2d 1207, 1216 (7th Cir. 1980) ("Our concern is not that the [product in question] will never be produced, but rather that because of the relatively early stage of its development, the design which is before us now may not be the design which is ultimately produced and marketed.").

In Telectronics, we affirmed a dismissal of a declaratory judgment action where clinical trials of the accused device had just begun and "[t]here was no certainty that the device when approved [by the FDA] would be the same device that began clinical trials." 982 F.2d at 1525-27. Likewise, in Sierra we found that jurisdictional reality requirements were not met where development of the power supply in question was "at an early stage" and its design was "fluid and indeterminate" when the complaint was filed. 363 F.3d at 1379-80. In Benitec, we also found no declaratory judgment basis where the declaratory plaintiff had only a "vaguely defined" plan to expand into animal husbandry and veterinary products and the technology in question was still in a "nascent" stage. 495 F.3d at 1349

Unlike the technology involved in Telectronics, Sierra and Benitec, which was fluid and in an early stage of development, TubeMaster's technology is "substantially fixed." TubeMaster's four basic loading device designs are designed "to cover virtually all of the reactor configurations that might be encountered at customers' facilities." Thus, TubeMaster does not expect to make substantial modifications to its loading device designs once production begins. The dispute with Cat Tech is "real," not hypothetical, because it appears likely that, once the cloud of liability for infringement is

eliminated, the accused products can be produced without significant design change. See Interdynamics, 698 F.2d at 174 (proceeding where the plaintiff planned to market a product that it would "be able to manufacture relatively quickly").

Cat Tech argues that there is no "live controversy" regarding configurations 1, 2 and 4 because TubeMaster has made "no disclosure of those configurations to customers or potential customers." Evidence that no preparations have been made to advertise or sell a potentially infringing device may, under certain circumstances, indicate that a dispute lacks the requisite immediacy. See Sierra, 363 F.3d at 1379 (considering the fact that there was no "existing or draft advertising literature" for the device in question in determining that the dispute was non-justiciable); Lang, 895 F.2d at 764-65 ("[T]he accused infringers had not distributed sales literature, prepared to solicit orders, or engaged in any activity indicating that the ship would soon be ready for sea."). MedImmune makes clear, however, that "all the circumstances" must be considered when making a justiciability determination. 127 S.Ct. at 771. Where, as here, there is cogent evidence that a declaratory plaintiff has made meaningful preparation to conduct potentially infringing activity, a showing that the plaintiff has prepared draft sales literature or otherwise disclosed its products to potential customers is not an indispensable prerequisite. See Interdynamics, 698 F.2d at 172 (sufficient that although the plaintiff "had not yet advertised or solicited orders for its proposed new product," there was significant evidence that the plaintiff intended to manufacture it).

C. District Court Discretion

Even assuming that the immediacy and reality prerequisites for declaratory judgment relief have been met, the district court's exercise of its declaratory judgment

authority is discretionary. SanDisk, 480 F.3d at 1383; Cardinal Chem. Co. v. Morton, Int'l, Inc., 508 U.S. 83, 95 n.17 (1993). "When there is no actual controversy, the court has no discretion to decide the case. When there is an actual controversy and thus jurisdiction, the exercise of that jurisdiction is discretionary." Spectronics Corp. v. H.B. Fuller Co., 940 F.2d 631, 634 (Fed. Cir. 1991). In deciding whether to entertain a declaratory judgment request, a court must determine whether resolving the case serves the objectives for which the Declaratory Judgment Act was created. Capo, Inc. v. Dioptics Med. Prods., Inc., 387 F.3d 1352, 1355 (Fed. Cir. 2004); EMC Corp. v. Norand Corp., 89 F.3d 807, 813-14 (Fed. Cir. 1996).

A plaintiff need not "bet the farm, or . . . risk treble damages . . . before seeking a declaration of its actively contested legal rights." MedImmune, 127 S.Ct. at 775. Absent a declaratory judgment of non-infringement, TubeMaster will be forced to "bet the farm" by making the "in terrorem choice," see Arrowhead, 846 F.2d at 735, between a growing potential liability to Cat Tech and abandoning its catalyst loading activities. Because this is precisely the type of "'dilemma that it was the very purpose of the Declaratory Judgment Act to ameliorate,'" MedImmune, 127 S.Ct. at 773 (quoting Abbott Labs., 387 U.S. at 152), the district court properly exercised its discretion to issue a declaratory judgment of non-infringement as to configurations 1, 2 and 4.[4] See SanDisk, 480 F.3d at 1381 ("Article III jurisdiction may be met where the patentee takes a position that puts the declaratory judgment plaintiff in the position of either pursuing arguably illegal behavior or abandoning that which he claims a right to do."); Goodyear,

[4] Cat Tech does not challenge the district court's finding of non-infringement by TubeMaster's configurations 1, 2 and 4. The only issue regarding these configurations is whether the district court could issue a declaratory judgment of non-infringement.

824 F.2d at 956 (Declaratory judgment should be used "to provide the allegedly infringing party relief from uncertainty and delay regarding its legal rights."); Wembley, Inc. v. Superba Cravats, Inc., 315 F.2d 87, 90 (2d Cir. 1963) ("[I]t would be economically wasteful to require a plaintiff to embark on an actual program of manufacture, use or sale which may turn out to be [infringing].").

II. Summary Judgment of Non-Infringement

We next turn to the trial court's determination of non-infringement as to TubeMaster's configuration 3, the configuration used to load catalyst in May of 2005. The central issue regarding configuration 3 is whether it meets the "spacing element" of the '660 patent. The claims of the '660 patent call for "a spacing between adjacent plates having a width not greater than the smallest dimension of a single particle to be loaded into the multi-tube reactor, the spacing for collecting dust and partial particles." '660 patent col.6 ll.57-61, col.7 ll.19-23. The district court construed this limitation to require "spacing that is not large enough to allow whole particles to fall through." Summary Judgment Decision, slip op. at 9.

Cat Tech challenges the district court's claim construction, arguing that the claims do not require that all spaces between plates be smaller than the width of a whole catalyst particle. According to Cat Tech, the claims require only that there be one point between plates (a "pinch point") that is of the requisite size.

We are not persuaded by Cat Tech's "pinch point" argument. The plain language of the claims, the specification and the prosecution history support the district court's determination that the '660 patent requires that every point between adjacent plates be smaller than the dimensions of a whole catalyst particle.

A. Claim Language

The appropriate starting point for claim construction "is always with the language of the asserted claim itself." Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998); z4 Techs., Inc. v. Microsoft Corp., 507 F.3d 1340, 1348 (Fed. Cir. 2007). In general, words used in a claim are accorded their ordinary and customary meaning. Honeywell Int'l Inc. v. Universal Avionics Sys. Corp., 488 F.3d 982, 992 (Fed. Cir. 2007); Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). The record contains no persuasive evidence that the word "spacing" has a specially defined meaning in the field of art encompassed by the '660 patent. Thus, the ordinary and customary meaning attributed to this term by those of ordinary skill in this art at the time of invention "involves little more than the application of the widely accepted meaning of commonly understood words." Id. at 1314.

The term "a spacing" is used in common parlance and its meaning is not difficult to ascertain. "Spacing" means the "fixing or arranging of spaces." Random House Webster's Unabridged Dictionary 1827 (2d ed. 2001); see also The Am. Heritage Dictionary of the English Language 1665 (4th ed. 2000) ("Spacing" is "the act of arranging with intervening spaces."). Thus, when the claims call for "a spacing" between adjacent plates that is not greater than the width of a whole catalyst particle, it means that the plates are "fixed" or "arranged" so that the distance between them will not be greater than the width of a whole catalyst particle. In other words, the gaps

between plates will be narrower than whole pieces of catalyst. See White v. Dunbar, 119 U.S. 47, 52 (1886) ("The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public . . . to construe it in a manner different from the plain import of its terms.").

"[C]laims are interpreted with an eye toward giving effect to all terms in the claim." Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006). Cat Tech's strained "pinch point" construction of the phrase "a spacing" renders an important claim limitation—the requirement that there be a spacing narrower than the width of a whole catalyst particle—functionally meaningless. It would be pointless to require that one inter-plate space be narrower than a whole catalyst particle if the other inter-plate spaces do not meet this sizing limitation. Having one narrow gap between plates would be an exercise in futility because whole catalyst particles would simply fall into the other, wider gaps between the plates. If the claim limitation requiring "a spacing" between plates that is narrower than a whole catalyst particle is not to be rendered functionally meaningless, that limitation must be construed to cover all of the gaps between plates. See Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd., 476 F.3d 1321, 1327-28 (Fed. Cir. 2007) (construing the ratios in one claim in a way that would not render the ratios of another claim meaningless); Bicon, 441 F.3d at 950-51 (refusing to allow a patentee to argue that characteristics specifically described in a claim were merely "superfluous"); Elekta Instrument S.A. v. O.U.R. Sci. Int'l, Inc., 214 F.3d 1302, 1305, 1307 (Fed. Cir. 2000) (concluding that claim language requiring gamma units with radiation sources between 30 and 45 degrees unambiguously excluded radiation

sources between 0 degrees and 30 degrees, because "[a]ny other conclusion renders the reference to 30 degrees superfluous").

Furthermore, claims 6 and 7 of the '660 patent specify that the inter-plate spaces are designed "for collecting dust and partial particles." '660 patent col. 6 ll.60-61, col. 7 ll.22-23 (emphasis added). If the '660 patent were construed, as Cat Tech advocates, to require only one point between adjacent plates that is smaller than a particle to be loaded, it is clear that whole catalyst particles would fall between the plates. The inter-plate spaces would then collect both whole and partial catalyst particles, not just partial particles as specified in the claims. See Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1563 (Fed. Cir. 1991) ("When the language of a claim is clear . . . and a different interpretation would render meaningless express claim limitations, we do not resort to speculative interpretation based on claims not granted.").

B. Written Description and Prosecution History

We see nothing in the specification which would support Cat Tech's strained "pinch point" construction. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) ("[I]t is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning."). The specification of the '660 patent never describes or suggests an inter-plate spacing which is narrower than the width of a whole particle at one point, but greater than the width of a whole catalyst particle at another. Instead, the specification indicates that there will be "small" gaps between plates that are useful "for accommodating the dust which inevitably develops during the loading work." '660 patent col.3 ll.65-67.

Moreover, a claim construction requiring that all inter-plate spaces be narrower than the width of a whole catalyst particle finds clear support in the file history of the '977 patent, which is the parent of the '660 patent. See Phillips, 415 F.3d at 1317 ("[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention."). When prosecuting the '977 patent, Cat Tech distinguished its invention from the prior art by stating that "[a]djacent plates do not touch fully, but are separated by a gap, each gap having a width that is less than the smallest dimension of a particle to be loaded." See Remarks Accompanying Preliminary Amendment 2 (Aug. 20, 2001) (emphasis added). Because Cat Tech made clear during prosecution that "each" gap between adjacent plates was smaller than a whole catalyst particle, it can not now assert that only one gap between adjacent plates is required to meet this spacing limitation.

C. Semantic Antics

Cat Tech argues that the article "a" in the phrase "a spacing" means that there need be only one space between plates that is narrower than a whole catalyst particle. Cat Tech's argument is little more than "semantic antics." See Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 857 (Fed. Cir. 1988). While it is true that the indefinite article "a" has been construed to mean "one or more," see Tate Access Floors, Inc. v. Maxcess Techs, Inc., 222 F.3d 958, 966 n.4 (Fed. Cir. 2000), the critical issue here is not whether "a" means one, but whether the term "spacing" refers to a pinch point or the entire gap between plates. Even if the claims were construed to require "one spacing" between plates, the entire length of that spacing must be narrower than a piece of whole catalyst particle. Indeed, during prosecution Cat Tech

distinguished its invention from the prior art by stating that "[t]he present invention is able to collect dust and chips because multiple channels are formed when the plates are pieced together."[5] Remarks Accompanying Preliminary Amendment 3 (Aug. 20, 2001) (emphasis added). Clearly, a "channel" is a space of some length rather than a pinch point. See, e.g., The Am. Heritage Dictionary of the English Language 311 (4th ed. 2000) (A "channel" is a "trench, furrow or groove.").

As the district court correctly concluded, the spacing element of the '660 patent requires an inter-plate spacing that is smaller than the width of a whole catalyst particle. See Summary Judgment Decision, slip op. at 9. Because TubeMaster's accused method does not meet this spacing limitation, the district court properly granted TubeMaster's motion for summary judgment of non-infringement as to configuration 3.

Conclusion

Accordingly, the judgment of the United States District Court for the Southern District of Texas is affirmed.

AFFIRMED

[5] In distinguishing its invention from the prior art, Cat Tech stated: "None of the prior art teach or disclose dust collection. . . . The present invention is able to collect dust and chips because multiple channels are formed when the plates are pieced together. The smaller the plates, the greater the number of channels per template." Remarks Accompanying Preliminary Amendment 3 (Aug. 20, 2001) (emphasis added).