

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OPTICIS CO., LTD.,
Petitioner,

v.

INNEOS LLC,
Patent Owner.

IPR2023-01256
Patent 7,198,416

PETITIONER'S REPLY
TO PATENT OWNER'S PRELIMINARY RESPONSE

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As authorized on November 29, 2023, Petitioner submits the following Reply to Patent Owner's Preliminary Response (Paper 12) ("POPR").

Patent Owner proposes overly narrow claim constructions, which are unsupported and contrary to applicable law, to try to avoid institution. If Patent Owner's constructions are rejected, its arguments against institution fail. And, even if the Board agrees with Patent Owner's constructions, institution is still warranted. Moreover, Patent Owner does not dispute that Bhandarkar (Ground 5) teaches, or would have suggested, all limitations of the Challenged Claims. Instead, Patent Owner argues only that Bhandarkar is not prior art. POPR, Section V(D). But Patent Owner's new evidence does not remedy the critical flaw in its swear-behind attempt.

I. Patent Owner's Claim Construction Arguments and Evidence

A. The Preambles of Claims 1 and 7: Statement of Purpose or Intended Use

The preambles' statement that the optical combiner is "*usable in data communication systems ... for transmission into and through a stopped single optical fiber*" is merely a purpose or intended use and does not confer structure to the optical combiner. The single optical fiber is not even part of the claimed combiner, so the statement that the combiner is usable *for transmission into and through a stopped single optical fiber* does not recite structure of *the claimed optical combiner*. Because the body of the challenged claims recite a structurally complete device with an arrangement of (i) collimating lenses and (ii) focusing means, the

preambles are not limiting. *See* Petition, pp. 12-13.

Patent Owner responds that “the language ‘plurality of n lasers’ and ‘each of said n outputs has a different output wavelength’ [in the preamble] is referenced in the body of the claim....” POPR, p. 15. But a preamble that provides context or is merely duplicative is not limiting. *Symantec Corp. v. Computer Associates Int’l, Inc.*, 522 F.3d 1279, 1288-89 (Fed. Cir. 2008). Because the claim body requires the laser outputs to have different wavelengths, this language is duplicative and does not suggest the preamble is limiting. Also, while claim 1 does not positively recite the lasers, claim 7 does so by separately introducing “an array of four lasers” in the body, further indicating the preamble’s reference to a plurality of lasers is not limiting.

B. The Preambles of Claims 1 and 7: “Optical Combiner”

For all the reasons discussed above, the preamble (and therefore, “optical combiner”) is not limiting. To the extent it is, it should be given its plain meaning – *a device that combines multiple optical inputs into an output*.

This is how the ’416 Patent uses the term. EX1001, 3:19-21 (“This combiner device has the ability to combine individual light signals into an optical path 90”); *id.* at 1:56-62 (referring to prior art “optical power combiner” that “combines the outputs of, for example, 19 passive optical fibers”). Because there is no definition or clear disavowal of claim scope, to the extent the term is limiting, it should receive its plain meaning. Patent Owner relies on *Corning Glass Works v.*

Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251 (Fed. Cir. 1989) as a case where a preamble was held to be limiting. POPR, p. 11. But in *Corning*, the specification *expressly defined* the term “optical waveguide.” *Id.*, 868 F.2d at 1256. Not so here.

Patent Owner’s proposed construction goes well beyond the plain meaning, straining the ordinary canons of claim construction to a breaking point. Patent Owner would insert extraneous requirements: “[i] an integrated subassembly of optical components [ii] for multiplexing light of different wavelengths, [iii] which includes an integrated, [iv] pre-aligned connector [v] with a stop to hold the single fiber optic cable.” This is inconsistent with how the ’416 Patent uses the term, as it expressly acknowledges that an optical combiner does *not* have to be “for multiplexing light of different wavelengths.” EX1001, 2:5-7 (“[T]he Lee et al [optical] combiner does not multiplex n different wavelength channels[.]”). It is also inconsistent with how the claims use the term. The claims specify that “said n laser output beams have n different output wavelengths,” and also refer to “multiplexing,” which would not be necessary if this was encompassed by “optical combiner.”

In short, there is no narrowing of claim scope. While the patent explains that “[t]he combiner 10 in this [first] embodiment includes” a “fiber stop or seat 60 formed in a ferrule 80” and refers to a “pre-aligned connector,” other embodiments do not show or describe such a stop or a pre-aligned connector. EX1001, 3:8-18 (first embodiment), 4:35-52 (fourth embodiment), FIGs. 7-11. For instance, even if

the fourth embodiment *could* include this (it is not shown or described), nothing in the patent indicates it is *required*, let alone that the term “optical combiner” connotes this narrow structure. To support its position on “integrated,” Patent Owner cites to a statement that the present invention provides an “injection molded, one piece optical combiner.” POPR, p. 12. But Patent Owner does not contend that “injection-molded” is a limitation. And the same paragraph states “one piece” is optional: “An optional two piece combiner is also provided....” EX1001, 2:17-18. Selectively reading in limitations from embodiments is contrary to the law.

C. “Focusing Means”

The parties dispute the corresponding structure identified in the specification. POPR, p. 16. “[T]o qualify as corresponding, the structure must not only perform the claimed function, but the specification must *clearly associate the structure* with performance of the function.” *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002) (emphasis in italics added, here and throughout).

The specification clearly associates the *structure* of a focusing lens as performing the *function* of “focusing said [n] collimated output beams onto a single spot at said stopped single optical fiber.” The ’416 Patent discloses that “the [laser] light is collimated, reflected off a prism 40 and *focused by the focusing lens 30* onto a spot at which a single optical fiber (not shown) is stopped....” EX1001, 3:11-15, 3:34-38 (the combiner includes “*lens 30 for focusing* several geometrically placed

collimated beams onto the output fiber (not shown)”), 1:65-67 (“The present invention ... uses a separate radial sector of the *focusing lens to focus*....”).

The claims are also illustrative. Claim 2, which depends from claim 1, recites that “said focusing means *is a single focusing lens*.” Claim 2 does not say the focusing lens is integrated or aligned in any particular way. Patent Owner’s assertion that the “focusing means” is narrower in claim 1 than in claim 2 cannot be right.

Moreover, the specification does not clearly associate either (1) a lens being “integrated into the optical combiner” or (2) a lens “that is in alignment with the collimating lenses and the core of the stopped optical fiber” as the structure that performs the function of the focusing means. Accordingly, it would be improper to make these into limitations. *Cardiac Pacemakers*, 296 F.3d at 1113 (“to qualify as corresponding,... the specification must *clearly associate the structure* with performance of the function”). First, as to integrated, the patent refers to an embodiment where a “plastic molded coupling module 16 is formed by integrating” numerous components, including focusing lens 30, “all within a single part 16.” EX1001, 3:39-44. This refers to a specific embodiment where “[e]ach optical coupling and redirection component is integrated within a single monolithic plastic-molded device.” *Id.*, 4:60-63; *see also* claim 3. Nothing here clearly associates integrating with the claimed function. Also, other embodiments do not require integration. The fourth embodiment, for example, illustrates a lens 350

formed separately from the collimating lenses. It is not called “integrated;” rather, “focusing lens 350 is supported in its position shown in FIG. 10 by means known to those skilled in the art which are deleted in the interest of brevity.” EX1001, 4:42-45. Second, as to alignment, the patent explains (among a list of multiple objects of the invention) that one object is “to passively align an optical fiber to the coupling optic” by “integrat[ing] a fiber optic connector within the optical module.” EX1001, 2:38-40. The patent explains that “[a]ll of the optical components within the multiplexer could utilize passive alignment mechanisms.” *Id.*, 4:58-59. That optical components “could” (but need not) utilize passive alignment, or even that passive alignment is one of many non-limiting objects of the invention, does not clearly associate alignment with the function of the focusing means. Finally, Patent Owner’s construction requires an optical fiber, though one is not positively recited.

In sum, Patent Owner improperly reads in requirements. The claims recite a *focusing means*—not an *alignment means*, not an *integration means*, not even a *stopping means*. As the patent makes clear, it is the focusing lens that focuses.

And this was previously recognized by Patent Owner when it filed its Complaint. *See* Petition, p. 12 n.4. Patent Owner argues that the positions it took in its Complaint were not claim construction, but merely an assertion that some “structure is disclosed.” POPR, p. 16 n.3. But the only reasonable interpretation of its prior statements is that the claimed means are encompassed by a focusing lens:

[T]he corresponding structure in the specification includes at least the following structures and equivalents thereto: Figs 1-4 and corresponding text (*focusing lens 30*), Figs 5-6 and corresponding text (*focusing lens 130*), Figs. 7-9 and corresponding text (*focusing lens 250*), and/or Figs 10-11 and corresponding text (*focusing lens 350*).

EX1014, Ex. B, p. 6 n.2. Patent Owner’s new construction – now faced with the prior art – reflects concerns over validity, and not teachings of the patent.

D. “Stopped”

The term “stopped” is not a term of art and is not defined. EX1003, ¶117. Instead, the ’416 Patent merely provides *an example* of how an optical fiber may be stopped. In a “first embodiment,” the specification notes that “a single optical fiber (not shown)” is “stopped by fiber stop or seat 60 formed in ferrule 80.” EX1001, 3:13-15. The stop or seat 60 is illustrated with respect to the first embodiment (FIGS. 1-4), but the other three embodiments (FIGS. 5-11) do not show a stop or seat 60, or otherwise describe how the optical fiber is stopped. As Petitioner explained initially, “stopped” would be understood to mean “fixed.” Petition, pp. 13-14.

Patent Owner argues that “a stopped single optical fiber” is “a single optical fiber [i] that has been inserted [ii] into the optical combiner [iii] until it abuts [iv] a physical structure [v] that prevents the fiber from being inserted further into the optical combiner.” This is not the ordinary meaning of the claim term, nor does

Patent Owner contend it is, or otherwise justify importing so many limitations by way of the single word “stopped.” And Patent Owner’s construction is unworkable with its other constructions. It’s unclear if the “physical structure” that prevents the fiber from being inserted is separate from the “stop” Patent Owner would add to the “optical combiner” term, or how the “stop” and “physical structure” relate. Moreover, “stopped” appears as part of the function of the *focusing means* term and the only reason to construe the *function* is to identify corresponding structure. Patent Owner instead wrongly adds new structure by this construction—structure that does not even perform the claimed function. *Cardiac Pacemakers*, 296 F.3d at 1113-14.

* * *

Although Patent Owner’s constructions are factually and legally improper, even if they were accepted the Board should still institute. At least Lemoff teaches, or would have suggested, every narrowing limitation that Patent Owner has proposed. Lemoff teaches that its device is integrated by a housing 230 that secures the receptacle 260 and holds the different components, including the connector composed of receptacle 260 and ferrule 255, in alignment. EX1006, 6:12-15; Petition, pp. 27-28; EX1003, ¶258. Lemoff teaches multiplexing by optical components (such as optical imaging element 220). EX1006, 1:52-56, 6:7-11; Petition, pp. 35-40. And it has a physical structure that prevents the fiber from being inserted further. EX1006, 5:65-6:2, FIG. 2; Petition, p. 45; EX1003, ¶253. Patent

Owner's argument that Lemoff teaches away from using an optical multiplexer (and thus is not an optical combiner) is misguided. POPR, pp. 40-41. What Lemoff teaches is that, instead of using "a complex optical multiplexer" "external to the emitter" (as in the prior art), one can achieve multiplexed communications using an optical combiner integrated with the emitters. EX1006, 1:34-56, 6:12-15. Likewise, it is not credible that the individual components of Kurita's optical combiner are floating about in space, and not integrated, just because a drawing is described as "conceptual." See EX1004, FIG. 3. The Petition includes grounds based on Kurita, based on Lemoff, and their combination. The Board should institute.

II. Patent Owner's Priority Arguments and Evidence

As explained in the Petition, "from November 10, 2003 until January 15, 2004, the only evidence of diligence is ... the inventors performing a second prior art search for over two months, after a first prior art search also taking two months." Petition, pp. 54-55. This is not reasonably continuous diligence. Patent Owner argues that "[p]rior art searching is sufficient activity for diligence," relying on *Correge v. Murphy*, 705 F.2d 1326 (Fed. Cir. 1983) and *In re Enhanced Sec. Rsch., LLC*, 739 F.3d 1347 (Fed. Cir. 2014). POPR, p. 58. Neither case supports its position. *Correge* relates to post-reduction abandonment, an entirely different legal concept unrelated to inventor diligence. *Id.*, 705 F.2d at 1331. *In re Enhanced* relates to the diligence of an attorney, which carries its own unique legal standards

and does not inform the question before the Board. *Id.*, 739 F.3d at 1358-59.

Patent Owner’s new evidence – the declaration of Michael Liang (Ex. 2011) – does not help its case. The declaration states that Mr. Liang has access to the hard drive where inventor Eric Grann “saves his old files.” *Id.* at ¶ 3. But the additional metadata provided by Patent Owner does not include dates within the gap of activity from November 10, 2003 to January 15, 2004. If it were there, presumably Patent Owner would have identified sufficient activity within this window by now.

Moreover, Patent Owner’s position *assuming* that it is entitled to an earlier priority date is wrong. POPR, p. 49 (“Because *the priority of the Challenged Claims predates* the earliest priority date [of] Bhandarkar, Petitioner has failed to establish that Bhandarkar is prior art.”). Petitioner offered Bhandarkar into evidence, and based on the filing dates on the face of Bhandarkar and the ’416 Patent, Bhandarkar is prior art under at least 35 U.S.C. § 102(e). Thus, it will be Patent Owner’s burden “to produce evidence supporting a date of invention before [Bhandarkar].” *Vizio, Inc. v. Nichia Corp.*, IPR2017-01623, Paper 72, p. 10 (PTAB January 9, 2019). With no evidence of reasonably continuous diligence for 2 months, Patent Owner will not be able to do so and it is likely that the claims are invalid based on Ground 5.

Dated: December 6, 2023

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CERTIFICATE OF SERVICE

I hereby certify that on December 6, 2023, I electronically served the document described as **PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE** on the following counsel of record for Patent Owner:

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