

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 IPR2018-00178
Patent 8,636,360 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. (“HOYA Optical” or “Petitioner”) filed a Petition, Paper 2 (“Pet.”), on November 10, 2017, to institute an *inter partes* review of claims 1–12 (the “challenged claims”) of U.S. Patent No. 8,636,360 B2 (Ex. 1001, “the ’360 Patent”). Inland Diamond Products Co. (“Inland Diamond” or “Patent Owner”) filed a Preliminary Response, Paper 10 (“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. Paper 11 (“Dec.”).

After institution, Inland Diamond filed a Patent Owner Response (“PO Resp.,” Paper 19) and HOYA Optical filed a Reply to the Patent Owner Response (“Pet. Reply,” Paper 21). Oral Hearing was held on February 19, 2019, and a transcript of that hearing has been entered in the record. Paper 26.

We have jurisdiction under 35 U.S.C. § 6(b). 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, 7, 8, and 12 of the ’360 patent 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. Patent Owner's Mandatory Notice, Paper 8.

B. Pending Litigation

Petitioner was the defendant in litigation concerning the '360 Patent, *Inland Diamond Products Co. v. HOYA Optical Labs of America*, Civil Action No. 2:17-cv-416-JRG (E.D. Texas). Pet. 1. This case has been dismissed with prejudice. Pet. Reply 1.

C. Other Related Matters

A related patent, U.S. Patent No. 9,405,130 B2, is the subject of IPR2018-00596, filed February 7, 2018, and instituted August 28, 2018. That patent was also at issue in the litigation referenced above. Ex. 2021, 3.

D. The '360 Patent (Exhibit 1001)

The '360 Patent relates to a plastic prescription lens having a beveled edge fitted in an eyeglass frame. Ex. 1001, 1:8–10. The eyeglass frame has a receiving channel defined by opposed interior wall surfaces. *Id.* at 1:58–60. The receiving channel also has a channel bottom. *Id.* at 1:60–62. The lens has a bevel at its periphery that extends to form a vertex. *Id.* at 1:64–65. 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 1:64–2:2. Figure 2 of the '360 Patent is reproduced below for illustrative purposes.

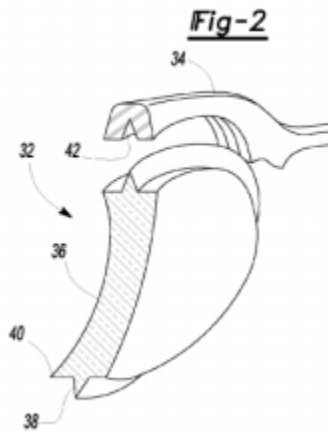


Figure 2 shows a perspective view of lens 36 and frame 34. *Id.* at 4:10–15. As depicted in Figure 2, the bevel 38 cooperates with a retention structure 42 (which includes the receiving channel) on eyeglass frame 34 to provide an interference fit with the bevel 38 when assembled. *Id.* at 4:18–20.

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 5:30–33, 2:2–3. The relationship of the angle of the bevel and the receiving channel is illustrated in Figure 3b, reproduced below.

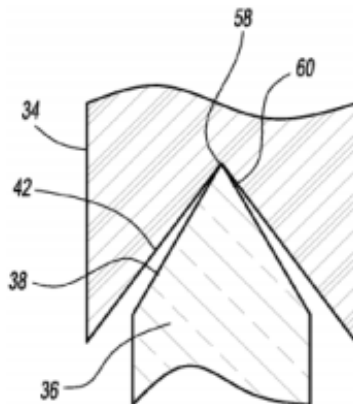


Figure 3B depicts “a cross-sectional view of the bevel in an interference fit with an eyeglass frame receiving channel bottom.” *Id.* at 2:36–38. The vertex 60 of the bevel is shown to be in contact with the vertex 58 of the retention structure 42. *Id.* at 4:61–63.

The ’360 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 1:22–29, 4:39–40. 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 4:42–43. 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 3:33–38.

E. Illustrative Claim

Claim 1 of the ’360 Patent is illustrative of the subject matter of the challenged claims:

1. A prescription plastic lens for use in an eyeglass frame, said eyeglass frame having a 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, the plastic lens comprising:

- a prescription lens body generally defined by 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, the bevel being receivable within the receiving channel, at least a portion of the vertex of the bevel being in contact with the receiving channel bottom and having an

interference fit with the receiving channel bottom when held within the eyeglass frame, the first angle being greater than the second angle; wherein the portion of the vertex in contact with the receiving channel bottom is in compression once the plastic lens is fitted in the frame.

Id. at 8:36–55.

F. Asserted Prior Art and Grounds of Unpatentability

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

Reference	Designation	Exhibit No.
WO 1999040494 A1, published Aug. 12, 1999 (English Translation)	Gottschald	Ex. 1009
U.S. Patent Appl. No. 2008/0125013 A1, published May 29, 2008	Schaeffer	Ex. 1012
American National Standard for Ophthalmics: Requirements for Ophthalmic Frames: ANSI Z80.5-1997, published Apr. 3, 1997	ANSI Z80.5-1997	Ex. 1007
U.S. Patent No. 2,756,631, issued July 31, 1956	Page	Ex. 1016
U.S. Patent Appl. No. 2008/0137028 A1, published June 12, 2008	Webb	Ex. 1017
Japanese Patent Application JP S61-245131, published Oct. 31, 1986 (English Translation)	Nomura	Ex. 1027
U.S. Patent No. 4,394,099, issued July 19, 1983	Santinelli	Ex. 1030
U.S. Patent No. 5,096,457, issued Mar. 17, 1992	Nakagawa1	Ex. 1029
German Patent Application DE 197 27 226 A1, published Oct. 22, 1998 (English Translation)	Berndt	Ex. 1034
U.S. Patent No. 4,135,792, issued Jan. 23, 1979	Deeg	Ex. 1021

U.S. Patent No. 6,845,678 B2, issued Jan. 25, 2005	Igarashi2	Ex. 1014
Japanese Patent Application JP S63-160526, published Oct. 20, 1988 (English Translation)	Umeda	Ex. 1036
U.S. Patent No. 6,840,851 B1, issued Jan. 11, 2005	Raffaelli	Ex. 1032
Japanese Patent Application Pub. No. 2005-31281, published Feb. 3, 2005 (English Translation)	Nakagawa2	Ex. 1043
U.S. Patent Appl. No. 2007/0298686 A1, published Dec. 27, 2007	Shibata	Ex. 1031
Glyn Walsh, et al., <i>The depth, contour and angle of the glazing grooves of spectacle frames: don't blame the glazer?</i> , Ophthal. Physiol. Opt., Vol. 20, No. 4, July 2000, 290–297.	Walsh	Ex. 1019

Petitioner challenges claims 1–12 of the '360 Patent as unpatentable under 35 U.S.C. § 103 on the grounds set forth below. *Id.* at 4–5.

Asserted Ground	References	Challenged Claims
1	Gottschald and Schaeffer	1 and 3
2	Gottschald, Schaeffer, and ANSI Z80.5-1997	7 and 12
3	Gottschald, Schaeffer, Page, and Webb	8
4	Nomura, Santinelli, Nakagawa1, Berndt, and Deeg	1–6, 9, and 10
5	Nomura, Santinelli, Nakagawa1, Berndt, Deeg, and Umeda	11
6	Raffaelli, Berndt, and Deeg	1, 3–5, 7, and 12
7	Nakagawa2, Santinelli, Shibata, and Umeda	1–7 and 9–12

8	Nomura, Santinelli, Nakagawa1, Walsh, Deeg, and Umeda	1–6 and 9–11
9	Nomura, Igarashi1, Nakagawa1, Berndt, Deeg, and Umeda	1–6 and 9–11
10	Utsumi and Deeg	1

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 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).

¹ See 83 Fed. Reg. 51340 (Oct. 11, 2018) (changing the standard for interpreting claims in *inter partes* reviews filed on or after November 13, 2018).

Petitioner seeks construction of two terms: “interference fit” and “eye-wire.” Pet. 10–15. In its Preliminary Response, Patent Owner offered its own construction of “interference fit” and additionally proposed a construction of “in compression.” Prelim. Resp. 8–23.

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

“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;

“eye-wire” - the component of an ophthalmic frame front encircling one lens; and

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

Following institution, the parties did not challenge our preliminary constructions of “eye-wire” or “in compression.” See PO Resp. 9–30; Pet. Reply 1–8. Patent Owner and Petitioner each provided further argument as to the construction of “interference fit.” PO Resp. 11–30; Pet. Reply 1–2. We provide additional analysis of these terms below.

1. “*Interference Fit*”

Claim 1 requires, *inter alia*, a lens with “a portion of the vertex of the bevel being in contact with the receiving channel bottom and having an *interference fit* with the receiving channel bottom when held within the eyeglass frame.” Ex. 1001, 8:48–51 (emphasis added). Claim 11 recites “a prescription plastic lens body generally defined by a peripheral edge having

a bevel extending away from the peripheral edge to a vertex . . . the bevel configured to form an *interference fit* between the vertex and a bottom of the receiving channel.” *Id.* at 9:14–20 (emphasis added).

In its Petition, HOYA Optical initially cites to a Wikipedia entry for “interference fit” that it offers as evidence of the term’s plain and ordinary meaning. Pet. 10. That Wikipedia entry indicates that “[a]n interference fit, also known as a press fit, is a fastening between two parts which is achieved by friction after the parts are pushed together, rather than by any other means of fastening.” Ex. 1003. Petitioner additionally cites to certain prior art references which, it asserts, use “interference fit” to mean press-fitting a lens into a plastic frame. Pet. 10–11 (citing Exs. 1004, 1005).

Petitioner further looks to the intrinsic record. Petitioner cites to several portions of the Specification which use the term “interference fit” as follows:

Another failure mode occurs when the glass lenses crack as a result of having an *interference fit* of the vertex of the bevel with a bottom of a channel portion of the eyeglass frame. It is well practiced in the art to avoid cracking of the lens by having the bevel vertex not in contact with the bottom of the channel of the eyeglass frame. As such, glass lenses have always been manufactured to have bevels which will not contact the bottom of the eyeglasses frame.

Ex. 1001, 1:22–29 (emphasis added).

Use of plastic for a lens allows an *interference fit* between a vertex of the bevel and a receiving channel of the eyeglass frame. Unlike a glass lens, the plastic lens is not readily susceptible to cracking when a vertex of the glass bevel comes in prolonged contact with the receiving channel bottom of the eyeglass frame.

Id. at 3:33–38 (emphasis added). Petitioner additionally cites to a portion of the file history where the Applicant argues that the claims require that “the frame has a larger angle than the bevel, such that there is an interference fit” and that “the vertex actually contacts the bottom of the channel to form an interference fit.” Ex. 1038, 1–2.

Petitioner also notes that the Examiner determined that the limitation “at least a portion of the vertex of the bevel having an interference fit with the receiving channel bottom when held within the eyeglass frame” was satisfied by a prior art reference that taught a lens where “the bevel fits into the triangular channel in such a manner that the channel interferes with the motion of the lens by frictional forces.” Pet. 14 (citing Ex. 1006, 3). Petitioner argues that this would not be a proper construction of “interference fit” at least because the application does not include any reference to “friction.” Pet. 14. Petitioner asserts that, if the Board is inclined to adopt the Examiner’s determination as a construction, it should be modified to “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 15.

In view of the foregoing, Petitioner argues that “interference fit” should be construed to mean “in contact with” or “in prolonged contact with.” Pet. 10–14. In the alternative, Petitioner argues that “interference fit” should be construed to mean “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 14–15.

In its Preliminary Response, Patent Owner argued that “interference fit” should be construed to mean “a fit between the lens and frame in which

an external dimension of the lens exceeds a corresponding internal dimension between the frame channel bottoms and the resulting contact between the bevel vertex and channel bottom secures the lens within the frame.” Prelim. Resp. 8.

Patent Owner contended that Petitioner’s proposed construction is too broad and that the claims, by their terms, require both “contact” *and* “an interference fit.” *Id.* at 10. Patent Owner cites to the portion of the Specification which provides that “[t]he bevel 38 has a securing structure, including the vertex 60 of the bevel, in contact with the retention structure’s vertex 58. The contact *may be an interference fit*[.]” Ex. 1001, 4:61–64 (emphasis added). Patent Owner argues that this establishes that contact, by itself, is not necessarily an “interference fit.” Prelim. Resp. 11.

Patent Owner additionally offered several dictionary and treatise definitions of “interference fit.” Prelim. Resp. 14–17. For example, the New Oxford American Dictionary defines “interference fit” as “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.” Ex. 2004. Patent Owner also cited to several prior art patents that use the term “interference fit” to refer to the deformation of a part that is inserted into a bore of lesser diameter. Prelim. Resp. 17–18 (citing Exs. 2007, 2008). Similarly, *Engineer on a Disk* teaches that a shaft in an interference fit has a diameter larger than that of the hole into which it is inserted. *Id.* at 16–17 (citing Ex. 2006). Patent Owner additionally cited to several prior art patents that use the term “interference fit” in a generally similar manner. *Id.* at 17–18.

The references, however, teach that the internal part (such as a shaft) is not of greater size than the external part (such as a bore) when in an assembled state. 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. Other references cited by Patent Owner similarly teach that the part to be inserted flexibly deforms upon insertion such that its dimensions no longer exceed the diameter of the bore. *See, e.g.*, Exs. 2007, 2008.

In view of such teachings, we preliminarily construed “interference fit” as “a relationship of the bevel of the lens and the receiving channel bottom of the eyeglass frame where such parts in contact so as to exert frictional forces that secure the lens in place.” Dec. 14. In so doing, we noted that “Patent Owner’s proposed dimensional relationship . . . may describe the relative dimensions prior to assembly, but does not describe the relative dimensions of the lens and frame after assembly.” *Id.* at 13. We also did not agree with Petitioner’s proposed construction, because “mere contact is insufficient to form an ‘interference fit.’” *Id.*

In its Response to the Petition, Patent Owner, recognizing the foregoing, indicates that it “has modified its preliminary construction to ‘a fit resulting from the lens being larger than the frame opening into which the lens is assembled’ – a construction not requiring the lens to be larger than the frame opening after assembly.” PO Resp. 24–25.

Patent Owner argues that the Board’s preliminary construction of “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” is too broad. *Id.* at 25. Patent Owner contends that the Board’s construction would mean that “mere ‘contact’ of a lens within a frame would satisfy the ‘interference fit’ limitation” and effectively moot the “fit” limitation. *Id.* at 26–27. Patent Owner further asserts that the Board’s preliminary construction would encompass a lens having an outer dimension equal to the corresponding inner frame channel dimension (a “transition fit”). *Id.* at 29.

In its Reply to Patent Owner’s Response, Petitioner notes that claim 1 requires “an interference fit with the receiving channel bottom **when held within the eyeglass frame**” and argues that Patent Owner proposes to define “interference fit” in terms of a condition (“the lens being larger than the frame opening”) that cannot exist upon assembly. Pet. Reply at 1–2 (emphasis in original).

While the weight of the cited references concerns the insertion of a shaft (or similar component) into a bore of lesser diameter, the art additionally teaches that an interference fit may result from the closing of a latch mechanism rather than an insertion. The Webb reference teaches an embodiment as follows:

When in a closed position, **a latching mechanism 40** may engage a lens 20 and thereby apply a force which places lens 20 in compression and a portion of frame 30 in tension. **The paired compressive and tensile forces may induce an interference fit** wherein lens 20 is securely retained by frame 30.

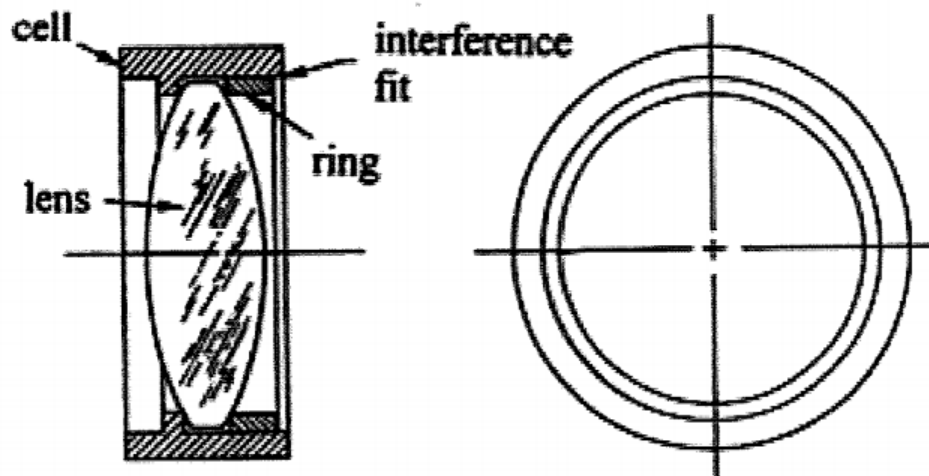
Ex. 1017 (Webb) ¶ 21 (emphasis added). Patent Owner states that “this does not disclose an ‘interference fit’ in the traditional sense – i.e., a male part being larger than a female receptacle. Instead, this is merely teaching that an interference fit may be induced by closing a latching mechanism such that the dimension between the latching mechanism and the frame would, if latched before such assembly, be less than the corresponding lens dimension.” PO Resp. 21–22. Patent Owner provides no support for this assertion.

Patent Owner additionally cites to an optical industry treatise, Yoder, *Mounting Lenses in Optical Instruments* (1995). Ex. 2005 (“Yoder”).

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. Patent Owner relies on Yoder “because it confirms that an interference fit requires that a dimension of an inner part (in Yoder, the ring) exceed that of the outer part (in Yoder, the cell).” PO Resp. 18. Yoder, however, 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.” Ex. 2005, 4. Thus, the inner part is not larger than the outer part immediately prior to insertion. The sole figure of the exhibit is reproduced below:



Ex. 2005, Fig. 3.11 (described as a “lens constraint design with a continuous ring pressed in place with an interference fit”). Accordingly, an interference fit may be induced by expansion and subsequent contraction of the external member (and/or by contraction and subsequent expansion of the internal member).

The Specification appears to indicate that an interference fit may arise from tightening of retention screws. The Background of the Invention teaches that “[w]hat is needed is a lens that can be assembled into *many types of eyeglass* frames to yield a more secure assembly of the eyeglass lens and frame.” Ex. 1001, 1:46–48 (emphasis added). The Specification additionally mentions that “loosening of the retention screws” may lead to the lens falling out of the frame. *Id.* at 1:42–45. A prior art reference teaches that “[i]n the case of metal frames, rims holding the lenses are tightened by one or more screws” while “[i]n plastic frames, a cool lens is inserted in a heated, expanded frame and held thereinplace by forces resulting from shrinkage of the frame rims after the frame is cooled.” Ex. 1021, 1:19–23. The construction proposed in the Patent Owner Response,

requiring a lens larger than the frame, is at odds with its Specification which includes metal frames with openings tightened (so as to reduce the size of the frame openings to match the lenses) by retention screws within the scope of the invention. A lens to be inserted into metal frames (subsequently tightened by retention screw) need not be larger than the frame opening at any point.

Patent Owner's construction is similarly ill-suited to partial frames. The Specification explicitly contemplates an embodiment where the frame portion corresponds only to an upper half of the lens body. *See* Ex. 1001, 5:7–11. In this embodiment, it is not clear what “the frame opening” is nor how to evaluate its size.

The claims at issue are apparatus claims rather than process claims. Accordingly, no specific means of achieving the interference fit is required. We construe “interference fit” as a structural limitation specifying the relationship of the bevel and frame. Even if construed as a product-by-process limitation (with the process being the insertion of a lens within a frame of lesser size), “determination of patentability is based on the product itself.” *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985).

Patent Owner frames its proposed construction in terms of the process by which the fit comes about, but says little about the structural characteristics of the interference fit upon assembly. The Specification teaches that pressure upon the lens would lead to compression of the vertex. Ex. 1001, 4:40–55. That the vertex is in a compressed state is separately required in all claims by the “in compression” limitation. *Id.* at 8:54, 9:24.

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. “Eye-wire”

In its Petition, HOYA Optical sought construction of the term “eyewire.” Pet. 15. The limitation “eye-wire” is recited in claim 7. Claim 7 is to an “eyeglasses component comprising: *an eye-wire eyeglass frame*, and two lenses supported by the *eye-wire eyeglass frame*, each of the lenses being a lens according to claim 1.” Ex. 1001, 8:66 – 9:2 (emphasis added). Petitioner relies upon the glossary of an ophthalmics standard published by the American National Standards Institute to supply the ordinary meaning of “eye-wire” as the “component of an ophthalmic frame front encircling one lens.” Ex. 1007, 4. Petitioner further states that this is synonymous with “rim.” Pet. 15.

In our Institution Decision, we reviewed the evidence cited by Petitioner and preliminarily adopted its proposed construction. Dec. 15. During trial, Patent Owner did not challenge this construction and has not presented argument regarding the scope of this term. *See generally* PO Resp. We, therefore, see no reason to modify our prior construction of “component of an ophthalmic frame front encircling one lens.”

3. “*In Compression*”

Claim 1 requires a lens having a bevel that extends to a vertex, “wherein the portion of the vertex in contact with the receiving channel bottom is *in compression* once the plastic lens is fitted in the frame.” Ex. 1001, 8:53–55 (emphasis added). Similarly, claim 11 requires a lens “wherein at least a portion of the vertex contacts the bottom of the receiving channel, is *in compression*, and is deformed once the plastic lens is fitted in the eyeglass frame.” *Id.* at 9:23–26 (emphasis added).

In its Preliminary Response to the Petition, Patent Owner requested construction of the term “in compression” as “the state of being compressed, i.e., pressed into less space.” Prelim. Resp. 22–23. Patent Owner cited to a dictionary definition of “compression” as “[t]he state of being compressed.” Ex. 2016, 3 (*The American Heritage Dictionary*, Second College Ed. (1982)). The same dictionary defines “compressed” as “[p]ressed together or into less space; made compact.” *Id.* Patent Owner also supplies similar definitions from other dictionaries. Prelim. Resp. 22–23.

Patent Owner additionally cites to the Specification which teaches that “compression on the apex of the bevel tends to lessen the chance of stress on the lens as the softer bevel easily deforms.” PO Resp. 23 (citing Ex. 1001, 4:42–44).

In our Decision instituting trial, we reviewed Patent Owner’s arguments and evidence, and preliminarily adopted its proposed construction of “in compression.” Dec. 16. During trial, Petitioner did not address the construction of this term, and we have been presented with no reason to depart from our preliminary construction. Accordingly, we maintain our

prior construction of “in compression” as “the state of being compressed, i.e., pressed into less space.”

B. Asserted Grounds of Invalidity

Petitioner asserts that all claims of the '360 Patent are 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 Decision instituting trial, 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 and 3), second (claims 7 and 12), third (claim 8), and seventh (claims 1–7 and 9–12) grounds would have been unpatentable. Dec. 23, 25, 26, 39. Conversely, we determined that Petitioner had not set forth sufficient evidence to establish a reasonable likelihood of unpatentability in its fourth, fifth, sixth, eighth, ninth, and tenth grounds. *Id.* at 30, 31, 32, 39–40. Petitioner did not further address these grounds subsequent to our Decision instituting trial. *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 4, 5, 6, and 8–10. We consider Petitioner’s grounds 1–3 and 7 below.

1. Obviousness of Claims 1 and 3 Over
Gottschald in View of Schaeffer

For its first asserted ground of invalidity, Petitioner contends that claims 1 and 3 are unpatentable under 35 U.S.C. § 103(a) as they would have been obvious over the combined disclosures of Gottschald and Schaeffer. Pet. 19–25; Pet. Reply 3–4.

a. Gottschald

Petitioner relies upon Gottschald as its primary reference in support of its first asserted ground of invalidity. Gottschald is a 1999 World Intellectual Property Organization published 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 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.

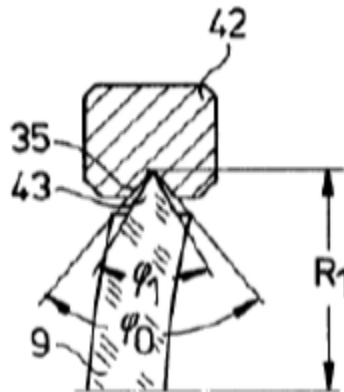
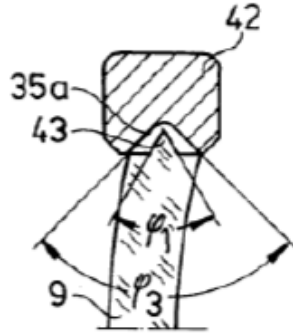


Figure 6 depicts bevel 43 bearing against the bevel groove 35 of the spectacle frame 42. *Id.* at 14.

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



Gottschald, 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. Schaeffer

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. 20 (citing Ex. 1012 (Schaeffer)) ¶¶ 4–6).

c. Analysis

Petitioner relies on Gottschald to teach all claim elements apart from “prescription lens body.” Pet. 20. Petitioner argues that a portion of the vertex “is in compression” and that the vertex of the bevel has an “interference fit” with the receiving channel bottom as required by claims 1 and 11. *Id.* at 23–24. These arguments are disputed by the Patent Owner. PO Resp. 32–38. Petitioner sets forth an analysis of where the remaining elements of claim 1 are found. *See* Pet. 19–24. Patent Owner does not explicitly dispute that Gottschald teaches the remaining elements as argued. *Id.* We have reviewed Petitioner’s analysis and the evidence relied upon and find that Petitioner has shown that the remaining elements of claim 1 are taught by Gottschald.

With regard to the “in compression” limitation, Petitioner relies upon Figure 6 of Gottschald (reproduced, *supra*) which shows that the angle of the lens bevel is less than that of the frame groove and also on Gottschald’s teaching that such 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.” Pet. 24 (citing Ex. 1009, 14) (underscoring in original). Petitioner argues that

Such ‘bearing’ necessarily causes the tip of the bevel (‘vertex’) to be “in contact with” the bevel base of the spectacle frame (‘receiving channel bottom’) as recited in claim 1. Such ‘bearing against’ also necessarily causes the tip of the bevel (‘vertex’) to be “in compression once the plastic lens is fitted in the frame,” as recited in claim 1.

Id. In its Reply to the Patent Owner’s Response, Petitioner similarly argues that “Gottschald teaches that the tip of the bevel ‘bears ... against’ the bevel

base of the frame (emphasis added), thus explicitly disclosing a force that puts the plastic lens in compression.” Pet. Reply 4 (emphasis in original).

Patent Owner argues that “‘to bear’ merely means ‘to hold or support something.’” PO Resp. 33 (citing <https://dictionary.cambridge.org/us/dictionary/english/bear>)². Patent Owner further asserts that the Petition fails to articulate how Gottschald’s disclosure of a frame that merely “bears against” the lens meets the “in compression” requirement of the claims. PO Resp. 33.

As discussed above, Gottschald teaches a bevel with a height greater than the depth of the bevel groove. Ex. 1009, 14. 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 indicates, in the arrangement described by Gottschald where the bevel groove is not as deep and the bevel of the lens is in contact with the groove base, the lens is “held securely.”

Petitioner asserts that the compression inherently (“necessarily”) follows from the bevel bearing against the groove. 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, one may look to the

² See Board Ex. 3001.

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, 4:39–46 (emphasis added). Patent Owner argues that the foregoing concerns “what happens if a bevel is in compression – it is not teaching 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. 35. 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. 1050, 8. Thus, the Specification teaches that a glass bevel may crack upon contact with a retention structure. It further teaches that a thermoplastic bevel will compress upon such contact rather than crack.

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 claims 1 and 11 of the ’360 patent.

Patent Owner additionally argues that that Gottschald fails to teach the claimed “interference fit.” PO Resp. 36–38. Petitioner relies upon the same teachings of Gottschald cited above 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, frictional force exists at this point of contact. For at least this reason, therefore, the tip of the bevel has an “interference fit” with the bevel base of the spectacle frame even under a narrow construction of that term.

Pet. 24.

It is not disputed that Gottschald teaches contact between the vertex of the bevel and the vertex of the bevel groove. *See, e.g.*, Ex. 1009 (Gottschald), Fig. 6. Gottschald further teaches that the lens is “ground to accurate dimensions” so that it “bears with the tip of the bevel against the bevel base of the spectacle frame.” *Id.* at 14. Moreover, Gottschald teaches that the lens should be held “securely.” *Id.* at 2 (“The flattening of the bevel is acceptable to a certain degree as long as the spectacle lens is accommodated securely in the bevel groove of the spectacle frame”), 16 (lens not inserted where “the spectacle lens is not held securely in the bevel groove 35a”). Gottschald additionally teaches that the lens is “in compression” as determined above. Given such teachings, there is adequate evidence of 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. Accordingly, we determine that Gottschald teaches an interference fit.

Petitioner sets forth a rationale to combine the teachings of Gottschald and Schaeffer. *Id.* at 20. Petitioner argues that the teachings of Gottschald are applicable to the prescription lenses of Schaeffer as follows:

POSITA would have been motivated by these teachings to use the method and device of Gottschald, with no change in its function, to edge the prescription plastic lens blank described by Schaeffer “so that the spectacle lens edge machining directly delivers a spectacle lens which is suitable for the selected spectacle frame, which has been ground to shape and which is provided with a bevel” (Gottschald, p. 6), and thereby to obtain the expected result of a “prescription plastic lens for use in an eyeglass frame” as recited in claim 1.

Id. at 20.

Patent Owner does not challenge the adequacy of Petitioner’s rationale with specificity. *See* PO Resp. 48–54. Rather, Patent Owner argues that Petitioner relies on “mere conclusory statements” throughout the Petition. *Id.* at 49. Such a generalized argument has little force. Having reviewed the evidence as a whole, we find that a person of ordinary skill in the art would have had reason to combine the teachings of Gottschald (regarding lens edging) and Schaeffer (regarding prescription lenses) in the manner Petitioner proposes.

Petitioner additionally argues that claim 3 would have been obvious over Gottschald and Schaeffer. Pet. 40. Claim 3 depends from claim 1 and further requires that “the bevel is a triangle having an apex.” Petitioner asserts that Figure 6 of Gottschald shows that bevel 43 is a triangle having an apex. *Id.* This contention is consistent with our review of Gottschald and

is not rebutted by Patent Owner, therefore, we find that Gottschald discloses the additional limitation of claim 3.

In view of all the foregoing, Petitioner has established by a preponderance of the evidence that claims 1 and 3 would have been obvious over the combined disclosures of Gottschald and Schaeffer.

2. Obviousness of Claims 7 and 12 Over Gottschald, Schaeffer,
and ANSI Z80.5-1997

For its second asserted ground of unpatentability, Petitioner contends that claims 7 and 12 would have been obvious over Gottschald (Ex. 1009), Schaeffer (Ex. 1012), and ANSI Z80.5-1997 (Ex. 1007). Pet. 25–27. Claim 7 is to an eyeglass component comprising “an eye-wire eyeglass frame, and two lenses supported by the eye-wire eyeglass frame, each of the lenses being a lens according to claim 1.” Petitioner contends that Gottschald teaches an “eye-wire eyeglass frame.” *Id.* at 26. Petitioner further contends that ANSI Z80.5-1997 teaches to have two lenses supported by the eyeglass frame. We have reviewed the record as a whole and find that Petitioner’s contentions are supported by the cited evidence. Patent Owner does not respond explicitly to these assertions (except as set forth above with regard to Ground 1).

Claim 12 depends from claim 7 and further requires that “the receiving channel bottom comprises the intersection of the opposed interior wall surfaces.” Petitioner contends that this feature is taught by Figure 6 of Gottschald. Pet. 27. Patent Owner does not respond explicitly to this assertion. We find that Gottschald teaches the elements of claim 12.

Patent Owner argues that Petitioner has not shown an adequate reason to combine the teachings of Gottschald, Schaeffer, and ANSI Z80.5-1997. PO Resp. 49–51. Patent Owner argues that Petitioner “fails to explain how or why a POSITA . . . would have made the combination or modification.” *Id.* at 49. Petitioner relies upon ANSI Z80.5-1997 for its teaching that spectacles have two lenses and a frame (as required by claim 7). Pet. 26. This is well-known to artisans and laymen alike. *See, e.g.*, Ex. 1012 ¶¶ 4–6. Given the ubiquity of such knowledge and the manifest requirements of human anatomy, we are persuaded that Petitioner has shown that a person of skill in the art would have had reason to make spectacles having two lenses rather than one. “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 and spectacle frames.

In view of all the foregoing, Petitioner has set forth sufficient evidence to establish by a preponderance of the evidence that claims 7 and 12 would have been obvious over the combined disclosures of Gottschald, Schaeffer, and ANSI Z80.5-1997.

3. Obviousness of Claim 8 Over Gottschald, Schaeffer, Page, and Webb

For its third asserted ground of unpatentability, Petitioner contends that claim 8 would have been obvious over Gottschald, Schaeffer, Page, and Webb. Pet. 27–33. Claim 8 depends from claim 1 and further requires that “the bevel is intermittently present.” Petitioner argues that Page teaches the intermittent bevel feature. *Id.* at 28. As evidence of a bevel that is

intermittently present, Petitioner cites, *inter alia*, the depiction in Figure 9 of Page showing bevel 15 at the periphery of the upper portion of lens 5, but not the lower portion. Pet. 28; see Ex. 1016, 2:42–44, Fig. 9. Petitioner cites Webb as disclosing a latching mechanism that applies a compressive force that may drive a section of the lens profile into lens groove 34. *Id.* at 31–32 (citing Ex. 1017 ¶¶ 21, 24). Petitioner additionally cites to teachings of Page and Webb that it asserts bolster Gottschald’s teachings relating both to an “interference fit” and the lens bevel being “in compression.” Pet. 29–30.

Patent Owner does not respond explicitly to Petitioner’s contentions that Page and Webb disclose the bevel being intermittently present. Patent Owner argues that none of the cited references teach the “interference fit” or “in compression” limitations. PO Resp. 38–39.

We have already determined that, on the present record, Gottschald teaches a lens having a bevel in an “interference fit” with the receiving channel and a lens bevel that is “in compression” when fitted in the frame. Accordingly, we need not address Petitioner’s additional arguments regarding the disclosures of Page and Webb regarding these limitations.

Petitioner argues that a person of ordinary skill in the art would have been motivated to modify the teachings of Gottschald and Schaeffer according to Page “at least because such modification would avoid having a visible but non-functional bevel around the periphery of the lower part of the lens.” Pet. 28. Petitioner further argues that a person of ordinary skill in the art would have been motivated to modify Page to include the latching mechanism of Webb to facilitate lens replacement. *Id.* at 32.

Patent Owner argues that “[a]t the time of the invention, a POSITA would not have combined Page with other art to use a lens having a bevel angle less than the frame channel angle and assemble it such that the bevel vertex is in compression because such a relationship – as discussed in Section IV(F) and (G) – was thought to cause lens damage.” PO Resp. 40–41. The cited portions of the Patent Owner’s Response concern Deeg (Section IV(F)) and Nomura (Section IV(G)), two prior art references that are not implicated in this ground of unpatentability. Patent Owner seems to rely on these references to argue that it was a widely held view that one could not use a plastic lens having a bevel in contact with a frame as such contact would damage the lens. *See generally id.* at 54–63. This is not directly applicable to Petitioner’s proposed combination, as it does not rebut the affirmative teaching of Gottschald to place the bevel of a plastic lens in contact with the frame bottom. *See Ex. 1009, Fig. 6.* Accordingly, we find such argument to be unpersuasive.

We find that that one of skill in the art would have been motivated to combine the cited teachings of Gottschald, Schaeffer, and Page, for the reasons set forth by Petitioner. Pet. 28, 29. That is, one of skill in the art would have had reason to omit the bevel from those portions of the lens not surrounded by the frame.

In view of the foregoing, Petitioner has established by a preponderance of the evidence that claim 8 would have been obvious over the combined disclosures of Gottschald, Schaeffer, Page, and Webb.

4. Obviousness of Claims 1–7 and 9–12 Over
Nakagawa2, Santinelli, Shibata, and Umeda

For its seventh asserted ground of unpatentability, Petitioner contends that claims 1–7 and 9–12 would have been unpatentable over Nakagawa2, Santinelli, Shibata, and Umeda. Pet. 65–73. Petitioner relies upon Nakagawa2 as teaching the “interference fit” and “in compression” limitations. *Id.* at 69. Nakagawa2 teaches that “the present invention is a V-bevel shape of eyeglasses formed so as to hold a lens by fitting it into a rim groove provided in a rim.” Ex. 1043 (Nakagawa2) ¶ 7. Nakagawa2 further provides that “[w]hen a lens 5 having a V-bevel shape similar to the conventional has been fit into the rim groove 3 of the eyeglass rim 1 formed as described above, the lens 5 is held in the rim groove 3 in the state illustrated in FIG. 2.” *Id.* ¶ 15. Nakagawa2 similarly teaches that “the entire periphery of the lens can be reliably supported by fitting into the rim groove.” *Id.* ¶ 17.

The rim groove of Nakagawa2 has one slanted face 4a, one flat face 4c, and an erect face 4d as shown in Figure 2, reproduced below.

FIG. 2

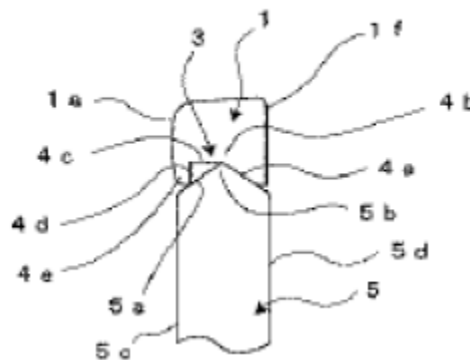


Figure 2 “is a schematic diagram of a state where a lens has been fit into the rim groove.” *Id.* ¶ 9.

Nakagawa2 further teaches that “the glass or plastic lens is greatly compressed by the metal rim, but this compression can be prevented from damaging the lens 5 by making the erect part 4e elastically deformable.” *Id.* ¶ 16. Petitioner argues that this teaching regarding compression of the lens satisfies the “in compression” limitation as well as the “interference fit” limitation. Pet. 69.

Patent Owner interprets Nakagawa2 differently. Patent Owner cites to several portions of Nakagawa2 including the following (which includes the portion cited by Petitioner):

[T]he apex part 5b of the V-bevel of the lens 5 shifts the flat face 4c of the rim groove 3, and as a result, the slanted face 5a on the front face 5c side of the lens 5 abuts against the erect face 4d with a greater compressive force than initially, such that there is no risk of the lens 5 coming out of the rim groove 3.

Furthermore, the glass or plastic lens is greatly compressed by the metal rim, but this compression can be prevented from damaging the lens 5 by making the erect part 4e elastically deformable.

Ex. 1043 (Nakagawa2) ¶ 16. Patent Owner concludes that “the ‘compression’ referred to in Nakagawa2 is the lateral compression between the slanted face 5a of the lens 5 and the erect part 4e.” PO Resp. 45. Patent Owner further argues as follows:

Specifically, “making the erect part 4e elastically deformable” can only prevent damage due to lateral compression because only the slanted face 5a of the lens 5 is in contact with the erect part 4e. The bevel vertex 5b of the lens 5 – the part that would have to be in contact to meet the claim 1 requirement that “the portion of the vertex in contact with the receiving channel bottom is in compression[”] – is never in contact with the erect part 4e.

PO Resp. 47–48.

Petitioner responds that “[a]s indicated quite clearly by the word ‘Furthermore’, however, Nakagawa2 is teaching that the ‘great compression’ of the lens by the metal rim occurs in addition to the lateral compression.” Pet. Reply 6 (underscoring in original).

The portion of the disclosure of Nakagawa2 that is the subject of the differing interpretations begins at Paragraph 15. There, Nakagawa2 teaches that “[w]hen a lens 5 having a V-bevel shape similar to the conventional has been fit into the rim groove 3 of the eyeglass rim 1 formed as described above, the lens 5 is held in the rim groove 3 in the state illustrated in FIG. 2.” Ex. 1043 ¶ 15. Nakagawa2 further teaches that

In this state, when a force acts in the front face 5c direction on the edge part centered around the center of the lens 5, this force acts in an arc shape. Therefore, the slanted face 5a on the rear face 5d side of the lens 5 gets dislodged with the end of the slanted face 4a of the rim groove 3 acting as a fulcrum.

Id. Thus, Figure 2 (reproduced above) corresponds to a rest state and Figure 3 corresponds to a state where a force has acted on the lens. In this latter state, the end of the slanted face 4a of the rim acts a fulcrum. This is shown in Figure 3, reproduced below.

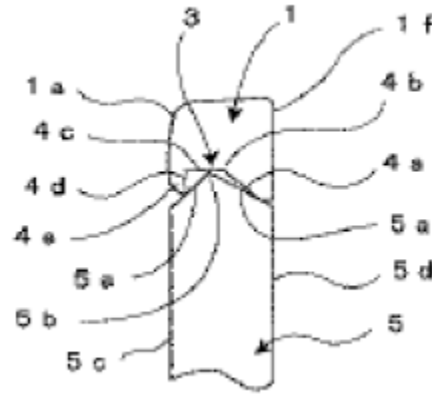


Figure 3 “is a schematic explanatory diagram illustrating a state where the lens of FIG. 2 has become dislodged toward the front.” *Id.* at 7.

Nakagawa2 indicates that the front face of the lens 5a “abuts against” upright member 4d with “a greater compressive force.” *Id.* ¶ 16. The reference further teaches that the lens is “greatly compressed” by the metal rim. *Id.* When read in context, this “greatly compressed” language seems most likely applicable to the portion of slanted face 4a which “acts as a fulcrum.” The elastic deformability of upright part 4e would then mitigate the force on the lens by permitting the lens to pivot (“this compression can be prevented from damaging the lens 5 by making the erect part 4e elastically deformable,” *id.*).

In our Decision on Institution we relied, in part, upon the plain meaning of Nakagawa2’s teaching that “the glass or plastic lens is greatly compressed by the metal rim.” Dec. 33–34. We have revisited our reliance on this disclosure in view of the arguments presented by the parties during the instituted trial. When considered in the context of the reference as a whole, the foregoing is sufficiently ambiguous that we cannot find a clear teaching that a vertex in contact with the receiving channel bottom “is in compression” nor of a vertex of the bevel being in contact with the receiving

channel bottom and having “an interference fit” with the receiving channel bottom as required by claims 1 and 11.

Accordingly, in view of all of the foregoing, Petitioner has not established by a preponderance of the evidence that claims 1–7 and 9–12 would have been unpatentable over Nakagawa2, Santinelli, Shibata, and Umeda.

III. CONCLUSION

For the reasons discussed above, Petitioner HOYA Optical has proven by a preponderance of the evidence that claims 1, 3, 7, 8, and 12 are unpatentable based on the following grounds of unpatentability:

Ground	Claims	Basis	References
1	1 and 3	§103(a)	Gottschald and Schaeffer
2	7 and 12	§103(a)	Gottschald, Schaeffer, and ANSI Z80.5-1997
3	8	§103(a)	Gottschald, Schaeffer, Page, and Webb

Petitioner has not met its burden of proof on the remaining grounds set forth in the Petition.

ORDER

In consideration of the above, it is:

ORDERED that claims 1, 3, 7, 8, and 12 of the '360 patent are held unpatentable;

FURTHER ORDERED that claims 2, 4–6, and 9–11 of the '360 patent have not been proven unpatentable; and

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.

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