NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

POLYCOM, INC.,
Appellant

v.

FULLVIEW, INC.,
Appellee

2018-1829

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 95/001,876.

Decided: April 29, 2019

SALVATORE P. TAMBURO, Blank Rome LLP, Washington, DC, argued for appellant. Also represented by KEITH ALAN RUTHERFORD, KEITH E. LUTSCH, Houston, TX.

JOSEPH LAZAROFF, Law Offices of Joseph L. Lazaroff, Rowayton, CT, argued for appellee.

Before LOURIE, CLEVENGER, and WALLACH, *Circuit Judges*.

CLEVENGER, *Circuit Judge*.

Polycom, Inc. appeals a Patent Trial and Appeal Board ("the Board") *inter partes* reexamination decision, which held claims 1–21 and 25–39 of U.S. Patent No. 6,700,711 ("the '711 patent") not obvious under 35 U.S.C. § 103, and claims 1, 5, 9–15, 25, 29, and 33–39 not anticipated under 35 U.S.C. § 102. Because the Board correctly concluded that claims 1–21 and 25–39 of the '711 would not have been obvious, and because we hold that Polycom waived its anticipation argument, we *affirm*.

BACKGROUND

I

Cameras have long been capable of capturing an image that reflects a certain portion of the scene in front of them. The concept of telepresence, however, has fueled the desire to capture not just a portion of a scene, but, instead, the entire scene in which a camera is situated. Telepresence refers to providing sensory information, especially visual and audio information, from a given scene and relaying it back to a person at a remote site. Many businesses use telepresence, for instance, to enable their employees to attend meetings in remote locations without requiring the employee to physically travel to that location. In order to achieve telepresence, one or more cameras must be capable of capturing multiple views of a given scene, such that a person can mimic physically being in that scene by switching between the various views.

The use of more than one camera to capture a scene naturally creates challenges. Certain aspects of the scene may go uncaptured because the cameras are arranged at the remote scene in such a way that there are spaces between the fields of view they are capable of capturing. Clearly, a user, such as an employee participating in a remote meeting, would be hindered by the fact that he could not view the entire meeting scene.

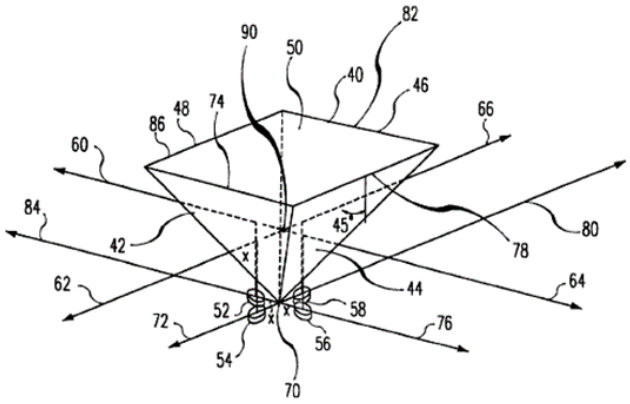
In more advanced telepresence systems, the views from two cameras can be used to simulate a third view from the points between those cameras, so that a user can view the entire scene. The third, simulated view is created by "interpolating" between the two actual camera views. '711 patent col. 1 ll. 55–60. While interpolation may allow the user to view the entire scene in which the cameras are situated, it also creates other problems. Such procedures produce irregularities in the simulated images due to the different viewing angles and viewing directions of the actual camera images. They also require a great amount of computational power, which in turn drives up the expense and drives down the efficiency of such systems.

The prior art recognized that one or more mirrors could be used with one or more cameras to capture the entire scene, thereby reducing or eliminating the need for interpolation. A problem that remained unresolved, however, was the existence of image artifacts in the resulting composite image caused by "portions of individual images being captured off edges of mirrors." *Id.* col. 2 ll. 29–30.

In an effort to solve the issues inherent in prior telepresence systems, the '711 patent describes using mirrors and multiple cameras to capture images of a scene and then merging those images to produce a composite, panoramic image that eliminates "at least a portion of a camera's field of view." *Id.* Abstract.

In one embodiment of the invention, the cameras are positioned around a polyhedron where each face of the polyhedron has a reflective surface. The cameras each view a different reflective face of the polyhedron as shown in Figure 2 below.

FIG. 2



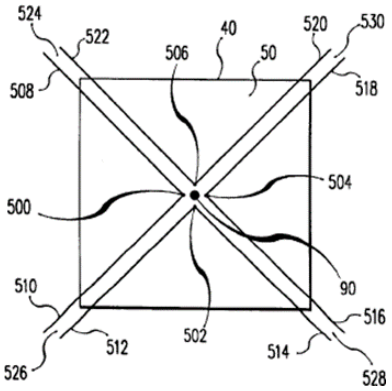
Cameras 52, 54, 56, and 58 are associated with reflective sides 48, 42, 44, and 46, respectively. The cameras all share a virtual optical center 90—the position from which the camera's field of view appears to originate—within the pyramid. The field of view of each camera—the reflection it views off of the reflective surface of the polyhedron—is merged with the individual fields of view of the other cameras and arranged to form a composite field of view, which is a continuous 360-degree view of an area when taken as a whole.

In another embodiment of the invention, the cameras are positioned around the pyramid "so that their effective optical centers are offset from each other. The offsets produce narrow blind regions that remove image distortions received from the edges of the pyramid's reflective surface." *Id.* col. 3 ll. 12–15.

Figure 14, which depicts the additional embodiment, is a top view of the pyramid arrangement shown in Figure 2. In reference to Figure 2, cameras 52, 54, 56, and 58 have been moved upward in the direction of base 50. As a result, virtual optical centers 500, 502, 504, and 506, which correspond to cameras 52, 54, 56, and 58, respectively, are moved away from virtual optical center 90. According to

the invention, it is desirable to move the cameras away from optical center 90 because then they do not capture images from the narrow planar shaped regions, 524, 526, 528, and 530, also called "blind regions," which include image artifacts created by the edges of the reflective polyhedron. Eliminating those regions from the cameras' fields of view alleviates the need for image processing, and, therefore, extensive computational power. The specification notes that "it is desirable to keep virtual optical centers 500, 502, 504, and 506 closely clustered so that planes 524, 526, 528, and 530 are only as thin as necessary to avoid edge artifacts" while minimizing any noticeable effect seen by the user. *Id.* col. 9 ll. 61-64.

FIG. 14



The '711 patent claims both a method and an apparatus. Claim 1 is illustrative of the claimed method and Claim 16 is illustrative of the claimed apparatus:

> 1. A method of producing a composite image with a plurality of sensors each having an individual field of view, comprising the steps of:
>
> > for at least one of the plurality of sensors, redirecting at least a portion of its individual field of view with a reflective area; and

merging images corresponding to the individual fields of view to produce the composite image having a corresponding field of view, wherein each one of at least two fields of view corresponding to images that are merged has a portion, where the images are merged, that has viewing directions that are substantially similar to the viewing directions of the other portion, and wherein the viewing directions within each one of such two portions appear to originate substantially from a point that is offset from the point for the other one of such two portions.

16. A viewing apparatus having a composite field of view, comprising:

at least two image sensors, each having an individual field of view;

at least one reflective area that redirects at least part of the individual field of view associated with one of the image sensors,

the individual fields of view of at least two image sensors being merged to produce the composite field of view, at least portions of each of the two individual merged fields of view having substantially similar viewing directions where they are merged, and the merged fields of view creating in the composite field of view at least one blind region that encompasses at least a portion of an edge of the reflective area and that lies between portions of two individual fields of view; and

a memory for storing data representative of said composite field of view electronically.

Id. col. 10 ll. 43–59, col. 11 ll. 40–57.

II

The relevant prior art references disclose improvements in image processing. One piece of prior art, an article entitled "Seamless Image-Connection Technique for a Multiple-Sensor Camera" ("Uehira"), describes a refinement to prior methods of improving HDTV picture resolution. Kazutake Uehira & Kazumi Komiya, *Seamless Image-Connection Technique for a Multiple-Sensor Camera*, E77-B IEICE Trans. Comm. 232 (1994). The prior art methods utilized multiple two-dimensional charge-coupled device ("CCD") sensors arrayed in a focal plane. Though the prior method reduced the cost of a high-resolution camera, it was not easy to join the images from the separate CCD sensors without losing part of the image in the process. The authors of Uehira solved that problem by using a pyramidal mirror to produce four separate focal planes that "prevent gaps along the joining lines of the combined image," as shown below in Figure 4. *Id.* at 232. "Each CCD sensor reads a quarter of the image and the four quarter-images are combined in to one HDTV picture." *Id.* The authors demonstrated that they could reduce image discontinuity at the joining lines and eliminate shading caused by the pyramidal mirror by using certain image-processing techniques, such as electrical correction and dark-and white-level correction.

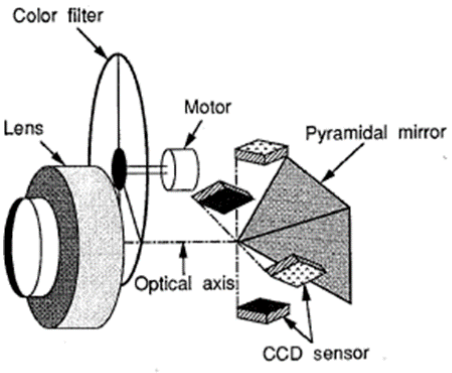


Fig. 4 Configuration of the optical system.

Another piece of prior art, U.S. Patent No. 5,444,478, entitled "Image Processing Method and Device for Constructing an Image from Adjacent Images" ("Lelong"), discloses a method of processing images to construct a target image from adjacent source images where the source and the target images have "substantially common view points." Lelong Abstract. Lelong, like the '711 patent, sought to improve the concept of telepresence, or as Lelong refers to it, "telemonitoring." *Id.* col. 1 ll. 28–31. Lelong wanted to create a device that could provide views to a user at a remote location that simulated the views seen by a stationary observer present at another location. For example, Lelong wanted a remote user to be able to see to the left and right, as well as above and below, an imaginary stationary observer at the scene.

To achieve that goal, Lelong's system requires that the combined fields of view of each camera capture all of the details of the scene "so that no object under surveillance is left out." *Id.* col. 6 ll. 37–38. To ensure that no aspects of a scene are left uncaptured, the cameras in Lelong are "arranged in such a way that their optical centers P, referred to as view points[,] coincide," *id.* col. 6 ll. 64–66, or are "very close" to coinciding, as shown in Figure 1G. *Id.* col. 6 l. 39. Unlike the system disclosed in the '711 patent, Lelong's system does not use a mirror.

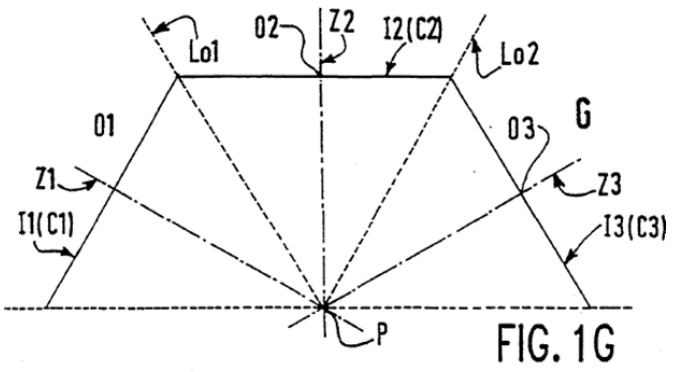


FIG. 1G

The cameras in Figure 1G, though not shown, are clustered around P, which denotes the "view point" or "optical center" of the cameras. *Id.* col. 6 ll. 65–66. Lelong explains that, in certain circumstances, the view points of the cameras need not be the same, i.e., "coincide physically." *Id.* col. 7 ll. 3–4. The patent assumes, however, that "the condition of coincidence is fulfilled sufficiently if the distance separating each of these view points is small as regards [sic] their distance to the filmed panoramic scene." *Id.* col 7 ll. 5–8. Stated another way, Lelong assumes that the condition of coincidence is fulfilled when the ratio between the distance to the panoramic scene and the distance separating the view points is equal to or greater than fifty. When the ratio is equal to or greater than fifty, Lelong explains that "it is not necessary to use costly optical mirror systems which are difficult to adjust for achieving a strict coincidence of the view points." *Id.* col. 7 ll. 13–15.

III

On January 26, 2012, Polycom filed a request for reexamination of the '711 patent. The Examiner granted Polycom's request in part, finding that it demonstrated a reasonable likelihood of prevailing on anticipation of claims 1–8, 12–21, 25–32, and 36–39 by Lelong and on obviousness of claims 1–5, 9–18, 25–29, 38, and 33–39 over Uehira. Obviousness over the combination of Lelong and Uehira was asserted as a ground for reexamination in Polycom's request, but the Examiner determined that "the request and claim charts . . . d[id] not make clear the limitations Lelong is lacking and the limitations for which Uehira is cited or how Lelong is modified by Uehira." J.A. 264. Thus, the Examiner declined to institute reexamination on that ground. In sum, the Examiner instituted reexamination of claims 1–21 and 25–39, but declined to institute reexamination with respect to claims 22–24 of the '711 patent.

On March 14, 2012, the Examiner issued a non-final office action rejecting claims 1–8, 12–21, 25–32, and 36–39 as anticipated by Lelong. The Examiner also rejected claims 1–5, 9–18, 25–29, 38, and 33–39 as anticipated by Uehira.[1]

Polycom petitioned for review of the partial denial of its reexamination request. The Director denied Polycom's petition.

The Examiner later withdrew the anticipation rejection based on Lelong, however, because Lelong "[did] not expressly or inherently describe 'at least one reflective area for redirecting at least a portion of the field of view associated with one of the image sensors.'" J.A. 516. The Examiner also noted that Lelong "did not make obvious 'redirecting at least a portion of its individual field of view with a reflective area'" because Lelong disclosed that optical mirrors were costly and difficult to use, and therefore taught away from the use of such mirrors. *Id.*

In the Action Closing Prosecution, the Examiner rejected claims 1, 5, 9–15, 25, 29, and 33–39 as anticipated by Uehira. The Examiner confirmed the patentability of claims 2–4, 6–8, 16–21, 26–28, and 30–32 by withdrawing the anticipation and obviousness rejections under Lelong and the anticipation rejection under Uehira. Polycom appealed the Examiner's decision not to reject claims 1–8, 12–21, 25–32, and 36–39 as anticipated by or obvious over Lelong. Fullview appealed the Examiner's rejection of claims 1, 5, 9–15, 25, 29, and 33–39 as anticipated by Uehira.

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[1] The Examiner did not reconcile its rejection for *anticipation* by Uehira with the fact that the Examiner had granted Polycom's request for reexamination on the basis that Uehira rendered *obvious* claims 1–5, 9–18, 25–29, 38, and 33–39.

In the Board's Decision on Appeal, it reversed the Examiner's rejection of claims 1, 5, 9–15, 25, 29, and 33–39 as anticipated by Uehira because it found that Uehira did not describe the following limitation: "wherein the viewing directions within each one of such two portions appear to originate substantially from a point that is offset from the point for the other one of such two portions." *Polycom , Inc. v. Fullview, Inc.*, Appeal No. 2014-3318, 2014 WL 4923553, at *4 (P.T.A.B. Sept. 29, 2014) ("Board Decision"). The Board also found that the Examiner erred in concluding that Lelong did not teach or suggest mirrors and that Lelong teaches away from the redirecting limitation of claim 1.

The Board then went on to reject claims 1–39 as obvious over the combination of Lelong and Uehira, a ground on which the Examiner refused to institute. Notably, the Board found that it was obvious to "employ Uehira's mirrors in Lelong's system to 'redirect[] at least a portion of [a sensor's] individual field of view with a reflective area' as recited in claim 1." *Id.* at *7.

The Board also found that a person of ordinary skill in the art ("POSA") would have known to arrange the optical elements taught by Lelong and Uehira "such that two sensors having substantially similar viewing directions produce images that appear to originate from offset view points by placing them at different distances from a reflective surface that redirects their individual fields of view toward the same scene." *Id.* The Board thus found claim 1 invalid over Lelong and Uehira.

The Board also found claim 2 obvious over the two references because Uehira disclosed "gaps along the joining lines of the combined image" that could be "prevented" when an image focused at the focal plane is wider than the corresponding area of an object. *Id.* at *3 (citing Uehira, *supra*, at 233). Additionally, Lelong disclosed "arranging sensors such that view points are not strictly coincident,

which one skilled in the art would realize creates gaps or overlaps." *Id.* at *8. Thus, the Board found claim 2 satisfied because the references disclosed "at least one blind region that encompasses at least a portion of an edge of a reflective area and that lies between the two portions of the two individual fields of view." *Id.*

Because the rest of the claims recited either varying the numbers of sensors or electronically merging and storing data, the Board found those claims were also obvious variations in view of Lelong and Uehira. The Board therefore entered that new ground of rejection and, under 37 C.F.R. § 41.77(b) (2004), provided Fullview with the option of reopening prosecution or requesting rehearing.

In response to the Board's decision, Fullview filed a request to reopen prosecution and presented new evidence in the form of two declarations: one of Arun Netravali ("Netravali Declaration") and one of Vishvjit S. Nalwa ("Nalwa Declaration"). Polycom filed comments responsive to Fullview's request and presented new evidence in the form of a declaration of Stephen D. Fantone ("Fantone Declaration"). After receiving the parties' submissions, the Board then remanded the proceeding to the Examiner to issue a determination that each rejection should be maintained or overcome by the new evidence.

The Examiner determined that the response by Fullview, along with the Netravali Declaration, overcame the new grounds of rejection by the Board. The Examiner found that it would not have been obvious to employ Uehira's mirrors in Lelong's system to redirect at least a portion of a sensor's individual field of view with a reflective area because, as the Netravali Declaration explained, "it is counterintuitive why anyone would use mirrors to make the viewpoints of multiple sensors coincide (as in Uehira) only to turn around and deliberately offset the viewpoints." J.A. 764. The Examiner also determined that "moving the sensors or mirrors of Uehira does not change

the sensor's viewpoints precisely because the 'field of view' of each sensor is in front of its image-forming lens, where it is out of reach of the mirrors of Uehira." J.A. 765.

The Examiner found that the combination of Lelong and Uehira also did not disclose the type of blind regions required by the '711 patent's claims because any blind regions in Uehira would be "wedge-shaped, each such wedge expanding from the common viewpoint shared by multiple CCD sensor[s], with the viewing directions on either side of such 'blind regions' not being substantially similar." J.A. 766. The Examiner also noted that Polycom never addressed how any alleged blind regions disclosed by Lelong "encompass a portion of an edge of a reflective area, as required by the claims." *Id.*

Following the Examiner's determination during the reopened prosecution, Fullview and Polycom filed responsive comments. The proceeding was then returned to the Board to reconsider the matter and issue a new decision. The Board affirmed the Examiner's non-adoption of the rejection of claims 1–39 as obvious over the combination of Lelong and Uehira. The Board noted that it was persuaded by the Netravali Declaration that Polycom failed to demonstrate "that Lelong (or Uehira) discloses or suggests the 'viewing directions' or 'portions' of at least two fields of view as recited in claim 1." J.A. 27. According to the Board, Polycom did not explain how the "view points" of Lelong both could be "substantially similar" yet "substantially . . . offset" from each other at the same time. J.A. 28.

Fullview then requested a rehearing of the Board's decision, arguing the Board abused its discretion by considering obviousness over Lelong and Uehira, and that the Board applied the wrong claim construction standard to an expired patent. Polycom also requested rehearing, claiming the Board's non-obviousness determination was not supported by substantial evidence. Polycom did not request rehearing of the Board's failure to find claims 1–8,

12–21, 25–32, and 36–39 anticipated over Lelong, despite the Board's holding that the Examiner erred in concluding the Lelong taught away from the use of mirrors.

First, the Board withdrew its rejection of claims 22–24 because, as both Fullview and Polycom argued, the Board did not have the authority to consider those claims as they were never subject to reexamination. The Board then considered and rejected Fullview's argument that the Board abused its discretion in entering a new ground of rejection. The Board also denied Polycom's request for a rehearing of the Board's decision to affirm the Examiner's non-adoption of the rejection of claims 1–21 and 25-39.

Polycom appeals from the Board's decision on rehearing. We have jurisdiction to consider Polycom's appeal under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

Polycom argues that the alleged inconsistencies in the Board's original decision, its decision after reopening prosecution, and its decision on rehearing warrant reversal. First, Polycom contends that the Board should have found the challenged claims of the '711 patent anticipated by Lelong after determining during the first Board hearing that, contrary to the Examiner's finding, Lelong disclosed mirrors. According to Polycom, the Examiner withdrew her anticipatory rejection because Lelong taught away from mirrors, and thus, the Board's finding that Lelong did not, in fact, teach away from mirrors should have ended the Board's analysis. Second, Polycom claims that the Board inextricably adopted a different reading of the '711 patent's claims and Lelong's disclosure than was laid out in its original decision to erroneously affirm the Examiner's nonobviousness determination.

The ultimate determination of obviousness is a question of law, but that determination is based on underlying factual findings. *See In re Gartside*, 203 F.3d 1305, 1316

(Fed. Cir. 2000). We review the Board's legal determinations de novo and any underlying factual determinations for substantial evidence. *In re Baxter Int'l, Inc.*, 678 F.3d 1357, 1361 (Fed. Cir. 2012). Anticipation, on the other hand, is strictly a question of fact subject to substantial evidence review. *Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052, 1068 (Fed. Cir. 2017).

I

Fullview contends that we need not address Polycom's anticipation argument because it was waived below. According to Fullview, Polycom should have included its anticipation argument in its request for rehearing, and, because it failed to do so, it cannot resurrect that argument now on appeal. We agree with Fullview.

Polycom argues that it is not required to first request rehearing before challenging a Board decision on appeal. To support its argument, Polycom cites a case which held that "[n]owhere does the statute granting parties the right to appeal a final written decision in an [inter partes review ('IPR')] require that the party first file a request for rehearing before the Board, especially a rehearing of the initial institution decision." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1377 (Fed. Cir. 2016). But that precedent does nothing to save Polycom's argument from waiver here.

In *Magnum*, the Patent and Trademark Office argued that the appellant had to raise its concerns to the Board in a request for rehearing of the initial institution decision, but we found that the appellant's issue was not with the Board's decision to institute the IPR on some grounds instead of others. *Id.* at 1373. Its issue, instead, was with certain statements that the Board made in that institution decision regarding the obviousness of the claimed invention which were later relied upon in the Board's final written decision. *Id.* at 1373-74. We thus found that, because those determinations were incorporated into the final written decision, which is directly appealable to this court, the

appellant did not need to make arguments regarding those statements in a request for rehearing of the institution decision. *Id.* at 1377.

Here, while Polycom could have directly appealed the Board's reopen decision to this Court, it instead decided to request rehearing of that decision. Because it made that strategic decision, it was required to include all of the "points believed to have been misapprehended or overlooked in rendering the Board's opinion reflecting its decision." 37 C.F.R. § 41.79 (2004). While it is true that the Board's reopen decision did not address arguments regarding anticipation over Lelong, the reopen decision "is deemed to incorporate the earlier decision[s], except for those portions specifically withdrawn." 37 C.F.R. § 41.77. The Board's original decision addressed the Examiner's decision to withdraw her anticipation rejection over Lelong. That aspect of the Board's original decision was never withdrawn. Thus, Polycom could have, and should have, raised the anticipation argument in its request for rehearing because this court should not be put in the position of reviewing an alleged error in the Board's reasoning that the Board itself was not given a chance to address when it considered Polycom's other arguments on rehearing. *See In re NuVasive, Inc.*, 842 F.3d 1376, 1380 (Fed. Cir. 2016) (explaining that such a course of action "deprives the court of 'the benefit of the [Board]'s informed judgment'" (citation omitted)). For those reasons, we find that Polycom waived its arguments regarding anticipation of the '711 patent over Lelong.

II

Polycom also challenges the Board's nonobviousness determination. First, Polycom contends that the Board misread claim 1 to require a substantial offset between the cameras. Second, Polycom argues that the Board incorrectly interpreted Lelong to teach that mirrors are not used when the offset is small. Third, Polycom claims that the

Board erred in its determination that, if Lelong taught a large offset, then the viewing directions would not be "substantially similar," as required by claim 1. Fourth, Polycom argues that the Board's incorrect reading of claim 1 to require a substantial offset also led to error in the Board's analysis of a POSA's motivation to combine Lelong and Uehira.

Polycom's first argument fails because, even if the Board incorrectly interpreted claim 1 to require that the offset between the points be substantial in its decision after the reopened prosecution, it rectified that error in its decision on rehearing. The Board assumed that the claimed offset was not substantial, and found that "Lelong explicitly disclose[d] that when the 'offset' of the 'view points' . . . is not substantial, then 'costly optical mirror systems' (or reflective areas) are not used." J.A. 10.

To counter the Board's determination, Polycom argues on appeal that the Board's rehearing decision inexplicably contradicts the Board's prior analysis of Lelong in its original decision. According to Polycom, the Board previously determined that Lelong did not teach away from the use of mirrors, but instead indicated that mirrors may not be necessary in certain situations.

Polycom mischaracterizes the Board's original decision. The Board disagreed with the Examiner that Lelong taught away from the claimed invention, "at least for applications where the distance to the *filmed scene* is relatively small," relative to the distance between the view points. *Polycom*, 2014 WL 4923553, at *5 (emphasis added). The Board also recognized, however, that "Lelong purport[ed] to render mirrors unnecessary in situations where 'the *distance separating each of these view points* is small as regards [sic] their distance to the filmed panoramic scene.'" *Id.* (emphasis added). The Board did not comment definitively on whether Lelong taught away from the use of mirrors when the distance separating the view

points was small as compared to their distance to the panoramic scene. *See id.* ("[W]ithout regard to whether Lelong's statement 'criticizes, discredits, or otherwise discourages' the use of mirrors in all contexts.").

Polycom's second argument is also unpersuasive because the Board's determination that Lelong does not teach the use of mirrors when the offset is small is supported by substantial evidence. First, despite Polycom's arguments to the contrary, the Board did not improperly read Lelong to be limited to a small offset in absolute terms. The Board noted "that Lelong . . . discloses that when the offset is not substantial (e.g., " 5cm or 10 cm [when] the distance to the panoramic scene is 5 m"), then 'costly optical mirror systems' are not used." J.A. 10. The Board thus clearly recognized that the offset's size was relative—not absolute—to the distance to the panoramic scene.

Moreover, as the Board's quoted language indicates, Lelong does, in fact, state that "it is not necessary to use costly optical mirror systems which are difficult to adjust for achieving a strict coincidence of the viewpoints" when the offset distance is small relative to the cameras' distance to the panoramic scene. Lelong col. 7 ll. 13–15. The Board found that Polycom did not explain why it would have been obvious to a POSA to incorporate a reflective area into Lelong despite that disclosure. Polycom's attempt to offer that missing explanation through its expert's declaration is unavailing.

On appeal, Polycom cites to Dr. Fantone's declaration for the proposition that, when the scene being captured is about two meters away, a POSA would understand that an optical mirror system could be used in Lelong's invention. The Board, however, clearly credited Fullview's expert's declaration, as opposed to the Fantone Declaration. *See* J.A. 26-27 (citing the Netravali Declaration as persuasive "that [Polycom] has not demonstrated sufficiently that Lelong (or Uehira) discloses or suggests the 'viewing

directions' of 'portions' of at least two fields of view as recited in claim 1"). "The Board has broad discretion as to the weight to give to declarations offered in the course of prosecution." *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004). Polycom does not present any persuasive evidence for why the Board abused its discretion in crediting the Netravali Declaration over the Fantone Declaration. Moreover, Dr. Fantone never explained how the "substantially similar" "viewing directions" from "offset" "points" limitation would be satisfied in the situation where a mirror system is used to capture a panoramic scene two meters away from the cameras. Thus, the Board did not abuse its discretion.

Polycom's third argument focuses on the Board's alleged error in finding that the viewing directions would not be substantially similar, as required by claim 1, if Lelong disclosed a large offset between the view points. Polycom claims that Figure 1G of Lelong is essentially the same as Figure 14 in the '711 patent. According to Polycom, Figure 14 demonstrates that, for example, "if the viewing directions are both pointing northeast when the offset (gap) is small, they are still pointing northeast (i.e., the same direction) when the offset (gap) is large." Appellant's Op. Br. 34. While the Board did not specifically address Polycom's argument in its decisions, that omission does not constitute reversible error. *See Yeda Research v. Mylan Pharm. Inc.*, 906 F.3d 1031, 1046 (Fed. Cir. 2018) ("[F]ailure to explicitly discuss every fleeting reference or minor argument does not alone establish that the Board did not consider it.").

Polycom cites no support for its argument, and, as Polycom admits, Figure 1G does not include the use of mirrors. Additionally, Fullview's expert's declaration, which the Board credited in its decision after the reopened prosecution, contradicted Polycom's unsupported attorney argument. *See* J.A. 716 ("[O]ffset (rather than coincident) viewpoints result in dissimilar viewing directions to any object and yet, according to the patent, viewing directions

from different view-points are substantially similar where the images are merged."); *see also Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) ("Attorney argument is not evidence.").

As for Polycom's fourth argument, it contends that Lelong does not characterize the offset between view points in absolute terms. Polycom therefore claims that the Board was wrong to limit Lelong's teaching to a small or a large offset distance. Because Lelong's teaching is not so limited, and because the claims require only an offset, Polycom contends that Lelong's teaching, in combination with Uehira's mirrors, should have been enough to render the '711 patent's claims obvious. Polycom's argument is not persuasive.

The Board read claim 1 to recite:

> [A] 'viewing direction of one portion of an image that is 'substantially similar' to a 'viewing direction' of a portion of another image and that the 'viewing direction of the one portion appears to 'originate' from a 'point' that is offset from the 'point' from which the other 'viewing direction' (of the portion of the other image) appears to originate.

J.A. 9. Polycom argued below that Lelong discloses cameras arranged in such a way that "their optical centers P, referred to as view points[,] coincide." J.A. 147. Polycom therefore claimed that Lelong discloses substantially similar viewing directions, as required by claim 1 of the '711 patent, because if the view points coincided then the viewing directions from those points must be substantially similar. Polycom also argued that Lelong's cameras, and thus its view points, need not coincide physically, and, instead, can be separated or offset from each other. Based on that argument, Polycom contended that the offsets claimed by the '711 patent were also disclosed in Lelong. As the Board recognized, those positions are clearly contradictory.

Missing from Polycom's evidence or arguments was an explanation of how the viewing directions of Lelong's cameras could be substantially similar, while simultaneously appearing to originate from points that are offset from each other.

Moreover, Fullview's expert's declaration, which the Board credited, explained the counterintuitive nature of "us[ing] mirrors to make the viewpoints of multiple sensors coincide . . . only to turn around and deliberately offset the viewpoints," such that the offset is perceptible to the viewer. J.A. 716. Lelong discloses the use of mirrors, as an alternative to its claimed non-mirrored optical system, to achieve "strict coincidence of view points," Lelong col. 7 l. 15, in situations where the "condition of coincidence" is not satisfied because the distance between the view points is large relative to the distance to the panoramic scene. *Id.* col. 7 l. 5. Polycom therefore failed to counter Fullview's evidence in two respects. Polycom did not show that a POSA would be motivated to use Uehira's mirror's in Lelong's optical system with insubstantial offsets. It also failed to show that a POSA would be motivated to use the mirrored optical system discussed in Lelong to arrive at the claimed invention, which requires the use of a mirror to achieve "substantially similar" viewing directions that appear to originate from offset, not coincident, view points. We thus affirm the Board's ultimate determination that neither Lelong nor Uehira disclosed or suggested "the claimed 'viewing directions' of 'portions' of fields of view or the substantial similarity or offsets of points of apparent origination of such viewing directions." J.A. 29.

III

Last, Fullview raises an argument in its opposition brief alleging that the Board abused its discretion in entering a new ground of rejection based on obviousness over Lelong and Uehira. At oral argument, however, Fullview made clear that argument was meant only as one in the

alternative if this court decided not to affirm the Board's nonobviousness finding. Oral Arg. at 25:54–26:21. Fullview further agreed to withdraw that argument if this court affirmed the Board's nonobviousness findings. *Id.* Because we affirm the Board on that ground, we need not reach Fullview's new-ground-of-rejection argument.

CONCLUSION

After careful analysis of the parties' arguments and the Board's determination, we *affirm* the Board's finding that claims 1–21 and 25–39 of the '711 patent would not have been obvious in view of the combination of Lelong and Uehira. We also find that Polycom waived its argument regarding anticipation for failing to raise it below.

AFFIRMED

COSTS

No costs.