

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ESSILOR INTERNATIONAL (COMPAGNIE GENERALE D'OPTIQUE),
Petitioner,

v.

EHS LENS PHILIPPINES, INC.,
Patent Owner.

Case IPR2016-01541
Patent 6,019,470

Before KRISTEN L. DROESCH, MICHAEL J. FITZPATRICK, and
ROBERT J. WEINSCHENK, *Administrative Patent Judges*.

DROESCH, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.108

I. INTRODUCTION

A. Background

EHS Lens Philippines Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) for *inter partes* review of claims 1–11, 13–15, 17, 19, and 20 (“the challenged claims”) of U.S. Patent No. 6,019,470 (“the ’470 Patent”). See 35 U.S.C. §§ 311–312. Essilor International (Compagnie Generale D’Optique) (“Patent Owner”) timely filed a Preliminary Response (Paper 8, “Prelim. Resp.”). See 35 U.S.C. § 313.

We have authority under 35 U.S.C. § 314 and 37 C.F.R. § 42.4. An *inter partes* review may not be instituted unless it is determined that “the information presented in the petition filed under section 311 and any response filed under section 313 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).

After considering the Petition and Preliminary Response, for the reasons provided below, we determine, based on the record before us there is not a reasonable likelihood Petitioner would prevail in showing claims 1–11, 13–15, 17, 19, and 20 are unpatentable.

B. Related Proceedings

The parties indicate the ’470 Patent is involved in the following related matters:

EHS Lens Philippines, Inc. v. Essilor Int’l, S.A., Case No. 3:16-cv-00563-JAG (E.D. Va); and

petition for *inter partes* review in Case No. IPR2016-01539 (concurrently filed). Pet. 5; Paper 5, 2.

C. The '470 Patent (Ex. 1001)

The '470 Patent discloses a progressive multifocal lens for vision correction and a related manufacturing method. See Ex. 1001, 1:7–9.

Figures 10a and 10b of the '470 Patent are reproduced below:

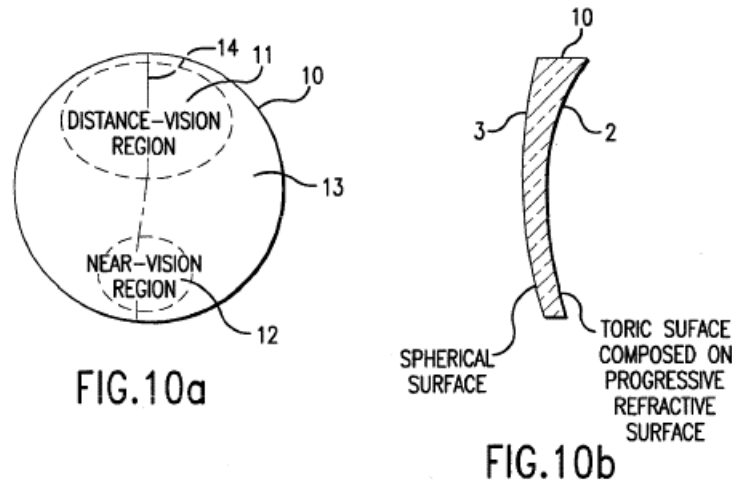


Figure 10a depicts progressive multifocal lens 10 having distance-vision region 11, near-vision region 12, progressive region 13, and main line of sight 14. See Ex. 1001, 2:19–21; 9:47–60. Figure 10b depicts lens 10 having the properties of a progressive refractive surface and a toric surface provided on lens surface 2 on the side of the eye. See *id.* at 14:23–26. A composite equation is utilized to determine the values of the z coordinates of lens surface 2 on the side of the eye. See *id.* at 14:26–59.

[T]he curvature of a toric surface for correction of astigmatism [is] applied to the lens surface on the side of the eye in addition to the curvature of a progressive refractive surface for correction of vision, and it can be made such that the surface on the side of the eye has an astigmatism correcting property, that is, a cylinder power.

Ex. 1001, 15:25–31. Because a progressive refractive surface having vision correcting power and an astigmatism correcting power is prepared on the lens surface on the side of the eye, the difference in magnification between

distance-vision region 11 and near-vision region 12 can be reduced, whereby the jumping and warping of images is reduced. *See id.* at 15:31–39.

D. Illustrative Claims

Claims 1 and 17 are independent, claims 2–11 and 13–15 depend from claim 1, and claims 19 and 20 depend from claim 17. Claims 1 and 17 are illustrative:

1. A progressive multifocal lens capable of correcting a user's vision and having a first major surface and a second major surface, where the first major surface is positioned closest to the user's eye when the progressive multifocal lens is worn by the user, the progressive multifocal lens comprising:
a distance-vision region having a first refractive power;
a near-vision region having a second refractive power; and
a progressive region joining the distance-vision region and the near-vision region and having a refractive power that varies gradually;
wherein the first major surface is a composite surface that comprises a progressive refractive surface comprising the distance-vision region, near-vision region, and progressive region; and
wherein the first major surface includes a surface that corrects astigmatism.

17. A method of manufacturing a progressive multifocal lens capable of correcting a user's vision and having a first major surface and a second major surface, where the first major surface is positioned closest to the user's eye when the progressive multifocal lens is worn by the user, the progressive multifocal lens having a distance-vision region having a first refractive power, a near-vision region having a second refractive power, and a progressive region joining the distance-vision region and the near-vision region and having a refractive power that varies, the method comprising:
determining parameters of an original progressive refractive surface capable of correcting the user's vision;

determining parameters of an original toric surface capable of correcting astigmatism; and
determining parameters of the first major surface of the progressive multifocal lens from the parameters of the original progressive refractive surface and the parameters of the original toric surface.

E. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of the following claims on the following grounds based on the following references (Pet. 18–57):

Claim(s)	Statutory Basis	Reference(s)
1, 2, 4, 5, 9–11, 14, and 15	§ 102	Pfeiffer ¹
3	§ 103	Pfeiffer and Jalie ² or Pfeiffer and Fowler ³
6, 7, and 8	§ 103	Pfeiffer and Fuëter ⁴
13	§ 103	Pfeiffer and Kato ⁵
17 and 19	§ 103	Pfeiffer and Kanolt ⁶
20	§ 103	Pfeiffer, Kanolt, and Jalie or Pfeiffer, Kanolt, and Fowler

¹ Ex. 1011, Ex. 1012, Ex. 1012 (corrected) German Published Patent Application DE 43 37 369 A1 (published May 4, 1995) (“Pfeiffer”). Referred to as “DE369” by Petitioner and “Rodenstock” by Patent Owner.

² Ex. 1013, Ex. 1019, Mo Jalie, *Aspheric Lenses*, OPTICIAN, Oct. 23, 1987, at 14 (“Jalie”). Referred to as “Mo Jalie” by Petitioner.

³ Ex. 1014, Ex. 1020, Colin Fowler, *Aspheric Lenses*, THE OPTICIAN, Aug. 13, 1982, at 14 (“Fowler”).

⁴ Ex. 1005, US Patent No. 4,606,622 (filed Jan. 13, 1984) (“Fuëter”). Referred to as “US622” by Petitioner.

⁵ Ex. 1015, US Patent No. 5,455,642 (filed Dec. 25, 1991) (“Kato”). Referred to as “US642” by Petitioner.

⁶ Ex. 1016, US Patent No. 2,878,721 (filed Feb. 3, 1954) (“Kanolt”). Referred to as “US271” by Petitioner.

1, 2, 4, 5, 9–11, 14, and 15	§ 103	Pfeiffer and Köppen ⁷
3	§ 103	Pfeiffer, Jalie, and Köppen or Pfeiffer, Fowler, and Köppen
6, 7, and 8	§ 103	Pfeiffer, Fuëter, and Köppen
13	§ 103	Pfeiffer, Kato, and Köppen
17 and 19	§ 103	Pfeiffer, Kanolt, and Köppen
20	§ 103	Pfeiffer, Kanolt, Jalie, and Köppen, or Pfeiffer, Kanolt, Fowler, and Köppen

The Petition also relies on the Declaration of Dr. Gilles Le Saux (Ex. 1002).

II. ANALYSIS

A. Claim Construction

Claims of an unexpired patent that will not expire before issuance of a final written decision are interpreted using the broadest reasonable interpretation in light of the specification. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Patent Owner asserts that, after the Petition was filed, the '470 Patent expired and, therefore, the broadest reasonable interpretation does not apply. *See* Prelim. Resp. 17. Petitioner contends “the broadest reasonable construction in light of the specification” should apply. *See* Pet. 12. Nonetheless, Petitioner contends that, “[e]ven if the Board were to apply a district court-type claim construction, the analysis herein would remain the same.” *See* Pet. 12 n.2.

Based on the face of the '470 Patent, it issued from a Patent Cooperation Treaty (PCT) application filed on October 11, 1996. *See* Ex.

⁷ Ex. 1017, Ex. 1018, Ex. 1018 (corrected) Werner Köppen, *Properties of Internal Toric Eyeglass Lenses*, GERMAN OPTICS MONTHLY JOURNAL, Aug. 1979, at 7 (“Köppen”). Referred to as “Rodenstock” by Petitioner and “German Optics” by Patent Owner.

1001, [22]; 35 U.S.C. § 363; *Broadcast Innovation, L.L.C. v. Charter Commc'ns, Inc.*, 420 F.3d 1364, 1368 (Fed. Cir. 2005). Accordingly, the October 11, 1996, filing date of the PCT application is the calculation date for the expiration of the '470 Patent. See 35 U.S.C. § 154(a)(2). On this record, we agree that the '470 Patent expired on October 11, 2016, after the Petition for *inter partes* review was filed. See *id.*

Because the '470 Patent has expired, we need not apply the broadest reasonable construction; instead, we may apply “a district court-type claim construction,” and we do so here. See 37 C.F.R. § 42.100(b). Thus, we construe the claims in accordance with their ordinary and customary meanings as would be understood by a person of ordinary skill in the art in the context of the '470 Patent Specification. See generally *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Petitioner proposes the following constructions for the following claim phrases (Pet. 12–17):

Claim Phrase	Petitioner's Proposed Construction
“progressive multifocal lens”	“a lens comprising two field sections having different refractive power, and a field section between those two fields wherein the refractive power changes progressively”
“a distance-vision region having a first refractive power”	“a portion of the progressive multifocal lens having a refractive power for viewing objects at a distance”
“a near-vision region having a second refractive power”	“a portion of the progressive multifocal lens having a refractive power for viewing nearby objects”

“a progressive region joining the distance-vision region and the near-vision region and having a refractive power that varies gradually”	“a region of the lens disposed between the distance-vision region and the near-vision regions and having a refractive power that varies gradually”
“the first major surface includes a surface that corrects astigmatism”	“the eye-side surface of the lens includes a surface that corrects astigmatism of the eye”
“rotationally symmetric”	“a lens surface that is rotationally symmetric will look the same when it is rotated about its z-axis to a new position, such as when it is rotated 180° about its z-axis, where the z-axis is orthogonal to the surface of the lens at the axis of rotation”
“main line of sight”	“a line extending from the distance-vision region to the near-vision region somewhat bent on the side of the nose.”
“join power”	“the difference in prescription (<i>i.e.</i> , difference in dioptric power) between the distance-vision region and the near-vision region.”

Patent Owner does not dispute explicitly Petitioner’s proposed constructions. *See* Prelim. Resp. 17. Based on the current record, each of Petitioner’s proposed claim constructions are consistent with their ordinary and customary meaning, as they would be understood by a person of ordinary skill in the art in the context of the ’470 Patent Specification. *See Phillips*, 415 F.3d at 1312–13. Accordingly, on this record and for purposes of this decision, we adopt Petitioner’s proposed claim constructions. In addition, we determine that no additional claim terms require express construction.

B. Asserted Grounds of Unpatentability

1. § 102 Anticipation of Claims 1, 2, 4, 8, 9–11, 14, and 15 by Pfeiffer

a. Pfeiffer (Ex. 1011, Ex. 1012, Ex. 1012 (corrected))

Pfeiffer discloses an ophthalmic lens having a progressive optic power. *See* Ex. 1012 (corrected), 3. For progressive ophthalmic lenses, it is known that the inevitable surface astigmatism present on a surface having a varying surface refractive power is considered an accompanying factor to be taken into account, and the amount of the surface astigmatism on the main line should not exceed a physiologically disturbing value. *See id.* at 3.

Pfeiffer discloses the invention is based on

improving an ophthalmic lens with a progressive effect having *at least one surface* with a surface power which changes in such a manner that, starting from at least one region in which the effect or the optic power of the ophthalmic lens is at least approximately constant, the optic power of the lens changes along a [main] line . . . on which a prescribed astigmatism is not identical with zero diopter in such a manner that there are no disturbing variations of the amount of and or the axial position of the overall astigmatism.

Ex. 1012 (corrected), 3 (emphasis added); *see id.* at 9 (claim 1). Pfeiffer discloses: “Contrary to the state of the art, in the case of the invented lens a specific amount of the surface astigmatism differing from 0 diopter over at least one part of the main line is prescribed but also the axial position of the surface astigmatism is prescribed.” *Id.* at 3. According to one aspect of the invention, “*only one surface* contributes to changing the optic power, *the other surface* of the lens can therefore be designed in a conventional manner as a so-called prescription surface with a spherical or a toric effect.” *Id.* at 4 (emphasis added); *see id.* at 9 (claim 2). According to another aspect of the invention, Pfeiffer discloses:

Due to the invented design of the . . . main line, it is however preferable if according to claim 3 at least the main part of the astigmatism serving a corrective purpose is supplied by the surface astigmatism of the surface having a changing surface power.

In this way, the second surface may always be a rotationally symmetrical surface (claim 4).

Naturally, however according to claim 5 the second surface may also have an astigmatic effect, and, in particular, be designed as an atoric surface, i.e., as a surface with no circular main sections (claim 5).

Ex. 1012 (corrected), 4. A performance function is minimized for prescribing a value of the surface astigmatism and the axial position of the surface astigmatism along the main line. *See id.* The performance function utilizes prescribed values for the surface astigmatism, surface power, and axial position. *See id.* Pfeiffer discloses in Tables 1 through 5 values based on embodiments for axial positions 0, 30, 45, 60, and 90⁰ for each surface only along the main line. *See id.* at 4–9. For each axial position, the tables provide x, y, and z coordinates along the main line (y axis) and corresponding prescribed values for the surface power (DO_v), actual surface power (DO), prescribed values for the surface astigmatism on the main line in diopter (Ast_v), actual surface astigmatism on the main line (Ast), and the actual axial position in degrees (Axis). *See id.* at 10, 11 (claim 10).

b. Claims 1, 2, 4, 5, 9–11, 14, and 15

Petitioner contends that Pfeiffer discloses “a progressive multifocal lens . . . having a first major surface . . . positioned closest to the user’s eye when the progressive multifocal lens is worn by the user,” as recited in claim 1, based on the following disclosures:

The present invention is based on the fundamental concept of improving an ophthalmic lens with a progressive effect

. . .

Due to the invented design of the main meridian or the main line, it is however preferable if according to claim 3 at least the main part of the astigmatism serving a corrective purpose is supplied by the surface astigmatism of the surface having a changing surface power.

In this way, the second surface may always be a rotationally symmetrical surface.

Pet. 18–19 (quoting Ex. 1012, 2–3 (Petitioner’s emphasis)).

Petitioner contends that Pfeiffer discloses “the first major surface is a composite surface that comprises a progressive refractive surface comprising the distance-vision region, near-vision region, and progressive region,” as recited in claim 1, based on the following disclosure of Pfeiffer: “It is stated in claim 2 that only one surface contributes to changing the optic power, the other surface of the lens can therefore be designed in a conventional manner as a so-called prescription surface with a spherical or a toric effect.” Pet. 22 (quoting Ex. 1012, 3). Petitioner alleges: “The claims of [Pfeiffer] likewise confirm that either of the two surfaces of the lens *may* comprise the composite progressive surface with changing optic power including the distance-vision region, the near-vision region, and the progressive region.” *Id.* (emphasis added). In support of this assertion, Petitioner directs attention to claim 1 of Pfeiffer. *See id.* at 22–23. The pertinent language of claim 1 is provided as follows: “An ophthalmic lens having a progressive optic power, said lens being provided with *at least one surface* having a surface power which changes in such a manner that, starting from at least one region, in which the optic power of said

ophthalmic lens is at least approximately constant. . . .” Ex. 1012, 9 (claim 1); Ex. 1012 (corrected), 10 (claim 1) (emphasis added). Petitioner contends: “Considering there are only two lens surfaces, the eye-side surface and the object-side surface, one of ordinary skill would understand that [Pfeiffer] teaches that the progressive surface *could be* developed on either the eye-side surface or the object-side surface.” Pet. 23 (emphasis added); *see also* Ex. 1002 ¶ 57 (Dr. Le Saux testifying to the same).

Petitioner directs attention to Tables 1 through 5 of Pfeiffer and makes the following assertion:

Because the surface power D_0 (in diopters) on the main line increases from the top of the lens ($y=36.0$ mm) to the bottom of the lens ($y=-36.0$ mm), *the person of ordinary skill would understand that Tables 1–5 are for the case where the progressive surface is developed on the object side of the lens.*

Pet. 23 (emphasis added); *see also* Ex. 1002 ¶ 58 (Dr. Le Saux testifying to the same). Petitioner further contends:

[A]s of the priority date, and consistent with the teaching of [Pfeiffer] that the progressive surface can be developed on either surface of the lens, a person of ordinary skill would have known that the values in Tables 1-5 could easily be used for developing the progressive surface on the eye-side of the lens (the first major surface in claim 1 of the '470 Patent) by selecting a “sphere” value “S” (in diopters) for the concave eye-side surface such that using the values for D_0 in Tables 1-5, S minus D_0 is positive along the entire surface. For example With respect to $z_0(y)$, once the sphere values of the eye-side surface is chosen, a person of ordinary skill would be able to calculate the $z_0(y)$ values for an eye-side progressive surface.

Pet. 23–24; *see also* Ex. 1002 ¶ 59 (Dr. Le Saux testifying to the same).

As to the final limitation of claim 1, which requires the first major surface also to include a surface that corrects for astigmatism of the eye (*see* Pet. 15, 24–25; Prelim. Resp. 17), Petitioner contends that Pfeiffer discloses this limitation based on the following disclosure:

It is stated in claim 2 that only one surface contributes to changing the optic power, the other surface of the lens can therefore be designed in a conventional manner as a so-called prescription surface with a spherical or a toric effect.

Due to the invented design of the main meridian or the main line, it is however preferable if, according to claim 3 at least the main part of the astigmatism serving a corrective purpose is supplied by the surface astigmatism of the surface having a changing surface power.

In this way, the second surface may always be a rotationally symmetrical surface (claim 4).

Pet. 25 (quoting Ex. 1012, 3). Based on the above quoted disclosure, Petitioner contends that Pfeiffer “teaches a preference for the main part of the correction for eye astigmatism to be supplied by the surface astigmatism of the progressive surface (*i.e.*, ‘the surface having changing surface power’ in the passage quoted above).” *Id.* Petitioner again directs attention to the values in Tables 1 through 5 of Pfeiffer and contends: “These values will be the same also for the case where the progressive surface that corrects for eye astigmatism is developed on the eye-side surface of the lens.” *Id.* at 26; *see also* Ex. 1002 ¶ 63 (Dr. Le Saux testifying to the same). Petitioner further directs attention to the following disclosure of Pfeiffer:

The tables show five preferred embodiments of the invented surfaces with different axial positions, notably 0° and 180°, 30°, 45°, 60° and 90°, with for each surface only a strip along the sinuous main meridian being given. If this strip has been determined according to the present invention, the remaining

surface can be calculated in an as such known manner starting from the strip along the main meridian.

Pet. 26 (quoting Ex 1012, 8). Petitioner asserts: “That such a calculation was known as of the priority date of the ’470 Patent is confirmed in the accompanying Declaration of Gilles Le Saux.” *Id.*; *see also* Ex. 1002 ¶ 64 (Dr. Le Saux testifying to the same).

In response, Patent Owner argues Pfeiffer does not anticipate claim 1 because the Petition fails to point to any language in Pfeiffer instructing a person of ordinary skill in the art to put both the eye astigmatism correcting surface and the progressive surface on the eye-side of the lens. *See* Prelim. Resp. 24 (citing *SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1375 (Fed. Cir. 2013)). Patent Owner points out that “claim 1 of [Pfeiffer] calls for . . . ‘at least one surface’ of the lens has both a progressive and an astigmatic correction,” and argues that “[n]othing in [Pfeiffer] teaches that the ‘one surface’ of claim 1 is, can, or should be the eye-side of the lens.” *Id.* at 25; *see id.* at 26. Patent Owner contends that, when read in the context of Pfeiffer’s disclosure, Petitioner relies incorrectly on the language of claims 1 and 2 to support the assertions that Pfeiffer discloses placing the progressive surface on the eye-side of the lens. *See id.* at 33–34. Patent Owner further directs attention to Petitioner’s admission that the five embodiments disclosed in Pfeiffer place the progressive surface on the object-side (i.e., front-side) of the lens, which is the opposite of the requirements of claim 1. *See id.* at 24 (citing Pet. 23–24; Ex. 1002 ¶ 58), 38 (citing Ex. 1002 ¶ 58). Patent Owner contends that the fact that every one of Pfeiffer’s examples in Tables 1 through 5 must be changed to meet the eye-

side requirement of the claims shows that Pfeiffer does not anticipate the claims. *See id.* at 24–25 (citing Pet. 23–24; Ex. 1002 ¶ 59).

Patent Owner also argues that, when considering the claims of Pfeiffer in isolation and ignoring the disclosed embodiments (i.e., embodiments of Tables 1 through 5), Pfeiffer is at best ambiguous and cannot support anticipation. Prelim. Resp. 33–34 (citing *In re Hughes*, 345 F.2d 184, 188 (CCPA 1965); *In re Turlay*, 304 F.2d 893, 899 (CCPA 1962)). Related to the previous argument, Patent Owner contends that the prosecution history of the U.S. Patent 5,992,998 (“’998 Patent”, Ex. 2020) shows that Pfeiffer “does not clearly convey what Petitioner asserts that it does.” *Id.* at 37. Specifically, Patent Owner points asserts that during prosecution of the ’998 Patent, which issued from Application No. 08/448,500 and claims foreign priority to Pfeiffer, the application claims as filed were similar to the translated claims from Pfeiffer, and were amended to address rejections under 35 U.S.C. § 112. *See id.* at 34–36 (citing Ex. 1012, 13 (claim 1); Ex. 2020, 1; Ex. 2021, 13 (claim 1); Ex. 2024, 3–4; Ex. 2025, 3–4; Ex. 2026; Ex. 2027 3–4, 6–7). Patent Owner contends Petitioner’s amendment of “at least one surface” of claim 1 to “a non-eye facing surface of the lens” “clearly delineate[s] the object side of the lens as constituting the progressive surface of the lens.” *Id.* at 36.

We agree that, when considered in the context of Pfeiffer’s entire disclosure and the admission that Pfeiffer discloses five embodiments where the progressive surface is on the opposite object-side of the lens (*see* Pet. 23–24; Ex. 1002 ¶ 58), Petitioner’s reliance on certain disclosures of Pfeiffer (e.g., “at least one surface”) is insufficient to demonstrate that Pfeiffer discloses a progressive surface is on the eye-side of the lens. The

prosecution history of the corresponding '998 Patent, cited by Patent Owner, only bolsters finding that Pfeiffer's reference to "at least one surface" does not disclose the eye-side surface in particular. Also insufficient to show anticipation are Petitioner's assertions that (1) "either of the two surfaces of the lens *may* comprise the composite progressive surface," and (2) "the progressive surface *could be* developed on either the eye-side surface or the object-side surface." Pet. 22–23 (emphasis added); *see also* Ex. 1002 ¶¶ 56–57 (Dr. Le Saux testifying to the same).

We further agree that Petitioner's proposed modifications to the values of Pfeiffer's Tables 1 through 5 to meet the eye-side requirement of the claims also show that Pfeiffer fails to anticipate the claims. As pointed out by Patent Owner (*see* Prelim. Resp. 26–27), Petitioner's expert Dr. Le Saux's testimony concedes that all of the examples disclosed in Pfeiffer show the progressive surface on the front side of the lens and that every one of those examples would require modification to arrive at the invention. *See* Ex. 1002 ¶ 58. Proposed modifications to the teachings of the prior art are appropriate for an obviousness analysis, not anticipation.

Accordingly, based on the record before us there is not a reasonable likelihood Petitioner would prevail in showing that claim 1, and dependent claims 2, 4, 5, 9–11, 14, and 15, are anticipated by Pfeiffer.

2. § 103 Unpatentability of Claims 1, 2, 4, 5, 9–11, 14, and 15
Over Pfeiffer and Köppen

a. Köppen (Ex. 1017, Ex. 1018, Ex. 1018 (corrected))

Köppen is an article in the German Monthly Optics Journal entitled "Properties of Internally Toric Eyeglass Lenses." *See* Ex. 1018, 1, 3; Ex 1018 (corrected), 2, 4. Köppen discloses: "Internally toric glasses are

advantageous not only from the optics viewpoint. Due to their spherical front surface, they can often be faceted and inserted into eyeglass frames more advantageously than externally toric glasses.” *Id.* at 7. Köppen further discloses that, “in the case of severe astigmatism and slanted axis position, it can be expected that the correction with an internal cylinder produces perceivably better results.” *Id.* at 8.

b. Claims 1, 2, 4, 5, 9–11, 14, and 15

Petitioner relies on the same teachings of Pfeiffer addressing the limitations of claim 1, and further relies on Köppen for teaching an ophthalmic lens with correction for eye astigmatism on the eye side of the lens. *See* Pet. 51–52 (citing Ex. 1018, 6–7⁸). Petitioner contends:

In view of the preference in [Pfeiffer] that the progressive surface and at least the main part of the surface astigmatism for correcting eye astigmatism are both on the same side of the lens ([Ex. 1012], p. 3), and that such a composite surface can be developed on either side of the lens ([Ex. 1012], pp. 3, 9 (claim 1)), a person of ordinary skill would have been motivated to develop such a composite surface on the eye-side of the lens in view of [Köppen’s] teaching of a preference for an ophthalmic lens where correction for eye astigmatism is on the eye side of the lens ([Ex. 1018], p. [7⁹]). [Ex. 1002] ¶ 144.

Certainly that would have been within the capabilities of the person of ordinary skill who had these references before him or her.

Pet. 52; *see also* Ex. 1002 ¶ 144 (Dr. Le Saux testifying to the same).

⁸ Patent Owner refers to original pages 10 and 11 of the document.

⁹ Patent Owner refers to original page 11 of the document.

As explained above in Section II.B.1.b., Pfeiffer does not disclose a progressive surface on the eye-side of the lens. To the extent that Petitioner asserts that it would have been obvious to one with ordinary skill in the art at the time of the invention to modify the teachings of Pfeiffer to result in a progressive surface on the eye-side of the lens (see Pet. 23–24; Ex. 1002 ¶ 59), we are not persuaded. Petitioner does not provide sufficient articulated reasoning with rational underpinning to explain why one with ordinary skill in the art at the time of the invention would use the values in Tables 1–5 of Pfeiffer to develop the progressive surface on the eye-side of the lens. See Pet. 23–24; *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Conclusory statements are not sufficient. See *KSR*, 550 U.S. at 418.

Petitioner’s position rests on an asserted understanding by one with ordinary skill in art that Pfeiffer “teaches that the progressive surface *could be* developed on either the eye-side surface or the object-side surface” which, in turn, rests on “[c]onsidering that there are only two lens surfaces.” Pet. 25; Ex. 1002 ¶ 57 (emphasis added). Petitioner’s expert Dr. Le Saux does not provide sufficient additional factual basis to support the ultimate conclusion of obviousness. See Ex. 1002 ¶¶ 57– 59. That there are only two lens surfaces for a vision correcting lens does not amount to sufficient articulated reasoning with rationale underpinning. Likewise, Petitioner’s conclusory statement that “a person of ordinary skill would readily be able to calculate the [] values for an eye-side progressive surface” is also insufficient. Pet. 25; Ex. 1002 ¶ 59. In the absence of sufficient articulated reasoning with rational underpinning, we are left to speculate as to a reason *why* one with ordinary skill in the art at the time of the invention would have modified the

teachings of Pfeiffer to arrive a progressive surface on the eye-side of the lens.

In response to Petitioner's assertion of obviousness based on the combined teachings of Pfeiffer and Köppen, Patent Owner contends that, even though Köppen teaches placing the prescription to correct astigmatism of the eye on the eye-side surface of the lens, Köppen does not teach combining this surface with a progressive surface in the manner claimed. *See* Prelim. Resp. 55 (citing Ex. 1017, 7¹⁰). Patent Owner notes that Köppen does not refer to progressive addition lenses (PAL) at all. *See id.*

We agree that Köppen's internally toric glasses do not teach or suggest placing a progressive surface including a surface that corrects astigmatism of the eye on the eye-side of the lens. Petitioner also does not provide sufficient articulated reasoning with a rational underpinning to explain why one with ordinary skill in the art at the time of the invention would combine Pfeiffer's progressive surface on the object-side of the lens (*see* Pet. 23; Ex. 1002 ¶ 58) with Köppen's internally toric glasses to arrive at a composite progressive surface including a surface that corrects astigmatism of the eye on the eye-side of the lens. *See KSR*, 550 U.S. at 418. Petitioner's following conclusory statements are insufficient: (1) "a person of ordinary skill would have been motivated to develop such a composite surface on the eye-side of the lens in view of [Köppen's] teaching;" and (2) it "would have been within the capabilities of the person of ordinary skill who had these references before him or her." Pet. 52; Ex. 1002 ¶ 144. Without sufficient articulated reasoning with rational

¹⁰ Patent Owner references page 11 of the document.

underpinning, only speculation remains as to a reason *why* one with ordinary skill in the art at the time of the invention would have combined the teachings of Pfeiffer and Köppen to arrive at the invention recited in claim 1.

Accordingly, based on the record before us there is not a reasonable likelihood Petitioner would prevail in showing that claim 1, and dependent claims 2, 4, 5, 9–11, 14, and 15, are unpatentable over Pfeiffer and Köppen.

*3. § 103 Unpatentability of Claims 3, 6–8, and 13
Over Pfeiffer, Köppen, and Additional Prior Art*

Claims 3, 6–8, and 13 depend from claim 1. As applied by Petitioner, the teachings of Jalie or Fowler, Fuëter, and Kato do not remedy the deficiencies of Pfeiffer and Köppen discussed in the preceding sections addressing claim 1. *See* Pet. 35–45, 53–55. Accordingly, for the same reasons as those addressing claim 1 in the preceding sections, based on the record before us there is not a reasonable likelihood Petitioner would prevail in showing that claim that claims 3, 6–8, and 13 are unpatentable.

*4. § 103 Unpatentability of Claims 17 and 19 Over Pfeiffer and Kanolt
a. Kanolt (Ex. 1016)*

Kanolt discloses an ophthalmic lens that has a multifocal surface on one face of the lens, preferably the rear face of the lens or the face nearest the wearer's eye. *See* Ex. 1016, 1:71–2:2. The other face of the lens may be given a spherical, cylindrical or toroidal form adapted to compensate for the imperfections of the wearer's eye. *See id.* at 2:2–4. Kanolt discloses that it may be desirable to make the dioptric power of the multifocal surface of the lens different from zero along the horizontal axis with gradual and continuous changes in dioptric power above and below the horizontal axis. *See id.* at 9:33–38. To accomplish this purpose, Kanolt discloses that

it is sufficient to add to the value of z a value corresponding to the z coordinate of a section of a spherical surface or of a cylindrical or toroidal surface . . . the resulting surface will have at each point a power that is very near[] . . . the algebraic sum of the powers at this point of the original surface and of the spherical surface or cylindrical or toroidal surface.

Id. at 9:47–54.

b. Claims 17 and 19

Petitioner asserts that “[c]laim 17 recites a method for manufacturing a progressive multifocal lens with an eye-side composite surface . . . including both a progressive surface for vision correction . . . , and a toric surface for correcting for eye astigmatism.” Pet. 46. Petitioner contends Pfeiffer teaches the lens of claim 17 based on the analysis provided for claim 1. *See id.* Petitioner asserts that Kanolt discloses a multifocal lens with an eye-side progressive surface of continuously varying dioptric power. *See id.* at 47 (citing Ex. 1016, 1:70–2:19; 6:16–18). Petitioner further asserts that Kanolt “explains that such a progressive surface can be combined with a toric surface by adding the ‘ z ’ values of the two surfaces together where the ‘ z ’ value is the height of the lens surface at any given point.” *Id.* (quoting Ex. 1016, 9:38–54). Petitioner contends:

[A] person of ordinary skill following the teachings of [Pfeiffer] to develop on the eye side of the lens a progressive refractive surface having a near-vision region, a far-vision region, and a region of varying power extending between those two regions, and also having a toric surface for correcting eye astigmatism would know from [Kanolt] that such a surface could be developed by adding the ‘ z ’ values for an original progressive surface to the ‘ z ’ values for the original toric surface.

Pet. 47–48; *see also* Ex. 1002 ¶ 130 (Dr. Le Saux testifying to the same).

Petitioner further contends:

One of ordinary skill would have been motivated to combine the teachings of [Pfeiffer] and [Kanolt], both of which concern progressive ophthalmic lenses, because a person of ordinary skill developing a lens wherein a progressive surface for correcting near and far vision and also a toric surface for correcting eye astigmatism are both on the eye side of the lens in accordance with the teachings of [Pfeiffer] would recognize the benefit of the teaching in [Kanolt] that such a surface can be developed by summing the “z” values of an original progressive surface and the “z” values of an original toric surface. [Ex. 1002], ¶ 131. Certainly that combination would have been within the capabilities of the person of ordinary skill who had these references before him or her. [Ex. 1002], ¶¶ 128–131.

Pet. 48; *see also* Ex. 1002 ¶ 131 (Dr. Le Saux testifying to the same).

In response, Patent Owner argues that for the same reasons addressing claim 1 in the Preliminary Response at pages 23 to 37, Pfeiffer does not teach a lens including an eye-side composite surface with a progressive surface for vision correction and a toric surface for correcting eye astigmatism. *See* Prelim. Resp. 51. We agree that, for the reasons addressing claim 1 explained above in Sections II.B.1.b. and II.B.2.b., that Petitioner does not show sufficiently that Pfeiffer discloses, teaches, or suggests a composite surface with a progressive refractive surface including a surface that corrects astigmatism of the eye on the eye side of the lens.

Patent Owner further argues that Petitioner concludes incorrectly “that Kanolt discloses ‘a progressive surface for correcting near and far vision and also a toric surface for correcting eye astigmatism are both on the eye side of the lens.’” Prelim. Resp. 51 (quoting Pet. 48). We agree. As pointed out by Patent Owner (*see* Prelim. Resp. 51–52), Kanolt discloses a multifocal surface with gradually and continuously increasing dioptric power on one face of the lens while *the other face of the lens* is given a spherical,

cylindrical, or toroidal (i.e., toric) form to compensate for eye imperfections. *See* Ex. 1016, 1:48–2:2.

Patent Owner further argues that Petitioner’s rationale for combining the teachings of Pfeiffer and Kanolt is conclusory and unsupported by rational underpinning. *See* Prelim. Resp. 52–53 (citing Pet. 48; *KSR*, 550 U.S. at 418). Patent Owner contends that just because a surface could have been developed by a person of ordinary skill in the art does not explain why a person of ordinary skill in the art would have modified the teachings of Pfeiffer in view of Kanolt in the way Petitioner proposes. *See id.* at 53. We agree. Petitioner’s assertions that (1) a person of ordinary skill in the art “would recognize the benefit of the teaching in [Kanolt] that such a surface can be developed,” and (2) the “combination would have been within the capabilities of the person of ordinary skill who had these references before him or her” are insufficient. Pet. 48; Ex. 1002 ¶¶ 130–131; *see* Prelim. Resp. 53. Absent sufficient articulated reasoning with rational underpinning, we are left to speculate as to reasons *why* one with ordinary skill in the art at the time of the invention would have modified the teachings of Pfeiffer and Kanolt to arrive at the invention of claim 17.

Therefore, based on the record before us there is not a reasonable likelihood Petitioner would prevail in showing that claim 17 and dependent claim 19 are unpatentable over Pfeiffer and Kanolt.

*5. § 103 Unpatentability of Claims 17 and 19 Over
Pfeiffer, Kanolt, and Köppen*

Petitioner asserts that claim 17 would have been obvious for the same reasons as those identified at pages 45 to 48 of the Petition addressing the combined teachings of Pfeiffer and Kanolt, as discussed above in Section

II.B.4.b., and the reasons identified at pages 51 to 52 of the Petition addressing the combined teachings of Pfeiffer and Köppen, as discussed above in Section II.B.2.b. *See* Pet. 55–56. Petitioner contends that for the reasons explained at pages 45 to 48 of the Petition, “one of ordinary skill would have been motivated to combine the teachings of [Pfeiffer] and [Kanolt], and for the reasons explained” at pages 51 to 52 of the Petition, “a person of ordinary skill would have been further motivated to combine the teaching of [Köppen].” *Id.* at 56 (referencing Pet. 45–48, 51–52); *see also* Ex. 1002 ¶¶ 156–157 (Dr. Le Saux testifying to the same).

Patent Owner contends that trial should not be instituted for the same reasons set forth regarding the unpatentability grounds based on Pfeiffer and Kanolt, and based on Pfeiffer and Köppen. *See* Prelim. Resp. 56. We agree. For the same reasons as those discussed above in Section II.B.2.b. and Section II.B.4.b., Petitioner does not provide sufficient articulated reasoning with rational underpinning for combining the teachings of Pfeiffer, Kanolt, and Köppen to arrive at the invention recited in claim 17. *See* Pet. 45–48, 51–52, 55–56.

Accordingly, based on the record before us there is not a reasonable likelihood that Petitioner would prevail in showing that claim 17 and dependent claim 19 are unpatentable over Pfeiffer, Kanolt, and Köppen.

6. § 103 Unpatentability of Claim 20 Over Pfeiffer, Kanolt, Köppen, and Jalie or Fowler

Claim 20 depends from claim 17. As applied by Petitioner, the teachings of Jalie or Fowler, do not remedy the deficiencies of Pfeiffer, Kanolt, and Köppen discussed in the preceding sections addressing claim 17. *See* Pet. 49–51, 56–57. Therefore, for the same reasons as those addressing

claim 17 in the preceding sections, based on the record before us there is not a reasonable likelihood Petitioner would prevail in showing that claim that claim 20 is unpatentable.

III. CONCLUSION

For the foregoing reasons, based on this record there is not a reasonable likelihood Petitioner would prevail in showing any of claims 1–11, 13–15, 17, 19, and 20 of the '470 Patent is unpatentable.

IV. ORDER

Accordingly, it is ORDERED that *inter partes* review of U.S. Patent No. 6,019,470 is not instituted based on this Petition.

IPR2016-01541
Patent 6,019,470

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