

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HOYA OPTICAL LABS OF AMERICA, INC.,
Petitioner,

v.

INLAND DIAMOND PRODUCTS CO.,
Patent Owner.

Case IPR2018-00596
Patent 9,405,130 B2

Before BRIAN J. McNAMARA, CHRISTOPHER L. CRUMBLEY, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

McMANUS, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. BACKGROUND

HOYA Optical Labs of America, Inc. (“Petitioner”) filed a Petition, Paper 1 (“Pet.”), on February 7, 2018, to institute an *inter partes* review of claims 1–12 (the “challenged claims”) of U.S. Patent No. 9,405,130 B2 (Ex. 1001, “the ’130 Patent”). Inland Diamond Products Co. (“Patent Owner”) filed a Preliminary Response, Paper 7 (“Prelim. Resp.”) seeking denial of the Petition. Upon consideration of the Petition and Preliminary Response, we determined that the information presented in the Petition demonstrated that there was a reasonable likelihood that Petitioner would prevail with respect to all claims. Pursuant to 35 U.S.C. § 314, we instituted this trial as to all the challenged claims on all grounds of unpatentability presented in the Petition. Paper 8 (“Dec. to Inst.”).

After institution, Inland Diamond Products Co. filed a Patent Owner Response (“PO Resp.,” Paper 10), Petitioner filed a Reply to the Patent Owner Response (“Pet. Reply,” Paper 12), and Inland Diamond filed a Sur-Reply to Petitioner’s Reply (“Sur-Reply,” Paper 13). Oral hearing was held on May 23, 2019, and a transcript of that hearing has been entered in the record. Paper 20.

We have jurisdiction under 35 U.S.C. § 6(b)(4). This final written decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons set forth below, we conclude that Petitioner has shown by a preponderance of the evidence that claims 1, 3, 6, 7, 8, and 10 of the ’130 patent are unpatentable. Petitioner, however, has not shown by a preponderance of the evidence that claims 2, 4, 5, 9, 11, and 12 are unpatentable.

A. Real Parties in Interest

Petitioner identifies the following additional real parties in interest: HOYA Holdings, Inc. (a California corporation) and HOYA Corporation of Tokyo, Japan. Pet. 1. Patent Owner certifies that Inland Diamond Products Co. is the real party in interest in the present proceeding. Paper 5 (Patent Owner's Mandatory Notice).

B. Pending Litigation

Petitioner was the defendant in litigation concerning the '130 Patent, *Inland Diamond Products Co. v. HOYA Optical Labs of America*, Civil Action No. 2:17-cv-416-JRG (E.D. Texas). Pet. 1. That case has been dismissed with prejudice. Pet. Reply 1.

C. Other Related Matters

A related patent, U.S. Patent No. 8,636,360 B2, was the subject of IPR2018-00178, instituted May 24, 2018, and terminated by Final Written Decision dated May 23, 2019. That patent was also at issue in the litigation referenced above. Pet. 1.

D. The '130 Patent (Exhibit 1001)

The '130 Patent relates to a plastic prescription lens having a beveled edge fitted in an eyeglass frame. Ex. 1001, 2:4–12. The eyeglass frame has a receiving channel defined by opposed interior wall surfaces. *Id.* at 1:67–2:2. The receiving channel also has a channel bottom. *Id.* at 2:2–4. The lens has a bevel at its periphery that extends to form a vertex. *Id.* at 2:6–7. The bevel extends into the receiving channel so that at least a portion of the

vertex forms an “interference fit” with the receiving channel bottom when held within the eyeglass frame. *Id.* at 2:8–2:11. Figure 2 of the ’130 Patent is reproduced below for illustrative purposes.

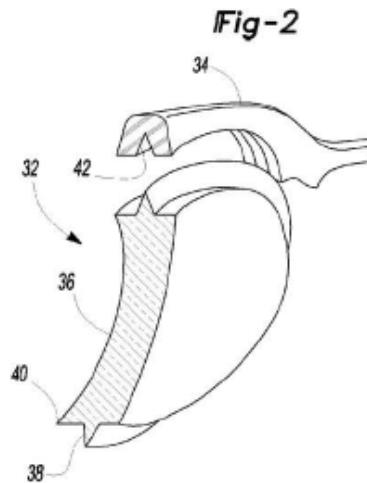


Figure 2 shows a perspective view of lens 36 and frame 34. *Id.* at 4:26–31. As depicted in Figure 2, bevel 38 cooperates with retention structure 42 (which includes the receiving channel) on eyeglass frame 34 to provide an interference fit with bevel 38 when assembled. *Id.* at 4:34–36.

The angle of the receiving channel of the eyeglass frame is wider than the angle of the bevel of the lens “in order to assure that the bevel’s vertex 60 can come in contact with retention structure’s vertex 58 to form the interference fit when the lens 36 is assembled with the eyeglass frame 34.” *Id.* at 5:46–49; *see also id.* at 2:11–12. The relationship of the angle of the bevel and the receiving channel is illustrated in Figure 3b, reproduced below.

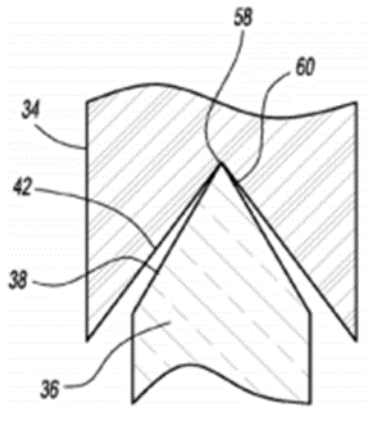


Figure 3B depicts “a cross-sectional view of the bevel in an interference fit with an eyeglass frame receiving channel bottom.” *Id.* at 2:49–51. Vertex 60 of the bevel is shown to be in contact with vertex 58 of retention structure 42. *Id.* at 5:10–12.

The '130 Patent further teaches that prior art glass lens bevels were susceptible to cracking when in contact with the retention structure of the frame. *Id.* at 1:31–38, 4:50–56. When the lens is made of plastic, rather than glass, compression on the apex of the bevel tends to lessen the chance of stress on the lens. *Id.* at 4:56–62. Accordingly, the bevel of a plastic lens in an interference fit with the receiving channel of an eyeglass frame is not readily susceptible to cracking. *Id.* at 3:50–53.

E. Illustrative Claim

Claim 1 of the '130 Patent is illustrative of the subject matter of the challenged claims:

1. A pair of eyeglasses, comprising:
an eyeglass frame having a receiving channel, the receiving channel defined by opposed interior wall surfaces having a first angle therebetween, the receiving channel having a

channel bottom at one end and a channel opening at the other end; and

a prescription plastic lens secured in the eyeglass frame and including a body having a peripheral edge, the peripheral edge having a bevel extending away from the peripheral edge to a vertex, the bevel having a distal portion having a second angle defined between opposing sides of the bevel adjacent to the vertex and being less than the first angle of the receiving channel, at least a portion of the vertex of the bevel being in contact with the receiving channel bottom, having an interference fit with the receiving channel bottom, and being in compression.

Id. at 8:51–67.

F. Asserted Prior Art and Grounds of Unpatentability

Petitioner relies upon the following prior art references. Pet. 2–4.

Reference	Designation	Exhibit No.
American National Standard for Ophthalmics: Requirements for Ophthalmic Frames: ANSI 280.5-1997, published April 3, 1997	ANSI	1007
Certified English translation of WO 1999040494 A1, published August 12, 1999	Gottschald	1009
U.S. Patent Application Pub. No. 2008/0125013, published May 29, 2008	Schaeffer	1012
U.S. Patent No. 6,623,339 B1, issued September 23, 2003	Igarashi1	1013
U.S. Patent No. 6,845,678 B1, issued January 25, 2005	Igarashi2	1014
U.S. Patent No. 5,098,180, issued March 24, 1992	Tobey	1015
U.S. Patent No. 2,756,631, issued July 31, 1956	Page	1016

Reference	Designation	Exhibit No.
U.S. Patent No. 2,254,746, issued September 2, 1941	Line	1017
Walsh, G. et al., The Depth, Contour and Angle of the Glazing Grooves of Spectacle Frames, Ophthal. Physiol. Opt., Vol. 20, No. 4, July 2000, pp. 290–297.	Walsh	1019
U.S. Patent No. 4,511,226, issued April 16, 1985	Freeman	1020
U.S. Patent No. 4,135,792, issued January 23, 1979	Deeg	1021
Certified English translation of Japanese Patent Application JP61245131, published November 11, 1986	Nomura	1027
U.S. Patent No. 6,203,409, issued March 20, 2001	Kennedy	1029
Brooks, C.W., Essentials of Ophthalmic Lens Finishing, 2d ed., 2003, Elsevier, pp. 161–163	Brooks	1031
U.S. Patent No. 6,840,851, issued Jan. 11, 2005	Raffaelli	1032
Certified English translation of DE Patent Publication 19727226A1, published October 22, 1998	Berndt	1034
U.S. Patent No. 5,056,270, issued October 15, 1991	Curcher	1044
U.S. Patent No. 4,656,590, issued April 7, 1987	Ace	1048
U.S. Patent No. 5,881,467, issued March 16, 1999	Clara	1056

Petitioner challenges claims 1–12 of the '130 Patent as unpatentable under 35 U.S.C. § 103 on the grounds set forth below. *Id.* at 25–82.

Ground	References	Challenged Claim(s)
1	Gottschald, ANSI, Schaeffer, and Deeg	1, 3, 6, and 7
2	Gottschald, ANSI, Schaeffer, Deeg, and Freeman	7
3	Gottschald, ANSI, Schaeffer, Page, and Line	8
4	Gottschald, ANSI, Schaeffer, Deeg and Ace (and/or Walsh)	10
5	Nomura, Igarashi1, Schaeffer, Kennedy, and Deeg	1–3, 6, and 11
6	Nomura, Igarashi1, Schaeffer, Kennedy, Deeg, and Berndt (and/or Walsh)	4 and 5
7	Nomura, Igarashi1, Schaeffer, Kennedy, Deeg, and Brooks	9 and 12
8	Nomura, Igarashi1, Schaeffer, Kennedy, Deeg, and Ace (and/or Walsh)	10
9	Raffaelli, Tobey, Clara, Curcher, Igarashi2 (and/or Berndt and/or Walsh), Gottschald, and Deeg	1, 3–5, and 7
10	Raffaelli, Tobey, Clara, Curcher, Igarashi2 (and/or Berndt and/or Walsh), Gottschald, Deeg, and Ace	10

II. ANALYSIS

A. Claim Construction

In *inter partes* reviews filed before November 13, 2018, claim terms in an unexpired patent are interpreted according to their “broadest reasonable construction in light of the specification of the patent” in which they appear. 37 C.F.R. § 42.100(b) (2017).¹ Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms generally are given their ordinary and customary meaning, as would have

¹ See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (changing the standard for interpreting claims in *inter partes* reviews filed on or after November 13, 2018).

been understood by one of ordinary skill in the art, in view of the specification. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms or phrases must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Only those terms in controversy need to be construed, and only to the extent necessary to resolve the controversy. See *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); see also *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an *inter partes* review).

Petitioner proposes constructions for two terms: “in compression” and “interference fit.” Pet. 8–16. In its Preliminary Response, Patent Owner offers its own constructions of these terms. Prelim. Resp. 8–27.

In our Decision instituting trial, we preliminarily construed the terms at issue as follows:

“in compression” - the state of being compressed, i.e., pressed into less space;

“interference fit” - a relationship of the bevel of the lens and the receiving channel bottom of the eyeglass frame where such parts are in contact so as to exert frictional forces that secure the lens in place.

Dec. to Inst. 9, 19. Following institution, the parties each submitted further briefing regarding the scope of the term “interference fit.” PO Resp. 11–39; Pet. Reply 1–3. Neither party submitted further briefing regarding the term “in compression.”

1. “*Interference Fit*”

Claims 1 and 12 require a pair of eyeglasses that comprise a plastic lens with a beveled edge that extends to a vertex “having an *interference fit* with the receiving channel bottom” of the eyeglass frame. Ex. 1001, 8:51–67 (emphasis added), 10:10–26 (emphasis added). Claim 11 is similar, requiring “the vertex contacting and forming an *interference fit* with a bottom of the receiving channel.” *Id.* at 10:5–7 (emphasis added). In our Decision to Institute, we preliminarily construed “interference fit” to mean “a relationship of the bevel of the lens and the receiving channel bottom of the eyeglass frame where such parts are in contact so as to exert frictional forces that secure the lens in place.” Dec. to Inst. 19.

In its Petition, Petitioner argues that “interference fit” should be construed to mean “a fastening between two parts which is achieved by friction after the parts are pushed together, rather than by any other means of fastening.” Pet. 10 (underscoring in original). In the alternative, Petitioner argues that the applicant used the claim term “interference fit” to have the broader meaning of “in contact with” or “in prolonged contact with.” *Id.* at 11–12. As a second alternative, Petitioner proposes that “interference fit” be construed as “a point of contact between a bevel of the lens and a groove of the frame at which frictional forces interfere with motion of the lens.” *Id.* at 14.

In its Reply to the Patent Owner’s Response, Petitioner argues that Patent Owner presents no credible reason to disturb the Board’s preliminary construction of “interference fit.” Pet. Reply 1–3. We next consider Patent Owner’s responsive arguments.

Patent Owner argues that the proper construction of “interference fit” is “a fit between the lens and the frame opening in which a lens dimension is larger than a corresponding frame opening dimension before assembly, or where such a relationship is induced after assembly.”² PO Resp. 12–39.

Patent Owner argues at length that its proposed construction reflects the plain meaning of “interference fit.” *Id.* at 12–27. Patent Owner asserts that there are three basic engineering fits: (1) clearance fits; (2) transition fits; and (3) interference fits. *Id.* at 13 (citing Ex. 2031). Patent Owner describes such fits as follows:

(1) a clearance fit is a fit where the tolerances of the mating parts always results in a clearance (*i.e.*, space) between the parts when assembled, (2) an interference fit is a fit where the tolerances of the mating parts always results in an interference (*i.e.*, the male part is always larger than the female part before assembly) between the parts, and (3) a transition fit is a fit where the tolerances of the mating parts are such that there could be a slight clearance or interference fit between the assembled parts.

Id.

Patent Owner further cites to various dictionary definitions. One such definition provides that an “interference fit” is “[a] fit between two parts in which the external dimension of one part slightly exceeds the internal dimension of the part into which it has to fit.” *Id.* at 16 (citing Ex. 2011). Other dictionary entries are similar. *Id.* at 16–17.

² In Patent Owner’s Preliminary Response, Patent Owner proposed that “interference fit” be construed to mean “a fit between the lens and the frame opening in which the lens is larger than the frame opening before or after the lens is assembled into the frame opening.” PO Prelim. Resp. 8.

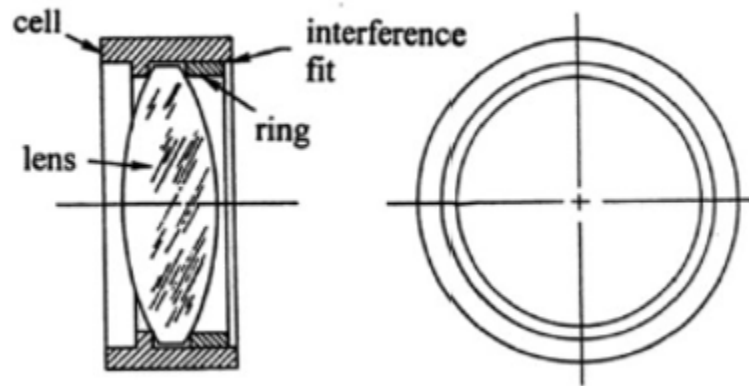
Patent Owner cites to a variety of references in further support of its proposed construction. *Id.* One such reference provides that “interference-fit threads” are “threads in which the externally threaded member is larger than the internally threaded member when both members are in a free state” *Id.* (citing Ex. 2032, 48). Although not mentioned by Patent Owner, we note that the exhibit further states “and which, when assembled, **become the same size** and develop a high resistance to any applied unscrewing torque through elastic compression, plastic movement of material, or both.” Ex. 2032, 48 (emphasis added).

This feature is common to a number of the references. For example, the *Machinery’s Handbook* provides that “[i]nterference-fit threads are threads in which the externally threaded member is larger than the internally threaded member when both members are in the free state and that, **when assembled, become the same size** and develop a holding torque through elastic compression, plastic movement of material, or both.” Ex. 2010, 1710 (emphasis added).

Patent Owner further discusses the Yoder optical industry treatise, *Mounting Lenses in Optical Instruments* (Ex. 2005). PO Resp. 19–22. Yoder teaches as follows:

A lens can also be held in place by an axial force exerted against it by a continuous ring as shown in Fig. 3.11. The OD [outer diameter] of the ring is made slightly oversized with respect to the ID [inner diameter] of the cell. After installing the lens, the ring can be pressed into place or (preferably) shrunk by cooling and inserted into a cell expanded by heating.

Ex. 2005, 4. The figure from Yoder relied upon by Patent Owner is reproduced below.



Id. at Fig. 3.11. The caption below the figure states “[a] lens constraint design with a continuous ring pressed in place with an interference fit.” *Id.* Yoder teaches that the inner part (the ring) is “shrunk by cooling” prior to insertion in an outer part (the cell) that is “expanded by heating.” *Id.* at 4. Patent Owner argues that this is one alternative for achieving an “interference fit” as follows:

Yoder is merely describing one technique – shrink fitting – by which an interference fit can be achieved between a male part having a dimension larger than a corresponding dimension of a female part. By way of shrink fitting, the male part is cooled and/or the female part is heated before assembly and then allowed to return to an ambient temperature after assembly. Thus, thermal contraction and/or expansion is used to assemble the parts. However, this does not change the fact that before assembly the male part has a dimension larger than a corresponding dimension of the female part.

PO Resp. 21. Patent Owner concludes that “once assembled they [the inner and outer components] assume the same dimension – whether through elastic or plastic deformation. This does not change the fact that the fit is not just any fit, but is an ‘interference fit.’” *Id.* at 22 (underscoring in original).

Patent Owner further discusses the Webb reference (PO Resp. 23–26), which teaches an embodiment where an interference fit is induced by closure of a latch mechanism:

Retention of a lens 20 may also be effected by inducing an **interference fit** between the lens 20 and frame 30. The **interference fit** may be induced by locking or otherwise closing latching mechanism 40 which imposes paired compressive and tensile forces on lens 20 and frame 30, respectively. By contrast, opening a latching mechanism 40 may release the applied forces thereby permitting removal of a respective lens 20. Accordingly, lenses 20 may be installed and removed without a user having to apply a force directly to the lens surface.

Ex. 2034 ¶ 17 (emphases added). Webb teaches that a lens is inserted then, subsequently, a latch mechanism is closed to “impose[] paired compressive and tensile forces on lens 20 and frame 30.” *Id.* Thus, the frame dimension of Webb prior to insertion exceeds the lens dimension.

Patent Owner argues that “Webb is teaching that an interference fit may be induced by closing a latching mechanism such that the dimension between the latching mechanism and the frame would, if latched before such assembly, be less than the corresponding lens dimension – the only possible teaching that makes sense.” PO Resp. 26. Patent Owner’s argument that an interference fit is induced by closing a latching mechanism after lens insertion appears to acknowledge that a frame opening may be larger than the subject lens prior to insertion and subsequent formation of an interference fit.

Patent Owner additionally argues that the Specification supports its proposed construction. *Id.* at 28–34. Patent Owner argues that the Specification’s teaching of the use of an interference fit to secure a lens to a

frame portion that corresponds only to an upper half of the lens body is not inconsistent with its proposed construction because the Specification describes an interference fit where the bevel is intermittently present. *Id.* at 28–29.

Patent Owner additionally discusses Figure 2 of the '130 Patent, reproduced below.

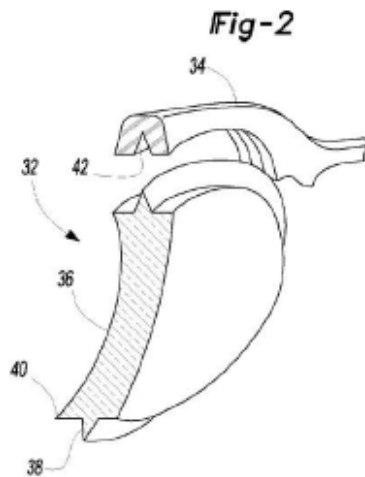


Figure 2 shows a perspective view of lens 36 and frame 34 “made in accordance with an embodiment of the present invention.” Ex. 1001, 4:26–31. Patent Owner asserts that Figure 2 supports its construction because it “is certainly not showing a retention structure [frame 34] that is ‘larger than’ the lens [36].” PO Resp. 30.

Patent Owner also addresses Figure 3B of the '130 Patent, reproduced below.

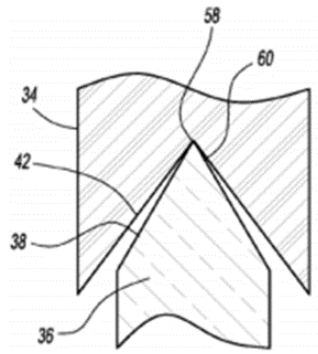


Figure 3B depicts “a cross-sectional view of the bevel in an interference fit with an eyeglass frame receiving channel bottom.” Ex. 1001, 2:49–51. Vertex 60 of the bevel is shown to be in contact with vertex 58 of retention structure 42. *Id.* at 5:10–12. In regard to Figure 3B, Patent Owner argues that “the interference fit is described as being between the lens bevel and the frame channel bottom as this is the only point of contact and accordingly the only place it occurs” and that this does not conflict with the ordinary meaning of the term. PO Resp. 31.

In regard to the Specification’s teaching regarding eyeglass frames that include retention screws, Patent Owner concedes that such lenses are not larger than the frame openings prior to insertion but argues that its proposed construction “would be applicable to such an embodiment where [the] ‘interference fit’ is induced after assembly.” *Id.* at 33.

Patent Owner further argues that the Board’s preliminary construction “would mean that the mere ‘contact’ of a lens within a frame would satisfy the ‘interference fit’ limitation.” *Id.* at 36.

The primary thrust of Patent Owner’s arguments is that the eyeglass lens must be larger than the frame opening prior to insertion. Patent Owner

includes a secondary argument that the lens may be larger *after* insertion. This latter argument carries little force.

Upon assembly, an external peripheral member (such as an eyeglass frame) will not have an opening smaller than the component situated therein. Patent Owner seems to concede this in its discussion of the *Machinery's Handbook* reference. There, Patent Owner states “[o]nce the parts are assembled into the fitted relationship, **they of course assume the same dimensions** – whether through elastic or plastic deformation of the male part, the female part, or both. Otherwise, they would not fit together.” PO Resp. 19 (emphasis added).

The portion of Patent Owner’s proposed construction requiring “a lens dimension before assembly is larger than a corresponding frame opening dimension” is also flawed. Such construction is in significant conflict with the Specification. The Specification indicates, and Patent Owner concedes, that frames tightened by retention screws may fall within the ambit of the claims. Ex. 1001, 1:49–58; PO Resp. 26. The lens openings in frames employing retention screws need not be, at any time, smaller than the lens incorporated therein. Rather, they are tightened to form a fit, which may be an interference fit.

The limitation at issue requires a particular fit between two components. The required fit must be sufficiently tight that the friction interferes with relative motion. One way of achieving such a fit is by insertion of a lens into a relatively smaller frame opening. Another is by heat expansion of a frame opening (as taught by Yoder). Another is by a latch mechanism (as taught by Webb). Another is by tightening of retention screws of an eyeglass frame (as taught, *inter alia*, by the Specification). A

specific arrangement of a lens and frame so as to interfere with movement of the lens is required by the claim. The *means* of obtaining the recited arrangement is not specified by the apparatus claims at issue.

Accordingly, having considered fully the arguments presented by Petitioner and Patent Owner, we turn to the specific arrangement of lens and frame required by the “interference fit” limitation. The Specification teaches that “[a]n interference fit of a bevel on a plastic lens to a bottom of a receiving channel of an eyeglass frame provides a relatively secure assembly with regard to lenses falling out.” *Id.* at 3:41–43.

The Specification further teaches that pressure upon the lens would lead to compression of the vertex. Ex. 1001, 4:55–62 (“[C]ompression on the apex of the bevel tends to lessen the chance of stress on the lens as the softer bevel easily deforms”). The Specification additionally teaches that “[t]he thermoset bevel can tolerate moderate stress when the bevel 50 is initially compressed in the eyewire frame.” *Id.* at 5:1–3. This teaching is consistent with the prosecution history where the applicant states “[w]ith the vertex being in contact with the channel, slight deformation occurs and allows for some additional pressure to build up between the lens and frame.” Ex. 1002, 8.

In view of the foregoing and in light of the parties’ arguments following institution, we modify our preliminary construction to recognize that an interference fit in this context implicates associated compressive forces. We, therefore, construe “interference fit” to mean “a relationship of the bevel of the lens and the receiving channel bottom of the eyeglass frame where such parts are in contact so as to exert frictional and compressive forces that secure the lens in place.”

2. “*In Compression*”

In the Decision on Institution, we construed “in compression” to mean “the state of being compressed, i.e., pressed into less space.” Dec. to Inst. 8–10. Neither party has submitted further briefing regarding this term. Accordingly, for the reason set forth in the Decision on Institution, we maintain the same construction for purposes of the present decision. Therefore, for purposes of this Decision, we construe “in compression” to mean “the state of being compressed, i.e., pressed into less space.” See Dec. to Inst. 8–10.

B. *Asserted Grounds of Unpatentability*

Petitioner asserts that all claims of the ’130 Patent would have been obvious in view of the prior art. A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). To establish obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. See *CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003); *In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

In our Institution Decision, we determined that Petitioner had set forth sufficient evidence to establish a reasonable likelihood that the claims at issue in Petitioner’s First (claims 1, 3, 6, and 7), Second (claim 7), Third (claim 8), and Fourth (claim 10) Grounds would have been unpatentable. Dec. to Inst. 29–30, 31, 35. Conversely, we determined that Petitioner had not set forth sufficient evidence to establish a reasonable likelihood of

unpatentability in its Fifth (claims 1–3, 6, and 11), Sixth (claims 4 and 5), Seventh (claims 9 and 12), Eighth (claim 10), Ninth (claims 1, 3–5, and 7), and Tenth (claim 10) Grounds.³ *Id.* at 39, 40, 41, 42.

1. Obviousness of Claims 1, 3, 6, and 7 over
Gottschald, ANSI, Schaeffer, and Deeg

As its First Ground of unpatentability, Petitioner contends that claims 1, 3, 6, and 7 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combined disclosures of Gottschald, ANSI, Schaeffer, and Deeg. Pet. 27–37.

a. Gottschald (Ex. 1009)

Petitioner relies upon Gottschald as its primary reference in support of its asserted First Ground of unpatentability.⁴ Gottschald is a 1999 World Intellectual Property Organization patent application titled “Method and Device for Forming a Bevel on the Edge of a Spectacle Lens.” Ex. 1009, 1. Gottschald teaches a method of optically scanning the groove of a spectacle frame, optically scanning the bevel groove of a lens machining tool (such as a grinding wheel), inputting such values into a control device, and machining the lens bevel using the determined values. *Id.*

Gottschald teaches that the shape of the grinding wheel’s bevel groove changes with use. Specifically, Gottschald teaches that “wear to the spectacle lens edge machining tool . . . bevel groove occurs, which leads not

³ Pursuant to the Supreme Court’s decision in *SAS Institute, Inc. v. Iancu*, 138 S.Ct. 1348, 1359–60, we instituted the present proceeding on all grounds.

⁴ Although we consider grounds of “unpatentability,” the Petition refers to grounds of “invalidity.”

only to an increase in the size of the finish-ground spectacle lens, but also to an increase of the angle of the bevel, i.e., to a flattening.” *Id.* at 5. Where such wear is within a “first tolerance range,” one may proceed with machining the lens “without taking into consideration a correction value.” *Id.* at 6. The first tolerance range “can cover a depth range of the bevel groove of the spectacle frame which is equal to or smaller than the depth range of the bevel groove of the spectacle lens edge machining tool.” *Id.* That is, the depth of the groove of the grinding wheel, which corresponds to the length of the lens bevel, should equal or exceed the depth of the frame groove.

Gottschald teaches that, as a result of its process, “[a] spectacle lens of which the contour has been ground to accurate dimensions can therefore simply be inserted in a corresponding spectacle frame and it bears with the tip of the bevel against the bevel base of the spectacle frame.” *Id.* at 14. Figure 6 of Gottschald is reproduced below.

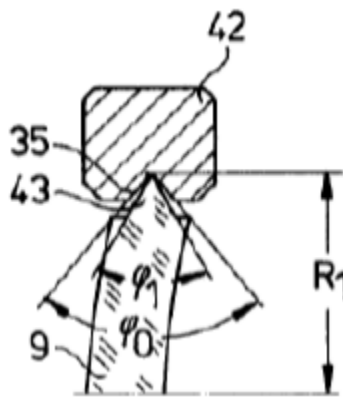
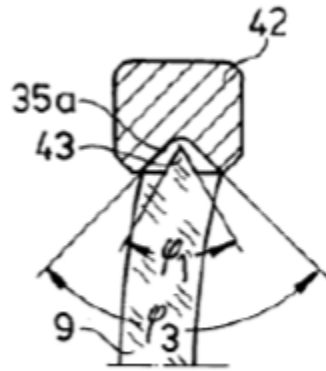


Figure 6 depicts bevel 43 bearing against bevel groove 35 of spectacle frame 42. *Id.* at 14.

Figure 9 of Gottschald, depicting a bevel *not* in contact with the bevel groove, is reproduced below.



Id. at Fig. 9. Figure 9 depicts a lens and frame where “the bevel groove 35a is so deep that the tip of the bevel 43 is no longer in contact with the groove base, but rather the cylindrical areas of the spectacle lens 9 rest laterally with respect to the bevel 43 on the edges of the bevel groove 35a.” *Id.* at 16. Gottschald teaches that “in such a case an insertion of the spectacle lens 9 in the spectacle frame 42 is not possible, since the spectacle lens *is not held securely in the bevel groove 35a.*” *Id.* (emphasis added).

b. ANSI (Ex. 1007)

Petitioner relies on ANSI Z80.5-1997 for the following definitions:

“eyeglasses: A term commonly used to describe an ophthalmic frame with lenses inserted”; and,

“spectacle: An ophthalmic device consisting of two separate ophthalmic lenses and a supporting frame to position and retain the lenses in proper optical alignment with the eyes.”

Ex. 1007, 4, 8; *see* Pet. 27–28.

c. Schaeffer (Ex. 1012)

Petitioner relies upon Schaeffer for its teaching that prescription eyeglass lenses “are formed from glass or plastic lens ‘blanks’ having certain desired properties to provide the correct prescription for the patient. . . . The

lens blank may be shaped using an edger. . . . The blank is edged so that the periphery of the finished lenses fit into the openings on the frames.” Pet. 31 (quoting Ex. 1012 (Schaeffer) ¶¶ 4–6).

d. Deeg (Ex. 1021)

Petitioner relies upon Deeg for its teaching that “conventional lens-mounting techniques” “apply relatively high circumferential clamping pressures to the lenses which can be withstood by glass lenses but not so with plastic lenses.” Ex. 1021, 1:24-31; see Pet. 33–34.

e. Analysis

In regard to claim 1, Petitioner relies upon ANSI to supply definitions of the terms “eyeglasses” and “spectacle.” Pet. 27–28. Petitioner relies upon Gottschald as teaching the receiving channel, a beveled lens having an angle less than that of the receiving channel, as well as the compression and interference fit limitations. *Id.* at 28–34. Petitioner further relies upon Schaeffer as teaching that prescription eyeglass lenses are made from glass or plastic lens blanks. *Id.* at 31–32. Petitioner additionally relies upon Deeg as teaching that the frame applies “relatively high circumferential clamping pressures to the lenses.” *Id.* at 33–34.

Petitioner asserts that one of skill in the art would have been motivated to combine the teachings of Gottschald (regarding a method of making a beveled lens of appropriate size) and Schaeffer (regarding lens blanks) so as to obtain a prescription plastic lens for use in an eyeglass frame. *Id.* at 31–32. Further, ANSI is relied upon only to supply definitions of the terms “eyeglasses” and “spectacle” so as to inform one’s understanding of Gottschald. *Id.* at 27. Petitioner further asserts that one of skill in the art would have been motivated to combine the elements as

claimed by known methods with no change in their respective functions to yield predictable results. *Id.* at 34.

Patent Owner argues that Gottschald fails to teach that the bevel is “in compression” and is in an “interference fit.” PO Resp. 40–48. Petitioner relies on Gottschald’s disclosure that a lens “can therefore simply be inserted in a corresponding spectacle frame and it bears with the tip of the bevel against the bevel base of the spectacle frame.” *See id.* at 40 (citing Pet. 24; Ex. 1009, 14). Patent Owner, however, argues that “bearing against a surface something [sic] does not ‘necessarily’ put an object in compression.” *Id.* at 41. Patent Owner additionally argues that the Board erred in finding that Gottschald teaches a lens that is “held securely.” *Id.* at 44. Patent Owner additionally contends that the Board is in error in preliminarily finding that a securely held plastic lens bevel will be subject to compression. *Id.* at 45.

Gottschald teaches “[a] spectacle lens of which the contour has been ground to accurate dimensions can therefore simply be inserted in a corresponding spectacle frame and it bears with the tip of the bevel against the bevel base of the spectacle frame.” Ex. 1009, 14. Gottschald further teaches a bevel with a height greater than the depth of the bevel groove. *Id.* (“The height of the bevel 43 . . . is greater than the depth of the bevel groove 35 of the spectacle frame 42.”). Gottschald further teaches that, when the bevel groove is so deep that the bevel is no longer in contact with the groove base, the lens will not be inserted “since the spectacle lens is not held securely in the bevel groove 35a.” *Id.* at 16. In the absence of evidence to the contrary, we conclude that this disclosure indicates, in the arrangement described by Gottschald, that the lens is “held securely.”

Petitioner asserts that compression inherently (“necessarily”) follows from the bevel bearing against the groove. Pet. 33. In evaluating inherency, one may look to the Specification to determine if a property is inherent to a material or structure. *See In re Huai-Hung Kao*, 639 F.3d 1057, 1070 (Fed. Cir. 2011) (“Substantial evidence supports the Board’s finding, based upon the specification, which confirms that the claimed ‘food effect’ is an inherent property of oxymorphone itself”); *see also In re Kubin*, 561 F.3d 1351, 1357 (Fed. Cir. 2009). Accordingly, we look to the Specification in determining whether the claimed compression is inherent to the secure contact of Gottschald. The Specification teaches as follows:

When bevel 50 is glass and contacts the retention structure 42, the prior art bevel 50 may crack. When bevel 50 is a thermoplastic composition, such as when bevel 50 is a polycarbonate material, *compression on the apex of the bevel tends to lessen the chance of stress on the lens as the softer bevel easily deforms*, absorbing the pressures that would have created stress in a lens that was fitted into a frame such as an eyewire.

Ex. 1001, 4:55–62 (emphases added). Patent Owner argues that the foregoing concerns “what happens if a bevel is in compression. It is not teaching, inherently or otherwise, that a bevel that merely ‘bears with the tip of the bevel against the bevel base of the spectacle frame’ such that the lens is ‘held securely,’ is in compression.” PO Resp. 45 (emphasis omitted). This does not withstand scrutiny. The cited passage teaches that the bevel of a thermoplastic lens will undergo compression of the apex of the bevel because the thermoplastic bevel “easily deforms.” Similarly, during prosecution, Patent Owner stated that “[w]ith the vertex being *in contact* with the channel, slight deformation occurs and allows for some additional

pressure to build up between the lens and frame that will allow the lens to stay in place even if some shrinkage occurs.” Ex. 1002, 8 (emphasis added). Thus, the Specification teaches that a glass bevel may crack upon contact with a retention structure and that a thermoplastic bevel will compress upon such contact rather than crack.⁵

Gottschald teaches a lens that “bears with the tip of the bevel against the bevel base of the spectacle frame” so that it is “held securely.” Ex. 1009, 14, 16. The Specification teaches that a plastic lens will compress in a manner that “tends to lessen the chance of stress on the lens” when fitted into a frame. In view of the foregoing, we are persuaded that Gottschald teaches a lens that is “in compression” as that term is used in claim 1 of the ’360 patent.

Turning to the recited “interference fit,” Petitioner relies upon the teachings of Gottschald and Deeg to establish that it teaches an “interference fit” between the lens and frame. Petitioner argues that

[a]s a necessary consequence of the tip of the bevel being ‘in compression’ against the groove bottom, as taught by Gottschald and also by Deeg, frictional force exists at this point of contact. For at least this reason, therefore, the tip of bevel 43 has an ‘interference fit’ with the bevel base of spectacle frame 42 even under a narrow construction of that term.

Pet. 34.

Patent Owner argues that the cited references fail to teach an “interference fit.” PO Resp. 46–48. Patent Owner asserts that Gottschald

⁵ Petitioner cites additional references in support of its contention regarding the compressibility/deformability of plastic lenses. Pet. 34–35.

fails to teach that a dimension of the lens exceeds a dimension of the frame.
Id. at 47–48.

Above, we construed “interference fit” to mean “a relationship of the bevel of the lens and the receiving channel bottom of the eyeglass frame where such parts are in contact so as to exert frictional and compressive forces that secure the lens in place.” Gottschald shows the bevel and channel bottom to be in contact as shown in Figure 6.

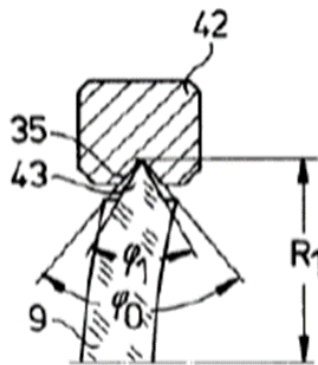


Figure 6 of Gottschald depicts bevel 43 bearing against bevel groove 35 of spectacle frame 42. Ex. 1009, 14. As noted above, Gottschald teaches that the lens is held securely. *Id.* at 16; *see also id.* at 2 (“[T]he spectacle lens is accommodated securely in the bevel groove . . .”). Gottschald further teaches that the lens “bears with the tip of the bevel against the bevel base of the spectacle frame.” *Id.* at 14. That the lens is held securely indicates frictional forces that secure the lens in place. That the lens bears with the tip against the base, in conjunction with teachings in the Specification (and the prosecution history and other references) regarding the plasticity and ready deformability of plastic lenses, indicates a compressive force.

Taken as a whole, on the present record, Petitioner has set forth sufficient evidence to establish that the cited references teach the limitations

of claim 1. Moreover, we are persuaded by Petitioner's stated reasons discussed above as to why one of skill in the art would have been motivated to combine the teachings of ANSI, Gottschald, and Schaeffer. Pet. 31–32. Accordingly, we determine that Petitioner has shown by a preponderance of the evidence that claim 1 would have been obvious over the combined disclosures of Gottschald, ANSI, and Schaeffer. In so holding, we do not rely upon the teachings of Deeg (*see* Dec. to Inst. 26–29) but determine that the remaining references include sufficient teachings to show that a person of ordinary skill in the art would have regarded the subject matter of claim 1 to be obvious.

Petitioner further asserts that Gottschald teaches the additional subject matter of claims 3 and 6. Pet. 35. Claim 3 depends from claim 1 and further requires that “the bevel is a triangle having an apex.” Ex. 1001, 9:3–4. Claim 6 depends from claim 1 and recites that “a height of the bevel is greater than a depth of the receiving channel.” *Id.* at 9:9–10.

Patent Owner does not offer argument in this regard and we find Petitioner's assertions persuasive. Accordingly, on the present record, Petitioner has set forth sufficient evidence to establish a reasonable likelihood that claims 3 and 6 would have been obvious over the combined disclosures of Gottschald, ANSI, and Schaeffer. As with claim 1, we do not rely upon the teachings of Deeg but determine that the remaining references include sufficient teachings to show that a person of ordinary skill in the art would have regarded the subject matter of claims 3 and 6 to be obvious.

Petitioner additionally contends that the cited references render claim 7 obvious. Pet. 36–37. Claim 7 depends from claim 1 and further requires “two prescription plastic lenses secured to the eyeglass frame, the lenses

being a plurality of the lenses of claim 1.” Ex. 1001, 9:11–14. Petitioner argues that “[i]f this claim is satisfied by two lenses” then it would have been obvious over the teachings cited in regard to claim 1. Pet. 36. In arguing that claim 1 is unpatentable, Petitioner cites to ANSI as teaching “two separate ophthalmic lenses.” *Id.* at 27–28. We find Petitioner’s assertions persuasive. Patent Owner does not brief this point. Accordingly, on the present record, Petitioner has established by a preponderance of the evidence that claim 7 would have been obvious over the combined disclosures of Gottschald, ANSI, and Schaeffer. As discussed above, we do not rely upon the teachings of Deeg but determine that the remaining references asserted in this ground include sufficient teachings to show that a person of ordinary skill in the art would have regarded the subject matter of claim 7 to be obvious.

2. Obviousness of Claim 7 Over Gottschald (Ex. 1009), ANSI (Ex. 1007), Schaeffer (Ex. 1012), Deeg (Ex. 1021), and Freeman (Ex. 1020)

As its Second Ground of unpatentability, Petitioner asserts that claim 7 would have been obvious over Gottschald, ANSI, Schaeffer, Deeg, and Freeman. Pet. 37–39. As noted above, claim 7 requires “two prescription plastic lenses secured to the eyeglass frame, the lenses being a plurality of the lenses of claim 1.” Ex. 1001, 9:11–14. Petitioner relies upon Freeman as teaching the limitations of claim 7 and the remaining references as teaching the limitations of claim 1 (in the same manner as set forth in support of its First Ground of unpatentability).⁶

⁶ Petitioner asserts that claim 7 “requires at least three lenses.” Pet. 37. The question of the number of lenses required by claim 7 has not been briefed and we need not address this issue for purposes of this Decision.

Petitioner argues that one of skill in the art would have been motivated to combine the teachings of Freeman with Gottschald and the other references “to obtain the advantages of ‘achiev[ing] clear vision at a variety of distances’ without ‘the inconvenience of changing glasses, ... the hazzard [sic] of distraction and the possibility of breaking the glasses not being worn.’” Pet. 38 (citing Ex. 1020, 1:21–26). Patent Owner does not present argument directly on this point and we find Petitioner’s arguments persuasive in this regard.

Patent Owner relies on its arguments, summarized above, regarding Gottschald. PO Resp. 40–48. For the reasons set forth above, we do not find such arguments to be persuasive. Accordingly, we determine that on the present record, Petitioner has set forth sufficient evidence to establish that claim 7 would have been unpatentable as obvious over the combined disclosures of Gottschald, ANSI, Schaeffer, and Freeman. As discussed above, we do not rely upon the teachings of Deeg but determine that the remaining references asserted in this ground include sufficient teachings to show that a person of ordinary skill in the art would have regarded the subject matter of claim 7 to be obvious.

3. Obviousness of Claim 8 over Gottschald, ANSI, Schaeffer, Page, and Line

As its Third Ground of unpatentability, Petitioner asserts that claim 8 would have been obvious over Gottschald, ANSI, Schaeffer, Page, and Line. Pet. 39–43. Claim 8 depends from claim 1 and further requires that “the bevel is intermittently present.” Ex. 1001, 9:15–16. Page teaches, in Figure

1 below, a pair of eyeglasses having a frame that contacts only the upper portion of the lens.

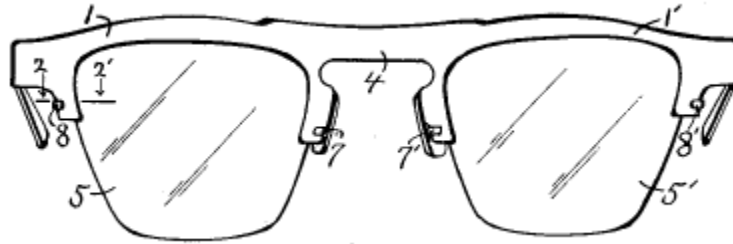


Figure 1 of Page depicts frames 1, 1' in contact with the upper portion of lenses 5. Ex. 1016, 2:9–15. Page teaches a bevel provided only around the upper part of the lens. Figure 9 of Page is reproduced below.

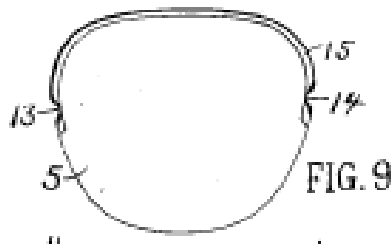


Figure 9 is a rear plan view of the lens of Page. Lens 5 is shown with bevel 15 across its upper portion and with notches 13 and 14 on each side.

Ex. 1016, 2:42–44. Petitioner asserts that bevel 15 is intermittently present and satisfies the additional limitation of claim 8. Petitioner additionally argues that one of skill in the art would have been motivated to limit the bevel taught by Gottschald, ANSI, and Schaeffer to the upper portion of the lens so as to avoid a visible but non-functional bevel around the periphery of the lower part of the lens. Pet. 40–41.

In addition to its teachings regarding a partial bevel, Page also teaches a “spring auxiliary rim member 6 is shaped to follow the contour edge of that portion of the lens engaging the rim member 1.” *Id.* at 2:17–19. Spring member 6 is shown in Figure 4 of Page.

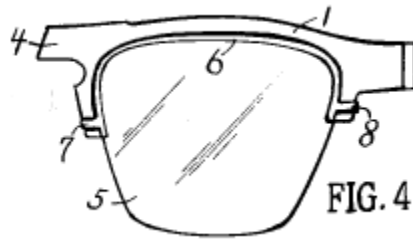


Figure 4 is a rear elevation view of the frame of Figure 1. Ex. 1016, 1:61–62. Page teaches that “[t]he spring action of the auxiliary rim member 6 constantly urges the converging side portions of the pliable rim member 1 against the edges of the lens in contact therewith maintaining the lens therein.” *Id.* at 2:26–30.

Petitioner argues that Page teaches that bracket 8 (the end portion of spring member 6) exerts a compressive force on the bevel 15 of lens 5. Pet. 41 (citing Ex. 1021, Fig. 2). Petitioner further argues that Page, in combination with the teachings of Gottschald, ANSI, and Schaeffer, teaches a lens bevel “in contact with,” and having “an interference fit” with, the channel bottom and “in compression” when assembled. Pet. 42.

Petitioner additionally asserts that Line (Ex. 1017) teaches a similar device “whereby the lenses will be held securely in a firm grip by tension pressure of the rim member which may be as much as ten pounds on each lens.” Ex. 1017, 1:39–54 (left column).

As to a reason to combine, Petitioner asserts “the intermittent beveling of Page can be seen as an improvement to the combined teachings of

Gottschald, ANSI, and Schaeffer in the same way as the claimed invention.” Pet. 42. Petitioner further proposes that a person of ordinary skill in the art “could have applied the intermittent beveling of Page in the same way to the combined teachings of Gottschald, ANSI, and Schaeffer, and the results would have been predictable.” *Id.* Petitioner contends that one of skill in the art would have been informed by his or her knowledge of Page which teaches that “the lenses are supported by pliable frame members [1] being urged into a tensional grip by auxiliary spring members [6].” Ex. 1016, 1:25–28. Petitioner further contends that one of skill in the art would have known that “the spring members 6 [of Page] could be implemented to apply as much as ten pounds of ‘compressive’ pressure on each lens, as taught by Line.” Pet. 42–43 (citing Ex. 1017, 1:45–47 (left column)). Patent Owner argues that the foregoing is insufficient to support a motivation to combine the references. PO Resp. 55–56.

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 416. Here, the familiar elements are lenses, spectacle frames, and associated parts. We agree with Petitioner that in its proposed combination of the references, such elements are combined by known methods to yield predictable results. Accordingly, we find Petitioner’s stated reason to combine persuasive.

In opposition to Petitioner’s Third Ground of unpatentability, Patent Owner again relies on its arguments, summarized above, regarding Gottschald. PO Resp. 40–48. For the reasons set forth above, we do not find such arguments to be persuasive. Accordingly, we determine that on the present record, Petitioner has set forth sufficient evidence to establish, by

a preponderance of the evidence, that claim 8 would have been unpatentable as obvious over the combined disclosures of Gottschald, ANSI, Schaeffer, Page, and Line.

4. Obviousness of Claim 10 over Gottschald, ANSI, Schaeffer, Deeg, and Ace (and/or Walsh)

As its Fourth Ground of unpatentability, Petitioner asserts that claim 10 would have been obvious over Gottschald, ANSI, Schaeffer, Deeg, and Ace (and/or Walsh). Claim 10 depends from claim 1 and further requires that the “depth of the receiving channel is from 0.44 to 0.74 mm.” Ex. 1001, 9:22–23. Petitioner cites Ace for its teaching that “[a]lmost all rim groove depths are in the range of 0.5 to 0.8 mm deep.” Pet. 43 (citing Ex. 1048, 1:61-65).⁷ Petitioner additionally asserts that Walsh teaches that “the groove depth of a metal eyeglass frame may be in the range of at least from 0.3 mm to 0.6 mm, and that the mean groove depth for metal eyeglass frames is 0.448 mm.” Pet. 43 (citing Ex. 1019, 294, Fig. 4).

We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that Petitioner sufficiently establishes that Walsh teaches a groove depth as described above. *See* Ex. 1019, 293 (Figure 4). In opposition to the Fourth Ground of unpatentability, Patent Owner relies on its previous arguments regarding Gottschald. *See* PO Resp.

⁷ The cited portion of Ace (U.S. Patent No. 4,656,590, Ex. 1048) does not support the stated proposition. The quotation cited by Petitioner appears to be found in U.S. Patent No. 4,921,341, which also names Ace as the inventor. The ’341 Ace patent, however, was not made of record in this proceeding, and we do not rely on either Ace reference in reaching our decision on this ground of unpatentability.

40–48. For the reasons given above, we do not find such arguments to be persuasive.

Accordingly, we determine that Petitioner has set forth sufficient evidence to establish, by a preponderance of the evidence, that claim 10 would have been unpatentable as obvious over the combined disclosures of Gottschald, ANSI, Schaeffer, and Walsh. In evaluating the Fourth Ground of unpatentability, we do not rely upon the teachings of Deeg and we rely upon Walsh rather than Ace as teaching the claimed groove depth.

5. Obviousness of Claims 1–3, 6, and 11 over Nomura, Igarashi1, Schaeffer, Kennedy, and Deeg

As its Fifth Ground of unpatentability, Petitioner asserts that claims 1–3, 6, and 11 are obvious over Nomura, Igarashi1, Schaeffer, Kennedy, and Deeg. Pet. 45–58. Petitioner relies upon Nomura and Deeg as teaching an “interference fit” and being “in compression” as required by claim 1. *Id.* at 52–53.

Nomura is a patent application entitled “Eyeglass Lens Frame Groove Line.” Ex. 1027, 1. The thrust of Nomura is that the walls of the receiving channel of the frame be convex. *Id.* at 2. Figures 1 and 2 of Nomura depict a lens inserted into a frame having the convex, arcuate walls taught by Nomura. *Id.* Figures 3 and 4 show a lens and frame arrangement described as “conventional.” *Id.* Figure 3 of Nomura is reproduced below:

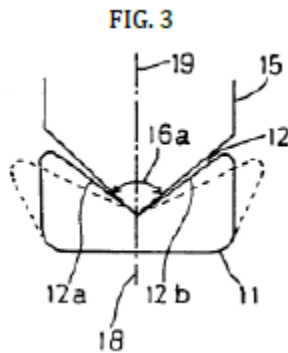


Figure 3 shows a cross-sectional view of a conventional, prior art groove line. Ex. 1027, 2.

Petitioner argues that “FIG. 3 of Nomura shows that when lens 15 is fitted into frame groove 12, it contacts the frame only at the apex (‘vertex’) of the triangle, which bears against the groove bottom.” Pet. 52 (emphasis omitted). Petitioner further argues that “[i]t necessarily follows that the apex of lens 15 bears the ‘relatively high circumferential clamping pressures’ disclosed by Deeg and is thus ‘in compression’ as recited in claim 1.” *Id.* Petitioner additionally argues that “[a]s a necessary consequence of the apex of the bevel being ‘in compression’ against the groove bottom, frictional force exists at this point of contact” and, therefore, the apex of the bevel has an “interference fit” with the channel bottom. *Id.* at 53.

Patent Owner argues that the foregoing is in error because Nomura teaches that the configuration of Figure 3 is undesirable. PO Resp. 48–50. That is, Patent Owner argues that Nomura teaches away from the embodiment of Figure 3. *Id.* at 50.

Nomura teaches that “when the lens is fitted in the V-shaped groove, in the situation of FIG. 3, a lens apex portion **is readily damaged.**” Ex. 1027, 3 (emphasis added). Nomura teaches, as an advance over the conventional art, the embodiment shown in Figure 1. Figure 1 is reproduced

below.

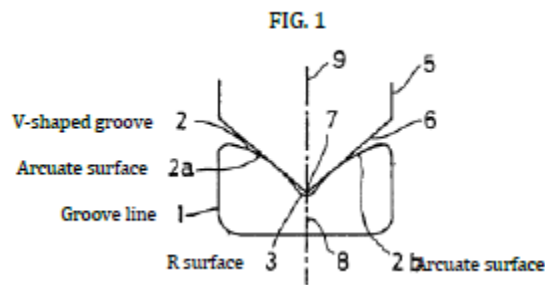


Figure 1 shows a cross-sectional view “of a groove line of the present invention.” *Id.* The embodiment of Figure 1 is taught to have the following advantages:

the left and right outer peripheral edges 6 of the lens tangentially contact the arcuate surfaces 2a, 2b of the groove line and the apex portion 7 of the lens is separated from the R surface 3 of the groove line. Therefore, the hold is strong, with no fear of the lens falling out, and the lens apex portion 7 is not in danger of being damaged.

Id. Thus, Patent Owner argues, Nomura teaches away from contact of the bevel vertex (apex) with the frame and therefore teaches away from a configuration where the lens vertex bears circumferential clamping pressure that brings about compression. PO Resp. 49–50.

In its Reply Brief, Petitioner contends that “the ‘conventional’ practice illustrated in FIG. 3 of Nomura discloses exactly the same structure that is recited in claim 1 of the ‘130 patent. Nomura does not teach that such a structure is inoperable, or that damage is inevitable.” Pet. Reply 8. Accordingly, Petitioner reasons, Nomura does not teach away from the embodiment of Figure 3. *Id.*

Prior art may teach away if it “criticize[s], discredit[s], or otherwise discourage[s] the solution claimed.” *In re Fulton*, 391 F.3d 1195, 1201

(Fed. Cir. 2004). A prior art reference teaches away when it “suggests that the line of development flowing from the reference’s disclosure is unlikely to be productive of the result sought by the applicant.” *Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1354 (Fed. Cir. 2012). Here, Nomura teaches that the bevel “is readily damaged” when arranged so as to be in direct contact with the channel bottom (groove) of the frame. Thus, Nomura tends to “discourage” a person of ordinary skill in the art from adopting a configuration requiring such direct contact. Accordingly, we agree with Patent Owner that Nomura teaches away from such arrangement.

In addition, Petitioner does not address our preliminary determination, in the Institution Decision, regarding Deeg teaching away from application of the “clamping pressures” for which it is cited in Petitioner’s asserted Fifth Ground of unpatentability. In this regard, we incorporate our findings and determinations made in regard to Deeg in the Institution Decision. *See* Dec. to Inst. 38–39.

In view of the foregoing, we determine that Petitioner has not shown, by a preponderance of the evidence, that claims 1–3, 6, and 11 would have been unpatentable as obvious over the combined disclosures of Nomura, Igarashi1, Schaeffer, Kennedy, and Deeg.

6. Grounds 6–10

In our Institution Decision, we determined that Petitioner had not set forth sufficient evidence to establish a reasonable likelihood of unpatentability in its Fifth, Sixth, Seventh, Eighth, Ninth, and Tenth Grounds. *Id.* at 39–42. Petitioner has submitted additional briefing regarding its Fifth asserted Ground, discussed *supra*, but not Grounds Six through Ten. *See generally* Pet. Reply. Accordingly, for the reasons set

forth in our Decision instituting trial, we determine that Petitioner has not carried its burden of proof with regard to Grounds Six through Ten. Dec. to Inst. 39–42.

7. Reason to Combine

Patent Owner argues that Petitioner has not set forth a sufficient basis to combine the teachings of the cited references. PO Resp. 52–58. Patent Owner advances specific argument with regard to Petitioner’s Ground 1 (PO Resp. 54–55), Ground 3 (*id.* at 55–56), and Grounds 9 and 10 (*id.* at 57–58). As we have determined that the references offered in support of Grounds 9 and 10 do not adequately teach all elements of the claims, we need not address the sufficiency of Petitioner’s proffered reasons to combine the teachings cited in support of those grounds. The adequacy of Petitioner’s stated reason to combine as to those combinations determined to teach all elements of the challenged claims is addressed above in connection with Grounds 1–4.

III. CONCLUSION

Petitioner HOYA Optical Labs of America, Inc. has met its burden of proof by a preponderance of the evidence in showing that claims 1, 3, 6, 7, 8, and 10 are unpatentable based on the following grounds of unpatentability:

Ground	Claims	Basis	References
1	1, 3, 6, and 7	§103(a)	Gottschald, ANSI, Schaeffer, and Deeg
2	7	§103(a)	Gottschald, ANSI, Schaeffer, Deeg, and Freeman

3	8	§103(a)	Gottschald, ANSI, Schaeffer, Page, and Line
4	10	§103(a)	Gottschald, ANSI, Schaeffer, Deeg, and Ace (and/or Walsh)

Petitioner has not shown, by a preponderance of the evidence, that claims 2, 4, 5, 9, 11, and 12 are unpatentable as obvious over the cited prior art.

ORDER

In consideration of the above, it is:

ORDERED that claims 1, 3, 6, 7, 8, and 10 of the '130 Patent are held unpatentable; and

FURTHER ORDERED that claims 2, 4, 5, 9, 11, and 12 have not been demonstrated to be unpatentable;

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2018-00596
Patent 9,405,130 B2

For PETITIONER:

James Y.C. Sze
William L. Shaffer
Kerry Hartman
KILPATRICK TOWNSEND & STOCKTON, LLP
jsze@kilpatricktownsend.com
wshaffer@kilpatricktownsend.com
khartman@kilpatricktownsend.com

For PATENT OWNER:

John M. Halan
Thomas A. Lewry
Mark A. Jotanovic
BROOKS KUSHMAN P.C.
jhalan@brookskushman.com
tlewry@brookskushman.com
mjotanovic@brookskushman.com