

2017-1517, -1518

United States Court of Appeals

for the

Federal Circuit

CASCADES PROJECTION LLC,

Appellant,

– v. –

EPSON AMERICA, INC., SONY CORPORATION,

Appellees.

*Appeals from the United States Patent and Trademark Office, Patent Trial and
Appeal Board, Nos. IPR2015-01206 and IPR2015-01846*

**BRIEF FOR APPELLEE
EPSON AMERICA, INC.**

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Claim 29 of the '347 patent states:

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.

Appx218 (emphasis added).

Claim 69 of the '347 patent states:

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.

Appx219-220 (emphasis added).

CERTIFICATE OF INTEREST

1. Full name of party represented by me:
EPSON AMERICA, INC.

2. Name of Real Party in interest (Please only include any real party in interest NOT identified in Question 3) represented by me is:

Not applicable

3. Parent corporations and publicly held companies that own 10 percent or more of stock in the party:

SEIKO EPSON CORPORATION

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

PAUL, WEISS, RIFKIND, WHARTON & GARRISON LLP: Damon Andrews; Tyler Miller; James Razick

Dated: August 25, 2017

/s/David J. Ball

David J. Ball

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STATEMENT OF RELATED CASES

Appellee Epson America, Inc. (“Epson”) agrees with the Statement of Related Cases provided by Appellant Cascades Projection, LLC (“Cascades”):

- *Cascades Projection LLC v. Epson America, Inc. et al.*, Case No. 2:15-cv-00258-SJO-RZ (C.D. Cal.)
- *Cascades Projection LLC v. Barco, Inc. et al.*, Case No. 2:15-cv-00271-SJO-RZ (C.D. Cal.)
- *Cascades Projection LLC v. Christie Digital Systems USA, Inc.*, Case No. 8:15-cv-00050-SJO-RZ (C.D. Cal.)
- *Cascades Projection LLC v. NEC Display Solutions of America, Inc.*, Case No. 2:15-cv-00273-SJO-RZ (C.D. Cal.)
- *Cascades Projection LLC v. Sony Corporation of America, Inc. et al.*, Case No. 2:15-cv-00274-SJO-RZ (C.D. Cal.).

STATEMENT OF THE ISSUES

Cascades challenges the Board’s Final Written Decisions invalidating certain claims of U.S. Patent No. 7,688,347 in IPRs brought by Epson and by Sony Corporation (“Sony”). In the Epson appeal, there are four ultimate issues for the Court to decide:

1. Whether the Board correctly concluded that claims 29, 30, 32 and 33 of the ’347 Patent are unpatentable under 35 U.S.C. § 103(a) (pre-AIA), where

(a) the intrinsic record and substantial extrinsic evidence support the Board’s identification of exemplary structure in the Figure 65 embodiment for the “input lens array” comprised within the “means for focusing” of claim 29; and

(b) substantial evidence supports the Board’s determination that the prior art contains motivation to combine and modify the cited references to achieve equivalent structure for performing the identical claimed function of the “means for focusing.”

2. Whether the Board correctly concluded that claims 48 and 69 of the ’347 Patent are unpatentable under 35 U.S.C. § 103(a) (pre-AIA), where

(a) the intrinsic record and substantial extrinsic evidence support the Board’s claim construction of “Fresnel polarizer” in claims 48 and 69 and in particular its determination not to import an “optical coating layer” limitation

because the specification does not provide a clear definition requiring such a limitation and instead discloses an alternative hologram embodiment; and

(b) substantial evidence again supports the Board's findings regarding the prior art and the Board correctly rejected Cascades' attempts to distinguish it based on unclaimed features.

3. With respect to the Board's determination of the effective filing date of the '347 Patent, which the Board made to determine if the patent has expired and thus the *Phillips* claim construction standard applies, whether Cascades' argument that the determination is "premature" should be rejected, where (a) Cascades waived its argument below; (b) Cascades failed to identify any way in which its argument would affect the disputed claim constructions or the Board's obviousness determinations; (c) Cascades failed to identify error in the Board's reliance on the filing date of the earliest related application specifically referenced in the '347 Patent; and (d) Cascades has not sought to stay this appeal pending Cascades' attempts to obtain a Certificate of Correction to remove from the patent the reference to that earliest related application.

4. Whether *inter partes* review ("IPR") proceedings pass constitutional muster, where the panel decision in *MCM Portfolio LLC v. Hewlett-Packard Co.*, 812 F.3d 1284 (Fed. Cir. 2015) remains binding on future panels pending the Supreme Court's decision in *Oil States Energy Services v. Greene's*

Energy Group, LLC, No. 16-712, (U.S. cert. granted June 12, 2017) and where Cascades' due process arguments are speculative and contrary to precedent.

STATEMENT OF THE CASE

On May 15, 2015, Epson petitioned for *inter partes* review of Cascades' U.S. Patent No. 7,688,347 (“the ’347 Patent”), challenging claims 29, 30, 32, 33, 48 and 69 as obvious in view of certain combinations of prior art references. Appx74 (the “Petition”). The Patent Trial and Appeal Board (the “Board”) instituted *inter partes* review on December 1, 2015. Appx1283 (the “Institution Decision”). On November 29, 2016, the Board issued its written determination that the challenged claims are invalid as obvious under the instituted grounds. Appx1 (the “Final Written Decision”).

A. The ’347 Patent

The ’347 Patent concerns display illumination systems for projectors using liquid crystal displays (“LCDs”) and other “light valves,” which the patent sometimes describes as “image-forming elements.” Appx187 (2:52-57); Appx189 (5:49-52); Appx204 (36:23, 31-32). Light valves modulate light from a light source, imposing image or data information on the light beam to be projected onto a viewing surface. Appx3; Appx191 (10:36-57). Such systems can also include an arrangement of “optics which collimate light from the source and improve light throughput efficiency and quality of the projected image.” *See* Appx189 (5:59-65). It is these optics that are the subject area of the alleged invention.

B. The Board’s Claim Constructions

1. Claims 29, 30, 32 And 33: “Input Lens Array” And “Means For Focusing”

These terms are recited in independent claim 29:¹

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.

The Board addressed the “input lens array” limitation as part of its analysis of the “means for focusing.” It is undisputed that “means for focusing” is a means-plus-function limitation and that the embodiment in Figure 65 of the ’347 Patent contains structure corresponding to the “means for focusing” including the “input lens array.” Appx8-12; Appellant’s Br. 44.

¹ Claim 29 is representative of dependent claims 30, 32, and 33. A portion of Cascades’ appeal brief separately addresses claim 33, Appellant’s Br. 29, 55, but this is because the combination of references upon which the Board instituted IPR for claim 33 is different from the combination for claims 29, 30 and 32. Cascades’ arguments for claim 33, like those for claim 29, are concerned with the “means for focusing” recited in claim 29. *See id.*

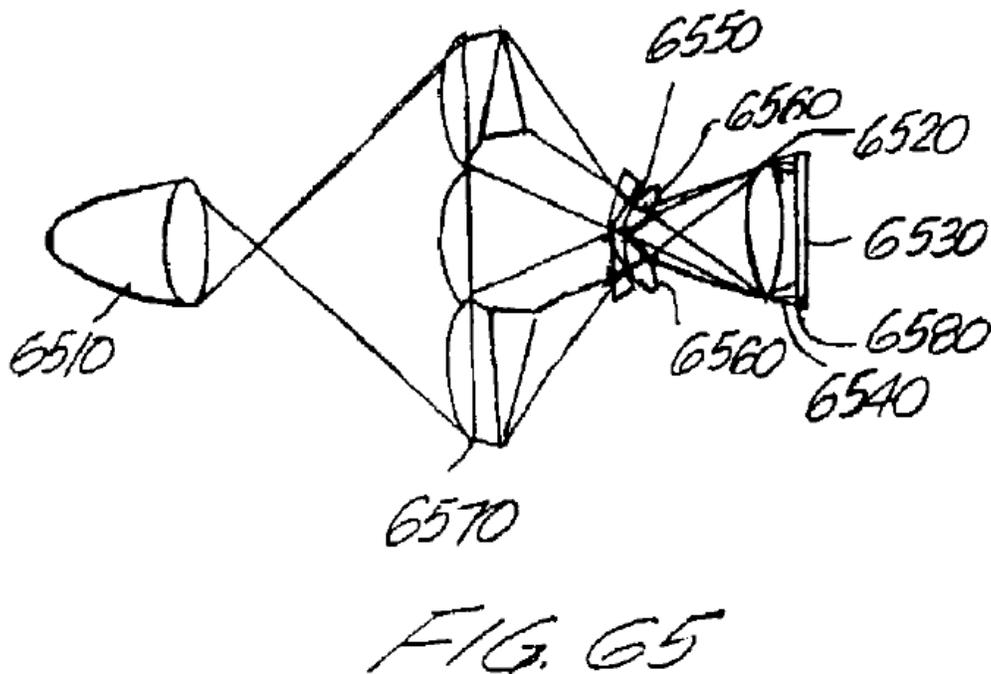


Figure 65 depicts a light source 6510 used to illuminate an LCD or other image-forming element (“IFE”) 6530 through a series of intervening optics. Appx9; Appx205-206 (38:49-39:4).² The light output by the lens array 6570 converges to “foci” 6550, Appx205 (38:51-52), which are “small regions at which rays converge or from which they appear to diverge,” Appx85-86; Appx930; Appx986-990 (¶¶ 39-44); Appx1134. Figure 65 also depicts two sets of unnumbered deflecting prisms – the first located just after lens array 6570, and the second set located near foci 6550 – which “properly place[]” the foci. *See*

² The Figure 65 embodiment is “a preferred variation” that adds additional structure to the embodiment shown in Figure 62. Appx205 (38:58). Thus, the description of Figure 62 at column 38, lines 49-57 applies equally to Figure 65. *See* Appx25; Appx1008 (¶ 74); Appx1705 (¶ 23).

Appx205 (38:52-54); Appx1008-1009 (¶ 74). The specification discloses that the second set of prisms could also be mirrors or other similar optical elements, stating that “mirrors, prisms, etc.” are used to “properly place[]” foci “to produce various collimated beams.” Appx205 (38:52-54).

Figure 65 separately depicts focusing lenses 6560, Appx205 (38:59-61), followed by another lens 6520 that produces “various collimated beams” 6540, *id.* (38:53-55). “Each lens 6560 focuses an image of a portion (with the same shape as the IFE [image-forming element]) of collimating lens 6570 onto the IFE 6530. The image can be made to fill part or all of the IFE.” *Id.* (38:61-64). Figure 65 also depicts the location of “input lens array(s) 6580” which allow the light to be “focussed ... into pixel holes.” Appx9; Appx206 (39:1-2).

The Board identified the “means for focusing” in Figure 65 as focusing lenses 6560 and the unnumbered prisms near foci 6550, together with “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).” Appx12. On appeal, Cascades’ only disagreement with the Board’s analysis is to assert that the “input lens array” depicted in Figure 65 is lens array 6570, not 6580. Appellant’s Br. 44-47, 50-51.

2. Claims 48 and 69: “Fresnel Polarizer”

This term is present in claims 48 and 69. Claim 69 is representative of claim 48 for purposes of this appeal:³

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.

It is undisputed that “Fresnel polarizer means” is not a means-plus-function limitation. Appx13; *see* Appx95; Appx1022 (¶ 98). The Board construed “Fresnel polarizer” to mean “a polarizer constructed with stepped, sawtooth-like elements so as to have the optical properties of a much thicker polarizer.” Appx16. An example appears in Figure 79, which depicts a Fresnel polarizer including identical plastic elements 7950 and 7970, each having a stepped sawtooth-like edge, and a multi-layer dielectric coating 7960 sandwiched between the elements. *See* Appx209 (45:9, 17-25); Appx998-999 (¶ 58).

³ Claim 48 is near-identical to claim 69, except that (1) claim 48 is written in dependent claim format while claim 69 is written in independent claim format, and (2) claim 48 refers to an “electronic image-forming element” while claim 69 refers to an “image-forming element.” *See* Appx218-219. These differences are immaterial to the Board’s decision and the arguments on appeal.

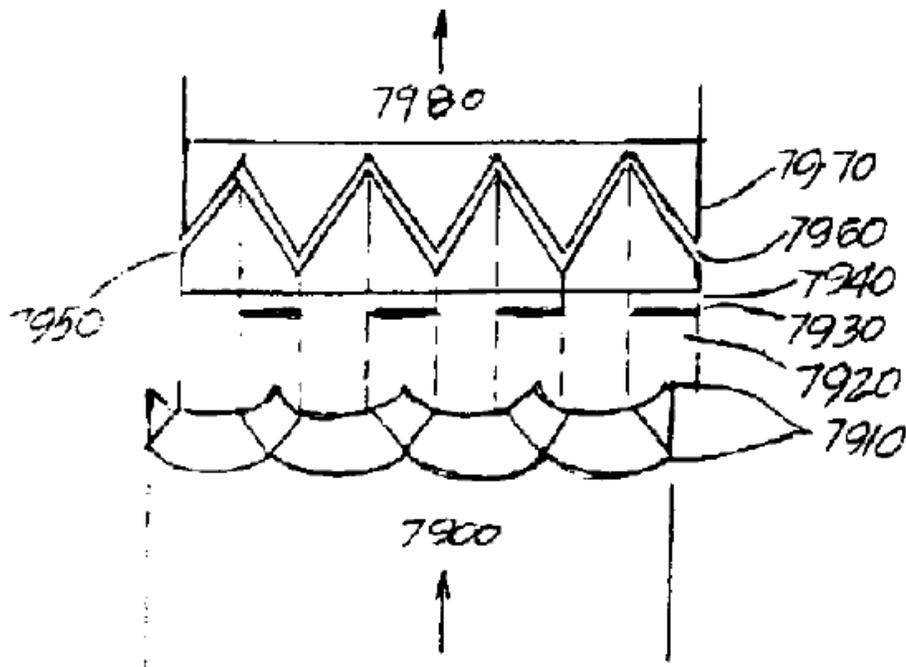


FIG 79

The specification also discloses an embodiment in which a hologram “provides an alternative to such a multi-layer coating.” Appx209 (46:37-39); *see* Appx15.

In reaching its construction, the Board cited a dictionary definition of “Fresnel lens” as a “thin lens constructed with stepped setbacks so as to have the optical properties of a much thicker lens,” and “numerous instances where the ’347 patent describes a ‘Fresnel polarizer’ or a ‘Fresnel polarizer plate’ as having a stepped sawtooth-like construction.” Appx13-14; Appx205 (38:10-21); Appx209 (45:1-5); Appx931. The benefit of a “Fresnel” configuration is that it “save[s] space, weight and cost.” Appx14; Appx205 (38:10-21); *see also* Appx990-994 (¶¶ 46-47, 51-52).

Cascades agrees with the wording of the Board’s construction but seeks to add to it a further limitation of “an optical coating layer where two sawtooth-like elements touch.” In its Final Written Decision, the Board rejected Cascades’ argument, stating that “[w]e are not persuaded that the Specification provides a clear definition of ‘Fresnel polarizer’ such that it is limited to having” such an optical coating layer. Appx15.

During the proceedings below, Cascades also sought to add to the construction a limitation of “polarization conversion of reflected incident light through a wave plate in a manner to cause nearly all incident light to exit with primarily one polarization.” The Board was unpersuaded, citing Epson’s observation that “the ’347 Patent does not teach that all ‘Fresnel polarizers’ must have polarization conversion” and an embodiment in the specification which refers to “improperly polarized light exiting the . . . Fresnel polarizer” instead of being converted to the other polarization. Appx16; Appx213 (54:23-24). On appeal, Cascades discusses polarization conversion as a purported innovation by named inventor Eugene Dolgoff, Appellant’s Br. 7-11, 24, but does not challenge the Board’s determination that it is not a requirement of a “Fresnel polarizer.”

3. Claims 48 and 69: “Means For Enhancing Brightness”

Claims 48 and 69 also recite “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,” with the bracketed word “electronic” appearing in claim 48 but not claim 69. Epson proposed, and the Board and Cascades agree, that the “means for enhancing brightness” in the Figure 65 embodiment includes lens array 6570, unlabeled deflecting prisms located just after lens array 6570, another set of unlabeled prisms, mirrors or similar optical elements located near foci 6550, focusing lens array 6560, and collimating lens 6520. *See* Appx12; Appx93-95; Appx1018-1019 (¶¶ 93-94); Appellant’s Br. 43.

4. The Effective Filing Date Determination Reached By The Board In Deciding What Claim Construction Standard To Apply

Because *Phillips*⁴ and not the “broadest reasonable construction” standard applies in USPTO proceedings on expired patents, *see* Appx4-5, Appx7; *In re Rambus Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012), the Board analyzed the expiration date of the ’347 Patent and in particular the effect of a priority disclaimer the applicant submitted during prosecution on the effective filing date used to calculate the expiration date. Appx4-7. For the following reasons, the Board determined that the effective filing date was such that the patent had expired and accordingly that the *Phillips* claim construction standard applies. *Id.*

⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

As specified on the cover and in column 1 of the patent, Appx136; Appx187, the application for the '347 Patent was the last in a string of six continuations and continuations-in-part. The earliest listed application is U.S. Application No. 07/659,596 ("the '596 Application"), filed on February 21, 1991, and the next listed application is U.S. Application No. 08/223,479 ("the '479 Application"), filed on April 4, 1994.

During prosecution of the application for the '347 Patent, the applicant disclaimed priority to the earliest listed application, the '596 Application, and submitted a corrected Application Data Sheet that struck out the original claim to the '596 Application filing date. Appx641; Appx652. The applicant unequivocally stated: "The present invention was first disclosed in Applicant's U.S. patent application 08/223,479, filed April 4, 1994." Appx641; *see also* Appx760. The applicant, however, never amended the specification of the '347 Patent "to change the original claim to priority." Appx6.

In its Final Written Decision, the Board determined that (1) in view of the disclaimer, the priority date of the '347 Patent is April 4, 1994; but (2) because the applicant did not correct the text of the specification itself, the expiration date is properly measured from February 21, 1991, the filing date of the earliest-referenced application or the '596 Application. Appx4-7; Appx17. The Board explained that "[t]he term of the patent grant begins on the date on which the

patent issues and ends 20 years from the date on 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) from the date on which the earliest such application was filed.’ 35 U.S.C. § 154(a)(2) (2002).” Appx5. “We determine, therefore, 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.’” Appx6.

Using the 1991 effective filing date, the Board calculated the expiration date of the ’347 Patent as September 16, 2016 and accordingly applied *Phillips* instead of the “broadest reasonable construction” standard. Appx5-7.

Cascades does not contest that *Phillips* applies if the patent term is properly measured from the filing of the ’596 Application. Nor does Cascades identify any part of the claim construction that might be different under the “broadest reasonable construction” standard than under *Phillips*. Instead, Cascades challenges the effective filing date determination as allegedly “premature.” Appellant’s Br. 58. Cascades states that in 2015, after the Board issued its Institution Decision in which it first set forth its analysis, the patent owner requested a Certificate of Correction that would remove the reference to the ’596

Application from the '347 Patent. *Id.* 57-58. The USPTO denied that request and also denied a petition for review of the denial. *Id.* 58. The patent owner then filed a "Petition for Reconsideration and Final Agency Action" which is pending. *Id.*

C. The Board's Obviousness Determinations

In its Final Written Decision, the Board determined that Epson had demonstrated obviousness on each of the instituted grounds and thus that all of the challenged claims are unpatentable. Appx30-31. Specifically, the Board found that:

- Claims 29, 30, and 32 are obvious in view of Brandt⁵ and Uchiyama.⁶ Appx19-23.
- Claim 33 is obvious in view of Brandt and EP '630,⁷ a combination that the Board relied upon instead of Brandt and Uchiyama "because Petitioner relies solely on Brandt and EP '630 to show the further requirements of dependent claim 33." Appx23-26.

⁵ U.S. Patent No. 5,098,184, naming inventor Adrianus H.J. van den **Brandt**, issued on March 24, 1992. Appx772.

⁶ Japanese Published Patent Application No. A-5-45724, naming lead inventor Shoichi **Uchiyama**, was published on February 26, 1993. Appx797. A certified translation of the text of Uchiyama is of record at Appx802.

⁷ European Patent Application Publication No. 0 509 630 A2 ("**EP '630**"), naming the same inventor Eugene Dolgoff as the '347 Patent, was published on October 21, 1992. Appx855.

- Claims 48 and 69 are obvious in view of Brandt and Sato.⁸

Appx26-29.

1. The Prior Art

Brandt. Brandt discloses “an efficient illumination system for an image projection apparatus” using an LCD display panel. Appx772; Appx788 (10:45-46). Brandt’s goal is that the “radiation energy” of the light source “should be used as efficiently as possible.” Appx784 (1:62-64). In Brandt’s display system, “a maximum quantity of the radiation supplied by the source is directed onto the display panel and in which the illumination beam at the position of the object to be illuminated, has a cross section adapted to this object.” *Id.* (2:53-57).

The embodiment of Brandt’s Figure 2 uses lenses to image the light source onto the LCD with the desired amount of brightness uniformity.

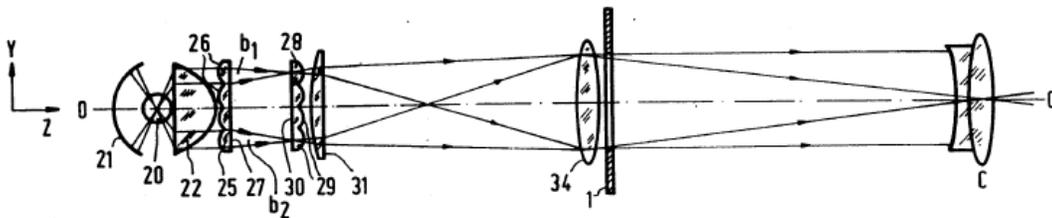


FIG. 2

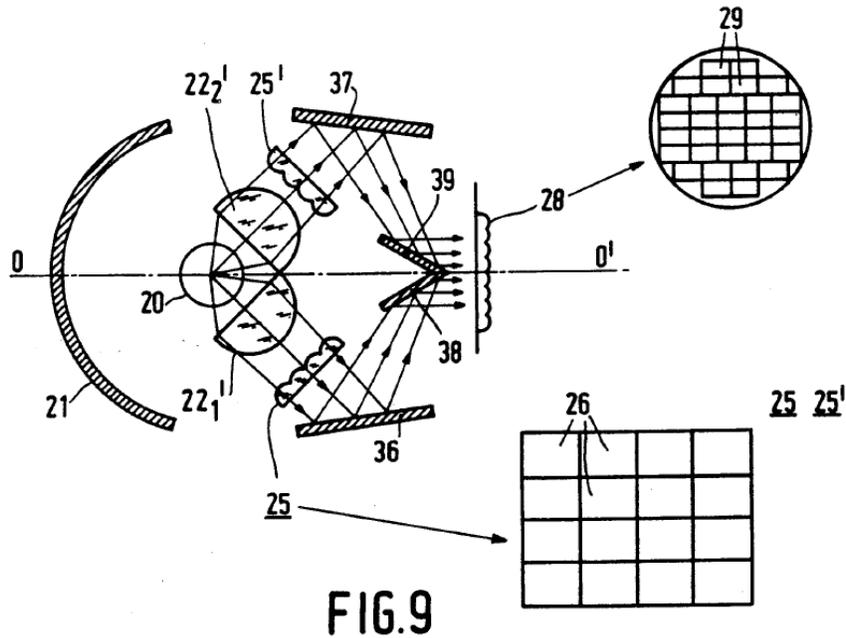
First lens plate 25 contains an array of lenses 26 that divide the light beam emanating from light source 20 into sub-beams and image them on associated

⁸ U.S. Patent No. 5,042,921, naming lead inventor Makoto **Sato**, issued on August 27, 1991. Appx817.

lenses of second lens plate 28. Appx17; Appx789 (12:44-53); Appx795 (23:63-65). Second lens plate 28 contains an array of lenses 29 that, with lens 31, superimpose the different sub-beams onto the LCD image-forming element 1. Appx17-18; Appx789 (12:62-67); Appx795 (24:1-3). The result is that “all radiation coming from the condensing lens system and entering through the first lens plate passes through the display panel and the illumination system has a high collection efficiency.” Appx790 (13:11-15). This contradicts Cascades’ attempt to take credit for reducing light waste as an alleged innovation in the ’347 Patent. *See* Appellant’s Br. 7, 11-13.

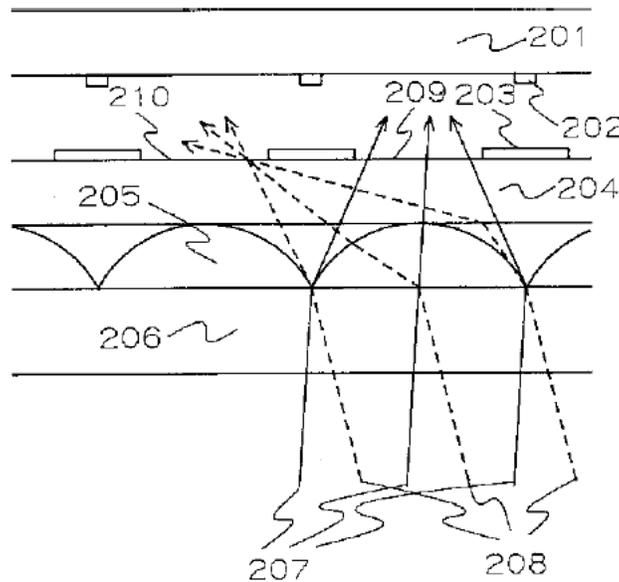
Moreover, Brandt’s system “results in the illumination intensity distribution in this plane [of LCD panel 1] having the desired uniformity, the degree of uniformity being determined by the number of lenses of the plates 25 and 28.” Appx789 (12:1-13:2). This contradicts Cascades’ attempt to take credit for increasing display brightness uniformity as an alleged innovation in the ’347 Patent. *See* Appellant’s Br. 7-8, 11-13.

The embodiment of Brandt’s Figure 9 splits the first lens plate into plates 25 and 25’ and adds mirrors 36-39 that, together with the lenses, reduce the beam size. Appx1056-1057 (¶ 148).



Uchiyama. Uchiyama “increase[s] the luminance of light outputted from the projection-type liquid crystal display apparatus” by increasing “the amount of light passing through pixel openings.” Appx803 (certified translation). Uchiyama’s Figure 2 shows lenses 205 in lens array 204 directing light rays into pixel openings 209 and 210. See Appx808-810. “Most of the light fluxes incident on the lens array therefore pass through the liquid crystal pixel openings, whereby the luminance of a projected image increases.” Appx809.

【図2】



EP '630. EP '630 explains that an LCD has opaque spaces between pixels that do not transmit light. Appx879 (47:48-50). “Light that hits these areas does not reach the screen, decreasing the brightness of the projected image and contributing to heating of the light valve.” *Id.* (47:50-53). Thus, Figure 34 shows lens array 3440, placed before light valve 3430, to “focus light coming from the condenser system down into the pixel holes.” *Id.* (47:55-48:2); Appx1052 (¶ 82).

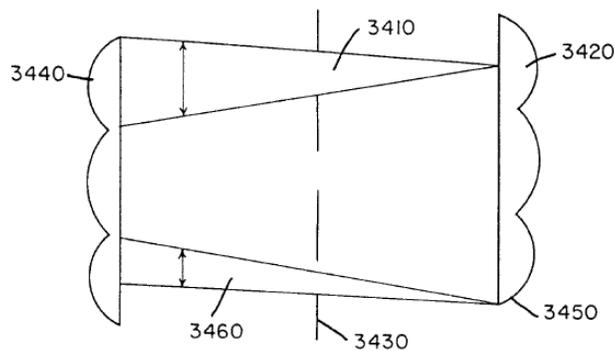


FIG. 34

Sato. Sato’s goal is “to provide a liquid crystal display apparatus which can utilize light from a light source in display on a liquid crystal display panel with almost no waste light.” Appx840 (1:66-2:1). Sato’s Figure 7 discloses polarizing beam splitter 108 including prisms 108d and 108e with a sawtooth-shaped interface between the prisms. Appx842 (6:63-68).

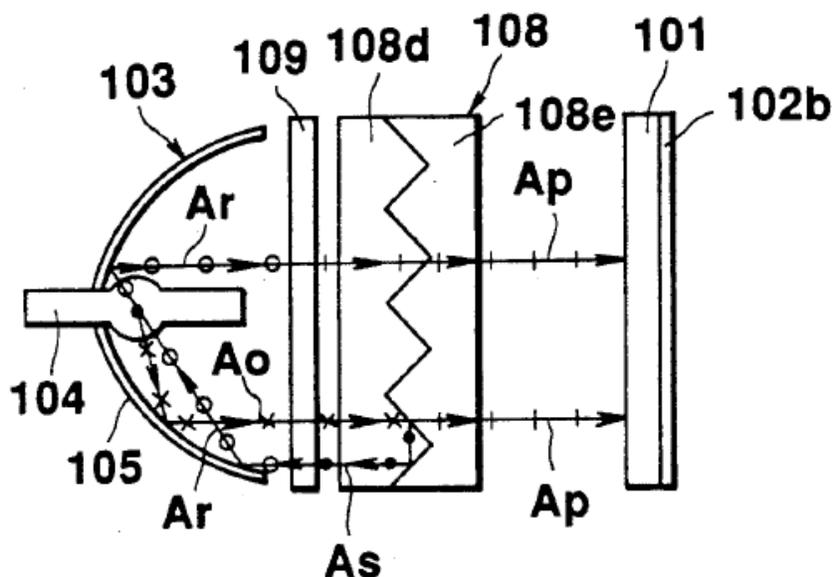


FIG. 7

108 is a polarizing beam splitter, and necessarily therefore a polarizer, because it splits the incident light into polarized components, with P-polarized component “Ap” transmitted to LCD 101 and S-polarized component “As” reflected at the interface between prisms 108d and 108e. *Id.* (5:66-6:8); Appx1074 (¶ 173).

Epson’s expert Dr. Frederic Kahn explained that its stepped, sawtooth-like construction “allows it to polarize light in the same manner as much thicker polarizers.” Appx1074-1075 (¶¶ 174-175). This contradicts Cascades’ attempt to

take credit for using a Fresnel sawtooth-like structure to reduce the size of polarizers as an alleged innovation in the '347 Patent. *See* Appellant's Br. 10-11.

The system in Sato's Figure 7 also performs polarization conversion using polarizing beam splitter 108 with optical rotatory plate 109. Appx842 (6:23-52); Appx843 (7:10-23); Appx1078-1079 (¶¶ 180, 182). This contradicts Cascades' attempt to take credit for polarization conversion as an alleged innovation in the '347 Patent. *See* Appellant's Br. 7, 9-10.

2. The Obviousness Analysis

Obviousness of claims 29, 30 and 32 over Brandt and Uchiyama.

Epson provided claim charts identifying specific portions of the cited prior art corresponding to each limitation of these claims and a detailed explanation for why one of ordinary skill would have been motivated to combine and modify the prior art to achieve the claimed invention. Appx97-117. The Board determined that Epson had demonstrated claims 29, 30 and 32 are unpatentable for obviousness over Brandt and Uchiyama. Appx23. The Board stated: "Petitioner identifies at least two persuasive reasons why one of ordinary skill in the art would have combined the teachings of the prior art references to achieve the claimed invention: (1) to increase the brightness of a projector display (Pet. 34-37 [Appx110-113]); and (2) to reduce beam size (*id.* at 37-41 [Appx113-117])." Appx22-23. The Board rejected Cascades' argument that the cited references are distinguishable

because they allegedly increase light waste and reduce brightness uniformity, explaining that “the challenged claims do not require any particular degree of uniformity or light waste.” Appx20-22.

Obviousness of claim 33 in view of Brandt and EP ’630. Epson also provided claim charts and a detailed explanation of the motivation to combine and modify Brandt and EP ’630 to achieve the alleged invention in claim 33, Appx97-117, and the Board again determined that Epson had demonstrated obviousness. Appx26. Cascades’ principal argument concerning dependent claim 33 below, as on appeal, turned on the “means for focusing” of independent claim 29, asserting that prisms are “a construed requirement of claim 29” and in particular of the means for focusing. Appx25. The Board rejected Cascades’ argument: “Although Figure 65 of the ’347 patent appears to show unnumbered ‘prisms’ near foci 6550, the patent makes clear that ‘prisms or mirrors’ may serve interchangeably. Ex. 1001 [Appx205], col. 38, ll. 49-57 (describing corresponding Fig. 62 structures).” Appx25.

Obviousness of claims 48 and 69 in view of Brandt and Sato. The Board also determined that Epson had demonstrated obviousness of claims 48 and 69. Appx29; *see* Appx118-130 (Epson’s claim charts and motivation to combine/modify analysis). With respect to the disputed “Fresnel polarizer” limitation, the Board noted Epson’s citation of polarizing beam splitter 108

disclosed in Figure 7 of Sato and rejected Cascades' argument that combining Brandt and Sato would allegedly "render Sato unsatisfactory for its intended purpose." Appx27-29. On appeal, Cascades does not repeat its "rendered unsatisfactory" argument.

SUMMARY OF ARGUMENT

Each of the Board's determinations is correct and supported by substantial evidence. Cascades asserts that the Board misidentified input lens array 6580 in Figure 65 as corresponding to the "input lens array" of claim 29, but Cascades does not identify any way in which its argument might affect the obviousness analysis. The Board stated that while input lens array 6580 is an example of an "input lens array," the term "is not limited to that particular structure and equivalents thereof." Appx11. Moreover, the Board identified the correct structure. Cascades neglects that the specification both expressly describes input lens array 6580 as an "input lens array" and describes the function of an "input lens array" as focusing light into pixel holes – a function performed by input lens array 6580 in the Figure 65 embodiment.

With respect to the obviousness of claims 29, 30, 32 and 33, the Board's findings regarding motivation to combine and modify the cited prior art references to achieve the claimed invention, Appx22-23, are supported by substantial evidence. Epson and its expert witness Dr. Kahn provided a detailed analysis identifying equivalent structure for performing the identical function of the "means for focusing" of claim 29; and explaining that one of ordinary skill would have been motivated to achieve the equivalent structure by combining Brandt with Uchiyama or EP '630 to increase the brightness of a projector display,

and modifying the cited references to add prisms or other equivalent optical elements to reduce the beam size and thereby reduce system size, cost and weight. The Board also correctly rejected Cascades' counterfactual attempts to disparage the prior art as purportedly wasteful of light and failing to achieve brightness uniformity because "the challenged claims do not require any particular degree of uniformity or light waste." Appx21. Again this determination is supported by substantial evidence including the cross-examination testimony of Cascades' expert Mr. William Bohannon.

With respect to claims 48 and 69, the Board correctly construed "Fresnel polarizer" not to require Cascades' proposed additional limitation of "an optical coating layer where two sawtooth-like elements touch." The Board correctly rejected Cascades' argument that "Fresnel polarizer" has a different, narrower, meaning from the ordinary meanings of "Fresnel" and "polarizer," noting that the specification of the '347 Patent does not provide the clear definition that would be requisite to narrow its meaning. Appx15. The Board also correctly rejected Cascades' attempt to import an "optical coating layer" limitation into the claims based on its alleged presence in each specification embodiment of a Fresnel polarizer, noting that the specification includes an embodiment in which "a less expensive hologram may serve as an alternative to a multi-layer coating." Appx15.

The remainder of the Board's analysis of claims 48 and 69 is also correct and supported by substantial evidence. Because polarization conversion is unclaimed, Cascades' counterfactual attack on Sato as purportedly lacking polarization conversion is irrelevant. And Cascades' attack on the Board's analysis of the "means for enhancing brightness" repeats the same arguments regarding the unclaimed features of reducing light waste and promoting brightness uniformity that the Board properly rejected in its analysis of the "means for focusing" of claims 29, 30, 32 and 33.

Cascades' assertion that analysis of the '347 Patent's effective filing date is "premature" should also be rejected. Cascades waived its argument by not making it in the Patent Owner's Response or at the oral hearing below, and the argument is immaterial in any event because Cascades does not identify any way in which the argument could have affected the outcome of the Board's decision. The only reason the Board addressed the effective filing date was so that the Board could determine whether the patent has expired and thus the *Phillips* claim construction standard applies instead of the "broadest reasonable construction" standard, and Cascades does not contend that the application of the "broadest reasonable construction" standard would have resulted in a different construction. Cascades does not dispute that the Board's effective filing date determination was correct based on the face of the patent, which continues to include a specific

reference to the '596 Application, and Cascades has not sought and would not be entitled to a stay of this appeal pending resolution of its efforts to obtain a Certificate of Correction to remove the reference to the '596 Application.

Finally, Cascades' challenge to the constitutionality of IPR proceedings should be rejected. The panel decision regarding separation of powers in *MCM* remains binding pending the Supreme Court's decision in *Oil States*, and Cascades' speculation regarding alleged bias ignores precedent recognizing that Board members are disinterested and that it does not violate due process for members of administrative agencies to decide whether to institute a proceeding and then rule on the merits.

ARGUMENT

I. Standards Of Review

The Board’s legal conclusions are reviewed de novo and its factual findings are reviewed for substantial evidence. *See Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015); *In re Zurko*, 527 U.S. 150, 162 (1999). The substantial evidence standard “require[s] a court to ask whether a ‘reasonable mind might accept’ a particular evidentiary record as ‘adequate to support a conclusion.’” *Zurko*, 527 U.S. at 162 (citation omitted).

Claim construction is an issue of law with subsidiary factual issues when there is relevant and disputed extrinsic evidence. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

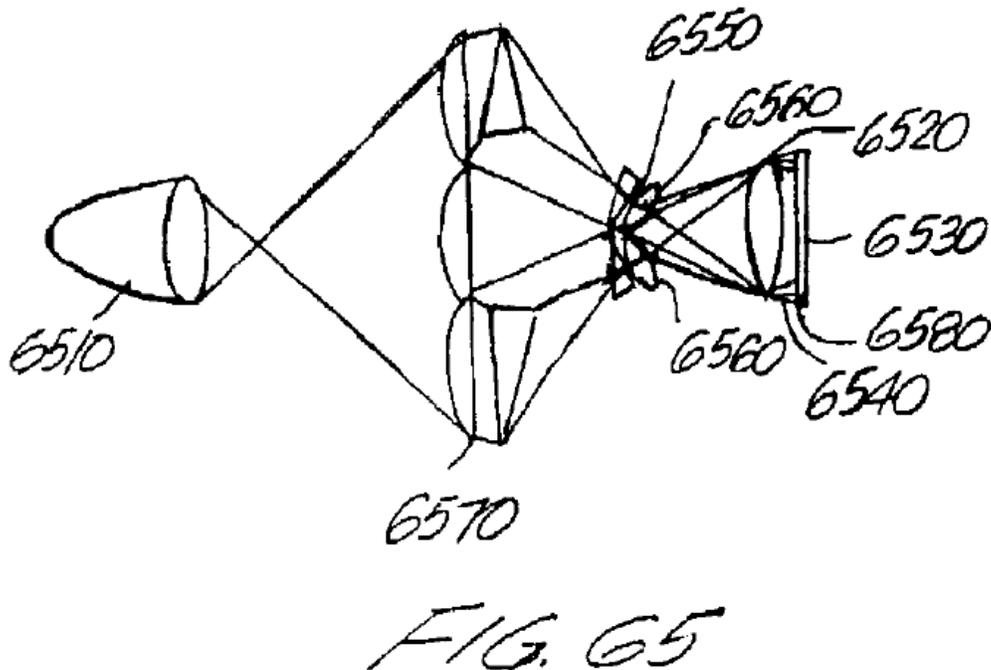
Obviousness is an issue of law with subsidiary factual issues regarding the scope and content of the prior art, differences between the prior art and the claimed invention, the level of skill in the art, and any secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). The Board’s findings regarding these issues, and in particular regarding motivation to modify or combine prior art references, are factual. “What a prior art reference teaches and whether a skilled artisan would have been motivated to combine references are questions of fact.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1051 (Fed. Cir. 2016) (en banc). “Whether a person of ordinary skill in the

art would have been motivated to modify or combine prior art is a question of fact.” *In re Van Os*, 844 F.3d 1359, 1360 (Fed. Cir. 2017).

II. The Board’s Determination That Claims 29, 30, 32 And 33 Are Unpatentable Is Correct And Supported By Substantial Evidence

A. The Board Correctly Identified The “Input Lens Array” In Figure 65 Of The ’347 Specification

In the course of identifying corresponding structure for the “means for focusing” of claim 29, the Board identified the structure in Figure 65 corresponding to the “input lens array” limitation as input lens array 6580, which the specification expressly labels an “input lens array.” Appx8-12; Appx206 (39:1). Cascades argues that the correct structure instead is lens array 6570. Appellant’s Br. 32, 44-47, 50-51.



First, Cascades does not identify any way in which the Board's identification of the Figure 65 "input lens array" might affect obviousness. It is undisputed that "input lens array" is not a means-plus-function limitation and thus is not limited to the corresponding structure described in the specification and equivalents. Appx11. The Board stated: "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." *Id.* Moreover, even if Cascades were correct that the Figure 65 "input lens array" is lens array 6570, that would not matter because Cascades does not dispute that Brandt discloses a lens array that corresponds to 6570. *See* Appx120, Appx1068 (¶ 167) (Epson's analysis of "means for enhancing brightness," showing that Brandt's lens array 25 corresponds to lens array 6570); Appx26, Appx29 (agreeing with Epson's analysis of "means for enhancing brightness"). Cascades' request for what amounts to an advisory opinion on "input lens array" should be rejected. *See Personalized User Model, LLP v. Google Inc.*, 797 F.3d 1341, 1350 (Fed. Cir. 2015).

Cascades' arguments are also incorrect. The specification identifies input lens array 6580 as an "input lens array" that focuses light "into pixel holes." Appx206 (39:1-2). The specification repeatedly uses "input lens array" to refer to structures such as input lens array 6580 that focus light into pixels and not on the opaque area between pixels. *Id.* (37:36-42); Appx211 (50:31-34).

The Board properly rejected Cascades' argument that focusing light "onto" pixels is purportedly inconsistent with focusing light "into" pixel holes, stating that "we are not convinced of any material difference between light falling 'onto' pixels and 'into' pixel holes," and noting that "[w]hether light is 'into' pixel holes or 'onto' pixels, the light is incident on pixels – not on the opaque areas between the pixels." Appx11-12. Even after the applicant changed the "means for focusing" during prosecution to say that light is focused "onto the pixels" instead of "into pixel holes," Appx592; Appx601, input lens array 6580 still accomplished this, because focusing light into pixel holes necessarily requires focusing light onto the pixels. Appx11-12; Appx1009 (¶ 75). And the applicant did not amend the specification passages cited above showing that input lens array 6580 is still an "input lens array."

According to Cascades' expert Mr. Bohannon, "lens arrays 6570 and 6560 work together to uniformly illuminate the IFE," and "lens array 6580 is used to 'cram' light into the pixel holes, being made to miss the opaque areas between pixels." Appx1718 (¶ 37) (emphasis in original). Thus, lens arrays 6570 and 6560 illuminate not only the pixels but also the opaque areas between pixels. But the specification teaches that focusing light "onto the opaque area" and not "through the pixel hole" would "defeat[] the purpose of using the input lens array."

Appx211 (50:31-34). Input lens array 6580 focuses light into and thus onto the pixels. Appx1009 (¶ 75).

Cascades also argues that “it is the unnumbered prisms, not the lenses 6580, that achieve the function and result of focusing light, ‘onto the pixels of said element’ as called for by Claim 29 and the claims dependent thereon.” Appellant’s Br. 50. This is a false dichotomy. It is undisputed that the prisms are one part of the system of optical elements that form the “means for focusing” in Figure 65. *Id.* 47-48. But the input lens array 6580 that focuses light into and thus onto the pixels is another part of that system. Appx1009 (¶¶ 75-76).

B. The Board Correctly Determined That The Cited References Render The “Means For Focusing” Obvious

The Board determined that Epson had demonstrated claims 29, 30 and 32 are unpatentable for obviousness over the combination of Brandt and Uchiyama, and claim 33 is unpatentable for obviousness over the combination of Brandt and EP ’630. Appx23; Appx26. The battleground before the Board, as on appeal, was the “means for focusing” of claim 29. The Board summarized Epson’s argument regarding the combination of Brandt and Uchiyama:

Petitioner [Epson] 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 [Appx99-105]. Petitioner admits that Brandt’s Figure 2 apparatus lacks the prisms or other optical elements to change the beam size in the manner shown in Figure 65 of the ’347 patent. *Id.* at 24 [Appx100].

Petitioner submits, however, that it would have been obvious to add to Brandt's structure prisms, and an input lens array as taught by Uchiyama, relying on the teachings of Uchiyama and the declaration of Dr. Kahn. *Id.* at 37, 39 [Appx113, Appx115]; Ex. 1011 (Kahn Decl.) ¶¶ 136–152 [Appx1045-1059].

Appx19. Epson's argument regarding the combination of Brandt and EP '630 was similar. *See* Appx109-117; Appx1045-1059 (¶¶ 136-152). The following demonstrates the substantial evidence supporting the Board's findings regarding the prior art and motivation to combine and modify the cited references to achieve the claimed invention and that the Board's ultimate conclusion of obviousness was correct.

Identification of equivalent structure for performing the identical function of the “means for focusing.” Equivalence between the prior art and an embodiment of a means-plus-function limitation can be proved by showing that the prior art performs the identical claimed function in substantially the same way to achieve substantially the same result. *Hearing Components, Inc. v. Shure, Inc.*, 600 F.3d 1357, 1370 (Fed. Cir. 2010), *abrogated on other grounds by Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120 (2014). In *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1269 (Fed. Cir. 1999), the Court reinstated a jury verdict based on a means-plus-function equivalence analysis that “point[ed] out the parallels between the claimed and accused structures.” Epson has done the same here.

The function of the “means for focusing” is “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.” Brandt, combined with either Uchiyama or the EP '630 Publication, contains structure for performing this identical function. Appx1048-1052 (¶¶ 139-142).

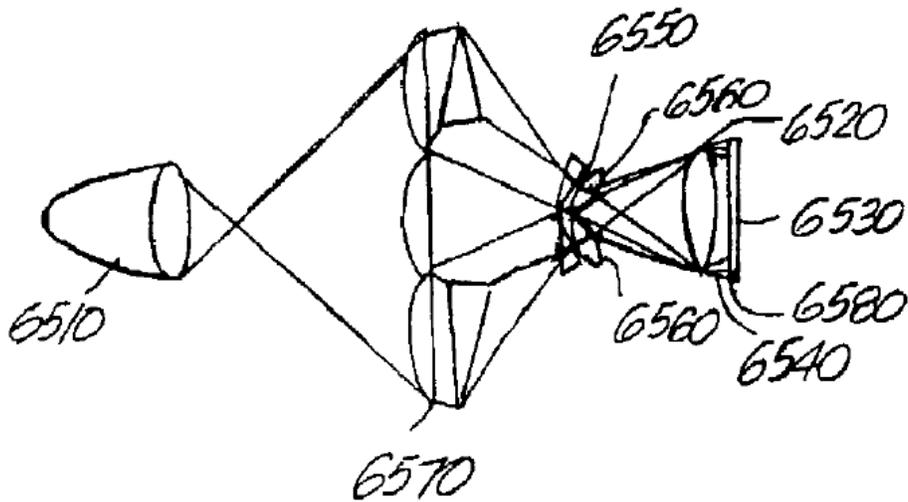


FIG. 65

'347 Patent Figure 65

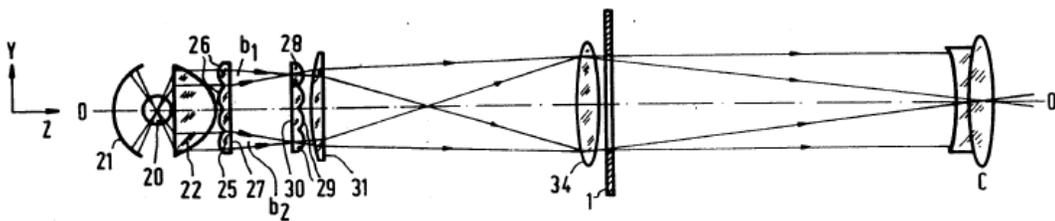
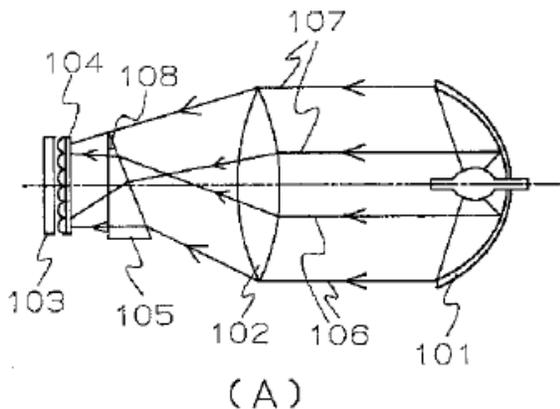


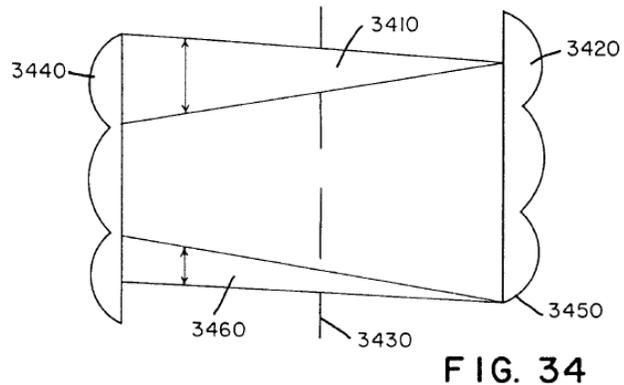
FIG. 2

Brandt Figure 2

【図1】



Uchiyama Figure 1(A)



EP '630 Figure 34

First, focusing lenses 6560 in Figure 65 correspond to Brandt's second lens plate 28. "Each lens 29 [in the second lens plate 28] ensures that a radiation spot formed on the corresponding lens 26 [in the first lens plate 25] is imaged on the display panel 1." Appx789 (12:62-64). Thus, second lens plate 28 focuses different segments of a light beam emanating from light source 20 onto the image-forming element 1. Appx1046-1050 (¶¶ 137, 139-140).

Second, input lens array 6580 in Figure 65 corresponds to Uchiyama's lens array 104 or EP '630 Publication's lens array 3440. These are "input lens arrays," as that term is used in the '347 patent, because each focuses light into the pixel holes of respective image-forming elements 103 in Uchiyama and 3430 in the EP '630 Publication. See Appx800 (Figs. 1(A) and 2); Appx808-810; Appx879-880 (47:47-49:29); Appx886 (61:29-31); Appx919 (Fig. 34). Because these input lens arrays focus light into the pixel holes, they necessarily focus light onto the

image-forming element at proper angles such that light is focused onto the pixels of said element. Appx1050-1052 (¶¶ 141-142).

The structure disclosed in Brandt and the other references, modified to include prisms or other optical elements to change the beam size as described below, is equivalent to that in Figure 65. Appx1053-1054 (¶ 143). It achieves substantially the same result of increasing the light incident onto the pixels and thus increasing light throughput in substantially the same way. *Id.* The optical elements 6560 and 6580 in the Figure 65 embodiment of the “means for focusing” correspond to elements in Brandt, combined with Uchiyama or EP ’630, which are the same optical elements and thus operate in the same way. *Id.*

Motivation to combine the cited references. The Board found that “Petitioner [Epson] identifies at least two persuasive reasons why one of ordinary skill in the art would have combined the teachings of the prior art references to achieve the claimed invention: (1) to increase the brightness of a projector display (Pet. 34–37 [Appx110-113]); and (2) to reduce beam size (*id.* at 37–41 [Appx113-117]).” Appx22-23. Reason (1) provides motivation to combine Brandt with either Uchiyama or EP ’630 and is supported by substantial evidence. Each reference teaches that it is desirable to increase the brightness of a projector display and teaches complementary structures and techniques for achieving this goal by combining familiar elements according to known methods to yield predictable

results. *See* Appx1034-1040 (¶¶ 118-128).

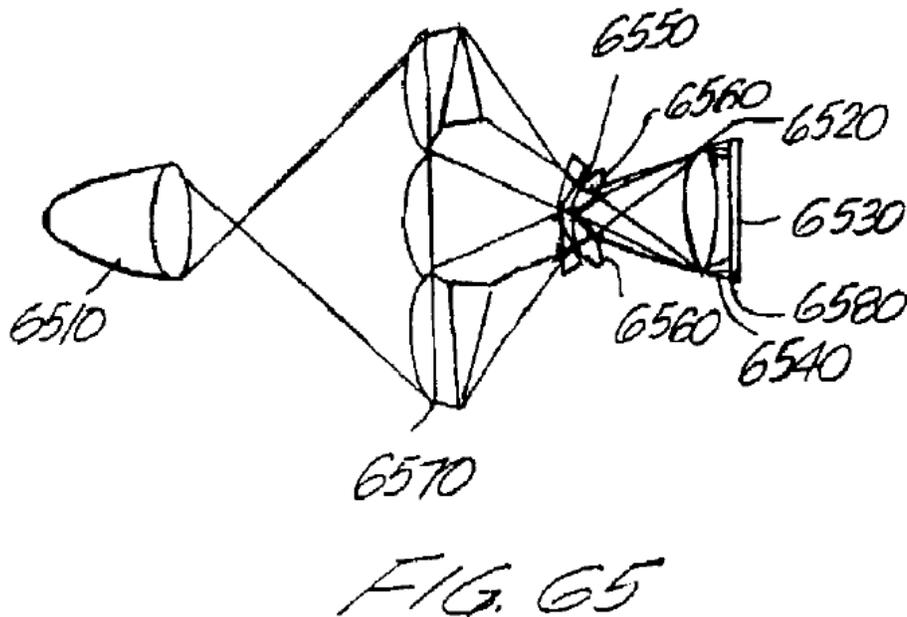
- Brandt states that to make projection systems that are compact, inexpensive and with a simple construction, the energy radiated by the light source “should be used as efficiently as possible.” Appx784 (1:51-64); *see also* Appx1034-1035 (¶¶ 119-120). Thus, in Brandt’s illumination system, “a maximum quantity of the radiation supplied by the source is directed onto the display panel.” Appx784 (2:53-55); *see also* Appx1036 (¶ 122).
- Uchiyama’s purpose is “to increase the luminance of light outputted from the projection-type liquid crystal display apparatus,” and Uchiyama teaches that the advantage it provides is that “[t]he amount of light passing through pixel openings can be increased.” Appx803; Appx808; Appx1036-1037 (¶ 123).
- The input lens array disclosed in EP ’630 also increases the light actually passing through the light valve. Epson 1007 at Appx879 (47:47-48:2); Appx881 (51:10-13); *see also* Appx1038 (¶ 125). EP ’630 also discloses a series of other techniques to “greatly increase the light output of a projection system.” Appx881 (51:1-20); Appx1038 (¶ 125).

Motivation to modify the cited references to add prisms. The Board found that the second of the “persuasive reasons” Epson had identified for “combin[ing] the teachings of the prior art references to achieve the claimed invention” was “to reduce beam size.” Appx22-23. This provides specific motivation to add prisms to a lens array system like Brandt’s to obtain equivalent structure to the “means for focusing” disclosed in the Figure 65 embodiment, and once again is supported by substantial evidence. Appx1054-1059 (¶¶ 144-152).

First, the purpose of including prisms with the lens arrays in the Figure 65 embodiment of the “means for focusing” is to change the beam size.⁹ “[T]he distances needed for light to spread out sufficiently and for separate beams to be sent to the image-forming element and overlapped at the proper angles” tend to increase projector size. Appx205 (38:37-40). Thus, the specification provides examples, including Figure 65, of methods “to reduce these dimension requirements.” *See id.* (38:41-42) (“various methods can be utilized”); *id.* (38:43-57) (Figures 61 and 62); Appx205-206 (38:58-39:4) (Figure 65, which is a “preferred variation” of Figure 62). The reduction in beam size in Figure 65

⁹ It is undisputed that prisms by themselves do not substantially change beam size, Appellant’s Br. 49-50; Appx1478 (Kahn Dep. at 55:18-23), but the prisms in Figure 65 operate in combination with the lens arrays to accomplish this. Appx1008 (¶ 74); Appx2001, Appx2003-2004, Appx2006 (Bohannon Dep. at 120:6-12, 122:24-123:6, 125:2-16); *see also* Appx1480 (Kahn Dep. at 57:16-22).

between lens array 6570 and lens array 6560, achieved using the unnumbered prisms, is evident.

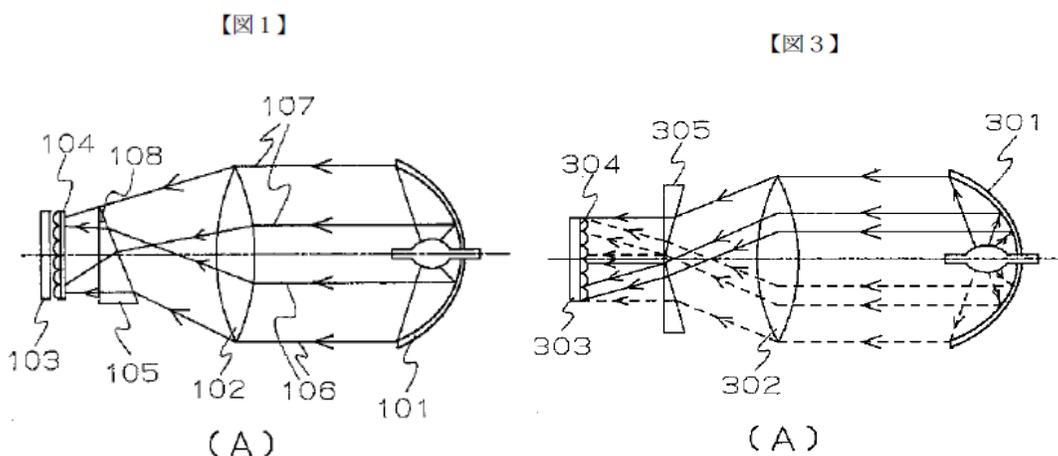


Second, the desirability of changing the beam size was well-known in the art. For example, Brandt teaches that “lamps having a higher light intensity generally also have a larger radiating surface area in the form of a lamp arc so that the output aperture of the illumination system is larger. When reducing the beam aperture so as to limit the dimensions of the subsequent optical components in the projection apparatus, a part of the light energy would be lost again. It is therefore desirable to receive as much light as possible from the lamp and to concentrate it to a narrow beam.” Appx789 (12:15-23) (emphasis added); *see also* Appx1054 (¶ 145). Uchiyama describes the prior art to his invention as including a system emitting a beam that is larger than the light valve and therefore must be reduced in

size. See Appx1055 (¶ 146); Appx801 (Fig. 4(A)); Appx805-808. EP '630 likewise discusses “reduc[ing] the size of the resulting collimated beam, which will probably be necessary in most applications.” Appx876 (41:19-23).

A person of ordinary skill in the art would also have been motivated to reduce the beam size because this would reduce the size and therefore the cost and weight of the other key optical elements in the system, including the light valve. Appx1063-1064 (¶ 159). Brandt disclosed that “a projection television apparatus is a consumer apparatus which should be compact and inexpensive and have a construction which is as simple as possible.” Appx784 (1:58-61).

Third, the prior art taught how to reduce the beam size using prisms. Uchiyama’s Figures 1(A) and 3(A) show use of lens and prism combinations 102/105 and 302/305 to reduce the beam size. Appx1055-1056 (¶ 147).



Cascades alludes in its “Statement of the Relevant Facts” to its arguments below that Uchiyama teaches away because it allegedly wastes light and its prisms

introduce non-uniformity into the display illumination. Appellant’s Br. 23. However, as explained in the next section below, the Board correctly determined that “the challenged claims do not require any particular degree of uniformity or light waste.” Appx21. Moreover, Cascades is wrong about Uchiyama’s teachings. The purpose of Uchiyama is to increase “[t]he amount of light passing through pixel openings” and thus reduce light waste. Appx803. And Uchiyama includes the embodiment in Figure 3(A), with two prisms 305, specifically to reduce the “slight” non-uniformity resulting from use of single prism 105 in Figure 1(A). Appx811-12. The Board found that “[t]o the extent that uniformity may have been considered in the design of a projection apparatus, Uchiyama’s second embodiment (using a combination of prisms) addresses the problem of the ‘slight amount of brightness unevenness’ in the first embodiment. Pet. Reply 4–5 [Appx1772-1773]; Ex. 1005, 5 (Figs. 3A, 3B), 10–11 [Appx801, Appx811-812].” Appx21. This finding is supported by the substantial evidence cited by the Board and Cascades does not challenge it on appeal.¹⁰

Motivation to modify the cited references to add mirrors, which are equivalent to prisms in the Figure 65 embodiment of the “means for focusing.”

¹⁰ Dr. Kahn also discussed the background knowledge in the prior art of using standard prisms to shape light beams, as displayed in a 1978 optics handbook that showed different types of prisms and noted “the reader may readily combine features or systems to meet his own particular requirements.” Appx1055-1056 (¶ 147) (citing Appx938, Appx943-950).

While the prior art teaching regarding prisms, discussed above, is by itself sufficient to support obviousness, the prior art also teaches using mirrors to reduce the beam size, and this equally supports obviousness because the '347 specification discloses that mirrors are equivalent to prisms in the Figure 65 embodiment.¹¹

The specification expressly discloses that the prisms shown in Figures 62 and 65 could also be mirrors:

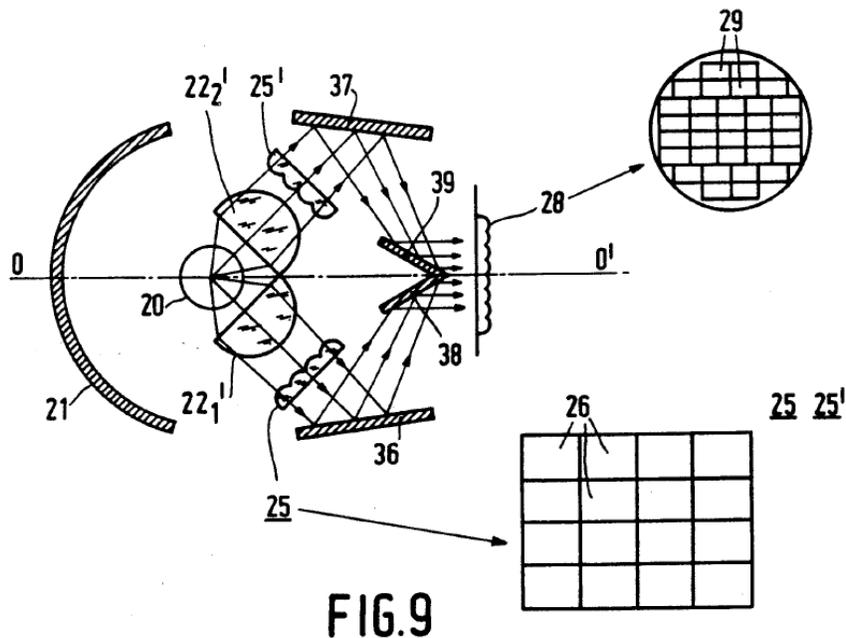
Alternatively, a larger single source (6210) can be sufficiently expanded to produce the required collimation, once collimated by a large lens 6270, after which different parts of the collimated beam can be brought to foci (6250) which are, likewise, properly placed (by mirrors, prisms, etc.) to produce various collimated beams (6240) at the proper angles once they pass through a collimating lens (6220) near the image-forming element (6230).

Appx205 (38:43-56) (discussing corresponding portion of Figure 62 embodiment) (emphasis added). This disclosure shows Cascades is incorrect to assert that “[n]owhere in the '347 Patent is any embodiment showing mirrors, rather than prisms, disclosed.” Appellant’s Br. 55. Thus, the Board determined that “the patent makes clear that ‘prisms or mirrors’ may serve interchangeably,” and “the patent teaches that ‘mirrors’ are the structural equivalents of ‘prisms’ in performing the function associated with the ‘means for focusing.’” Appx25-26.

¹¹ The prior art also teaches other methods to reduce the beam size. See Appx1057-1058 (¶¶ 149-150).

The prior art teaches using mirrors to reduce the beam size.

Appx1056-1057 (¶ 148). Brandt's Figure 9 shows a double condenser lens system which produces beams reflected by mirrors 36-39 to produce a smaller beam. *Id.*



See Appx791 (15:19-24) (describing Figure 9); Appx790 (14:19-28) (describing mirrors 36-39 in the alternative embodiment of Figure 6). The beam-reducing mirrors of Figure 9 are located between collimating lens arrays (25, 25') and focusing lens array 28, just as the beam-reducing prisms in Figure 65 of the '347 patent are located between lens array 6570 and focusing lens array 6560.

Appx1056-1057 (¶ 148). Thus, Brandt's Figure 9 discloses "where such mirrors can be effectively positioned," and is prior art that "shows how mirrors can be so used." See Appellant's Br. 55.

C. Cascades’ Attempts to Distinguish The Prior Art Based On The Unclaimed Features Of Brightness Uniformity And Light Waste Should Be Rejected

Cascades argues that Brandt teaches away from the “result” achieved by the “means for focusing,” which according to Cascades is to “place a uniform field of light of the right size and shape on the IFE, without wasting light.”

Appellant’s Br. 48 (quoting Appx1719 (¶ 41)). According to Cascades, “[t]he Board’s failure to understand that the proper ‘result’ of a correct claim construction – namely uniform illumination over the entire image forming element – led it to discount the fact that Brandt teaches away from Mr. Dolgoff’s goal of achieving uniform illumination. ... Accordingly, there is no incentive to combine the teachings of Brandt and Uchiyama.” Appellant’s Br. 54. This is wrong on the law and wrong on the facts.

The Board correctly determined that “the challenged claims do not require any particular degree of uniformity or light waste.” Appx21. Uniform illumination and elimination of light waste are not claimed functions and thus can have no role in a proper claim construction or obviousness analysis. “[A] court may not construe a means-plus-function limitation ‘by adopting a function different from that explicitly recited in the claim.’” *JVW Enters. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1331 (Fed. Cir. 2005) (citation omitted). The expressly recited function of the “means for focusing” is “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.” Appx218 (63:34-37). There is no reference to uniform illumination or light waste.

Moreover, Cascades’ expert Mr. Bohannon agreed at his deposition that a person of ordinary skill in the art in 1994 would not have understood claim 29, or any of the challenged claims, to require any particular degree of uniformity or light waste. Appx1951-1952, Appx1971-1974, Appx2036-2037 (Bohannon Dep. at 70:9-71:3, 90:14-93:10, 155:5-156:3) (uniformity); Appx1953-1954, Appx2039 (Bohannon Dep. at 72:9-73:8, 158:3-17) (light waste). The Board cited Mr. Bohannon’s testimony and it is substantial evidence further supporting the Board’s determination. Appx21.

This is fatal to Cascades’ argument. In evaluating structural equivalence for a means-plus-function claim element, “[t]he inquiry should be restricted to the way in which the structure performs the properly-defined function and should not be influenced by the manner in which the structure performs other, extraneous functions.” *Applied Med. Res. Corp. v. United States Surgical Corp.*, 448 F.3d 1324, 1334 (Fed. Cir. 2006) (emphasis in original). “That two structures may perform unrelated—and, more to the point, unclaimed—functions differently or not at all is simply not pertinent to the measure of § 112, ¶ 6 equivalents.” *Odetics*, 185 F.3d at 1271.

Cascades also ignores the teachings in Brandt that actually reduce light waste and promote uniformity rather than teaching away. Brandt described his invention as “[a]n efficient illumination system,” Appx772; Appx788 (10:45-46), in which the “radiation energy” of the light source “should be used as efficiently as possible,” Appx784 (1:62-64). Brandt disclosed how to reduce light waste by addressing the same beam shape losses discussed in the ’347 Patent. Brandt explained: “the combination of radiation source and parabolic reflector supplies a parallel beam with a round cross-section, whereas the display panel is rectangular,” and thus “the portions of the illumination beam outside the rectangle of the display panel are blocked and cannot be used.” Appx784 (1:65-68, 2:10-12). Brandt solved this problem using the same type of multi-stage optical lens configuration that Cascades describes on pages 11-13 of the Appellant’s Brief and is shown in Brandt’s Figure 2. *See* Appx784-785 (2:59-3:17); Appx790 (13:9-15).

Cascades argues that Brandt “captures only the rectangular portion of light within a circular beam and wastes the light falling outside that circle,” Appellant’s Br. 22, but a system like Brandt’s with many lens elements (48 are shown, in a 6 x 8 array, in the expanded view of second lens plate 28 in Figure 4 at Appx774) has far lower losses. Appx1566 (Kahn Dep. at 143:2-11). Cascades’ expert Mr. Bohannon agreed that as the number of elements increases, the losses decrease. Appx2069-2071 (Bohannon Dep. at 188:17-189:4, 190:20-24).

Brandt also disclosed how to achieve lighting uniformity. Brandt explained the problem here is that “since the beam supplied by the radiation source has a larger light intensity in the center than at the edge, the illumination intensity distribution on the display panel will not be uniform.” Appx784 (2:31-35). This is the same as Cascades’ stated problem of “[a]chieving uniform image brightness,” Appellant’s Br. 8, and once again Brandt solved it using the same multi-stage optical lens configuration that Cascades describes on pages 11-13 of its merits brief and is shown in Brandt’s Figure 2. *See* Appx785 (3:17-22).

Brandt specifically discloses that his superpositioning of light beam segments in the Figure 2 embodiment “results in the illumination intensity distribution in this plane having the desired uniformity, the degree of uniformity being determined by the number of lenses of the plates 25 and 28.” Appx789-790 (12:67-13:2). This results from averaging the beams, with more averaging and therefore more uniformity as the number of lenses increases, Appx1552-1554, 1644 (Kahn Dep. at 129:14-131:7, 221:8-20) – the same averaging that Cascades describes. *See* Appellant’s Br. 12. Even Cascades’ expert Mr. Bohannon conceded Brandt’s superpositioning “probably” improved uniformity. Appx2077 (Bohannon Dep. at 196:4-20).

Cascades relies on Brandt’s statement that “[t]he illumination intensity at the edges of a display panel need not be exactly equal to that in the

center of the panel”; that such exactly equal uniformity “would look unnatural, notably when displaying video images”; and “[i]t is then preferable that the illumination intensity slightly decreases from the center towards the edges.” Appx786 (5:18-25). But this is not a teaching away from uniformity; rather, it is a teaching not to overdo uniformity, *see* Appx1561-1562 (Kahn Dep. at 138:19-139:4), to be read in context with Brandt’s teachings discussed above that uniformity is desirable and how to achieve it. “The degree of teaching away” is a factual question: it “depends on the particular facts.” *Gold Std. Instrs., LLC v. US Endodontics, LLC*, No. 2016-2597, slip op. at 4, 2017 WL 3530361 at *2 (Fed. Cir. Aug. 17, 2017) (nonprecedential) (citing *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994)). Substantial evidence supports the Board’s rejection of Cascades’ teaching away argument here. *See* Appx21.

III. The Board’s Determination That Claims 48 And 69 Are Unpatentable Is Correct And Supported By Substantial Evidence

A. The Board Correctly Construed “Fresnel Polarizer” Not To Require An “Optical Coating Layer”

As the Board recognized, “a claim term is presumed to carry its ordinary and customary meaning.” Appx7 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). The Board adopted Epson’s proposed ordinary-meaning construction of “Fresnel polarizer” as “a polarizer constructed with stepped, sawtooth-like elements so as to have the optical

properties of a much thicker polarizer.” Appx13-16. Cascades agrees with this wording but seeks to add a further requirement of “an optical coating layer where two sawtooth-like elements touch” based on purported usage of “Fresnel polarizer” in the ’347 specification. The Board correctly recognized, however, that the specification does not provide the clear definition that would be requisite to narrow its ordinary meaning. Appx15.

“Fresnel” and “polarizer” are commonly-used terms with well-understood ordinary meanings in the art. Appx990 (¶ 46). “Fresnel” is commonly used to describe thinned-down optical elements with a sawtooth-like construction allowing them to have the optical properties of much thicker elements. *Id.*; *see* Appx931 (dictionary definition of Fresnel lens as a “thin lens constructed with stepped setbacks so as to have the optical properties of a much thicker lens”). The ’347 Patent uses “Fresnel” in this way to refer to a thinned-down optical element that can be used to “save space, weight and cost.” Appx205 (38:20-21) (Fresnel prism); *see also* Appx215 (58:46-48) (Fresnel mirror). “Polarizer” refers to a common optical instrument, Appx990 (¶ 46), and also has an ordinary meaning of, in Mr. Bohannon’s words, “something that separates S and P [polarization components], creates linearly or circularly polarized light,” Appx2149 (Bohannon

Dep. at 268:9-25).¹² Indeed, the ordinary meaning of “polarizer” is so well-established that the Board and Cascades agreed with Epson’s proposal to use the word “polarizer” verbatim in the construction instead of construing it further.

Cascades asserts that “Fresnel polarizer” is a “coined term,” with a different meaning from how one of ordinary skill would understand the terms “Fresnel” and “polarizer” in that it purportedly requires an “optical coating layer.” But the inventor did not act as his own lexicographer to define “Fresnel polarizer.” Cascades quotes a passage beginning with the phrase “[a]pplicant has devised a ‘Fresnel MacNeille prism’” but this passage is not a definition and, significantly, does not use the term “Fresnel polarizer.” Appellant’s Br. 36 (quoting Appx208 (44:2-8)). The specification also lacks the consistent usage that would accompany a clear definition of “Fresnel polarizer” different from its plain and ordinary meaning. First, Cascades uses a paraphrase in square brackets to assert that the embodiment described at Appx208, column 44, lines 9-12 “states, ‘FIG. 78 depicts [a Fresnel polarizer].’” Appellant’s Br. 37. What the cited passage actually says is that “FIG. 78 depicts this device.” Appx208 (44:1-9). “This device” refers back to the “Fresnel MacNeille prism” described in the preceding paragraph at column 44,

¹² The record in the Sony IPR contains further evidence demonstrating that both “Fresnel” and “polarizer” are familiar terms with established meanings in the art. *See* Appx52-53.

line 3 and to the label “Fresnel MacNeille polarizer” provided for Figure 78 in the “Brief Description of the Drawings” at Appx191, column 10, lines 9-10 – not “Fresnel polarizer.” Second, Cascades asserts that “Fresnel MacNeille prism” and “Fresnel polarizer” are synonymous, Appellant’s Br. 36, but Cascades’ single cited passage refers to “MacNeille or Fresnel polarizer” and does not refer to “Fresnel MacNeille prisms” at all. *See* Appx209 (46:21-23). At most this might suggest that “MacNeille polarizers” and “Fresnel polarizers” are synonymous, but elsewhere the specification explains that “MacNeille polarizers” are different from “Fresnel MacNeille prisms,” Appx208 (44:2-3, 9, 25-28), which Cascades now asserts are synonymous with “Fresnel polarizers.” This linguistic tangle is far from a clear definition that requires deviation from the ordinary meaning of “Fresnel” and “polarizer.”

Moreover, the caselaw regarding “coined terms” does not and cannot change the fundamental requirement that the claims be construed as they would be understood by a person of ordinary skill in the art in view of the specification. *See Phillips*, 415 F.3d at 1313. “Coined” merely refers to a term “without a meaning apart from the patent,” and *Phillips* applies. *MyMail, Ltd. v. America Online, Inc.*, 476 F.3d 1372, 1376 (Fed. Cir. 2007). The term “Fresnel polarizer” has an ordinary meaning in the art as the Board recognized. Appx1298. Even if Mr. Dolgoff truly were the first person ever to have used the combined term “Fresnel

polarizer,” it is composed of two well understood terms and is not “without a meaning apart from the patent.” *See MyMail*, 476 F.3d at 1376.

Cascades also invokes a series of embodiments including stepped, sawtooth-like polarizing elements that are constructed using multi-layer optical coatings and that the specification sometimes refers to as “Fresnel polarizers” or “Fresnel polarizer configurations.” Appellant’s Br. 37-38. But none of these embodiments state or suggest that the disclosed polarizers would not be “Fresnel polarizers” if they did not have optical coatings; to the contrary, the specification emphasizes a different feature, the compact nature of the polarizers resulting from their sawtooth-like Fresnel structure. Appx208-209 (44:2-8, 27-30, 31-33, 45:5-8). In contrast, the specification downplays the coatings as already “known in the art.” Appx209 (45:20-24). Thus, the specification does not, as Cascades attempts to suggest, provide example after example that must be interpreted as narrowing the ordinary meaning of “Fresnel” and “polarizer.”

Faced with this intrinsic record, the Board was correct to cite this Court’s decision in *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012), which requires a patentee acting as its own lexicographer to “‘clearly set forth a definition of the disputed claim term’ other than its plain and ordinary meaning,” and observes that it is insufficient to “use a word in the same manner in all embodiments” without “‘clearly express[ing] an intent’ to redefine

the term.” *Id.* (citations omitted); *see* Appx15. “[E]ven if ‘all of the embodiments discussed in the patent’ included a specific limitation, it would not be ‘proper to import from the patent’s written description limitations that are not found in the claims themselves.’” *Cadence Pharm. Inc. v. Exela PharmSci Inc.*, 780 F.3d 1364, 1369 (Fed. Cir. 2015) (citation omitted). “A construing court’s reliance on the specification must not go so far as to ‘import limitations into the claims from examples or embodiments appearing only in a patent’s written description . . . unless the specification makes clear that “the patentee intends for the claims and the embodiments in the specification to be strictly coextensive.”” *Silicon Graphics, Inc. v. ATI Techs., Inc.*, 607 F.3d 784, 792 (Fed. Cir. 2010) (citations omitted). The passages Cascades cites would not mandate its proposed narrowing construction even if the specification did not contain any contrary evidence.

The specification does contain contrary evidence, however. The Board cited as evidence from the specification that “a less expensive hologram may serve as an alternative to a multi-layer coating.” Appx15:

All previously described MacNeille polarizers and Fresnel polarizers have utilized multi-layer dielectric coatings which must be applied with vacuum deposition. This is somewhat expensive and time consuming. A hologram, which can be recorded with a single exposure, provides an alternative to such a multi-layer coating at a lower cost in much less time. This can be accomplished by making a volume hologram in which the angle between the interfering beams is greater than 90 degrees. The standing-wave pattern set-up within the emulsion

provides alternating layers of high and low indices with a single quick exposure. This “stack” is similar in form and function to the multi-layer stack conventionally created by vacuum deposition.

Appx209 (46:34-46) (emphasis added). The underlined portion unambiguously states that a hologram “provides an alternative” to previously-described multi-layer coatings and thus supports the Board’s determination to that effect. Appx15.

Cascades responds that a hologram “is simply a more easily and economically implemented form of optical coating,” Appellant’s Br. 42, but this is unsupported attorney argument. The specification does not state, for example, that the hologram “emulsion” or “stack” referenced in this passage is an “optical coating layer,” and Cascades offers no evidence that a person of ordinary skill would have understood that a hologram can only be constructed using an “optical coating layer.” Once again, the specification does not contain the clear and unmistakable description that would be required to redefine “Fresnel polarizer,” and the Board was correct to determine “that the patent does not teach that every Fresnel polarizer must have an optical coating layer.” Appx15.¹³

¹³ Cascades also ignores Sony’s explanation below that “the ’347 patent teaches multiple ways of polarizing light, such as dielectric coatings, holograms, liquid crystal layers, and gratings, and does not exclude any ways of doing so. ([Appx209] at 46:19-67.)” Appx4224. Sony’s citation included not only the hologram embodiment discussed above but also a liquid crystal embodiment that does not include coatings: the use of “a cholesteric-nematic liquid crystal instead of a multi-layer dielectric coating.” Appx209 (46:55-58).

Cascades invokes expert testimony from both sides but none of the testimony supports a narrowing construction. Cascades' expert Mr. Bohannon did not discuss the hologram embodiment. *See* Appx1722 (¶ 46). Cascades also attempts to rely on Dr. Kahn's cross-examination testimony that a person of ordinary skill would perceive that "Fresnel polarizer" implies coatings, but the Board properly discredited Cascades' characterization of that testimony. That testimony came after Cascades walked Dr. Kahn through the specification passages describing configurations with coatings and not the hologram embodiment. *See* Appx1491-1497 (Kahn Dep. at 68:5-74:10). The Board concluded that "the alleged admission related to disclosures in the '347 patent concerning optical coating embodiments, without addressing or questioning the witness about the above-noted disclosure concerning the alternative hologram embodiment." Appx15.¹⁴ Moreover, when Cascades asked Dr. Kahn about whether coatings are necessary for a Fresnel polarizer, he testified that he could "envision structures which would not have dielectric coatings. You could do a similar thing, albeit more expensively, with single crystals." Appx1679 (Kahn Dep. at 256:14-19).

¹⁴ This is one of several examples where the Board credited the testimony of Epson's and Sony's experts and did not credit the testimony of Cascades' expert Mr. Bohannon. *See* Appx23; Appx45-46.

B. Cascades’ Obviousness Arguments Regarding The “Fresnel Polarizer” Rely On Unclaimed Features And Should Be Rejected

The Board determined that Epson had demonstrated claims 48 and 69 are unpatentable for obviousness over the combination of Brandt and Sato, citing Epson’s submission that Figure 7 of Sato discloses a Fresnel polarizer (as construed by Epson and the Board) and rejecting each of the arguments that Cascades made below. Appx26-29. The Fresnel polarizer in Sato Figure 7 is element 108, containing prism pairs 108d and 108e which form a polarizing element 108 with a stepped sawtooth-like configuration. Appx842 (6:63-68); *see* Appx1074-1075 (¶¶ 173-175).

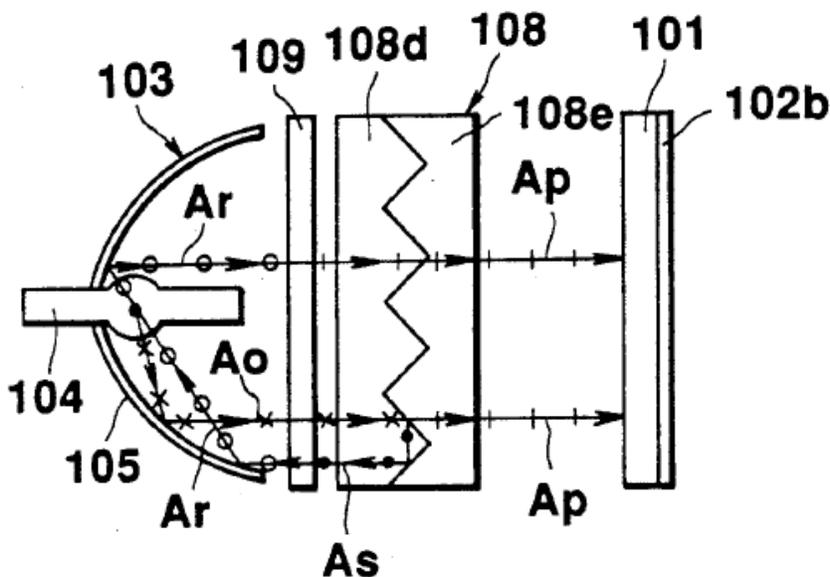


FIG. 7

On appeal, Cascades does not contest that Sato discloses a Fresnel polarizer under the Board’s construction. Instead, Cascades repeats its argument

that a Fresnel polarizer must have an “optical coating layer” and Sato does not describe the use of such coatings to construct a polarizer. Appellant’s Br. 57. If the Board’s construction is correct, then Cascades’ argument is irrelevant.¹⁵

Cascades also repeats its expert Mr. Bohannon’s assertion, discussing the entire apparatus shown in Sato’s Figure 7 and not just the polarizer 108, that “Sato relies on passing the available light several times through the optical elements of his system, which results in the eventual loss of more than 50% of the available light” and thus allegedly “wasting 50% of the light that reaches his device.” Appellant’s Br. 24. Cascades’ argument, once again, concerns an unclaimed feature. The operation being performed by the apparatus of Sato’s Figure 7 as a whole is polarization conversion to more effectively use light in an LCD system. Appx842-843 (6:23-52, 7:10-23); Appx1079 (¶ 182). But the Board correctly determined that claims 48 and 69 do not require polarization conversion,

¹⁵ Cascades also ignores the testimony of its expert Mr. Bohannon that persons of ordinary skill in 1994 knew how to use optical coatings to polarize light. Appx2052, Appx2151, Appx2156 (Bohannon Dep. at 171:9-17, 270:5-14, 275:4-9). Moreover, as Epson explained below, Appx1788-1789, U.S. Patent No. 2,403,731 to S.M. MacNeille, issued on July 9, 1946, discloses multi-layer optical coatings and provides detailed formulas that can be used to design the layers. Appx963-966 (1:25-30, 3:1-8:75); Appx992 (¶ 49). The ’347 Patent itself describes the use of multi-layer optical coatings as “known in the art.” Appx209 (45:22-23). The Final Written Decision did not address this uncontroverted evidence because the Board correctly determined that optical coatings are not a requirement, but Epson plans to rely on this evidence again on remand if the Court determines to adopt Cascades’ proposed construction.

Appx16, and Cascades does not challenge this on appeal.¹⁶

C. Cascades’ Arguments Regarding The “Means For Enhancing Brightness” Also Rely On Unclaimed Features And Should Be Rejected

As Cascades observes, the structure corresponding to the “means for enhancing brightness” in the Figure 65 embodiment is undisputed. Appellant’s Br. 43; *see* Appx12; Appx90-92; Appx1018-1019 (¶¶ 93-94). Cascades asserts that “the Board rejected Cascades’ argument that the *way* in which brightness enhancement is achieved includes the use of prisms,” Appellant’s Br. 19 (emphasis in original), 43, but this is incorrect. The Board, like Cascades, agreed with Epson’s identification of the structures in Figure 65 corresponding to the “means for enhancing brightness” and those structures included prisms. *See* Appx116.

Cascades also asserts that “[t]he “way” that brightness is enhanced is to capture essentially all of the light at the first lens array,’ and that, ‘the “result” of the Figure 65 structures is to be able to use all of the source light while still achieving uniformity by lighting corners and edges.’” Appellant’s Br. 43. This reprises Cascades’ argument that the function of the “means for focusing” in claim 29 is to eliminate light waste and achieve uniformity, and should be rejected for the same reasons. The Board correctly determined that “the challenged claims,”

¹⁶ Cascades’ argument that Sato does a poor job of polarization conversion is also unsupported. *See* Appx1790.

including claims 48 and 69, “do not require any particular degree of uniformity or light waste.” Appx21. The claimed function of the “means for enhancing brightness” is “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.” The function does not include capturing all or any specified portion of the light emanating from a light source and it does not include making the beam uniform. Therefore, as a matter of law, reducing light waste and promoting uniformity cannot be considered. *See Applied Med. Res.*, 448 F.3d at 1334; *JVW Enters.*, 424 F.3d at 1331. And even were they considered, Brandt teaches them both. *See supra* at 46-47.

IV. The Board’s Effective Filing Date Determination Was Correct; Cascades Waived Its Challenge To That Determination; And Cascades Does Not Identify Any Way Its Challenge Would Affect The Outcome

The sole reason the Board considered the effective filing date for the ’347 Patent was to determine the expiration date and thus which claim construction standard to apply: the “broadest reasonable construction” standard it uses for unexpired patents, or the *Phillips* standard it uses for expired patents. Appx4-5. The Board determined the patent term should be measured from the 1991 filing date of the ’596 Application and thus the patent had expired, and applied the *Phillips* standard. Appx4-7.

Cascades has waived its effective filing date challenge. As the Board determined in the *Sony* IPR, Cascades failed to challenge the Board's same effective filing date determination in its Patent Owner's Response to Sony's IPR Petition and thus waived this issue. Appx39. Cascades similarly waived this issue in the *Epson* IPR because the Board made the same expiration date determination in the Institution Decision in *Epson* and Cascades did not challenge it in the Patent Owner's Response or at oral argument. *See In re Nuvasive Inc.*, 842 F.3d 1376, 1380-81 (Fed. Cir. 2016) (finding waiver where "NuVasive challenged the public accessibility of the prior art references during the preliminary proceedings of the inter partes review, . . . but failed to challenge public accessibility during the trial phase") (cited by Board at Appx39). Cascades cites a brief that it submitted at the Board's request in November 2015, Appellant's Br. 57 (citing Appx1266-1278), but that was before the Board issued its Institution Decision with its effective filing date determination in December 2015, *see* Appx1283. And while Cascades listed the pre-institution briefing on the expiration date, along with all of the other submissions below, as matters for argument at the oral hearing, Appx1822, Cascades did not argue the effective filing date or expiration date at the hearing.

Even if the effective filing date challenge were preserved, it would not affect the outcome of this appeal. Cascades has not identified any way in which application of the "broadest reasonable construction" standard instead of

Phillips would affect the disputed claim constructions. Moreover, the only possible effect would be to broaden the constructions, and thus make proving obviousness over the prior art easier. As a matter of logic, the broadest reasonable construction cannot be narrower than the correct *Phillips* construction. *See also Facebook, Inc. v. Pragmatus AV, LLC*, 582 F. App'x 864, 869 (Fed. Cir. 2014) (nonprecedential) (“The broadest reasonable interpretation of a claim term may be the same as or broader than the construction of a term under the *Phillips* standard. But it cannot be narrower.”).

The Board's determination was correct. Cascades does not identify any error in the Board's application of the unambiguous statutory language to hold that the patent term is measured from the filing of the first application specifically referenced in the patent, namely the '596 Application. *See* Appx5-7. A specifically referenced earlier application “cannot be disregarded simply because [the patentee] subsequently found that the later filing date would be more advantageous. [The patentee] must accept the consequences as well as the potential benefits of the [related application] status of” later applications. *Abbot Labs. v. Novopharm Ltd.*, 104 F.3d 1305, 1308 (Fed Cir. 1997). This also serves the public notice function of patents by basing the expiration date on the face of the patent itself.

Cascades' attempt to obtain a Certificate of Correction should not delay this appeal. Cascades argues that determining the effective filing date is “premature” because proceedings on its attempt to obtain a Certificate of Correction to remove the reference to the '596 Application are pending. Appellant's Br. 58.¹⁷ But again, Cascades is silent on how resolution of the Certificate of Correction dispute would affect the Board's invalidation of its claims. That dispute is separate from and provides no basis for delaying resolution of this appeal, and indeed Cascades has not sought and would not be entitled to a stay of this appeal pending the decision on the Certificate of Correction.

To the extent that Cascades now asserts for the first time that the separate issue of what is the '347 Patent priority date “remains unsettled,” Appellant's Br. 58, that is incorrect. Cascades' prosecution disclaimer of priority to the 1991 filing date of the '596 Application was unequivocal: “The present invention was first disclosed in Applicant's U.S. patent application 08/223,479, filed April 4, 1994.” Appx641; *see also* Appx760. Cascades confirmed the disclaimer in its pre-institution submission to the Board below, stating that the

¹⁷ Cascades notes that the USPTO denied the request for a Certificate of Correction in 2015 and denied a Petition for Review in 2016. The pending “Petition for Reconsideration and Final Agency Action” was filed on November 7, 2016. Appellant's Br. 57-58.

applicant “expressly disclaimed any priority for the ’279 Application prior to April 4, 1994 (filing date for the ’479 Application).” Appx1268.

V. Cascades’ Constitutionality Challenge Is Contrary To This Court’s Precedent And Identifies No Violation Of Due Process

Separation Of Powers. Cascades seeks to relitigate the Court’s denial of its request for initial hearing en banc by arguing that under *Deckers Corp. v. United States*, 752 F.3d 949, 959 (Fed. Cir. 2014), the Supreme Court’s grant of *certiorari* in *Oil States Energy Services v. Greene’s Energy Group, LLC*, No. 16-712 (U.S. cert. granted June 12, 2017), removes any need for this Panel to follow the Panel decision in *MCM Portfolio LLC v. Hewlett-Packard Co.*, 812 F.3d 1284 (Fed. Cir. 2015). Appellant’s Br. 59. That is incorrect. *Deckers* states: “In this Circuit, a later panel is bound by the determinations of a prior panel, unless relieved of that obligation by an *en banc* order of the court or a decision of the Supreme Court.” *Id.* (emphasis added). Cascades offers no authority to suggest that the mere grant of *certiorari* is such a “decision of the Supreme Court,” and there is good reason for not treating a grant of *certiorari* as disturbing this Circuit’s well-settled practice. A decision to grant *certiorari* is not a decision on the merits, and the Supreme Court can and does dismiss cases at any time after granting *certiorari* without reaching the merits. *See, e.g., Pem Entities LLC v. Levin*, No. 16-492, 582 U.S. ___, 2017 WL 3429146 (U.S. Aug. 10, 2017) (dismissing writ of

certiorari as improvidently granted).¹⁸

Due Process.¹⁹ Cascades' due process attack on the Board's purported bias and lack of neutrality should also be rejected. "The indispensable ingredients of due process are notice and an opportunity to be heard by a disinterested decision-maker." *Abbott Labs. v. Cordis Corp.*, 710 F.3d 1318, 1328 (Fed. Cir. 2013). The Court held that these requirements were satisfied in *inter partes* reexamination and specifically cited the observation in *Patlex Corp. v. Mossinghoff*, 771 F.2d 480, 485-86 (Fed. Cir. 1985), that *ex parte* reexaminations are conducted by "disinterested experts." *Abbott Labs. v. Cordis*, 710 F.3d at 1328 (citing *Patlex II*, 771 F.2d at 485-86). There should be no dispute that the members of the Board are disinterested.

Cascades asserts that allowing the same Board panel to decide whether to institute an IPR and then rule on the merits risks "anchoring" bias. But it is "very typical for the members of administrative agencies to receive the results of investigations, to approve the filing of charges or formal complaints instituting

¹⁸ Cascades is also wrong to assert that *MCM* "incorrectly distinguished" *McCormick Harvesting Machine Co. v. Aultman*, 169 U.S. 606 (1898). See *Cascades Projection LLC v. Epson Am., Inc.*, Dkt. No. 55 at 7, 864 F.3d 1309 (Fed. Cir. 2017) (Dyk, J. concurring).

¹⁹ Cascades' "Statement of the Issues" also refers to the Seventh Amendment, Appellant's Br. 3, but Cascades does not present any argument under the Seventh Amendment.

enforcement proceedings, and then to participate in the ensuing hearings. This mode of procedure does not violate the Administrative Procedure Act, and it does not violate due process of law.” *Withrow v. Larkin*, 421 U.S. 35, 56-57 (1975). Moreover, “judges frequently try the same case more than once and decide identical issues each time, although these issues involve questions both of law and fact,” without violating due process. *See id.* at 49. Cascades offers no basis for departing from this settled precedent.

Cascades also speculates that the Board is incentivized to invalidate patents to attract more IPR filings, but one could as easily argue that the Board might be inclined to uphold more patents to attract more patent filings and thereby increase the size, importance and revenues of the USPTO as a whole. Such speculative institutional gain, in either direction, is not “‘so strong a motive’ to rule in a way that would aid the institution.” *Alpha Epsilon Phi Tau Chapter Hous. Ass’n v. City of Berkeley*, 114 F.3d 840, 844 (9th Cir. 1997) (quoting *Tumey v. Ohio*, 273 U.S. 510, 532 (1927)).

Cascades’ cited cases are extreme examples that do not apply here. In *Caperton v. A.T. Massey Coal Co.*, 556 U.S. 868, 873 (2009), a judge declined to recuse himself and then cast the deciding vote reversing a \$50 million verdict shortly after receiving more than \$3 million in campaign contributions from the CEO of the defendant. In *In re Murchison*, 349 U.S. 133, 138 (1955), a judge

served as a “one-man grand jury” that decided to prosecute a defendant for contempt, relying on “his own personal knowledge and impression of what had occurred in the grand jury room” that “could not be tested by adequate cross-examination,” and then presided over the contempt hearing. It is unsurprising that these scenarios were found to violate due process, but they do not support Cascades’ continuing attacks on the Board. In *Concrete Pipe & Products of California, Inc. v. Construction Laborers Pension Trust for Southern California*, 508 U.S. 602, 615-31 (1993), trustees who were personally liable for shortfalls determined how much a withdrawing employer was required to contribute to a pension fund – and even that was held not to violate due process. And there is no due process violation here.

CONCLUSION

For the foregoing reasons, Epson respectfully requests that the Court affirm the Patent Trial and Appeal Board’s Final Written Decision that claims 29, 30, 32, 33, 48 and 69 of the ’347 Patent are unpatentable.

Dated: August 25, 2017

Respectfully submitted,

/s/ David J. Ball

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**United States Court of Appeals
for the Federal Circuit**

Cascades Projection LLC v. Epson America, Inc, 2017-1517, -1518

CERTIFICATE OF SERVICE

I, Julian Hadiz, being duly sworn according to law and being over the age of 18, upon my oath depose and say that:

Counsel Press was retained by PAUL, WEISS, RIFKIND, WHARTON & GARRISON LLP, counsel for Appellee, Epson America, Inc., to print this document. I am an employee of Counsel Press.

On **August 25, 2017**, counsel has authorized me to electronically file the foregoing **Brief for Appellee Epson America, Inc.** with the Clerk of Court using the CM/ECF System, which will serve via e-mail notice of such filing to all counsel registered as CM/ECF users, including the following principal counsel for the other parties:

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Paper copies will also be mailed to the above principal counsel at the time paper copies are sent to the Court. Any counsel for Amicus Curiae, appearing at the time of this filing, we be served via CM/ECF email notice only.

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August 25, 2017

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**CERTIFICATE OF COMPLIANCE
WITH TYPE-VOLUME LIMITATION, TYPEFACE REQUIREMENTS,
AND TYPE STYLE REQUIREMENTS**

This brief complies with the type-volume limitation of Federal Circuit Rule 32(a). The brief contains 13,195 words, excluding parts of the brief exempted by Fed. R. App. P. 32(f) and Federal Circuit Rule 32(b). The word count includes the words counted by the Microsoft Word 2010 function and the words counted in the images.

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Dated: August 25, 2017

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