

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

SUNPOWER CORPORATION,	:	
	:	
Plaintiff,	:	
	:	
v.	:	C. A. No. 12-1633-MPT
	:	
PANELCLAW, INC.,	:	
	:	
Defendant.	:	

MEMORANDUM

I. INTRODUCTION

This is a patent case. On December 3, 2012, SunPower Corporation (“SunPower”) filed suit alleging PanelClaw, Inc. (“PanelClaw”) infringes U.S. Patent Nos. 5,505,788 (“the ‘788 patent”) and RE38,988 (“the ‘988 patent”).¹ SunPower amended its complaint on January 24, 2013, and again on April 15, 2013.² PanelClaw filed its answer and counterclaims to the Second Amended Complaint on May 29, 2013.³ SunPower answered PanelClaw’s counterclaims on June 21, 2013.⁴ Pursuant to the court’s October 2, 2013 Order, SunPower provided its preliminary claim charts to PanelClaw on October 18, 2013.⁵ PanelClaw then filed petitions for *inter partes* review (“IPR”) of the asserted patents and the court stayed the case pending resolution of the IPRs on May 16, 2014.⁶

¹ D.I. 1.

² D.I. 5 (First Amended Complaint); D.I. 16 (Second Amended Complaint).

³ D.I. 18.

⁴ D.I. 19.

⁵ D.I. 24.

⁶ D.I. 31; D.I. 43.

On June 30, 2014, the United States Patent and Trademark Office (“USPTO”) denied institution of IPR of the claims of the ‘788 patent⁷ (including currently asserted claims 1-5), denied institution of IPR with respect to currently asserted claims 17, 18, 36, 38-40, 58, 59, 61-63, 65, 66, 71-73, and 76 of the ‘988 patent, and granted institution of IPR with respect to claims 1, 55, 56, 78, and 79 of the ‘988 patent.⁸ On April 3, 2015, the USPTO issued a Final Written Decision on the ‘988 patent finding claims 1, 55, 56, 78, and 79 unpatentable due to anticipation.⁹ The court then lifted the stay on July 13, 2015.¹⁰ On September 11, 2015, the parties filed a request consenting to this judge’s jurisdiction in this case for all purposes, including trial and final judgement, which was granted on September 16, 2015.¹¹ The court entered a Scheduling Order on October 23, 2015.¹² On November 2, 2015, the parties submitted a joint stipulation agreeing to PanelClaw filing an early motion for summary judgement “focused solely on the limited issues identified by Defendant in the Joint Status Report (D.I. 46 at 3-5)” which the court permitted on November 4, 2015.¹³ Currently before the court is PanelClaw’s motion for summary judgement of non-infringement and invalidity.¹⁴ PanelClaw asserts non-infringement of the asserted claims of the ‘788 patent, and that the asserted claims of the ‘988 patent are invalid due to indefiniteness, lack of enablement, and failure to meet the written description requirement under 35 U.S.C.

⁷ D.I. 71, Ex. C.

⁸ D.I. 74, Ex. 1.

⁹ D.I. 71, Ex. G.

¹⁰ D.I. 45.

¹¹ D.I. 49; D.I. 50.

¹² D.I. 57.

¹³ D.I. 63.

¹⁴ D.I. 69.

§ 112, and/or under 35 U.S.C. § 101 as inoperative and lacking utility.¹⁵

II. BACKGROUND

SunPower is a publically traded company that has been developing solar technologies since the 1980s. It describes itself as a global leader in developing high-efficiency solar solutions for private residences, businesses, utilities, and city, county, state, and federal government customers.¹⁶ Founded in 2007, PanelClaw is a privately owned company headquartered in North Andover, Massachusetts.¹⁷ PanelClaw does not develop, sell, or install solar panel assemblies.¹⁸ Instead, its accused products are mounting solutions that consist of a support for a solar panel, a “claw” for securing the solar panel to the support, and, in some cases, a wind deflector.¹⁹ PanelClaw’s customers purchase the components of its mounting systems to be assembled with panels and equipment supplied by others.²⁰

SunPower maintains that within the last several years, PanelClaw has released a series of products that compete with SunPower’s T5 and T10 product lines which embody the inventions of the asserted claims.²¹ Specifically, SunPower asserts PanelClaw’s Polar Bear and Grizzly Bear products compete directly with SunPower’s T5 and T10 product lines in the market for installation of photovoltaic systems on commercial building roofs.²²

¹⁵ D.I. 70 at 10-15.

¹⁶ D.I. 38 at ¶ 4; D.I. 71, Ex. L.

¹⁷ D.I. 71, Ex. K.

¹⁸ D.I. 13, Ex. A at ¶¶ 4-5.

¹⁹ D.I. 71, Ex. J at Ex. A, p. 4 & Ex. B, p. 4.

²⁰ D.I. 13, Ex. A at ¶ 6.

²¹ D.I. 38 at ¶¶ 12-13.

²² *Id.*

'788 patent, titled "Thermally Regulated Photovoltaic Roofing Assembly," was filed in 1994, issued in 1996, and expired in 2012. The invention "generally relates to a photovoltaic roofing assembly, and in particular to a photovoltaic roofing assembly which can regulate the temperatures experienced by the solar cells and requires no roof penetrations for hold-down to the roof surface."²³ The Abstract of the '788 patent recites:

A photovoltaic roofing assembly comprises a roofing membrane (102), a plurality of photovoltaic modules (104, 106, 108, 110) disposed as a layer on top of the roofing membrane (102), and a plurality of pre-formed spacers, pedestals or supports (112, 114, 116, 118, 120, 122) which are respectively disposed below the plurality of photovoltaic modules (104, 106, 108, 110) and integral therewith, or fixed thereto. Spacers (112, 114, 116, 118, 120, 122) are disposed on top of roofing membrane (102). Membrane (102) is supported on conventional roof framing, and attached thereto by conventional methods. In an alternative embodiment, the roofing assembly may have a tapered profile for orienting modules (204, 206, 208, 210) in a direction of increased sun exposure. Other embodiments include the use of phase change material for temperature regulation, and incorporating an insulation block into the assembly as a means of spacing and of building thermal control. Such construction results in a simple, readily assembled roofing assembly which regulates the temperature of the photovoltaic module and roofing membrane and avoids the need for roofing penetrations for hold-down to the building rooftop. Photovoltaic modules (104, 106, 108, 110) serve the purpose of electric generator, and in addition, the multiple purposes of ballast, UV block, and weather protector for the insulation block and roofing membrane below. A fluid convects within the passageways created by the spacers, transferring heat from the backside of the photovoltaic modules. Rainwater drains through the joints between the integral modules, onto and over the roofing membrane below.²⁴

The '988 patent, titled "Lightweight, Self-Ballasting Photovoltaic Roofing Assembly," a re-issue of U.S. Patent No. 5,746,839 issued in 1998, was filed in 2003,

²³ '788 patent, 1:6-10.

²⁴ '788 patent, Abstract.

issued in 2006, and expires in early 2016. The invention “generally relates to a photovoltaic roofing assembly, and in particular to a lightweight photovoltaic roofing assembly requiring no roofing penetrations and which resists wind up-lift due to specialized component geometry and by acting as an integral assembly.”²⁵ The Abstract of the ‘988 patent recites:

A photovoltaic roofing assembly comprises a roofing membrane (102), a plurality of photovoltaic modules (104, 106, 108) disposed as a layer on top of the roofing membrane (102), and a plurality of pre-formed spacers, pedestals or supports (112, 114, 116, 118, 120, 122) which are respectively disposed below the plurality of photovoltaic modules (104, 106, 108) and integral therewith, or fixed thereto. Spacers (112, 114, 116, 118, 120, 122) are disposed on top of roofing membrane (102). Membrane (102) is supported on conventional roof framing, and attached thereto by conventional methods. In an alternative embodiment, the roofing assembly may have insulation block (322) below the spacers (314, 314', 315, 315'). The geometry of the preformed spacers (112, 114, 116, 118, 120, 122, 314, 314', 315, 315') is such that wind tunnel testing has shown its maximum effectiveness in reducing net forces of wind uplift on the overall assembly. Such construction results in a simple, lightweight, self-ballasting, readily assembled roofing assembly which resists the forces of wind uplift using no roofing penetrations.²⁶

III. GOVERNING LAW

Summary judgment is appropriate “if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.”²⁷ This standard is applicable to all types of cases, including patent cases.²⁸ The movant bears the burden of establishing the lack of a genuinely disputed material fact by demonstrating “that there is an absence of evidence to support the nonmoving

²⁵ ‘988 patent, 1:22-26.

²⁶ ‘988 patent, Abstract.

²⁷ FED. R. CIV. P. 56(a).

²⁸ *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1576-77 (Fed. Cir. 1989).

party's case."²⁹ "Facts that could alter the outcome are 'material,' and disputes are 'genuine' if evidence exists from which a rational person could conclude that the position of the person with the burden of proof on the disputed issue is correct."³⁰ "Where the record taken as a whole could not lead a rational trier of fact to find for the non-moving party, there is no genuine issue for trial."³¹

Infringement is a question of fact that must be proven by a preponderance of the evidence.³² "Determining literal infringement is a two step process: the 'proper construction of the asserted claim and a determination of whether the claim as properly construed reads on the accused product or method.'"³³

"Because a patent is presumed to be valid, the evidentiary burden to show facts supporting a conclusion of invalidity is one of clear and convincing evidence."³⁴

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention."³⁵ "[A] claim must be 'sufficiently definite to inform the public of the bounds of the protected

²⁹ *Celotex Corp. v. Catrett*, 477 U.S. 317, 325 (1986).

³⁰ *Horowitz v. Fed. Kemper Life Assurance Co.*, 57 F.3d 300, 302 n.1 (3d Cir.1995) (internal citations omitted).

³¹ *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986) (internal quotations omitted).

³² See, e.g., *Cross Med. Prods. Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1302, 1310 (Fed. Cir. 2005).

³³ *ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1319 (Fed. Cir. 2012) (quoting *Georgia-Pacific Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1330 (Fed. Cir. 1999)).

³⁴ *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1345 (Fed. Cir. 2007) (citing *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1338-39 (Fed. Cir. 2003)).

³⁵ *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2122 (2014).

invention, i.e., what subject matter is covered by the exclusive rights of the patent.”³⁶

Enablement is a question of law To satisfy section 112 of the 1952 Patent Act, the specification must enable a person of ordinary skill in the art to make and use the invention. This requirement is met when at the time of filing the application one skilled in the art, having read the specification, could practice the invention without undue experimentation. Whether undue experimentation is required is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations.³⁷

The written description inquiry is a question of fact.³⁸ To comply with that requirement:

the description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed. In other words, the test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.³⁹

Although “[c]ompliance with the written description requirement is a question of fact [it] is amenable to summary judgment in cases where no reasonable fact finder could return a verdict for the non-moving party.”⁴⁰

IV. DISCUSSION

SunPower alleges claims 1-5 of the ‘788 patent are infringed by PanelClaw’s Grizzly Bear and Polar Bear products.⁴¹ Claim 1 is the only asserted independent claim.

³⁶ *Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 737 (Fed. Cir. 2014) (quoting *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008)).

³⁷ *Cephalon, Inc. v. Watson Pharms., Inc.*, 707 F.3d 1330, 1336 (Fed. Cir. 2013) (citations, internal quotation marks, and footnote omitted).

³⁸ *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010).

³⁹ *Id.*

⁴⁰ *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1307 (Fed. Cir. 2008) (citing *Invitrogen Corp. v. Clonetech Labs., Inc.*, 429 F.3d 1052, 1072-73 (Fed. Cir. 2005)).

⁴¹ D.I. 16 at ¶¶ 18-25.

Claims 2-4 are dependent or multi-dependent from claim 1. Claim 1 recites:

A photovoltaic roofing assembly, comprising:

a roofing membrane;

a plurality of photovoltaic modules disposed as a layer on top of said roofing membrane, and

means for regulating the temperature of said photovoltaic modules.⁴²

PanelClaw bases its non-infringement argument on the construction of phrase “disposed as a layer” on a roof given by the Patent Trial and Appeal Board (“PTAB”) during the IPR for the ’788 patent. In that IPR, PanelClaw submitted prior art, including references “Brown” and “Stiebel,” arguing that these references anticipate the asserted claims of the ’788 patent.⁴³ Those references show rooftop mounted solar panel assemblies with solar panels mounted at an angle on a roof and gaps between the solar panels.⁴⁴ In response, SunPower argued “a person of ordinary skill in the art would have readily understood that ‘a plurality of photovoltaic modules disposed as a layer on top of said roofing membrane’ . . . means that the photovoltaic modules . . . are arranged as an overlying surface on top of the roofing membrane.”⁴⁵ The PTAB agreed with SunPower and construed “as a layer on top of said roofing membrane” to mean “that the photovoltaic modules or integral units, as the case may be, are arranged as an overlying surface on top of the roofing membrane.”⁴⁶

⁴² ’788 patent, claim 1.

⁴³ D.I. 71, Ex. C (PTAB Decision) at 11-15.

⁴⁴ D.I. 70 at 5.

⁴⁵ D.I. 71, Ex. B (Patent Owner SunPower Corporation’s Preliminary Response) at 17, 23.

⁴⁶ *Id.*, Ex. C at 8.

Based on that construction, the PTAB determined the Brown and Stiebel references did not disclose that requirement. The PTAB found “each row of solar panels in Brown is at an incline to the roof, such that a large gap exists between successive rows. They do not provide an overlying surface to the roofing membrane”⁴⁷ and “[b]ecause the panels [disclosed in Stiebel] are inclined, a gap exists between successive solar panel panels, precluding the formation of such an overlying surface.”⁴⁸

PanelClaw now requests that the court adopt the PTAB’s construction of “as a layer on top of said roofing membrane” as “that the photovoltaic modules or integral units, as the case may be, are arranged as an overlying surface on top of the roofing membrane.”⁴⁹ It maintains this construction is consistent with the specification and SunPower’s arguments to the PTAB.⁵⁰ It also asserts adoption of the PTAB’s construction of that phrase is appropriate because that construction was based on the same type of interpretation conducted by the courts.⁵¹ During the IPR, the PTAB rejected PanelClaw’s assertion that the claims should be given their broadest reasonable construction pursuant to 37 C.F.R. § 42.100(b).⁵² Because the ‘788 patent

⁴⁷ *Id.*, Ex. C at 12.

⁴⁸ *Id.*, Ex. C at 15; *see also id.*, Ex. B at 19 (SunPower arguing “Brown’s panels are not arranged as an overlying surface on top [of] a roofing membrane and therefore does not teach or disclose ‘a plurality of photovoltaic modules disposed as a layer on top of said roofing membrane’ . . .”).

⁴⁹ D.I. 70 at 7.

⁵⁰ *Id.* PanelClaw also contends because SunPower’s argument before the PTAB was successful, it is estopped from taking a different position now. *Id.* The court disagrees with that contention. *See adidas AG v. Under Armour, Inc.*, C.A. No. 14-130-GMS, D.I. 201 (Order Denying Defendants’ Motion to Modify the Court’s Claim Construction Order) at 2 n.1. (D. Del. Dec. 15, 2015) (“The PTAB’s choice not to institute an IPR is not the type of adjudication that leads to issue preclusion.”).

⁵¹ D.I. 70 at 7 n.1.

⁵² D.I. 71, Ex. C at 6.

is expired, the PTAB found PanelClaw's reliance on that regulation misplaced as the rule pertains only to claims "in an unexpired patent."⁵³ "[T]he Board's review of the claims of an expired patent is similar to that of a district court's review."⁵⁴ In the context of construing the claims of an expired patent, the PTAB generally gives claim terms their ordinary and customary meaning, as understood by a person of ordinary skill in the art, at the time of the invention, taking into consideration the language of the claims, the specification, and the prosecution history of record because the expired claims are not subject to amendment.⁵⁵

According to PanelClaw, under the PTAB's construction its accused products cannot infringe because, when assembled with photovoltaic panels, those products support the panels at an angle with gaps of exposed roof between rows.⁵⁶ It argues that as with Brown and Stiebel, the gaps between successive rows of panels in the assembled PanelClaw system mean there is no overlying surface and no "layer on top of said roofing membrane," which it insists is required by all asserted claims.⁵⁷ PanelClaw asserts, therefore, for the exact same reason the PTAB found these claims not anticipated by Brown and Stiebel, they cannot be infringed by PanelClaw's

⁵³ *Id.*, Ex. C at 6-7 (quoting 37 C.F.R. § 42.100(b) ("A claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.")).

⁵⁴ *Id.*, Ex. C at 7 (alteration in original) (quoting *In re Rambus, Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012)).

⁵⁵ *Id.*, Ex. C at 7 (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (*en banc*)).

⁵⁶ D.I. 70 at 7 (citing D.I. 71, Ex. J at Ex. K, p. 1 (PanelClaw advertising material picturing its Grizzly Bear product having gaps between rows of panels)).

⁵⁷ *Id.*

products,⁵⁸ and concludes that SunPower’s argument before the PTAB to obtain a construction of “disposed as a layer” that distinguished the claims from Brown and Stiebel, also distinguishes the claims from PanelClaw’s products.⁵⁹

SunPower characterizes PanelClaw’s opening brief is devoid of evidentiary support in asking the court to make findings on disputed factual issues, such as non-infringement.⁶⁰ It notes fact discovery is in the very early stages and expert discovery is a year away.⁶¹ Moreover, it contends PanelClaw’s arguments are inextricably intertwined with claim construction, which the court has not yet undertaken.⁶² Therefore, SunPower maintains the issues raised by PanelClaw are not appropriate for summary judgment.⁶³

SunPower states several genuine issues of material fact preclude summary judgment of non-infringement of the ‘788 patent. It contends that rather than engaging in the proper legal infringement analysis requiring the accused products to be compared to properly construed claims, PanelClaw stretches and distorts the holding of the PTAB in denying institution of IPR, performs a legally flawed non-infringement analysis, and presents the court with nothing more than attorney argument.⁶⁴

SunPower argues PanelClaw’s assertion that the PTAB denied the IPR because “the ‘Brown’ and ‘Stiebel’ references were inclined, with gaps between the panels, such

⁵⁸ *Id.* at 7-8.

⁵⁹ *Id.* at 8.

⁶⁰ D.I. 73 at 1.

⁶¹ *Id.*

⁶² *Id.* A claim construction hearing is currently scheduled for June 3, 2016.

⁶³ *Id.*

⁶⁴ *Id.* at 6.

that they did not form an overlying surface like that described in the patent” is inaccurate.⁶⁵ The PTAB explained that PanelClaw failed to identify the requisite corresponding structure in its IPR petition for the “means for regulating the temperature of said photovoltaic modules” in independent claim 1.⁶⁶ Due to that failure, the PTAB denied the IPR petition as to claims 1-5 “for this reason alone.”⁶⁷ The PTAB did, however, note that although it denied the IPR for that reason, it stated “we also address another deficiency common to claims 1-5,” i.e., the lack of disclosure of solar panels arranged as an overlying surface on top of a roof in the Brown and Stiebel references because of gaps between rows of panels.⁶⁸ It is the construction by the PTAB of the phrase at issue on which PanelClaw bases its non-infringement argument.

SunPower states that the court is not bound by the PTAB’s construction of the phrase “disposed as a layer.” Although SunPower’s statement is correct,⁶⁹ it is not improper for the court to take the PTAB’s claim construction into consideration,⁷⁰

⁶⁵ *Id.* at 7 (quoting D.I. 70 at 6).

⁶⁶ D.I. 71, Ex. C at 9-10.

⁶⁷ *Id.*, Ex. C at 10. SunPower also criticizes PanelClaw for not addressing the means-plus-function limitation in its opening brief. That criticism is misplaced. “To prove literal infringement, a plaintiff must show that the accused device contains each and every limitation of the asserted claims.” *Presidio Components, Inc. v. Amer. Tech. Ceramics Corp.*, 702 F.3d 1351, 1358 (Fed. Cir. 2012) (citing *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1301 (Fed. Cir. 2011)). PanelClaw need not discuss the means-plus-function limitation because, as noted above, its summary judgment motion rests on the argument that the accused products do not meet the “disposed as a layer” element of the asserted claims.

⁶⁸ D.I. 71, Ex. C at 12 n.7, 15 n.8.

⁶⁹ *adidas AG v. Under Armour, Inc.*, C.A. No. 14-130-GMS, D.I. 201 at 2 n.1. (D. Del. Dec. 15, 2015). (“The court is not bound by a preliminary claim construction used by the PTAB for the limited purpose of denying an IPR request.”).

⁷⁰ *Centrak, Inc. v. Sonitor Techs., Inc.*, C.A. No. 14-183-RGA, 2015 WL 9595999, at *4 (D. Del. Dec. 30, 2015) (“[W]hile not controlling, I find the PTAB’s construction of this term in its decision not to institute *inter partes* review of [the] ‘909 patent to be well-

particularly where that construction was “similar to that of a district court’s review.”⁷¹

Here, the court finds the PTAB’s construction to be well-reasoned and persuasive. First, SunPower, itself, argued to the PTAB that:

Brown’s solar panels are substantially vertical with large open spaces between the panels. Accordingly, Brown’s panels are not arranged as an overlying surface on top on a roofing membrane and therefore, Brown does not teach or disclose “a plurality of photovoltaic modules disposed as a layer on top of said roofing membrane”⁷²

* * * * *

Stiebel does not disclose that its solar panels are disposed as a layer. Rather, Stiebel teaches that its solar panels are substantially upright with a large space between two adjoining solar panels. Accordingly, Stiebel’s panels are not arranged as an overlying surface on top [of] a roofing membrane and therefore, Stiebel does not teach or disclose “a plurality of photovoltaic modules disposed as a layer on top of said roofing membrane”⁷³

The PTAB agreed with SunPower’s proposed construction and noted it was supported by the specification’s statement that “[t]he photovoltaic module performs the multiple functions normally provided by a roofing paver, including ballast, UV protection, and weather protection for the membrane and insulation layers below.”⁷⁴ Referencing

reasoned and persuasive.”).

⁷¹ D.I. 71, Ex. C at 6-7. SunPower contends that the PTAB’s discussion of the prior art was in the context of invalidity, not infringement. D.I. 73 at 7. The PTAB’s construction of “disposed as a layer” was in the context of claim construction, in which it analyzed SunPower’s arguments in favor of its proposed construction, the specification, and the construction from prior litigation involving the ‘788 patent. After accepting SunPower’s proposed construction, the PTAB then applied that construction to the prior art references in its separate invalidity analysis.

⁷² D.I. 71, Ex. B at 18 (citation omitted).

⁷³ *Id.*, Ex. B at 24 (citation omitted).

⁷⁴ *Id.*, Ex. C at 8 (quoting ‘788 patent, 4:3-7 (Summary of the Invention)). SunPower had directed the PTAB to that specification language in support of its proposed construction. *Id.*, Ex. B at 17.

Figure 9 of the '788 patent, the PTAB noted “[t]he specification also illustrates an array of photovoltaic modules as an overlying surface on top of large section of a roofing membrane.”⁷⁵ Notably, the '788 patent was asserted in prior litigation by SunPower. In that case, the court construed “modules disposed as a layer on top of said roofing membrane” to mean “modules that are arranged in a manner that provides coverage of a surface.”⁷⁶ The PTAB cited that construction as also being consistent with the construction suggested by SunPower and adopted by the PTAB.⁷⁷ The court, therefore, adopts the PTAB’s construction of “as a layer on top of said roofing membrane” as “that the photovoltaic modules or integral units, as the case may be, are arranged as an overlying surface on top of the roofing membrane.”

SunPower argues that PanelClaw asks the court to improperly compare an annotated image of one of the accused products, not to the asserted claims, but to two prior art assemblies asserted in the IPR.⁷⁸ SunPower notes a comparison of accused products to the prior art cannot be the basis of a defense to infringement.⁷⁹ The court disagrees that PanelClaw is asking the court to make such a comparison. PanelClaw is asking the court to find that rooftop mounted solar panel assemblies having large gaps with exposed roof are not “disposed as a layer” as required by the asserted claims.⁸⁰

⁷⁵ *Id.*, Ex. C at 8.

⁷⁶ *SunPower Corp. v. Sunlink Corp.*, No. CV 08-2807 SBA, 2009 WL 2996724, at *1 (N.D. Cal. Mar. 16, 2009) (the “*Sunlink* case”).

⁷⁷ D.I. 71, Ex. C at 8.

⁷⁸ D.I. 73 at 1, 7.

⁷⁹ *See Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1365 (Fed. Cir. 2002) (explaining there is no “practicing the prior art” defense to infringement); *Ecolab, Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1377 (Fed. Cir. 2002) (“[P]racticing the prior art’ is not a defense to literal infringement.”).

⁸⁰ D.I. 77 at 1.

Having adopted the PTAB's construction, the court determines that PanelClaw's accused products do not infringe the '788 patent. The evidence PanelClaw relies on to demonstrate its accused products do not meet the "disposed as a layer" limitation comes from SunPower's own infringement contentions. In its opening brief, PanelClaw cites exhibit K of those contentions, which shows its Grizzly Bear product having rows of panels with significant gaps between them leaving the roof exposed in those gaps.⁸¹ Other exhibits to SunPower's contentions similarly show large gaps between the solar panels of PanelClaw's accused Polar Bear products.⁸² With such an arrangement, the photovoltaic modules cannot "perform the multiple functions normally provided by a roofing paver, including ballast, UV protection, and weather protection for the membrane and insulation layers below,"⁸³ and do not meet the requirement that "the photovoltaic modules or integral units, as the case may be, are arranged as an overlying surface on top of the roofing membrane." Consequently, the court grants PanelClaw's motion for summary judgment of non-infringement of the '788 patent.

⁸¹ D.I. 70 at 7 (citing D.I. 71, Ex. J at Ex. K, p.1); see also D.I. 71, Ex. C at 1 (also showing a large gap between Grizzly Bear solar panels). SunPower cites Figures 1a-c and 2a-c as showing gaps between rows of photovoltaic panels. D.I. 73 at 9. Those figures do show small gaps between the panels. In each of those illustrations, however, the spacers, pedestals, or supports under the panels extend across whatever gap exists, thus leaving the roof membrane unexposed. Despite any gaps illustrated in those drawings, it is clear that PanelClaw's products do not meet the "disposed as a layer" limitation. SunPower also cites the specification's description of the layer below the modules as "semi-continuous." *Id.* (citing '788 patent, 6:9-23). That passage, in part, reads "[a] semi-continuous spacial layer is created below photovoltaic modules 104, 106, 108, 110 which enables the convection of a fluid, preferably air, through passageways created by the spacers." '788 patent, 6:18-22. That passage describes the air gap (i.e. spacial layer) between the modules and the roof; it does not describe the modules being semi-continuous.

⁸² See D.I. 71, Ex. J at Ex. E, p.1; *id.*, Ex. J at Ex. F p.1

⁸³ '788 patent, 4:3-7.

SunPower alleges PanelClaw's Grizzly Bear and Polar Bear products infringe claims 17, 18, 36, 38-40, 58, 59, 61-63, 65, 66, 71-73, and 76 of the '988.⁸⁴

Representative independent claim 36 recites:

A photovoltaic roofing assembly comprising:

a plurality of photovoltaic assemblies, each said photovoltaic assembly comprising:

a photovoltaic module having upper, lower, and lateral sides and having upper and lower surfaces; and

a variable-height spacer secured to the lower surface of the photovoltaic module so to orient said photovoltaic module at an angle with said lateral sides extending downwardly from said upper side to said lower side, said angle being about 5°-30° from horizontal;

said spacer sized and configured to define:

a tapered open region beneath said lower surface; and

access openings along said upper and lower sides fluidly coupling said open region to said upper surface;

whereby wind uplift forces are resisted when said photovoltaic assembly is mounted to a support surface; and

means for interengaging adjacent photovoltaic assemblies into an array of photovoltaic assemblies, said array defining a perimeter.⁸⁵

PanelClaw argues the asserted claims of the '988 patent are invalid as indefinite, for failure to meet the enablement and written description requirements, and/or lack of operability.⁸⁶ Invalidity must be demonstrated by clear and convincing evidence.⁸⁷

⁸⁴ D.I. 16 at ¶¶ 26-36.

⁸⁵ '988 patent, claim 36.

⁸⁶ D.I. 70 at 2-3.

⁸⁷ *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1345 (Fed. Cir. 2007) (citing *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1328-39 (Fed. Cir. 2003)).

Each of the asserted claims of the '988 patent recites a "photovoltaic assembly" which PanelClaw notes comprises a photovoltaic module and a spacer secured to the bottom of the photovoltaic module that creates an "open region" underneath the module and "access openings."⁸⁸ Each of the claims also include the language "whereby wind uplift forces are resisted when said photovoltaic assembly is mounted to a support surface" ("the Whereby Clause").⁸⁹

PanelClaw bases its indefiniteness argument on the Whereby Clause. In support, it cites certain statements and conclusions the PTAB made in its '988 patent IPR decision, and the testimony of SunPower's expert, Theodore Stathopoulos, Ph.D., as part of that IPR. PanelClaw maintains, however, the asserted claims are indefinite regardless of how the Whereby Clause is construed because it argues that clause has no discernible scope as every object on Earth resists some amount of wind uplift forces.⁹⁰ PanelClaw argues there is nothing in the claims that suggest (i) the circumstances under which "wind uplift forces" are resisted, (ii) what in particular causes that resistance or (iii) how much resistance (however that might be measured) would be sufficient to meet the limitation.⁹¹

In the '988 patent IPR, the PTAB determined claims 1, 55, 56, 78, and 79 were unpatentable as anticipated by Brown.⁹² In discussing the Whereby Clause, the PTAB agreed with SunPower that "the claims require resistance to wind uplift forces as a

⁸⁸ D.I. 70 at 8.

⁸⁹ See '988 patent, claims 1, 36, 56, 58.

⁹⁰ D.I. 70 at 12.

⁹¹ *Id.*

⁹² D.I. 71, Ex. G at 2.

result of the claimed structural limitations,” but disagreed with SunPower that the clause “sets forth an additional limitation, separate from the recited structure.”⁹³ PanelClaw notes the PTAB could not consider indefiniteness, enablement, or written description under 35 U.S.C. § 112.⁹⁴ Therefore, turning to the prior art, the PTAB found Brown anticipated the claims because “the recited feature of resistance to wind uplift forces constitutes a description of the result of photovoltaic assemblies having the recited structural limitations” and “Brown discloses the claimed structures. Therefore, the Brown structure resists wind uplift forces.”⁹⁵

In the IPR, Stathopoulos testified that the claimed uplift resistance must be achieved by the assembly’s “aerodynamic characteristics.”⁹⁶ PanelClaw states he explained that the size, shape, and thickness of the PV panels would affect wind uplift resistance, and that whether an assembly would infringe would depend upon the size of the access openings.⁹⁷ PanelClaw also points to Stathopoulos’s testimony that certain photovoltaic assemblies having spacers with access openings will not resist wind uplift, and that, under certain circumstances, having an open region beneath a solar panel would not create resistance to wind uplift.⁹⁸ Lastly, PanelClaw states he testified that

⁹³ *Id.*, Ex. G at 7-8. In rejecting SunPower’s assertion that the Whereby Clause “sets forth an additional limitation, separate from the recited structure,” the PTAB stated that assertion was “not supported by the specification, which does not explain adequately how to determine whether structure recited by the claims falls within the scope of the claims” *Id.*, Ex. G at 9.

⁹⁴ D.I. 70 at 13; see 35 U.S.C. § 311(b) (limiting IPRs to anticipation and obviousness).

⁹⁵ D.I. 71, Ex. G at 12.

⁹⁶ *Id.*, Ex. H at 76.

⁹⁷ D.I. 70 at 14 (citing D.I. 71, Ex. H at 42-47).

⁹⁸ *Id.* (citing D.I. 71, Ex. H at 76, 113-14).

“interconnecting multiple photovoltaic assemblies does not necessarily resist wind uplift forces,” and that “if the gaps between adjacent photovoltaic assemblies are too small, interconnected photovoltaic assemblies can generate, rather than resist, wind uplift.”⁹⁹

PanelClaw concludes the PTAB’s determination that the claims “require resistance to wind uplift forces as a result of the claimed structural limitations” means the claims are indefinite, because the structural characteristics that would achieve the “whereby” language, e.g., aerodynamics, size, shape, weight, etc., are not claimed, and Stathopoulos’s testimony that the claimed structure does not necessarily result in resistance to wind uplift, demonstrates the asserted claims are indefinite.

The court agrees with SunPower that PanelClaw has not met its burden of demonstrating by clear and convincing evidence that the asserted claims are indefinite based on the current record.

First, the court is not bound by the PTAB’s decision.¹⁰⁰ Therefore, the PTAB’s discussion of the Whereby Clause is not determinative. Next, the testimony of Stathopoulos’s during the IPR also fails to meet PanelClaw’s burden to show indefiniteness. That PanelClaw cites his testimony that the claimed structure may or may not resist wind uplift forces, depending on their particular characteristics, does not convince the court its motion must be granted. As SunPower points out, the ‘988 patent acknowledges that not all configurations of access openings are effective at resisting

⁹⁹ *Id.* (quoting D.I. 71. Ex. H at 111).

¹⁰⁰ *St. Clair Intellectual Prop. Consultants, Inc. v. Matsushita Elec. Indus. Co., LTD.*, C.A. No. 04-1436–JJF-LPS, 2009 WL 3834541, at *9 (D. Del. Nov. 13, 2009) (“Although the PTO appears to have found such a limitation in construing the disputed claims under the ‘broadest reasonable construction’ standard, I accord the PTO’s views on claim construction no deference.”).

wind uplift.¹⁰¹ Stathopoulos also submitted a declaration in this matter stating that by reading the claims and the specification, one of ordinary skill in the art would readily understand the Whereby Clause to refer to aerodynamic features of the claimed assemblies.¹⁰²

Finally, SunPower also asserted the '988 patent in the *Sunlink* case. Like PanelClaw, the defendant in that case also argued the Whereby Clause was not capable of construction, thus rendering the claims invalid under 35 U.S.C. § 112.¹⁰³ The *Sunlink* court, however, was able to construe that clause, determining that “whereby wind uplift forces are resisted” meant “upward force of the wind on the assembly is resisted.”¹⁰⁴ That another district court construed the Whereby Clause while facing the same type of invalidity argument indicates this court should proceed through the *Markman* process with respect to that clause. Consequently, PanelClaw’s motion for invalidity based on indefiniteness is denied.

In addition to its indefiniteness argument, PanelClaw maintains the asserted claims of the '988 patent are invalid as not enabled, lacking adequate written description, and/or as inoperative, because the patent purportedly does not teach any assembly that is able resist wind uplift force using only an individual photovoltaic panel

¹⁰¹ D.I. 73 at 12; '988 patent, 6:66-7:6 ([W]ind tunnel investigations determined that the preferred mode of operation is where spacers are normal to the direction of the wind and following close to the perimeter of the module. *Poor performance* is experienced where there is continuous blocking of the interior cavity around the perimeter of the module.”) (emphasis added).

¹⁰² D.I. 73 at ¶¶ 20-23.

¹⁰³ D.I. 78, Ex. A at 16-17.

¹⁰⁴ *SunPower Corp. v. Sunlink Corp.*, No. CV 08-2807 SBA, 2009 WL 2996724, at *1 (N.D. Cal. Mar. 16, 2009).

and a spacer.¹⁰⁵ PanelClaw argues the claims are directed to individual “assemblies” made of a single panel and a single spacer with no mention of the perimeter securement that PanelClaw states is required in all described embodiments to allow the assembly to resist wind uplift force when installed on a roof.¹⁰⁶ PanelClaw contends the first embodiment is described as requiring “perimeter securement” to function.

According to the present invention, a lightweight, self-ballasting solar cell roofing assembly is preferably formed with **two portions. One portion consists of a plurality of photovoltaic modules, together with spacers which rest on a conventional building rooftop.** The spacers are preferably pre-formed and are sized and configured to provide passageways beneath the photovoltaic module extending from at least two sides of the modules to reduce lift forces on the modules. The photovoltaic modules with spacers preferably have interlocking edges or corners. **The second portion is a means of perimeter securement which avoid roof membrane penetrations, such as the use of roofing pavers.**

The photovoltaic module portion is situated over the building rooftop in a manner to be exposed to solar radiation and electrically connected for transport of electricity. The paver portion is situated over the same building and interlocks with the photovoltaic modules with spacers. Other means of perimeter securement are possible, including placing metal flashing along the edge of the perimeter modules and connecting to the flashing end-to-end around the array perimeter, or adhering said flashing to the roofing membrane. The photovoltaic module performs the multiple function normally provided by a roofing paver, including ballast, UV protection, and weather protection for the membrane and insulation layers below. **Together the two portions serve the dual function of a self-ballasted protective roof covering and an assembly for the collection of radiant energy.**¹⁰⁷

PanelClaw notes the second “alternate” embodiment is formed with three portions, but the assembly still includes the “perimeter securement” as the third portion.

¹⁰⁵ D.I. 70 at 3, 15.

¹⁰⁶ *Id.*

¹⁰⁷ ‘988 patent, 2:43-3:3 (emphasis added).

The **first portion consists of a plurality of insulation blocks** which are situated on **photovoltaic modules, together with spacers which rests on the plurality of insulation blocks**. The insulation blocks with photovoltaic modules and spacers have interlocking edges. The photovoltaic module performs multiple functions including ballast, UV protection, and weather protection for the membrane and insulation layers below. **A third portion is a means of perimeter securement such as metal flashing or conventional roofing pavers, located at the perimeter of arrays of photovoltaic modules and tying the entire array together as an integral assembly**. Other means of perimeter securement are also possible. Together the three portions serve the dual function of a protected membrane roofing system and an assembly for the collection of radiant energy.¹⁰⁸

PanelClaw also argues the descriptions of the patent's illustrations support its position. Figures 1A-D illustrate a system in which the spacers rest directly on the roofing membrane. The specification explains "[t]he modules and spacers placed in arrays on top of the roofing membrane," and "[r]oofing pavers are situated around the perimeter of photovoltaic modules and interlock at the perimeter of the modules," where "[s]uch construction results in a simple, readily assembled roofing assembly which can be lightweight while resisting the forces of wind uplift."¹⁰⁹ Figures 2A-2D illustrate an embodiment in which the photovoltaic modules may instead be mounted on panels, while Figures 3A-3D show a variation in which the spacers are installed over insulation blocks. PanelClaw states the descriptions of Figures 2 and 3 do not recite any mechanism for securing the different types of panel assemblies on a roof without using the perimeter securement described in connection with Figure 1.¹¹⁰ Figures 4A and 4B show "sectional views of alternate means of perimeter securement for the roof tile

¹⁰⁸ '988 patent, 3:5-21 (emphasis added).

¹⁰⁹ '988 patent, 5:29-33.

¹¹⁰ D.I. 70 at 10.

system,” while Figure 5 “shows a perspective view of the photovoltaic roofing assembly where solar roofing tiles 504 form an array 502 which is situated on a building rooftop,” and “[p]erimeter securement 510 runs the perimeter of array 502 and ties the roofing tiles 504 into an integral assembly.”¹¹¹ The specification explains that “[t]he advantages of the foregoing assembly,” include that “the assembly is lightweight (9.76-19.53 kg/sq. m or 2-4 pounds/sq. ft.) relative to conventional roofing ballast (48.8-73.2 kg/sq. m or 10-15 pounds/sq. ft.), relying on a combination of weight, edge to edge connection, and spacer geometry to resist the forces of uplift.”¹¹² According to PanelClaw, “the foregoing assembly” is the entire rooftop system, including the perimeter securement, and it is able to fall within those weight ranges only because the assembly includes the perimeter securement.¹¹³

PanelClaw concludes that the patent does not provide any description of, or enable one of skill in the art to make, a single panel/spacer combination that resists wind uplift force.¹¹⁴ PanelClaw maintains that using the teaching of the ‘988 patent, it is impossible to achieve resistance to “wind uplift forces when said photovoltaic assembly is mounted to a support surface” with only a photovoltaic panel and a spacer, and it would also be impossible to achieve with a photovoltaic panel and a spacer that are 2-4 psf.¹¹⁵ It concludes that because the claims are not commensurate with the disclosure,

¹¹¹ ‘988 patent, 7:50-67.

¹¹² ‘988 patent, 5:34-40.

¹¹³ D.I. 70 at 10.

¹¹⁴ *Id.* at 3, 15.

¹¹⁵ *Id.* at 15. Dependant claims 18, 63, 65, and 66 each require that “the photovoltaic module and spacer have a combined weight of about two to four pounds per square foot.”

they are invalid under 35 U.S.C. § 112, as not enabled and lacking written description, and/or under 35 U.S.C. § 101 as inoperative and lacking utility.¹¹⁶

SunPower insists PanelClaw has not met its burden to show the '988 patent claims are invalid for lack of enablement, written description, or operability as PanelClaw presents no evidence in support of its motion and instead relies only on attorney argument.¹¹⁷ First, SunPower argues PanelClaw's enablement and written description arguments are fatally flawed for failure to provide any evidence or argument about a person of ordinary skill in the art.¹¹⁸ Moreover, it maintains PanelClaw's motion should be denied because enablement and written description are inherently factual analyses and PanelClaw has purportedly presented no facts—only attorney argument.¹¹⁹

The court agrees with SunPower that PanelClaw's attorney argument in support of its contention that the claims do not meet the enablement and written description requirements and/or the claimed invention is inoperative is insufficient to support its

¹¹⁶ *Id.* at 3, 15.

¹¹⁷ D.I. 73 at 13.

¹¹⁸ *Id.* (citing *AAT Bioquest, Inc. v Texas Fluorescence Labs., Inc.*, No. 14-CV-3909-DMR, 2015 WL 1738402, at *5 (N.D. Cal. Apr. 13, 2015) (“TEFLabs's failure to provide any evidence or argument regarding what constitutes 'persons or ordinary skill in the art' dooms its motion for summary judgment on the written description requirement.”)).

¹¹⁹ *Id.* (citing *Cephalon, Inc. v. Watson Pharm, Inc.* 707 F.3d 1330, 1336 (Fed. Cir. 2005) (“Whether undue experimentation is required in the enablement analysis is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations.”) (internal quotation marks omitted); *Masimo Corp. v. Philips Elec. N. Am. Corp.*, 62 F. Supp. 3d 368, 381 (D. Del. 2014) (denying summary judgment for inadequate written description because of the “longstanding principle that the written description inquiry is quintessentially a question of fact.”) (internal quotation marks omitted)).

motion for summary judgment.¹²⁰ PanelClaw’s assertion that “[b]ecause the claims lack the perimeter, their subject matter is neither enabled nor adequately described”¹²¹ is a conclusory attorney argument, not evidence. PanelClaw’s reliance on the preferred embodiments having perimeter securement is also unpersuasive. PanelClaw insists it not attempting to read perimeter securement into the claims, but is merely observing that the perimeter securement is not recited in the asserted claims, and the patent describes no assembly that is able to function without it.¹²² The Federal Circuit has forcefully stated that specific aspects of a preferred embodiment are not required to be incorporated into claims that do not recite such aspects.

[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments. In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.¹²³

Also, the patent expressly provides that:

“[w]hile the invention has been described in its preferred embodiments, it is to be understood that the words which have been used are words of description rather than limitations and that changes may be made within the purview of the appended claims without departing from the true scope

¹²⁰ *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986) (The party moving for summary judgment bears the initial burden of showing the absence of genuine issues of material fact.); see *Invitrogen Crop. v. Clontech Labs., Inc.*, 429 F.3d 1052, 1068 (Fed. Cir. 2005) (“Unsubstantiated attorney argument regarding the meaning of technical evidence is no substitute for competent expert testimony. It does not, and cannot, support [defendant’s] burden on summary judgment.”); cf. *Ferring B.V. v. Barr Labs., Inc.*, 437 F.3d 1181, 1193 (Fed. Cir. 2006) (“Conclusory allegations and attorney arguments are insufficient to overcome a motion for summary judgment.”) (citations omitted).

¹²¹ D.I. 70 at 15.

¹²² D.I. 77 at 8.

¹²³ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (*en banc*) (citations omitted).

and spirit of the invention in its broader aspects.¹²⁴

Moreover, where the applicants intended perimeter securement to be a limitation, that limitation was included.¹²⁵

Finally, SunPower submits the declaration of its expert, Stathopoulos, in which he opines that one of ordinary skill in the art would read the '988 patent specification and claims and readily understand the invention resists wind uplift not by weight alone but because of the aerodynamic features of its photovoltaic assemblies; would readily understand the particular structural elements of the claims are described in detail throughout the specification; could readily understand how to build the claimed assemblies without undue experimentation; and could design, model, and test suitably in an appropriate wind tunnel the claimed invention which would work in actual deployment—even with a single panel/spacer.¹²⁶

Consequently, the court determines PanelClaw has failed to demonstrate by clear and convincing evidence that the asserted claims are invalid for failure to meet the enablement and written description requirements and/or the invention's inoperability and its motion is denied.

V. CONCLUSION

For the aforementioned reasons, PanelClaw's motion for summary judgment (D.I.

¹²⁴ '988 patent, 8:1-6.

¹²⁵ See, e.g., '988 patent, claim 22 ("assembly . . . further comprising perimeter ties situated around the photovoltaic array and joined with said photovoltaic array to make an integral array assembly"); claim 23 ("assembly . . . wherein said perimeter ties are joined with one another whereby the integral array assembly is tied together and strengthened"); claim 24 ("assembly wherein said perimeter ties comprise a chosen one of concrete pavers and hollow metal flashing units").

¹²⁶ D.I. 75 at ¶¶ 20-25.

69) is GRANTED in part and DENIED in part. An appropriate order shall issue.

Dated: April 1, 2016

/s/ Mary Pat Thyng
UNITED STATES MAGISTRATE JUDGE

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

SUNPOWER CORPORATION,	:	
	:	
Plaintiff,	:	
	:	
v.	:	C. A. No. 12-1633-MPT
	:	
PANELCLAW, INC.,	:	
	:	
Defendant.	:	

ORDER

At Wilmington this 1st day of **April, 2016**, consistent with the memorandum issued this same date;

IT IS ORDERED, ADJUDGED, and DECREED that PanelClaw’s motion for summary judgment (D.I. 69) is GRANTED in part and DENIED in part.

- A. PanelClaw’s motion for summary judgment of non-infringement of the ‘788 patent is GRANTED;
- B. PanelClaw’s motion for summary judgment of invalidity of the ‘988 patent is DENIED.

Dated: April 1, 2016

/s/ Mary Pat Thyng

UNITED STATES MAGISTRATE JUDGE