

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EPSON AMERICA, INC.,
Petitioner,

v.

CASCADES PROJECTION LLC,
Patent Owner.

Case IPR2015-01206
Patent 7,688,347 B2

Before HOWARD B. BLANKENSHIP, THOMAS L. GIANNETTI, and
ROBERT L. KINDER, *Administrative Patent Judges*.

BLANKENSHIP, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. BACKGROUND

Epson America, Inc. (Petitioner) requests an *inter partes* review of claims 29, 30, 32, 33, 48, and 69 of U.S. Patent No. 7,688,347 B2 (Ex. 1001, “the ’347 patent”) under 35 U.S.C. §§ 311–319. Paper 1 (“Petition” or “Pet.”). Patent Owner Cascades Projection LLC has filed a preliminary response. Paper 6 (“Prelim. Resp.”).

We have jurisdiction under 35 U.S.C. § 314. Section 314(a) provides that an *inter partes* review may not be instituted unless “the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

For the reasons that follow, we institute an *inter partes* review of claims 29, 30, 32, 33, 48, and 69 of the ’347 patent.

A. Related Proceedings

Petitioner identifies multiple lawsuits involving the ’347 patent that are ongoing in the U.S. District Court for the Central District of California. Pet. 1.

B. The ’347 Patent

The ’347 patent relates to liquid crystal display (LCD) technology using an external light source and a light valve such as an active matrix LCD. The light valve modulates the light source, imposing image or data information on the light beam so that the beam can be projected onto a viewing surface. *See generally* Ex. 1001, at [57] & col. 10, ll. 36–57. Using an arrangement similar to that of a cathode-ray tube (CRT) projection

system, a properly constructed light valve projection system can produce an image brighter than that produced by a CRT projection system. *Id.* at col. 10, ll. 41–43.

C. Illustrative Claims

Claims 29 and 69, reproduced below, are illustrative.

29. A display system comprising: a light source; an element having pixels, said element being capable of having an image formed thereon; and means for focusing different segments of a light beam emanating from said light source onto said element at proper angles such that light is focused onto the pixels of said element, comprising at least one input lens array located between said light source and said element.

69. A display system comprising: a light source; an element capable of having an image formed thereon, said element having a predetermined shape; and means for enhancing brightness of an image by shaping a beam illuminating said image-forming element such that the shape of the beam substantially matches the shape of said image-forming element, wherein said enhancing means also includes a Fresnel polarizer means.

D. Asserted Prior Art

van den Brandt et al. (“Brandt”) (Ex. 1003)	US 5,098,184	Mar. 24, 1992
Sato et al. (“Sato”) (Ex. 1006)	US 5,042,921	Aug. 27, 1991
Uchiyama (Ex. 1004) ¹	JP A-5-45724	Feb. 26, 1993

¹ Exhibit 1005 is a certified English translation of the Japanese-language

Dolgoff (“EP ’630”)
(Ex. 1007)

EP 0 509 630 A2 Oct. 21, 1992

E. Asserted Ground of Unpatentability

Petitioner asserts the following grounds of unpatentability under 35 U.S.C. § 103(a) against claims 29, 30, 32, 33, 48, and 69 (Pet. 7):

References	Claims
Brandt and Uchiyama or EP ’630	29, 30, 32, and 33
Brandt and Sato or EP ’630	48 and 69

II. ANALYSIS

A. Claim Construction

Before proceeding with claim construction, we must determine the proper standard to apply. The parties each contend the claims of the ’347 patent should be given their broadest reasonable construction. However, that standard is applicable only to unexpired patents. *See* 37 C.F.R. § 42.100(b) (“A claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.”). For expired patents, we apply the *Phillips* standard used in district court patent litigation. *See infra*. In this case, we are faced with a situation in which, if a trial proceeds, the patent will expire during the trial.

For the reasons that follow, we conclude that the ’347 patent will expire no later than September 16, 2016. The term of the patent grant begins on the date on which the patent issues and ends 20 years from the date on

document.

which the application for the patent was filed in the United States “or, if the application contains a specific reference to an earlier filed application or applications under section 120, 121, or 365(c) of this title, from the date on which the earliest such application was filed.” 35 U.S.C. § 154(a)(2) (2002). The ’347 patent is based on an application filed April 3, 2002, but claims the benefit of priority under 35 U.S.C. § 120 to a chain of parent applications, with the earliest-referenced application (No. 07/659,596) filed February 21, 1991. Ex. 1001, at [60] & col. 1, ll. 9–19. The term of the ’347 patent is extended or adjusted, however, by 2034 days. Ex. 1001, at [*]; *see* 35 U.S.C. § 154(b) (2002) (adjustment of patent term). Based on the earliest-claimed priority and the extension or adjustment of term, the USPTO patent term calculator tool (*available at* <http://www.uspto.gov/patent/laws-and-regulations/patent-term-calculator>) yields a calculated expiration date of September 16, 2016.

Patent Owner submits, however, that the priority claim to the earliest application (filed February 21, 1991) was canceled during prosecution of the ’347 patent application, resulting in an earliest-claimed priority date of April 4, 1994 (filing of U.S. Application No. 08/223,479). Applicant’s Counsel submitted a paper during prosecution of the ’347 patent that purported to be accompanied by an Application Data Sheet containing a “corrected” claim to priority. Ex. 1002, 421; *see also id.* at 431–32 (“Application Data Sheet”). According to Applicant’s Counsel, “[f]or present purposes, Applicant does not claim priority to any predecessor” of the application filed April 4, 1994. *Id.* at 431. Counsel also stated that “[t]he present invention was first disclosed in Applicant’s U.S. patent application 08/223,479, filed April 4, 1994.” *Id.*

According to the prosecution history, however, Applicant's "corrected" claim to priority was never accepted or processed by the USPTO. At the time of mailing of the Notice of Allowability, the Bib Data Sheet for the application still reflected the claim for the priority benefit of the application filed February 21, 1991. Ex. 1002, 532. On the date of transmitting the issue fee for the patent, Counsel submitted a letter regarding the priority date for the patent, referring to the earlier-filed Remarks "to ensure that the priority date is recorded by the U.S. Patent and Trademark Office as April 4, 1994. . . ." Ex. 1002, 540. But the '347 patent application was not amended during prosecution to change the original claim to priority. Both the '347 patent's Title Page and cross-reference section are consistent with the priority claim in the '347 patent application as originally filed. Ex. 1002, 8 (Application Data Sheet Domestic Priority Information), 9 § [0002] (cross-reference to related applications). We determine that the term of the '347 patent is, thus, measured from February 21, 1991 because the application contains a specific reference to earlier filed applications under section 120, with term measured "from the date on which the earliest such application was filed." 35 U.S.C. § 154(a)(2) (2002). Although not necessarily controlling, we note also that, at present, the USPTO's public Patent Application Information Retrieval (PAIR) system, under the "Continuity Data" tab, indicates that the '347 patent claims the benefit of priority to applications including the earliest-filed February 21, 1991 application.

Because, on this record, we conclude that the term of the '347 patent will expire prior to the one-year period allotted for an *inter partes* review, for purposes of this Decision we presume that the patent has expired. As

noted *supra*, for claims of an expired patent, the Board’s claim interpretation is similar to that of a district court. *See In re Rambus, Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence. . . .” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-17 (Fed. Cir. 2005) (en banc)). However, there is a “heavy presumption” that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002).

1. Means for Focusing

A petition for an *inter partes* review must identify how each challenged claim is to be construed. 37 C.F.R. § 42.104(b)(3). As part of that requirement, a petitioner must “identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function” of any means-or step-plus-function limitation. *Id.*; *see also* 35 U.S.C. § 112 ¶ 6.²

Claim 29 recites “means for focusing different segments of a light beam emanating from said light source onto said element at proper angles such that light is focused onto the pixels of said element, comprising at least

² Section 4(c) of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”) re-designated 35 U.S.C. § 112 ¶ 6 as 35 U.S.C. § 112(f). Because the ’347 patent has a filing date prior to September 16, 2012, the effective date of § 4(c) of the AIA, we refer to the pre-AIA version of 35 U.S.C. § 112.

one input lens array located between said light source and said element.” According to Petitioner, there are five embodiments in the ’347 patent that are clearly linked or associated with performing the function for the “means for focusing.” Pet. 13. For purposes of its obviousness challenge with respect to claim 29, Petitioner limits its discussion to structure set forth in the Figure 65 embodiment. *Id.* at 13–15.

Figure 65 of the ’347 patent is reproduced below.

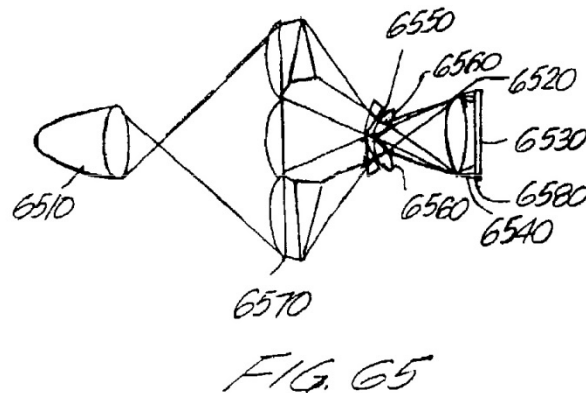


Figure 65 is an arrangement whereby each beam from a light source can be imaged by an intermediate focusing lens or focusing lenses, one for each beam. Ex. 1001, col. 38, ll. 49–60. The Figure depicts light source 6510 and focusing lenses 6560, whereby each lens 6560 focuses an image of a portion of collimating lens 6570 onto image-forming element (IFE) 6530. *Id.* at col. 38, ll. 60–63. Figure 65 also depicts one or more input lens array(s) 6580 for focusing light into pixel holes in IFE 6530. *Id.* at col. 38, l. 64 – col. 39, l. 4.

According to Petitioner, Figure 65 also depicts two sets of deflecting prisms or mirrors — the first located just after lens array 6570, and the second set located near foci 6550 — that are not numbered but are shown in the Figure and included to reduce the beam size. Pet. 14 (citing Ex. 1011

(Declaration of Dr. Frederic J. Kahn) ¶ 74). Petitioner submits further that the “means for focusing” includes, consistent with claim 29, “at least one input lens array [6580] located between said light source [6510] and said element [6530].” Pet. 15 (citing Ex. 1011 ¶ 76). “[T]he structure depicted in Figure 65 that performs the function of the “means for focusing ...” includes lens array 6570, the deflecting prisms (shown but not numbered) located just after lens array 6570, another set of prisms, mirrors or similar optical elements (not numbered) near the foci 6550, focusing lens array 6560, collimating lens 6520, and input lens array 6580.” Pet. 15 (citing Ex. 1011 ¶ 77).

Section 112 paragraph 6, however, does not “permit incorporation of structure from the written description beyond that necessary to perform the claimed function.” *Asyst Techs, Inc. v. Empak, Inc.*, 268 F.3d 1364, 1369–70 (Fed. Cir. 2001) (citation omitted). Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations. *Id.* at 1370. The structure corresponding to a function set forth in a means-plus-function limitation must actually perform the recited function, not merely enable the pertinent structure to operate as intended. *Id.* at 1371. In the Figure 65 embodiment, the corresponding structure for the claim 29 “means for focusing” appears to require no more than focusing lenses 6560 and the unnumbered prisms near foci 6550 for effecting the “proper angles” as claimed. Ex. 1001, col. 38, l. 49 – col. 39, l. 4. The claim specifies further, however, that the “means for focusing” includes “at least one input lens array located between said light source and said element” — e.g., input lens array 6580 as shown in Figure 65.

Patent Owner contends that the mirrors or prisms described in relation to the Figure 65 embodiment are limited to particular “light beam steering prisms” as depicted in Figure 66 (ref. num. 6640). Prelim. Resp. 12–16. Patent Owner submits that Figure 66, a “preferred variation” of Figure 65, “must not be excluded from the scope of the claims,” citing *MBO Laboratories, Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007). *Id.* at 14. *MBO Laboratories*, however, does not address “preferred variations” but “preferred embodiments.” *See MBO Laboratories*, 474 F.3d at 1333 (“[A] claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.”) (citation omitted).

When the specification describes two or more distinct embodiments that perform the same recited function, one does not attempt to craft a single claim interpretation that is consonant with all structures in the specification corresponding to the claimed functions. *Ishida Co. v. Taylor*, 221 F.3d 1310, 1316 (Fed. Cir. 2000). Further, though such “means plus function” limitations embrace all of the disclosed embodiments that correspond to the claimed function, the claims are not limited to any particular one of the disclosed embodiments. *See Micro Chemical Inc. v. Great Plains Chemical Co.*, 194 F.3d 1250, 1259 (Fed. Cir. 1999) (“Because alternative structures corresponding to the claimed function were described, the district court incorrectly limited ‘weighing means’ to the specific structures of the preferred embodiment.”); *Serrano v. Telular Corp.*, 111 F.3d 1578, 1583 (Fed. Cir. 1997) (although the specification disclosed discrete logic circuitry as a preferred embodiment, the invention was not limited to such circuitry because the specification also stated that the logic could be configured in

software). A claim interpretation that *excludes* a preferred embodiment from the scope of the claim is rarely, if ever, correct. *MBO Laboratories*, 474 F.3d at 1333. That maxim does not mean, however, that the scope of a claim must be *limited to* the details of some preferred embodiment.

The '347 patent describes Figure 65 as a “preferred variation” of an earlier-described arrangement, with the “preferred variation” adding focusing lenses 6560. Ex. 1001, col. 38, ll. 49–61. Similarly, the patent describes Figure 66 as a “further preferred variation” that adds, *inter alia*, Fresnel prisms 6640 to structures that include focusing lenses 6650 (which correspond to focusing lenses 6560 in the Figure 65 arrangement). *Id.* at col. 39, ll. 5–21. Assuming that structures depicted in Figure 66 may correspond to the claimed “means for focusing,” those structures represent a separate, distinct embodiment vis-à-vis the Figure 65 embodiment.

Patent Owner argues also that the '347 patent's Figure 74 “preferred embodiment” that includes two “input lens arrays” cannot be excluded from the determination of the scope of the “input lens array” recited in claim 29. Prelim. Resp. 17–21. According to the patent, Figure 74 depicts “another embodiment” of the invention using two input lens arrays to direct colored light to respective pixels. Ex. 1001, col. 9, ll. 65–67. Patent Owner submits that “as long as the means-plus-function structure in claim 29 includes any lens array between the light source and the element, the ‘input lens array’ claim requirement is met.” Prelim. Resp. 20. We agree with Patent Owner to the extent that the structure of the “at least one input lens array” is exemplified by the lens array(s) 6580 as depicted in Figure 65, but is not limited to that particular structure and equivalents thereof. Although the “input lens array” is part of the “means for focusing,” the “input lens array”

is recited as a structural limitation as opposed to a nonce word associated with a function and the limitation is, thus, not interpreted in accordance with § 112, sixth paragraph.

To summarize, for purposes of this Decision we determine that the structure corresponding to the claim 29 “means for focusing” consists of focusing lenses 6560 (’347 patent Fig. 65) and the unnumbered prisms near foci 6550. The claim further requires that the “means for focusing” includes the structural element of at least one input lens array located between the light source and the element having pixels (e.g., input lens array 6580 as depicted in Figure 65).

2. Means for Enhancing Brightness

Claim 69 recites “means for enhancing brightness of an image by shaping a beam illuminating said image-forming element such that the shape of the beam substantially matches the shape of said image-forming element.” Independent claim 47, from which challenged claim 48 depends, recites the same limitation except that the image-forming element is an “electronic” image-forming element.

Petitioner identifies structures in the Figure 65 embodiment that are deemed to correspond to the “means for enhancing brightness.” Pet. 17–19. We are persuaded, on this record, that the structures that Petitioner identifies as corresponding to the claimed functions represent a proper construction for the “means.” Patent Owner’s arguments to the contrary are based, in substantial part, on the improper incorporation of the ’347 patent’s Figure 66 embodiment into the claim. Prelim. Resp. 23–25.

3. Means for Bringing Light

Claim 30 depends from claim 29 and recites “further comprising means for bringing light from different sections of the light beam emanating from said light source to foci.” Petitioner focuses again on the Figure 65 embodiment described by the ’347 patent, submitting that the structure corresponding to the means for bringing light “includes lens array 6570 and the deflecting prisms (shown but not numbered) located just after lens array 6570.” Pet. 17.

We are persuaded that Petitioner has properly identified corresponding structure for the “means for bringing light.” Patent Owner submits that Petitioner improperly includes lens array 6570 and the deflecting prisms located after the lens array as structure for both the claim 29 “means for focusing” and the claim 30 “means for bringing light.” Prelim. Resp. 21–23. As we have noted, however (§ 1, *supra*), at this juncture we consider the “means for focusing” as not requiring lens array 6570 and its associated deflecting prisms.

4. Fresnel Polarizer

The parties agree that the “Fresnel polarizer means” recited in claims 48 and 69 is not a limitation to be construed in accordance with 35 U.S.C. § 112, sixth paragraph, because there is no recited function associated with the “means.” The parties disagree, however, on the meaning of “Fresnel polarizer” in the context of the ’347 patent disclosure.

Petitioner submits that “Fresnel polarizer” should be construed as a polarizer constructed with stepped, sawtooth-like elements so as to have the optical properties of a much thicker polarizer. Pet. 10 (citing Ex. 1011

¶¶ 45–64). Petitioner refers also to a technical dictionary definition of “Fresnel lens,” defined as a “thin lens constructed with stepped setbacks so as to have the optical properties of a much thicker lens.” Pet. 10–11 (citing Ex. 1008, 5). Petitioner also points to numerous instances where the ’347 patent describes and depicts a “Fresnel polarizer” or a “Fresnel polarizer plate” as having a stepped sawtooth-like construction. Pet. 11. *See, e.g.*, Ex. 1001, col. 45, ll. 1–5 (“Fresnel polarizer plate 7830 of FIG. 78”).

Patent Owner, on the other hand, submits that “Fresnel polarizer” should be construed as:

a polarization device that contains multiple MacNeille-type polarizers, each of which is smaller than an entire beam being polarized, and each of which is mounted in a fixed relationship to the remaining MacNeille-type polarizers, and where the polarization device selectively alters the polarization planes of multiple portions of an output beam.

Prelim. Resp. 26. Patent Owner submits that this alternative, verbose construction of “Fresnel polarizer” is based on a “formal, express definition” of the term that is found in a claim of an ancestor application of the ’347 patent. *Id.* at 27. Patent Owner cites no authority, however, for the proposition that *a claim* in a related (or, for that matter, the same) application might serve to define or limit a term used in a patent’s disclosure. Although an inventor is free to define the specific terms used to describe the invention, “this must be done with reasonable clarity, deliberateness, and precision.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

To act as its own lexicographer, a patentee must “clearly set forth a definition of the disputed claim term” other than its plain and ordinary meaning. It is not enough for a patentee to

simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must “clearly express an intent” to redefine the term.

Thorner v. Sony Computer Ent. Am. LLC, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citations omitted).

Patent Owner also refers to various embodiments described by the '347 patent that are alleged to be consistent with Patent Owner's proffered construction. However, the Federal Circuit has repeatedly warned against confining the claims to specific embodiments described in the specification. *Phillips v. AWH Corp.*, 415 F.3d at 1323. Moreover, Patent Owner's example of the patent referring to the Figure 85 described embodiment as a polarization device that “contains multiple MacNeille-type polarizers” does not support the view that every embodiment of a “Fresnel polarizer” requires multiple MacNeille-type polarizers. Prelim. Resp. 29; *cf.* Ex. 1001, col. 10, ll. 25–26 (referring to Fig. 85 as a “Fresnel MacNeille polarizer”). *See also* Ex. 1001, col. 44, ll. 2–6 (“Applicant has devised a ‘Fresnel MacNeille prism,’ which functions as a MacNeille prism beam splitter but has, at the outer surfaces of the plates, a multiplicity [of] tiny saw-tooth surfaces, each behaving as a normal prism.”). Similarly, Patent Owner refers to Figures 78 through 82 and 85 as depicting a “Fresnel polarizer” as claimed, which is not borne out by a review of the patent. Prelim. Resp. 33; *cf.* Ex. 1001, col. 10, ll. 9–26 (referring to each of the embodiments as a type of “Fresnel MacNeille polarizer”).

Further, although acknowledging that the '347 patent specification indicates that “Fresnel polarizers” and “MacNeille polarizers” are “different things,” Patent Owner provides no persuasive explanation as to how that

description is somehow deemed to support Patent Owner's construction of "Fresnel polarizer" such that the polarizer must contain "multiple MacNeille-type polarizers." Prelim. Resp. 31; *cf.* Ex. 1001, col. 46, ll. 21–36 (referring to "MacNeille polarizers" and "Fresnel polarizers").

On this record, the evidence does not support departing from the presumed ordinary and customary meaning of "Fresnel polarizer" when construing the term in claims 48 and 69. *See, e.g.*, Ex. 1001, col. 38, ll. 20–21 ("Fresnel prisms can be used instead of standard prisms to save space, weight and cost."). For purposes of this Decision, we are persuaded that, consistent with Petitioner's interpretation, "Fresnel polarizer" should be construed as a polarizer constructed with stepped, sawtooth-like elements so as to have the optical properties of a much thicker polarizer.

B. Claims 29, 30, 32, and 33 — Brandt and Uchiyama or EP '630

Petitioner asserts that claim 29 is obvious over the combination of Brandt and Uchiyama or EP '630. Pet. 21–32 (claim chart). Although Uchiyama and EP '630 were published after filing of the earliest-claimed § 120 priority of the '347 patent, Petitioner relies on Patent Owner's disclaimer of the earliest-filed application. Pet. 4; *see also* Ex. 1002, 16 ("The present invention was first disclosed in Applicant's U.S. patent application 08/223,479, filed April 4, 1994."). Because Uchiyama and EP '630 were published more than one year prior to April 4, 1994, on this record, the documents are § 102(b) references.

1. Brandt

Figure 2 of Brandt is reproduced below.

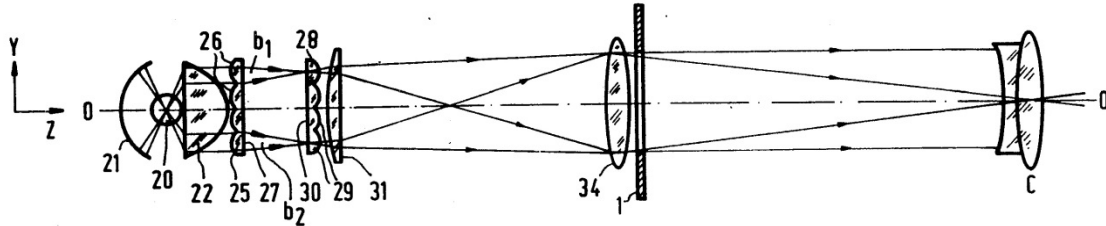


FIG. 2

Figure 2 depicts an illumination system in which lamp 20 emits light in the direction of display panel 1, as well as in a rearward direction. Ex. 1003, col. 12, ll. 29–34. The light emitted by the lamp and its image are received by condenser lens system 22, which concentrates the light to a parallel beam incident on first lens plate 25. *Id.* at col. 12, ll. 41–45. Each of lenses 26 images source 20 on associated lens 29 of second lens plate 28. Source-facing side 30 of plate 28 is flat, and the side remote from the source supports a matrix of lenses 29. Each lens 29 ensures that a radiation spot formed on corresponding lens 26 is imaged on display panel 1. Lens 31, arranged behind second lens plate 28, ensures that all re-images are superimposed on one another in the plane of the display panel. *Id.* at col. 12, ll. 49–67. Further lens 34, which images the exit pupil of the illumination system in the entrance pupil of the projection lens system, is arranged in front of display panel 1. *Id.* at col. 13, ll. 34–37.

2. Uchiyama

Fig. 4A of Uchiyama is reproduced below.

【図4】

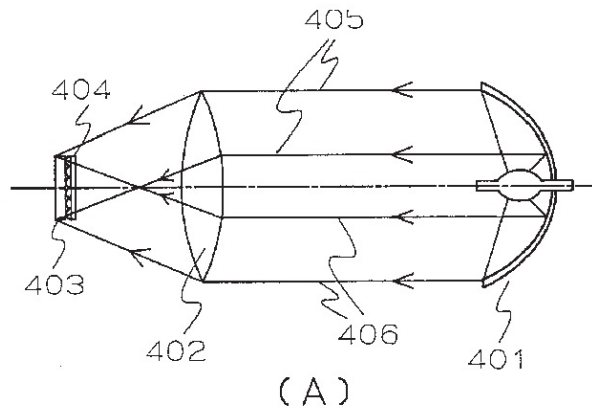


Figure 4A depicts a “related art” projection-type liquid crystal display apparatus. Ex. 1005, 4. The apparatus includes lamp 401, condenser lens 402, lens array 404, and liquid crystal valve 403. *Id.* Reference characters 405 and 406 represent light fluxes incident on liquid crystal light valve 403. *Id.*

Figure 1A of Uchiyama is reproduced below.

【図1】

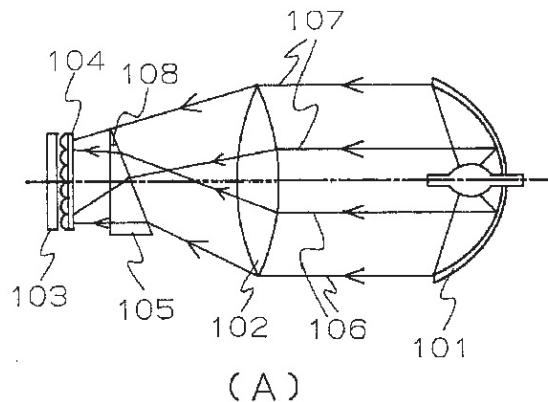


Figure 1A depicts an illumination optical system of a projection-type liquid crystal display apparatus according to Uchiyama's invention. *Id.* at 7. The apparatus differs from the “related art” apparatus in that prism 105 is

disposed in the optical path. *Id.* at 8. Addition and placement of the prism yields an increase in the luminance of the projected image. *Id.* at 3, 8.

3. Brandt and Uchiyama or EP '630

Petitioner identifies structures depicted in Brandt's Figure 2 that it deems to be the same as or equivalent to the structures making up the "means for focusing" depicted in Figure 65 of the '347 patent. Pet. 23–29. Petitioner admits that Brandt's Figure 2 apparatus lacks the prisms or reflectors described in the '347 patent's Figure 65 embodiment. *Id.* at 24. Petitioner submits, however, that it would have been obvious to add prisms to Brandt's structure, relying on the teachings of Uchiyama and the declaration of Dr. Kahn. *Id.* at 37, 39; Ex. 1011 (Kahn Decl.) ¶¶ 136–152.

Patent Owner argues that the applied prior art fails to disclose or suggest "light beam segment steering prisms" that the '347 patent describes in relation to the Figure 66 embodiment. For the reasons expressed in the claim construction section (§ II.A.1, *supra*), however, the particular prisms required for the Figure 66 embodiment are not required as structure for the claim 29 "means for focusing." As such, there is no need to show teaching or suggestion of "light beam segment steering prisms" in the prior art in Petitioner's challenge of the claim based on the described corresponding structure in the separate Figure 65 embodiment.

Patent Owner alleges that the Petition never explains "how" the specific teachings in Brandt, Uchiyama, and EP '630 should be modified to include prisms or how any such specific combination would operate. Prelim. Resp. 39–40. Even assuming such detail is necessary to demonstrate

obviousness,³ Patent Owner does not address, for example, Petitioner's detailed explanation as to how Uchiyama teaches the use of a prism to reduce beam size, consistent with Brandt's teaching of the desirability of receiving as much light as possible from the lamp and to concentrate it to a narrow beam. Pet. 37–39; Ex. 1011 ¶¶ 145–46.

Petitioner also points to structures in the applied prior art of Brandt and Uchiyama to demonstrate the obviousness of the subject matter of dependent claims 30 and 32. Pet. 29–32. For dependent claim 33, which recites a “field lens” near the element having pixels, Petitioner relies solely on the combination of Brandt and EP '630 for the additional limitations of that claim. *Id.* at 33.

We have considered all of Petitioner's arguments in relation to claims 29, 30, 32, and 33 in view of the applied prior art. We are persuaded that Petitioner has met the threshold showing of § 314(a) with respect to these claims. On the present record, we find that Petitioner has established a reasonable likelihood that it would prevail in its challenge of claims 29, 30, and 32 for obviousness over Brandt and Uchiyama and in its challenge of claim 33 for obviousness over Brandt and EP '630.

³ The test for obviousness is not whether the features of one reference may be bodily incorporated into the structure of another reference. Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). It is not necessary that the inventions of the references be physically combinable to render obvious the invention under review. *In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983).

C. Claims 48 and 69 — Brandt and Sato or EP '630

Petitioner applies the teachings of Brandt and Sato or EP '630 to demonstrate the obviousness of claims 48 and 69. Pet. 41–51. Claim 48 depends from claim 47 and recites that the “enhancing means” includes a Fresnel polarizer means. As noted in the claim construction section (§ II.A.4, *supra*), for purposes of this Decision we construe “Fresnel polarizer means” as recited in claims 48 and 69 as a polarizer constructed with stepped, sawtooth-like elements so as to have the optical properties of a much thicker polarizer.

Base claim 47 recites “means for enhancing brightness of an image by shaping a beam illuminating said electronic image-forming element such that the shape of the beam substantially matches the shape of said electronic image-forming element.” Petitioner submits that the limitations of claim 47 are present in Brandt, including structures from Brandt’s Figure 2 that are deemed to be the same or equivalent to structures in the ’347 patent corresponding to the “means for enhancing.” Pet. 17–19, 44–46. Again, Petitioner focuses on the ’347 patent’s Figure 65 embodiment. *Id.* at 43. Similar to the challenge of claim 29, Petitioner admits that Brandt’s Figure 2 does not include prisms or similar optical elements as described in the patent’s Figure 65 embodiment. *Id.* at 44.

Petitioner submits, however, that Sato discloses a Fresnel polarizer in Figure 7. Pet. 47; Ex. 1011 ¶¶ 173–75. Petitioner also contends that Sato teaches using such a polarizing beam splitter to increase display brightness. Pet. 52–53; Ex. 1011 ¶ 124. *See, e.g.*, Ex. 1006, col. 2, ll. 17–26 (all of the light transmitted through a polarizing beam splitter can be utilized in the display panel).

Claim 69 recites limitations similar to those of claims 48 and 49, including an “enhancing means” that includes a Fresnel polarizer means. Petitioner refers, in large part, to its analysis of claims 48 and 49. Pet. 50–51.

Patent Owner argues that Sato does not disclose a “Fresnel polarizer,” but it relies on the construction of “Fresnel polarizer” that we have rejected on this record. Prelim. Resp. 46–50; *cf.* § II.A.4, *supra*. Patent Owner argues, further, that the Petition does not explain “how” Brandt and Sato should be combined. Prelim. Resp. 50. However, we consider at least the material we have identified in the Petition with respect to the challenge of claim 49 in view of Brandt and Sato to meet the threshold, at the least, of a reasonable likelihood of prevailing on that asserted ground. The Preliminary Response also contains attorney argument (at 51–52) asserting that combining Brandt and Sato would render Sato unsatisfactory for its alleged “intended purpose.” The asserted ground of obviousness does not, however, propose to modify anything in Sato.

We are persuaded that Petitioner has met the threshold showing of § 314(a). On the present record, we find that Petitioner has established a reasonable likelihood that it would prevail in its challenge of claims 48 and 69 for obviousness over Brandt and Sato.

D. Alternative Grounds

In view of the grounds on which we institute *inter partes* review of claims 29, 30, 32, 33, 48, and 69, we exercise our discretion and decline to institute review based on the asserted alternative grounds that these claims

are unpatentable for obviousness. *See* 35 U.S.C. 314(a); 37 C.F.R. § 42.108(a).

III. CONCLUSION

The Petition demonstrates a reasonable likelihood of prevailing in establishing that claims 29, 30, 32, 33, 48, and 69 are unpatentable over the prior art.

We have not made a final determination with respect to the patentability of any claim.

IV. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314, an *inter partes* review is instituted for claims 29, 30, and 32 on the ground of obviousness over Brandt and Uchiyama;

FURTHER ORDERED that an *inter partes* review is instituted for claim 33 on the ground of obviousness over Brandt and EP '630;

FURTHER ORDERED that an *inter partes* review is instituted for claims 48 and 69 on the ground of obviousness over Brandt and Sato;

FURTHER ORDERED that no other ground of unpatentability, with respect to any claim, is instituted for trial; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '347 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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PETITIONER:

David J. Ball
Damon Andrews
Tyler S. Miller
PAUL, WEISS, RIFKIND, WHARTON & GARRISON LLP
dball@paulweiss.com
dandrews@paulweiss.com
tmiller@paulweiss.com

PATENT OWNER:

Nick P. Patel
Daniel J. Krueger
KRUEGER ISELIN, LLP
nick@kipatents.com
dan@kipatents.com