

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA MOBILITY LLC,
Petitioner,

v.

LARGAN PRECISION CO., LTD.,
Patent Owner.

IPR2022-01156
Patent 9,784,948 B2

Before NORMAN H. BEAMER, NABEEL U. KHAN, and
JOHN D. HAMANN, *Administrative Patent Judges*.

KHAN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Motorola Mobility LLC (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–4, 6–16, 18–24, 28, and 29 (“the challenged claims”) of U.S. Patent No. 9,784,948 B2 (“the ’948 patent,” Ex. 1001). Largan Precision Co. Ltd. (“Patent Owner”) timely filed a Preliminary Response (Paper 6, “Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 7, “Prelim. Reply”) addressing the issue of real parties-in-interest, and Patent Owner filed a Preliminary Sur-reply (Paper 8, “Prelim. Sur-reply”) in response.

An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). Having considered the arguments and evidence presented by Petitioner and Patent Owner, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on the challenged claims of the ’948 patent and we institute *inter partes* review as to the challenged claims of the ’948 patent on all the grounds of unpatentability set forth in the Petition.

B. *Related Proceedings*

The parties identify the following pending matter as involving the ’948 patent: *Largan Precision Co., Ltd. v. Motorola Mobility LLC*, Case No. 4:21-cv-09138-JSW (N.D. Cal.). Pet. x; Paper 4, 2.

C. *Real Parties-in-Interest*

Petitioner identifies itself as the sole real party-in-interest. Pet. x. Patent Owner identifies itself as the sole real party-in-interest. Paper 4, 2.

D. The '948 Patent (Ex. 1001)

The '948 patent, titled “Image Lens System,” relates to “an imaging lens system used in a mobile phone camera.” Ex. 1001, code (54), 1:21–23. The patent describes “there is an increasing demand for compact imaging lenses featuring better image quality.” *Id.* at 1:33–34. The '948 patent explains that a “conventional compact lens assembly for mobile phone cameras . . . generally comprises four lens elements.” *Id.* at 1:35–38. However, the '948 patent goes on to explain that “the four-element lens has become insufficient for a high-end imaging lens assembly due to the rapid increase in the resolution of mobile phone cameras, the reduction in the pixel size of sensors and the increasing demand for compact lens assemblies featuring better image quality.” *Id.* at 1:38–43. Thus, “a need exists in the art for an imaging lens system applicable to high-resolution mobile phone cameras while maintaining a moderate total track length.” *Id.* at 1:44–47.

To address this need, the '948 patent describes an image capturing lens assembly comprising five lens elements having specific characteristics and properties. Figure 1 of the '948 patent, reproduced below, illustrates one embodiment of the '948 patent's image capturing lens assembly.

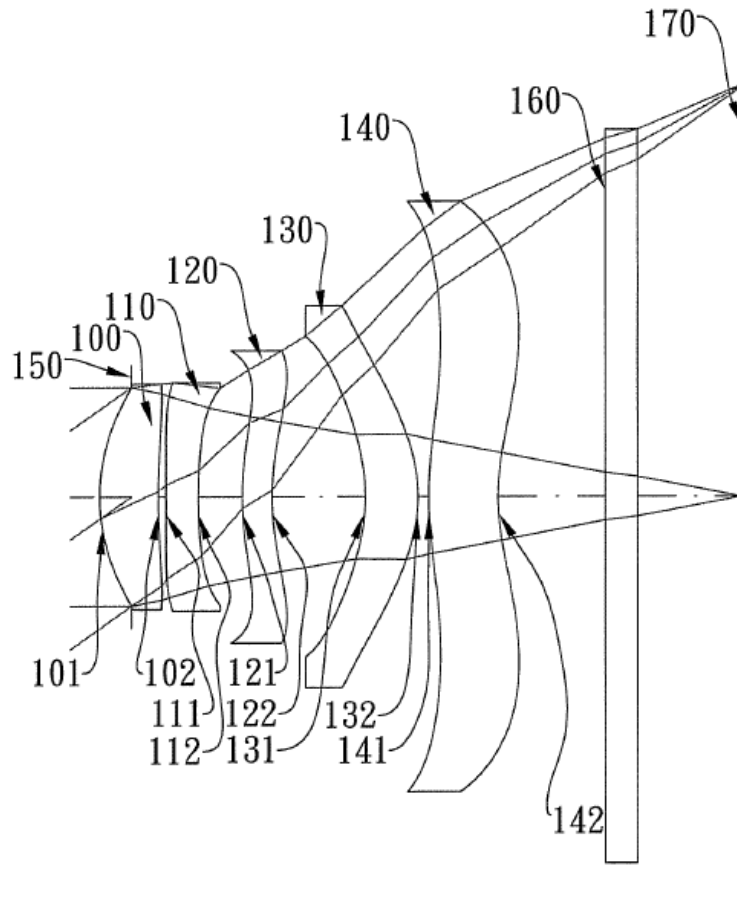


Figure 1 shows an image lens system comprising five lens elements including, in order from the object side to the image side: a plastic first lens element 100 with positive refractive power having a convex object-side surface 101 and a concave image-side surface 102 the object-side and image-side surfaces 101 and 102 being aspheric; a plastic second lens element 110 with negative refractive power having a convex object-side surface 111 and a concave image-side surface 112, the object-side and image-side surfaces 111 and 112 being aspheric; a plastic third lens element 120 with negative refractive power having a convex object-side surface 121 and a concave image-side surface 122, the object-side and image-side surfaces 121 and 122 being aspheric; a plastic fourth lens element 130 with positive refractive power having a concave object-side surface 131 and a

convex image-side surface 132, the object-side and image-side surfaces 131 and 132 being aspheric; and a plastic fifth lens element 140 with negative refractive power having a convex object-side surface 141 and a concave image-side surface 142, the object-side and image-side surfaces 141 and 142 being aspheric and each of which being provided with at least one inflection point. Ex. 1001, 7:9–34. Aperture stop 150 is disposed between an imaged object and the first lens element 10. *Id.* at 7:34–35. The imaging lens system further comprises an IR filter 160 disposed between the image-side surface 142 of the fifth lens element 140 and the image plane 170 and the IR filter 160 has no influence on the focal length of the imaging lens system. *Id.* at 7:36–40.

The '948 patent explains that such an arrangement of optical elements can effectively correct the aberrations to improve image quality of the system, reduce the total track length of the imaging lens system and achieve a wide field of view. Ex. 1001, 1:66–2:2.

E. Priority Chain of the '948 Patent

The '948 Patent issued from U.S. Patent Application No. 15/067,369, (“the 2016 application”) filed on March 11, 2016. The 2016 application claims priority to U.S. Application Ser. No. 14/168,809 (“the 2014 application”) filed on Jan. 30, 2014, now Pat. No. 9,465,197. The 2014 application claims priority to U.S. Application Ser. No. 13/848,150 (“the 2013 application”) filed on Mar. 21, 2013, now Pat. No. 8,736,981. The 2013 application claims priority to U.S. Application Ser. No. 13/433,438 (“the 2012 application”) filed on Mar. 29, 2012, now Pat. No. 8,520,324. The 2012 application claims priority to U.S. Application Ser. No. 12/654,912 filed on Jan. 8, 2010 (“the 2010 application”), now Pat. No. 8,233,224, which claims priority under 35 U.S.C. 119(e) to Taiwan

Application Serial No. 098123694 A (“the Taiwan application”), filed on July 14, 2009.

F. Illustrative Claims

Of the challenged claims, claims 1, 14, and 23 are independent. Claim 1 is representative and is reproduced below with limitation identifiers in brackets corresponding to claim analysis headings in the Petition. *See, e.g.*, Pet. 31–43.

[1.1] An imaging lens system including, in order from an object side to an image side:

[1.2] a first lens element having a concave image-side surface;

[1.3] a second lens element;

[1.4] a third lens element with negative refractive power having a convex object-side surface and a concave image-side surface, the object-side and image-side surfaces thereof being aspheric;

[1.5] a fourth lens element with positive refractive power having a convex image-side surface; and

[1.6] a fifth lens element with negative refractive power having a convex object-side surface and a concave image-side surface, the object-side and image-side surfaces thereof being aspheric, each of the object-side and image-side surfaces thereof being provided with at least one inflection point;

[1.7] wherein there are a total of five lens elements in the imaging lens system, and a gap exists between every two adjacent lens elements along an optical axis of the imaging lens system.

Ex. 1001, 12:6–26.

G. Evidence

The Petition relies on the following reference:

Reference	Exhibit No.
US 2011/0013069 A1; filed Jan. 8, 2010; published Jan. 20, 2011; (“Chen-069”).	1012

Petitioner also relies on the Declaration of Tom D. Milster, Ph.D., (Ex. 1003) in support of its arguments.

H. Asserted Grounds of Unpatentability

Petitioner asserts that the challenged claims would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §¹	Reference(s)/Basis
1–4, 6–16, 18–24, 28, 29	102	Chen-069

II. DISCRETIONARY DENIAL

Petitioner argues the challenged claims are anticipated by Chen-069, the publication of the 2010 application that is an ancestor of the '948 patent because the challenged claims are not entitled to claim priority to the intervening 2012 application. Pet. 6–7; Ex. 1001, code (63); Ex. 1012. Thus, Petitioner argues the priority chain of the '948 patent is broken and Chen-069 is prior art to the '948 patent. Patent Owner argues that discretionary denial is warranted under 35 U.S.C. § 325(d) because the Examiner already addressed the issue of priority of the '948 patent during prosecution of the 2016 application that issued as the '948 patent. Prelim. Resp. 7 (citing Ex. 1002, 210–211 (“[t]he foreign priority fully supports all of the claims of the present application and as such applicant is entitled to a priority date of July 14, 2009 in terms of applying prior art.”)). Thus, Patent Owner argues that because “the priority issue raised in the Petition was

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102 and 103 and became effective March 16, 2013. Because the '948 patent was filed before this date, the pre-AIA versions of 35 U.S.C. §§ 102 and 103 apply.

already evaluated and decided by the Examiner during prosecution, . . . the Board should exercise its discretion and deny institution.”

Section 325(d) provides that, in determining whether to institute an *inter partes* review, “the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d) (2018). The Board uses a two-part framework in determining whether to exercise its discretion under § 325(d), specifically:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”); *see also Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph) (listing non-exclusive factors to consider in evaluating the applicability of § 325(d)) (“*Becton Dickinson*”).

Turning to the first part of the framework, there is no dispute that, although Chen-069 is an ancestor to the ’948 patent, it was not previously presented to the Office in the context of determining patentability of the claims of the ’948 patent. Instead, Patent Owner argues that the Examiner has found that the 2009 Taiwan application fully supported the claims of the 2016 application, from which the ’948 patent issued, and thus made a

determination as to the priority date to which the claims of the '948 patent are entitled. Prelim. Resp. 7–8. A review of the prosecution history of the 2016 application, however, shows that there was no dispute between the Examiner and the applicant that the prior art applied in rejecting the claims of the 2016 application predated the July 14, 2009 date of the Taiwan application. Ex. 1002, 200–213. Thus, there were no arguments made that the applied art did not predate the 2016 application or that otherwise called into question the priority date of the 2016 application. And there certainly were no arguments that Chen-069 was prior art to the 2016 application. The Examiner's unsolicited priority date finding is, therefore, not an argument previously presented to the Office under the *Advanced Bionics* framework. We therefore conclude that the same or substantially the same art or arguments were not previously presented to the Office.

Moreover, even if we were to consider the Examiner's unsolicited priority date finding to be an argument under the first part of the *Advanced Bionics* framework, for the reasons more fully explained below, we determine that Petitioner has shown sufficiently, based on the current record, that the Examiner erred in determining the priority date of the claims of the 2016 application. *See infra* § IV.D.2. We therefore conclude that Petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims under the second part of the *Advanced Bionics* framework.

Patent Owner also argues "Petitioner's challenge amounts to a backdoor way of asserting an impermissible challenge under 35 U.S.C. § 112, and the Board should exercise its discretion and deny institution." Prelim. Resp. 11. This is because, Patent Owner argues, in order to determine that Chen-069 is prior art to the '948 patent, we must first

determine that the written description of the 2012 application does not support the challenged claims under 35 U.S.C. § 112 as Petitioner has alleged. *Id.* at 11–12. Thus, according to Patent Owner, because all of the specifications in the chain of applications are identical, “the Petition’s assertion that the 2012 application does not provide written description support for the challenged claims is really an assertion that the ’948 Patent specification *itself* lacks written description support for the challenged claims.” *Id.* at 12.

We disagree. In determining patentability based on asserted prior art patents and printed publications under 35 U.S.C. § 311(b), the Board routinely makes determinations regarding priority dates of challenged claims and in doing so, often analyzes whether the challenged claims have written description support from earlier applications in a priority chain. *See, e.g., Droplets, Inc. v. E*TRADE Bank*, 887 F.3d 1309 (Fed. Cir. 2018); *Paice LLC v. Ford Motor Co.*, 881 F.3d 894 (Fed. Cir. 2018); *Enzo Life Scis., Inc. v. Becton, Dickinson & Co.*, 780 F. App’x 903 (Fed. Cir. Aug. 16, 2019); *Nintendo of Am., Inc. v. iLife Techs., Inc.*, 717 F. App’x 996 (Fed. Cir. Dec. 27, 2017). Doing so, however, is not tantamount to finding claims unpatentable under 35 U.S.C. § 112. The fact that the asserted art and the ’948 patent share the same disclosure does not change this fact.

Accordingly, we decline to exercise our discretion to deny institution.

III. REAL PARTIES-IN-INTEREST

Patent Owner argues that Petitioner “purposefully omitted a real party-in-interest to gain an advantage in this forum.” Prelim. Resp. 14. More specifically, Patent Owner argues that Petitioner failed to disclose Sunny Optical Technology Company Limited (“Sunny”), which Patent Owner identifies as Petitioner’s “supplier of the lens assemblies accused of

infringement in the related litigation.” *Id.* According to Patent Owner, “[t]he advantage gained is that of avoiding estoppel if [Petitioner] ultimately loses in a final written decision,” because Sunny, “as the supplier and the party that benefits most directly from cancelation of the challenged claims, will remain free to mount a second attack.” *Id.*

Notably, the parties do not dispute that Sunny is not time-barred from filing a Petition challenging the ’948 patent. We thus find that for purposes of institution, we need not address whether Sunny is an unnamed real party-in-interest “because, even if it were, it would not create a time bar or estoppel under 35 U.S.C. § 315.” *SharkNinja Operating LLC v. iRobot Corp.*, IPR2020-00734, Paper 11 at 18 (PTAB Oct. 6, 2020) (precedential); *see also Intel Corp. v. Alacritech, Inc.*, IPR2017-01391, Paper 8 at 3–6 (PTAB Nov. 28, 2017) (holding that the Board will not address the argument for purposes of institution that a litigation co-defendant should be named as a real party-in-interest in the absence of an allegation that the co-defendant would be time-barred under section 315(b)). We find that this “approach better serves the interest of cost and efficiency.” *SharkNinja*, Paper 11 at 20; 37 C.F.R. § 42.1(b).

Moreover, we disagree with Patent Owner that *SharkNinja* is not controlling here. Prelim. Sur-reply 2. While we agree that *SharkNinja* made additional findings (i.e., no allegations of purposefully omitting a party to gain advantage and that the petitioner had offered to add the party as a real party-in-interest), those findings do not limit the reasoning of *SharkNinja*’s holding, which is based on there being no time bar. *SharkNinja*, Paper 11 at 18–20.

Accordingly, we find that Patent Owner’s arguments concerning Sunny not being named as a real party-in-interest do not form a basis to deny institution under our circumstances.

IV. ANALYSIS OF ASSERTED GROUNDS

A. Principles of Law

Petitioner bears the burden of persuasion to prove unpatentability of the claims challenged in the Petition, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. Inc., v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987); *see also Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008) (to anticipate a patent claim under 35 U.S.C. § 102, “a single prior art reference must expressly or inherently disclose each claim limitation”). Moreover, “[b]ecause the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)). Whether a reference anticipates is assessed from the perspective of one of ordinary skill in the art. *See Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368–69 (Fed. Cir. 2003) (“[T]he dispositive question regarding anticipation [i]s whether *one skilled in the art* would reasonably understand or infer from the [prior art reference’s] teaching’ that every claim element was disclosed in that single

reference.” (second and third alterations in original) (quoting *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991))).

Additionally, under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates. *MEHL/Biophile Int’l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999) (citation omitted); *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349–50 (Fed. Cir. 2002).

B. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (internal quotation marks and citation omitted).

Petitioner argues that a person of ordinary skill in the art (“POSITA”) at the time of the filing of ’948 Patent “would include someone with (i) a Bachelor’s degree in Physics, Optical Sciences, or equivalent education or training, as well as (ii) approximately three years of experience in designing multi-lens optical systems. Lack of work experience could have been offset by additional education, and vice versa.” Pet. 13–14 (citing Milster ¶ 28). In addition, Petitioner argues that a POSITA would have understood the fundamentals of optical aberration theory, and understood and used standard techniques for making lenses cheaper and more effective, especially for lens systems used in mobile devices. According to Petitioner, a POSITA would have known how to use lens design software such as Code V, Oslo, and ZEMAX, and would have taken a lens design course or had equivalent training. Additionally, Petitioner argues that a POSITA would have

regularly used such software to create new lens designs, often using pre-existing lens designs as a starting point and then performing routine optimizations to reach a desired design. *Id.* ¶¶ 29-31. Petitioner goes on to argue that a POSITA would have followed and regularly consulted books, articles, and other publications and that the knowledge of a POSITA would be reflected in numerous prior art textbooks and publications referenced herein, including Smith (Ex. 1010), Fischer (Ex. 1013), and Kingslake (Ex. 1014).

Patent Owner does not propose a level of ordinary skill in the art nor does Patent Owner dispute the level of skill proposed by Petitioner.

For purposes of this Decision, we adopt Petitioner’s proposed level of ordinary skill.

C. Claim Construction

We apply the same claim construction standard used in district court actions under 35 U.S.C. § 282(b), namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b) (2020).

In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Only claim terms in controversy require express construction, “and only to the extent necessary to resolve the

controversy.” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *see also Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

Petitioner does not propose a specific construction for any terms and instead argues that “no claim terms require specific construction to resolve the unpatentability issues presented” in their Petition. Pet. 22. Patent Owner also does not propose any specific constructions in their Preliminary Response.²

We determine that, at this stage of the proceeding, no explicit constructions are required to resolve the dispute between the parties. A final determination as to claim construction will be made at the close of the proceeding, after any hearing, based on all the evidence of record. The parties are expected to assert all their claim construction arguments and evidence in the Petition, Patent Owner’s Response, Petitioner’s Reply, Patent Owner’s Sur-reply, or otherwise during trial, as permitted by our rules.

D. Anticipation by Chen-069

Petitioner argues claims 1–4, 6–16, 18–24, 28, and 29 of the ’948 patent are anticipated by Chen-069. Pet. 41–65. Below we analyze Petitioner’s contentions in light of Patent Owner’s arguments.

² Patent Owner does argue that Petitioner is asserting an erroneous claim construction for the “first lens element” in its arguments regarding anticipation over Chen-069. Prelim. Resp. 22–29. We address this argument in our analysis of the asserted anticipation ground.

1. Overview of Chen-069 (Ex. 1005)

Chen-069 is the published version of U.S. Application No. 12/654,912 which is an ancestor of the '948 patent. Ex. 1012, codes (10), (21). Chen-069 was published on January 20, 2011. *Id.* at code (43). Chen-069 shares its disclosure with the '948 patent with only minor differences. For an overview of Chen-069, we refer to the overview of the '948 patent found above.

2. Whether Chen-069 is Prior Art

Petitioner argues that the '948 patent does not benefit from the priority of the 2012 application in its chain because the 2012 application does not support the full breadth of the challenged claims. *Id.* at 23–40. Thus, according to Petitioner, Chen-069, which was published before the 2012 application, is prior art to the '948 patent even though Chen-069 is a published ancestor application in the priority chain of the '948 patent. Pet. 42–44.

Petitioner argues that the 2012 application does not support the full breadth of the challenged claims because the 2012 application discloses a five-lens system in which the first lens has only positive power and the second lens has negative power. Pet. 30–32. Petitioner argues that the “2012 application does not disclose or otherwise contemplate a lens system in which the first lens has negative refractive power, or the second lens element has positive refractive power.” Pet. 34 (citing Ex. 1003 ¶ 77). The challenged claims, however, “are broad enough to encompass a five-lens element optical system in which the first lens has negative power and/or the second lens has positive power.” *Id.* at 33.

According to Petitioner, a system with a negative first lens is significantly different than a system with a positive first lens, as confirmed

by ZEMAX modeling. Pet. 38–40. Petitioner therefore argues that a “POSITA would not have considered these undisclosed [negative first lens] permutations to be taught by the 2012 application.” *Id.* at 40.

Patent Owner argues that “the Petition errs in contending the ’948 Patent discloses only five-element lens systems having a first lens element with positive refractive power and a second lens element with negative refractive power.” Prelim. Resp. 17. Patent Owner points out that Petitioner refers to systems with negative-powered first lens and positive-powered second lens as wide-angle camera systems and then argues that “[t]here is nothing in the written description of the ’948 Patent that suggests the inventors intended to exclude wide-angle camera systems” and instead argues that the ’948 “patent specification states that ‘when the aperture stop is disposed near the third lens element, a wide angle view can be favorably achieved. ..., the emphasis is on the wide field of view so that the sensitivity of the imaging system can be effectively reduced.’” *Id.* at 17–18.

Patent Owner also argues the Petition errs in focusing on the first and second lens elements to the exclusion of the third, fourth and fifth lens elements. Prelim. Resp. at 18. According to Patent Owner, “the Examiner understood that the patentable features of the ’948 Patent concern aspects of the **third, fourth and fifth lens elements** of the patented five-element lens system, and *not* aspects of the first or second lens elements.” Prelim. Resp. 18. Thus, Patent Owner argues, it was “within its rights to file additional continuation applications, such as the ’369 application [*i.e.* the 2016 application], that sought to obtain patent protection for the various combinations of patentable features of the third, fourth and fifth lens elements of its patented lens system.” *Id.* at 21.

Patent Owner next argues that “the Petition is asserting a claim construction argument that the ‘first lens element’ recited in the challenged claims should be restricted to a positive refractive power and that the ‘second lens element’ should be restricted to a negative refractive power.” Prelim. Resp. 22. Patent Owner argues that “without such restrictions, the Petition’s argument that the challenged claims lack written description support also fails.” *Id.* at 29.

Patent Owner argues that in order to shift the burden from Petitioner to Patent Owner on establishing the priority date of the ’948 patent, Petitioner was required to introduce prior art that predates the apparent effective date of the challenged claims. Prelim. Resp. 30 (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1329 (Fed. Cir. 2008)). The ’948 Patent’s apparent effective date is the foreign priority date of the Taiwan application, according to Patent Owner, which is the same effective priority date as the 2012 application. Thus, Patent Owner argues that Petitioner has not brought forward evidence of prior art that predates the apparent effective date of the ’948 Patent and thus has not met its burden. *Id.*

At this stage of the proceeding, we are persuaded Chen-069 is prior art to the ’948 patent. 35 U.S.C. § 120 states:

An application for patent for an invention disclosed in the manner provided by section 112(a) (other than the requirement to disclose the best mode) in an application previously filed in the United States, or as provided by section 363 or 385, which names an inventor or joint inventor in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application.

Thus, “a patent application is entitled to the benefit of the filing date of an earlier filed application only if the disclosure of the earlier application

provides support for the claims of the later application, as required by 35 U.S.C. § 112.” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008).

In order to determine whether the 2012 application provides written description support for the challenged claims of the ’948 patent, we look to see whether the specification of the 2012 application “reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter [of the challenged claims] as of the filing date [of the 2012 application].” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). “[T]he purpose of the written description requirement is to ‘ensure that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor’s contribution to the field of art as described in the patent specification.’” *Id.* at 1353 (quoting *University of Rochester v. G.D. Searle & Co., Inc.*, 358 F.3d 916, 920 (Fed. Cir. 2004)). Thus, whether the specification complies with the written description requirement calls for the comparison of the scope of the claim with the scope of the description to determine whether the inventor has demonstrated possession of the claimed invention.

First, we look to the claims to determine their scope. Here we agree with Petitioner that the independent claims of the ’948 patent do not limit the first and second lens elements to having a particular refractive power. Claim 1, for example, recites “a first lens element having a concave image-side surface; a second lens element.”³ Ex. 1001, 12:9–10. These limitations do not specify either lens as having a specific refractive power. This is in contrast to the third, fourth, and fifth lenses each of which are specifically

³ Independent claims 14 and 23 recite identical limitations.

limited to a negative, positive, and negative refractive power, respectively. *Id.* at 12:11–19. Moreover, claims 4 and 5, which depend from claim 1, add limitations requiring the “first lens element [to have] positive refractive power” and the “second lens element [to have] negative refractive power.” *Id.* at 12:35–38. Under the doctrine of claim differentiation, we interpret independent claim 1 as not requiring the first lens to have positive refractive power and also not requiring the second lens to have negative refractive power. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 911 (Fed. Cir. 2004) (“[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim.”). Thus, we determine that the scope of these independent claims encompasses a first lens having either a positive or negative refractive power and a second lens having either a positive or negative refractive power.

Next, we look at the written description of the 2012 application. The Summary of the Invention section of the 2012 application repeatedly describes the invention as having “a first lens element with positive refractive power having a convex object-side surface; a second lens element with negative refractive power.” Ex. 1005, 2:5–9; *see* 2:19–20 (“the first lens element provides a positive refractive power”); 3:14–19 (“[t]he present invention provides another imaging lens system including . . . “a first lens element with positive refractive power having a convex object-side surface; a second lens element with negative refractive power”). The Detailed Description of the Preferred Embodiments likewise describes the “present invention [as] provid[ing] an image lens system including . . . a first lens element with positive refractive power having a convex object-side surface; a second lens element with negative refractive power.” *Id.* at 6:9–12, *see id.*

at 6:14–17; 8:26–9:3; 9:12–16; 12:21–26. Each of the figures depicting the five-lens system shows the first lens as having a positive refractive power and a second lens as having a negative refractive power and each of their associated description in the specification of the 2012 application describes the first and second lenses in the same way. *Id.* at 12:21–13:1; 15:25–16:10; 18:25–19:10, Figs. 1, 3, 5.

Based on the disclosure of the 2012 application we determine that it does not describe an imaging lens system with a negative refractive power or a second lens with positive refractive power, yet as explained above, both such lenses fall under the scope of the independent claims of the '948 patent. None of the challenged dependent claims limit the first and second lenses to having positive and negative refractive powers respectively. Thus, the written description of the 2012 application does not support the full breadth of the challenged claims. We therefore determine, at this stage of the proceeding, that the challenged claims of the '948 patent do not benefit from the priority date of the 2012 application.

Patent Owner argues that “the Petition errs in contending the '948 Patent discloses only five-element lens systems having a first lens element with positive refractive power and a second lens element with negative refractive power.” Prelim. Resp. 17. However, Patent Owner does not point to any disclosure in the 2012 application that indicates that the inventor had possession of a lens system with a first lens element with negative refractive power and a second lens element with positive refractive power at the time the 2012 application was filed.

Patent Owner’s argument that the Petition errs in focusing on the first and second lens elements to the exclusion of the third, fourth and fifth lens elements and that the patentable features of the '948 patent relate to the

third, fourth, and fifth lens (Prelim. Resp. 18) is not relevant to the question of whether the 2012 application provides written description support for the claims of the '948 patent. Regardless of where the novel or patentable features of the '948 patent lie, the claims include the first and second lens as limitations and these limitations must be supported by the 2012 application in order for the claim to benefit from the priority date of the 2012 application.

We disagree with Patent Owner's argument that Petitioner "is asserting a claim construction argument that the 'first lens element' recited in the challenged claims should be restricted to a positive refractive power and that the 'second lens element' should be restricted to a negative refractive power." Prelim. Resp. 22. In fact, Petitioner explicitly argues the opposite, stating that "[a]ll challenged claims are broad enough to encompass a five-lens element optical system in which the first lens has negative power and/or the second lens has positive power." Pet. 33.

Finally, for the reasons explained above, we disagree with Patent Owner's argument that Petitioner has not carried its burden in showing that the '948 patent does not benefit from the priority date of the 2012 application.

Chen-069 was published January 20, 2011, before the March 29, 2012 filing date of the 2012 application. Therefore, at this stage of the proceeding, we determine that Chen-069 is prior art to the '948 patent.

3. *Analysis of Claim 1*

Petitioner argues Chen-069 discloses the preamble and the first, second, third, fourth, and fifth lenses as recited in limitations 1.2–1.6 by disclosing the following:

FIG. 1 shows an imaging lens system in accordance with a first embodiment of the present invention, and FIG. 2 shows the aberration curves of the first embodiment of the present invention. The imaging lens system of the first embodiment of the present invention mainly comprises five lens elements including, in order from the object side to the image side: a plastic first lens element 100 with positive refractive power having a convex object-side surface 101 and a concave image-side surface 102, the object-side and image side surfaces 101 and 102 thereof being aspheric; a plastic second lens element 110 with negative refractive power having a convex object-side surface 111 and a concave image side surface 112, the object-side and image-side surfaces 111 and 112 thereof being aspheric; a plastic third lens element 120 with negative refractive power having a convex object side surface 121 and a concave image-side surface 122, the object-side and image-side surfaces 121 and 122 thereof being aspheric; a plastic fourth lens element 130 with positive refractive power having a concave object-side surface 131 and a convex image-side surface 132, the object-side and image-side surfaces 131 and 132 thereof being aspheric; and a plastic fifth lens element 140 with negative refractive power having a convex object-side surface 141 and a concave image side surface 142, the object-side and image-side surfaces 141 and 142 thereof being aspheric, and each of which being provided with at least one inflection point; wherein an aperture stop 150 is disposed between an imaged object and the first lens element 100; wherein the imaging lens system further comprises an IR filter 160 disposed between the image side surface 142 of the fifth lens element 140 and the image plane 170; and wherein the IR filter 160 has no influence on the focal length of the imaging lens system.

Pet. 44–47 (citing Ex. 1012 ¶ 53; Figs. 1, 7; Ex. 1003 ¶¶ 86–91).

Additionally, Petitioner argues Chen-069’s Figure 1 discloses a five-element imaging lens system in which a gap exists between every two adjacent lens elements along an optical axis of the imaging lens system as recited in limitation 1.7. Pet. 47 (Ex. 1012, Fig. 1; Ex. 1003 ¶ 92).

Patent Owner does not separately dispute Petitioner's contentions for any of these limitations and instead relies on the arguments that we have already analyzed above. *See* Prelim. Resp. 31. Reviewing paragraph 53 of Chen-069, we agree with Petitioner that it discloses each of the five lenses and their corresponding characteristics recited in the preamble and limitations 1.2–1.6. We also agree that Figure 1 of Chen-069 depicts its lens system as including a gap between all adjacent lens elements.

At this stage of the proceeding, for the reasons provided by Petitioner, we determine Petitioner has set forth sufficient evidence and reasoning establishing a reasonable likelihood that Chen-069 discloses the preamble and each of the limitations of claim 1 and therefore anticipates claim 1.

4. Remaining Challenged Claims

Petitioner contends claims 2–4, 6–16, 18–24, 28, and 29 are anticipated by Chen-069 and provides evidence and reasoning supporting its contentions. Pet. 48–65. Patent Owner does not separately dispute Petitioner's contentions for these claims. We determine Petitioner has presented sufficient evidence to establish that Chen-069 discloses the limitations of the remaining challenged claims.

V. CONCLUSION

Petitioner has demonstrated a reasonable likelihood of prevailing in showing the unpatentability of at least one challenged claim of the '948 patent. At this stage of the proceeding, however, we have not made a final determination with respect to the patentability of the challenged claims.

VI. ORDER

For the foregoing reasons, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–4, 6–16, 18–24, 28, and 29 of the '948 patent is instituted with respect to all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '948 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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