

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BIO IMAGING SAS d/b/a VILBER,
Petitioner,
v.

SPECTRAL INSTRUMENTS IMAGING, LLC
Patent Owner.

IPR2023-00449
Patent 8,901,516 B2

Before GREGG I. ANDERSON, ROBERT J. WEINSCHENK, and
MICHAEL T. CYGAN, *Administrative Patent Judges*.

ANDERSON, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314; 37 C.F.R. § 42.4

I. INTRODUCTION

Bio Imaging SAS d/b/a Vilber (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–27 of U.S. Patent No. 8,901,516 B2 (Ex. 1001, “the ’516 patent”). Paper 1 (“Pet.”). Spectral Instruments Imaging, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314.

For the reasons explained below, we deny the Petition and do not institute an *inter partes* review.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies itself, Bio Imaging SAS d/b/a Vilber; Bio Imaging Asia PTE LTD, d/b/a Vilber Bio Imaging Asia; and Scintica Inc. as real parties-in-interest. Pet. 3. Patent Owner asserts it is the real party in interest. Paper 3, 2.

B. *Related Matters*

The ’516 patent is asserted in a litigation styled *Spectral Instruments Imaging, LLC vs. Scintica Inc.*, No. 4:22-cv-00043 (S.D. Tex.) (the “Spectral Litigation”). Pet. 3; Paper 3, 2. The parties identify no other related matters. *Id.*

C. *The ’516 Patent*

The application for the ’516 patent was filed August 31, 2011. Ex. 1001 at code 22.

1. *Background*

The ’516 patent relates to molecular imaging systems “used to capture various types or modes of images from an object or specimen being analyzed.” Ex. 1001, 1:20–22. Such imaging systems detect extremely low levels of light emitted by a bio-luminescence process, a fluorescence

process, or by a combination thereof. *Id.* at 1:24–28. The '516 patent purports to improve the cost and ease of use of such systems. *Id.* at 1:51–53.

2. The '516 Patent's Excitation Light Source Assembly

The '516 patent is directed to an “excitation light source assembly . . . of the type commonly used in molecular imaging applications.” Ex. 1001, 3:20–24. The '516 patent explains that captured light “may be generated by a bio-luminescence process, a fluorescence process,” or “reflected by the object.” *Id.* at 1:20–32. The excitation light source assembly illuminates an object on a stage to excite fluorescence in it, and the camera of the system images the fluorescence. *Id.* at 2:49–54, 3:24–39, 6:11–28, Figs. 1–2. The fluorescent materials in the specimen being photographed may be excited with light of various colors or wavelength bands. *Id.* at 4:43–46.

Figure 1 of the '516 patent is reproduced below.

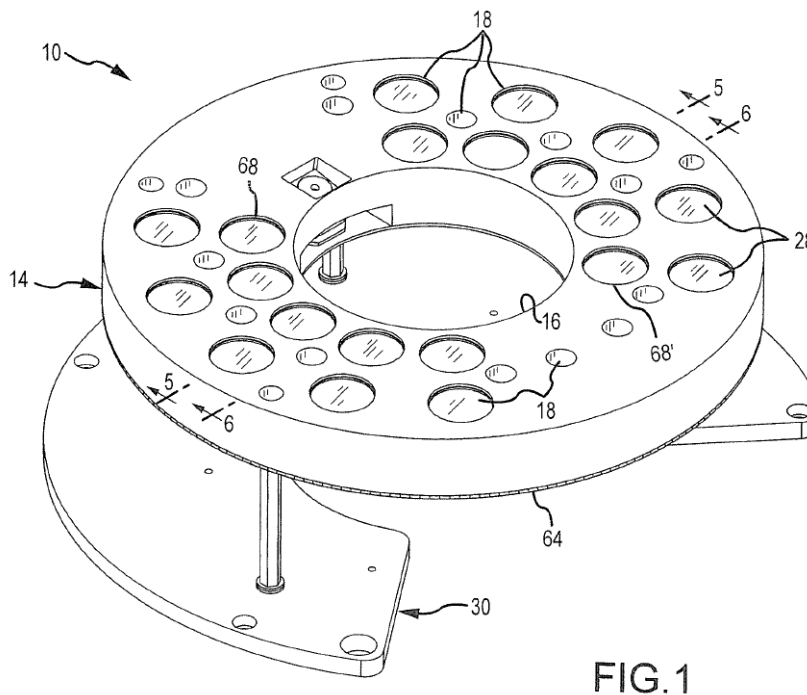


FIG. 1

Figure 1 is a perspective view of one embodiment of an excitation light source assembly of a molecular imaging system.

Ex. 1001, 6:8, 6:18–21. As shown in Figure 2, the base member 30 (shown in Fig. 1) mounts to a support structure 32 inside the main enclosure 48 so that a lens assembly 34 (shown in Figure 3) of camera 36 is “substantially aligned (i.e., concentric) . . . [with] central opening 16 of housing 14 of excitation light source assembly 10.” Ex. 1001, 4:20–34.

The ’516 patent explains that:

A significant advantage of the excitation light source assembly of the present invention is that it may be used to illuminate an object or specimen with light in multiple narrow bands or colors, thereby allowing a single excitation light source assembly to be used in imaging applications involving a wide range of fluorescent materials that are excited over a wide range of wavelengths.

Ex. 1001, 5:4–10.

D. Illustrative Claim

Claims 1–25 of the ’516 patent are challenged. Pet. 5–6. Claims 1, 14, and 25 are independent claims to an assembly. Claims 2–13 depend directly or indirectly from claim 1. Claims 15–24 depend directly or indirectly from claim 14. Claims 26 and 27 depend directly or indirectly from claim 25. Claim 1 is reproduced below as illustrative.

1[Preamble]¹ An excitation light source assembly, comprising:

[1a] a housing defining a central opening therein and a plurality of lamp receptacles surrounding the central opening, said housing being mountable to a support structure so that the central opening is aligned with a camera also mounted to the

¹ Petitioner uses letters added in brackets to identify specific limitations of each claim. See, e.g., Pet. 34 (limitation 1a). We adopt that format for purposes of this Decision.

support structure so that a field of view of the camera is unobstructed by said housing;

[1b] a light source positioned within each of the plurality of lamp receptacles, wherein at least one of said light sources comprises a narrow-band light source; and

[1c] a diffuser positioned within at least some of the plurality of lamp receptacles, each of said diffusers diffusing light produced by each of said light sources; and

[1d] a control system operatively connected to each of said light sources said control system operating selected ones of said light sources to provide a desired excitation illumination to an object within the field of view of said camera, the object fluorescing in response to the excitation illumination provided by said light sources.

Ex. 1001, 13:22–40.

E. Evidence of Record

This proceeding relies on the following prior art references and expert testimony:

Shubuya-ku, JP 2004-325174A, published November 18, 2004 (Ex. 1040, “Olympus”);

Frangioni, WO 2009/009671 A2, published January 15, 2009 (Ex. 1064, “Frangioni”);

Hansen, WO 01/77648 A1, published October 18, 2001 (Ex. 1060, “Hansen”);

Malmros, US 2003/0026762 A1, published February 6, 2003 (Ex. 1074, “Malmros”);

Brydegaard, *Broad-band multispectral microscope for imaging transmission spectroscopy employing an array of light-emitting*

diodes, American Journal of Physics (February 2009) (Ex. 1043, “Brydegaard”);

Syngene Europe and USA, *G:BOX Gel Documentation and Analysis* and GBox Specifications, stored by Archive.org as of Aug. 24, 2009, https://web.archive.org/web/20090824075803/http://www.syngene.com/2009_GB. (Ex. 1044 (documentation), Ex. 1045 (specification), “GBox”);

Petitioner relies on the Declaration of Joseph John Talghader, Ph.D. (Ex. 1004, “Talghader Declaration²”); and

Patent Owner relies on the Declaration of David W. Piston, Ph.D. (Ex. 2001, “Piston Declaration”).

F. Asserted Grounds

Claim(s) Challenged	35 U.S.C.³ §	Reference(s)/Basis
1, 3, 4, 7, 9–11, 14–17, 23, 25	102	Olympus
2, 5, 20	103	Olympus
6, 10–12, 18, 21, 22, 26	103	Olympus, Frangioni

² The Talghader Declaration includes as Appendix C a “Claim Construction Expert Report.” See Ex. 1004, 95–120. When referring to the Talghader Declaration claim construction testimony, we will refer to Talghader Appendix C followed by page number.

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. § 102 effective March 16, 2013. Because the challenged patent was filed prior to March 16, 2013, we refer to the prior version of Sections 102 and 103, but the findings and analysis in this Decision would be the same under the AIA version of the statute.

Claim(s) Challenged	35 U.S.C. ³ §	Reference(s)/Basis
8, 13, 19, 27	103	Olympus, Hansen/Malmros
24	103	Olympus, Brydegaard
1–23, 25–27	103	GBox, Olympus
24	103	GBox, Olympus, Brydegaard

III. DISCRETIONARY DENIAL

Both parties address discretionary denial under 35 U.S.C. § 314(a). *See* Pet. 81–82; Prelim. Resp. 5–12. Because we determine that Petitioner has not shown a reasonable likelihood that any claim of the ’516 patent is unpatentable, we need not reach the discretionary denial question.

IV. PATENTABILITY ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner proposes that

[a] person of ordinary skill in the art at the time of the alleged invention of the ’516 patent . . . should have an understanding of light sources, structures for holding and electrically connecting the light sources, optical devices such as filters and diffusers, cameras, and control systems to operate the light sources. A [person of ordinary skill in the art] would have at least a bachelor’s degree in engineering or physics and about two years of experience in imaging systems or studies or research relating to light sources used in imaging systems. Additional education may supplement practical experience and additional practical experience may supplement education.

Pet. 20 (citing Ex. 1004 ¶ 22). “For purposes of this Preliminary Response only, Patent Owner applies the skill level proposed by Petitioner.” Prelim. Resp. 12.

Petitioner’s proposal is consistent with the level of ordinary skill in the art reflected by the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d at 1579. On this record, the level of ordinary skill is neither in dispute nor dispositive of any challenge. For purposes of this Decision, we apply Petitioner’s articulation.

B. Claim Construction

A claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100 (2019). Thus, we apply the claim construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Petitioner identifies four terms for construction, which are listed below with Petitioner’s proposed construction. Pet. 21–28; subsections 1–4 below. Patent Owner elects to not respond to Petitioner’s claim construction proposals and “reserves the right to address in its Response those four claim constructions and any other claim construction issue should the Board decide to institute trial for this IPR.” Prelim. Resp. 12. We do not construe any of the four terms because we determine for other reasons that Petitioner has not shown a reasonable likelihood that any claim of the ’516 patent is unpatentable.

Patent Owner disputes specifically that Olympus discloses certain claim limitations in its argument. Prelim. Resp. 14–27. Principal among the terms Patent Owner disputes is “a camera . . . mounted to the/said support structure (‘support structure’ term)” as it appears in claims 1, 14 and 25, and that term is dispositive of our Decision. See, e.g., Sections IV.D.2–4 below. Because we find Petitioner has not sufficiently shown the “support structure” term, no other claim terms require construction.

“support structure” term (claims 1, 14 and 25)

Patent Owner disputes the showing made by Petitioner on the “support structure” term as to claim 1 and claims 14 and claim 25, which both parties compare to claim 1. See Prelim. Resp. 14–23. The claim language of claims 1, 14, and 25 all require that “a camera” is mounted to the “support structure.” See, e.g., Section II.D above (claim 1); see also Ex. 1001, 2:28–29.

The ’516 patent describes the support structure by saying that the “excitation light source assembly” is provided with a “suitable support structure 32.” Ex. 1001, 4:24–26. In addition, Figures 2 and 3 are referenced specifically. *Id.* Later in the Specification it is explained that

The support structure 32 is configured to receive camera 36, control system 40, as well as various other components and systems required for operation of the imaging system 12. However, because such various other components and systems that may be required or desired for the operation of the imaging system 12 are not required to understand or practice the present invention, such additional components and systems will not be described in further detail herein.

Id. at 6:25–32.

We draw two conclusions from the Specification. First, no specific support structure is necessary. Second, the “support structure” is “not

required to understand or practice the present invention.” With the preceding in mind, we determine that a “support structure” means a structure that is suitable to support the claimed “excitation light source assembly” and camera.

C. Legal Standard for Anticipation

In order for a prior art reference to serve as an anticipatory reference, it “must disclose every limitation of the claimed invention, either explicitly or inherently.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). We must analyze prior art references as a skilled artisan would. *See Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991), *overruled on other grounds by Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282 (Fed. Cir. 2009) (to anticipate, “[t]here must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention”). As the Federal Circuit has held:

This modest flexibility in the rule that “anticipation” requires that every element of the claims appear in a single reference accommodates situations where the common knowledge of technologists is not recorded in the reference; that is, where technological facts are known to those in the field of the invention, albeit not known to judges. It is not, however, a substitute for determination of patentability in terms of § 103.

Cont’l Can Co. USA v. Monsanto Co., 948 F.2d 1264, 1268–69 (Fed. Cir. 1991). Further, “[a] claim limitation is inherent . . . if it is necessarily present in the prior art, not merely probably or possibly present.” *Akamai Techs., Inc. v. Cable & Wireless*, 344 F.3d 1186, 1192 (Fed. Cir. 2003).

D. Anticipation of Claims 1, 3, 4, 7, 9–11, 14–17, 23, and 25 by Olympus

Petitioner alleges claims 1, 3, 4, 7, 9–11, 14–17, 23, and 25 would have been anticipated by Olympus. Pet. 5, 30–56. The Talghader Declaration is cited as support. Ex. 1004 ¶¶ 39–100.

1. Olympus (Ex. 1040)

Olympus teaches a fluorescence detection system that uses a plurality of “LED light source units 11” housed in a “light source holding member 9” to illuminate a sample on a table 1 to generate fluorescence in the sample. Ex. 1040, Abs., Fig. 1.

Figure 1 of Olympus is reproduced below.

[Fig. 1]

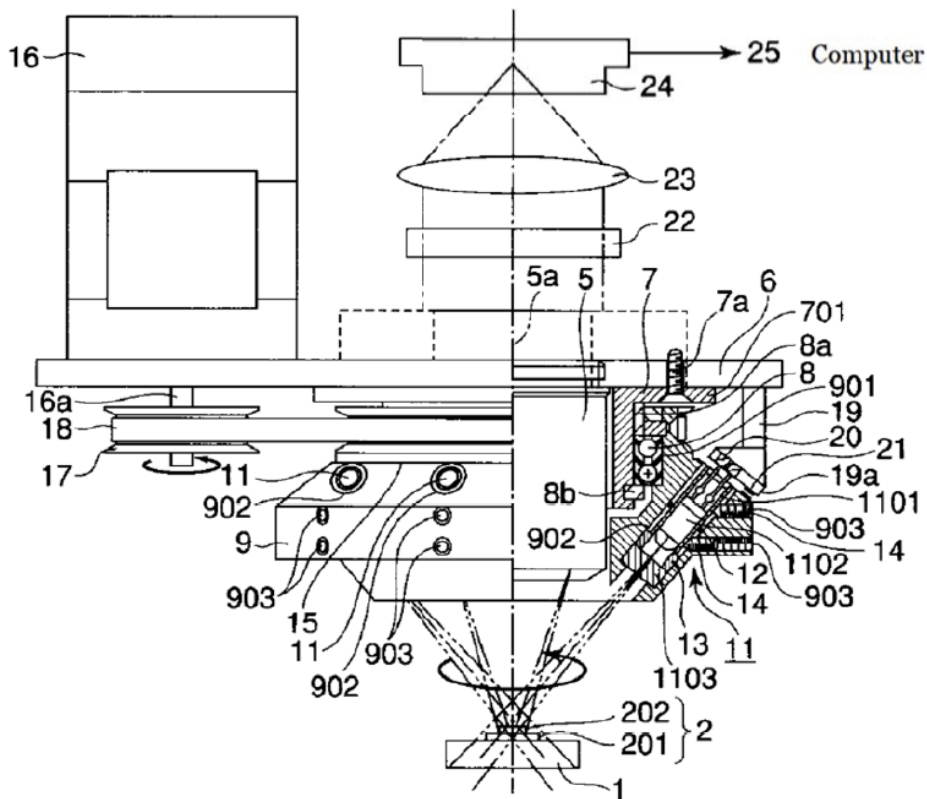


Figure 1 is a schematic of a fluorescence inspection device based on a microscope structure.

Ex. 1040 ¶ 216. The cross-section portion of Figure 1 shows the light source holding member 9 includes a central opening or “hole portion 901 formed along the optical axis 5 a.” *Id.* ¶ 53. An objective lens 5 is able to focus on the sample table 1 through the hole portion 901. *Id.* at Abs., ¶¶ 50, 52–53, 55–56. Figure 1 also shows “LED light source unit housing holes 902.” *Id.* ¶ 56. “On an optical axis 5 a on the rear side of the objective lens 5, a filter 22 which constitutes a light detecting means together with an objective lens 5, an imaging lens 23, and a photodetector 24 which is represented by a CCD camera are arranged.” *Id.* ¶ 66.

The LED light source unit in housing hole 902 includes an LED light source 1102 and a band-pass filter 1103 that “mainly passes the vicinity of the wavelength region of the light emitted from the LED light source 1102.” Ex. 1040, Abs., ¶¶ 45, 58, 200–209. Olympus seeks to produce even and efficient irradiation excitation light for “performing highly reliable fluorescence,” and for “uniformly irradiat[ing] over the entire surface of the sample” to receive “stable and reproducible fluorescence.” *Id.* at Abs., ¶ 116.

Figure 6 of Olympus is reproduced below.

[Fig. 6]

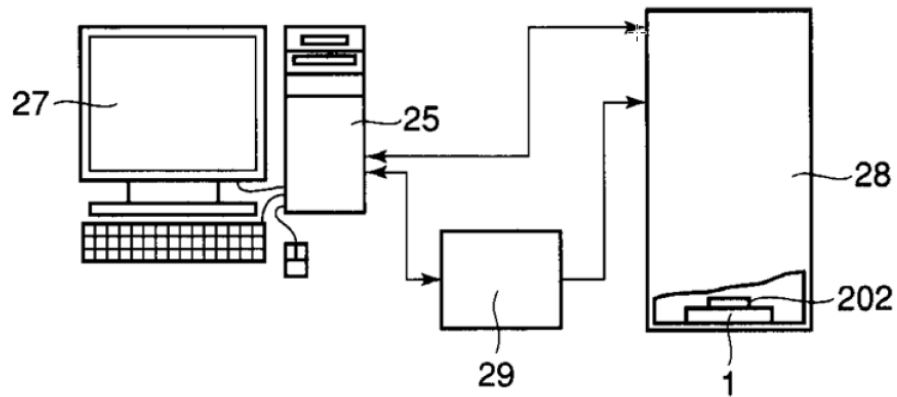


Figure 6 is a block diagram of the entire fluorescence inspection device.

Ex. 1005 ¶ 71. Referring to Figure 6, Olympus explains that “the fluorescent detection unit 28 and the LED light source unit 11 which are the main parts described in FIG. 1.” *Id.* ¶ 72.

Figure 22 of Olympus is reproduced below.

[Fig. 22]

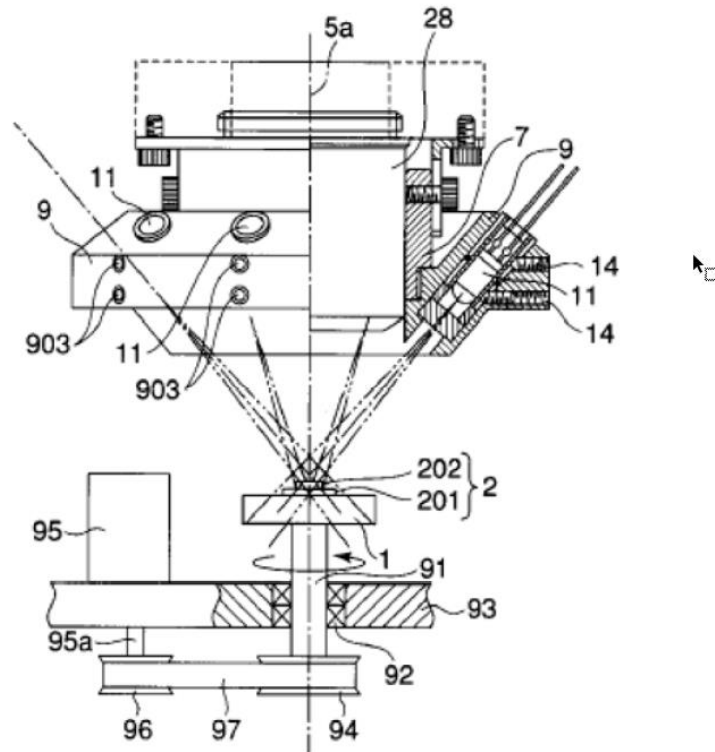


Figure 22 shows a schematic configuration of the Figure 6 embodiment and uses the same reference numerals as in Figure 1 for like parts.

Ex. 1040 ¶ 202. Although light source unit 11 is shown in Figure 22, neither the fluorescent detection unit 28 nor its number 28 are found in the figure.

2. Claim 1

Limitation 1a recites “a housing defining a central opening therein and a plurality of lamp receptacles surrounding the central opening, said housing being mountable to a support structure so that the central opening is aligned with a camera also mounted to the support structure so that a field of view of the camera is unobstructed by said housing.” The dispositive claim

language for this Decision is italicized, including the “support structure” term. As discussed in detail below, Patent Owner argues neither Olympus nor the Petition show a camera mounted to the “support structure.” See Prelim. Resp. 14–17. We agree.

For the “support structure,” Petitioner relies on Figure 1’s light source holding member 9 which is described as “*mountable to a support structure so that the central opening is aligned with a camera also mounted to the support structure so that a field of view of the camera is unobstructed by said housing.*” Pet. 35. Petitioner specifically cites to Olympus “base 6, shaft 7, bearing 8, C-ring 8b, and associated hardware to position the light source holding member 9 with respect to the camera and to maintain them above sample table 1.” *Id.* at 35 (citing Ex. 1040 ¶¶ 51, 64, 200–209, Figs. 1, 22; Ex. 1004 ¶¶ 64–66).

In addition to its preceding showing for limitation 1a, Petitioner cites to the embodiment of Figure 22 where the

light source holding member 9 is fixed and is mounted to a cylindrical fixed shaft 7 and associated hardware to position it with respect to the camera and to maintain them above sample table 1. The stationary light source holding member 9 of FIG. 22 has the same alignment of lens 5, sample tank 201, and light source holding member 9 along optical axis 5a.

Pet. 36 (citing Ex. 1040, ¶¶ 201–209, Fig. 22; Ex. 1004 ¶¶ 64–65).

Patent Owner contends the recited “support structure” of limitation 1a is not shown in Olympus, specifically that the “camera is also mounted to the [support structure].” Prelim. Resp. 14–17. Patent Owner contends that the Petition’s reliance on Olympus’ disclosure of a “base 6, shaft 7, bearing 8, C-ring 8b, and associated hardware” does not disclose the claimed “support structure” with a camera mounted to it. *Id.* at 14–15 (citing Pet. 34;

Ex. 2001 ¶¶ 29–31). Patent Owner notes the Olympus’ camera 24 is “not connected to anything in Figure 1 other than computer 25, which the Petition does not allege to be part of any ‘support structure.’” *Id.* at 15 (citing Pet. 36; Ex. 1004 ¶ 92; Ex. 2001 ¶ 21). Patent Owner argues that aligning the camera and light source holding member with the central opening, as shown in Olympus “does not establish that the photodetector/CCD camera 24 is *mounted* to the same support structure as the light source holding member 9.” *Id.* at 16 (citing Ex. 1040, Fig. 1 (annotated at Prelim. Resp. 16); Ex. 2001 ¶¶ 29–30); *see also id.* at 17 (same arguments applied to Ex. 1040, Fig. 22).

With respect to Figure 22 of Olympus, Patent Owner further argues that

the fact that the *light source holding member 9* is mounted to a cylindrical fixed shaft 7 to position it with respect to the camera *does not establish that the camera* is also mounted to the same cylindrical fixed shaft 7. Figure 22 does not even include the camera 24, much less demonstrate that it is attached to any support structure identified in the Petition.

Prelim. Resp. 17 (citing Ex. 2001 ¶¶ 29–30).

As we determined, the “support structure” requires that it is suitable to support the claimed “excitation light source assembly” *and* camera. *See* Section IV.B above. Petitioner points to structure of Figure 1 of Olympus (namely, base 6, shaft 7, bearing 8, C-ring 8b, and associated hardware) that is suitable to support the light source assembly but not the camera. Petitioner argues that “photodetector/CCD camera 24” is discussed in Olympus. *See* Pet. 35–36 (citing Ex. 1040 ¶¶ 50, 52, 53). But Petitioner does not show the camera is supported by the same structure in Figure 1 that supports the light source assembly.

For Figure 22's embodiment, Petitioner apparently contends the fluorescence detecting unit 28 is the claimed camera. *See* Pet. 36–37 (citing Ex. 1040 ¶¶ 200–210, Fig. 22 (annotated at Pet. 37); Ex. 1004 ¶ 65). Specifically, Petitioner argues “the embodiment of FIG. 22 (which uses the same reference numerals) light source holding member 9 is fixed and is mounted to a cylindrical fixed shaft 7 and associated hardware to position it *with respect to the camera* and to maintain them above sample table 1.” *Id.* at 36 (emphasis added). But Figure 22 and the associated description do not describe a “camera.” *See also* Prelim. Resp. 17 (citing Ex. 2001 ¶¶ 29–30) (arguing Figure 22's embodiment does not include a camera). Petitioner does not show that the fluorescent detector is the equivalent of a camera or that, if it is a “camera,” that it is supported by the light source holding member.

This missing proof is not met by the Petitioner's unsupported argument. The Talghader Declaration does not include testimony that the “support structure” mounts the claimed camera, instead pointing out that “[l]ens 5, lens 23, and photodetector/CCD camera 24 are on optical axis 5a.” Pet. 36 (citing Ex. 1004 ¶¶ 64–66). The Talghader Declaration specifically directed to limitation 1.a and the “support structure” term lacks any discussion or analysis of the “support structure” term. *See* Ex. 1004 ¶¶ 86–87).

Olympus does describe, in Figure 6, a fluorescence detection unit 28. Ex. 1040 ¶¶ 71–72, Fig. 6. However, because both Figure 6 and Figure 1 are described as illustrating the same embodiment, the camera in that embodiment is specifically portrayed in Figure 1, and Figure 6 does not indicate that it is mounted to the support structure. *Id.* ¶ 216 (page 29) (describing both Figures 1 and 6 as “according to a 1 embodiment”).

Although Figure 22 also contains a feature 28 that appears to abut light source holding member 9, Petitioner has not shown that Figure 22 necessarily indicates that a camera is mounted to light source holding member 9. First, Figure 22 is a different embodiment than the embodiment of Figures 1 and 6. *Id.* ¶ 216 (page 30) (describing Figure 22 as “a 6 embodiment”). Second, Figure 6 is a “block diagram” in which “the LED light source unit 11 [is] in the fluorescence detection unit 28.” *Id.* ¶ 72. That is a different configuration from Figure 22, in which the LED units 11 are separate from, and exterior to, feature 28. *Id.* ¶¶ 202, 203 (describing LED units 11), Fig. 22 (illustrating units 11 separately from, not within, feature 28). Additionally, the embodiments exhibit other inconsistencies, including whether the sample table 1 and sample 202 are exterior to feature 28 (Figure 22) or are enclosed within unit 28 (Figure 6).

In view of these inconsistencies, Petitioner does not explain how Olympus necessarily shows a camera mounted to a support structure. Neither embodiment 1 nor embodiment 6 explicitly shows such an arrangement, and Petitioner has not explained how a person having ordinary skill in the art would recognize any description of a combination of the two embodiments that requires mounting of a camera to a support structure.

On this record, we therefore conclude that Petitioner has not sufficiently shown that Olympus discloses limitation 1a. Having failed to sufficiently show all limitations of claim 1, as required to show anticipation, Petitioner has not shown a reasonable likelihood that claim 1 would have been anticipated by Olympus.

3. Claim 14

Independent claim 14 also has similar limitations to claim 1. Claim 14 recites “a camera mounted to said support structure.” *See* Pet. 49.

Petitioner relies on its showing for claim 1a for the “support structure” term of claim 14. *Id.*

For the same reasons as discussed above in connection with limitation 1a, the “support structure” term of claim 14 has not been shown and, the Petitioner has not shown all elements of claim 14 are disclosed in Olympus. Petitioner has not shown a reasonable likelihood that claim 14 would have been anticipated by Olympus.

4. Claim 25

Independent claim 25 is very similar to claim 1. The Petition cites back to its analysis in independent claim 1 for its showing for claim 25. Pet. 55. Limitation 25a is identical to limitation 1a analyzed above.

For the same reasons as discussed above in connection with limitation 1a, the “support structure” term of claim 25a has not been shown and, the Petitioner has not shown all elements of claim 25 are disclosed in Olympus. Petitioner has not shown a reasonable likelihood that claim 25 would have been anticipated by Olympus.

5. Claims 3, 4, 7, 9–11, 15–17, and 23

Having already decided one limitation of independent claims 1, 14 and 25 has not been shown, Petitioner has not shown a reasonable likelihood that the asserted claims depending therefrom, claims 3, 4, 7, 9–11, 15–17, and 23, would have been anticipated by Olympus.

E. Legal Standard for Obviousness

A patent claim is invalid as obvious if the differences between the claimed subject matter and the prior art are “such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103(a) (2018).

The ultimate determination of obviousness is a question of law, but that determination is based on underlying factual findings . . . The underlying factual findings include (1) “the scope and content of the prior art,” (2) “differences between the prior art and the claims at issue,” (3) “the level of ordinary skill in the pertinent art,” and (4) [when in evidence,] the presence of secondary considerations of nonobviousness such “as commercial success, long felt but unsolved needs, failure of others,” and unexpected results.

In re NuVasive, Inc., 842 F.3d 1376, 1381 (Fed. Cir. 2016) (citing *inter alia* *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966)).

“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Furthermore, in assessing the prior art, the Board must consider whether a person of ordinary skill would have been motivated to combine the prior art to achieve the claimed invention. *NuVasive*, 842 F.3d at 1381.

As the U.S. Court of Appeals for the Federal Circuit found, in quoting from the Supreme Court’s decision in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–19 (2007),

“because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known,” “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.”

Personal Web Technologies, LLC v. Apple, Inc., 848 F.3d 987, 991–92 (Fed. Cir. 2017).

F. Obviousness of Claims 1–23 and 25–27 GBox and Olympus

Petitioner alleges claims 1–23 and 25–27 would have been obvious over GBox and Olympus. Pet. 6, 75–80. The Talghader Declaration is cited as support. Ex. 1004 ¶¶ 149–155.

1. GBox (Ex. 1044)

GBox is an imaging system that can be used for “all fluorescence and chemiluminescence applications” and the user can tailor its system specifically to its needs from a selection of cameras, lenses, filters and lighting options. Ex. 1044, 2. GBox is designed to work with a computer to “control the camera/lenses, lighting and darkroom functions.” *Id.* at 3. GBox provides an LED lighting module for “advanced fluorescence applications,” including in-vivo fluorescence applications. *Id.* at 4. GBox includes lenses that are “essential for . . . low light level fluorescence applications” in a rectangular “[f]ully light tight darkroom.” *Id.* at 5. GBox also includes overhead white lighting with optional 254nm and 365nm UV light options. *Id.* at 7.

2. Olympus (Ex. 1040)

Olympus is described in Section IV.D.1 above.

3. Claims 1, 14, and 25

Petitioner cites GBox primarily in response to an argument Patent Owner does not make here, a “main enclosure” argument. Pet. 79. For all other claim limitations for claims 1, 14, and 25 Petitioner argues they are “unpatentable for much [of] the same reasons” discussed above in connection with alleged anticipation by Olympus. *Id.* (citing Pet. 30–56). GBox is not relied on to show the “support structure.”

For the same reasons as discussed above regarding the “support structure” term of claims 1, 14, and 25, Petitioner has not shown all elements

of claims 1, 14, and 25 are taught or suggested by Olympus. Petitioner has not shown a reasonable likelihood that claims 1, 14, and 25 would have been obvious over GBox and Olympus.

4. Claims 2–13, 15–23 and 26–27

Having already decided one limitation of independent claims 1, 14 and 25 has not been shown, Petitioner has not shown a reasonable likelihood that dependent claims 2–13, 15–23 and 26–27 would have been obvious over GBox and Olympus.

G. Obviousness of Claims 2, 5, and 20 Over Olympus

Petitioner alleges dependent claims 2, 5, and 20 would have been obvious over Olympus. Pet. 5, 56–59. The Talghader Declaration is cited as support. Ex. 1004 ¶¶ 108–111.

1. Olympus (Ex. 1040)

Olympus is described in Section IV.D.1 above.

2. Claims 2, 5, and 20

Having already decided one limitation of independent claims 1 and 14 has not been disclosed by Olympus, Petitioner has not shown a reasonable likelihood that dependent claims 2, 5, and 20 would have been obvious over Olympus.

H. Obviousness of Claims 6, 10–12, 18, 21–22, and 26 over Olympus and Frangioni

Petitioner alleges claims 6, 10–12, 18, 21–22, and 26 would have been obvious over Olympus and Frangioni. Pet. 5, 59–68. The Talghader Declaration is cited as support. Ex. 1004 ¶¶ 112–134.

1. Olympus (Ex. 1040)

Olympus is described in Section IV.D.1 above.

2. Frangioni (Ex. 1064)

Frangioni teaches a plurality of LEDs in a system for “a wide range of lighting and imaging applications,” including an imaging system that illuminates a field with visible white light and an excitation light source while capturing a corresponding visible light image and a diagnostic image from a fluorescent dye or the like. Ex. 1064 ¶ 19.

3. Claims 6, 10–12, 18, 21–22, and 26

Having already decided one limitation of independent claims 1, 14 and 25 has not been shown, Petitioner has not shown a reasonable likelihood that dependent claims 6, 10–12, 18, 21–22, and 26 would have been obvious over Olympus and Frangioni, which is not relied on to show the “support structure.”

I. Obviousness of Claims 8, 13, 19, and 27 over Olympus and Hansen/Malmros

Petitioner alleges claims 8, 13, 19, and 27 would have been obvious over Olympus and either Hansen or Malmros. Pet. 5, 68–73. The Talghader Declaration is cited as support. Ex. 1004 ¶¶ 135–146.

1. Olympus (Ex. 1040)

Olympus is described in Section IV.D.1 above.

2. Hansen (Ex. 1060)

Hansen is directed to “an apparatus and a method for detecting the fluorescence of a sample, wherein the apparatus comprises [an] excitation light source located on the same side of the sample as the detecting means.” Ex. 1060, 1.

3. Malmros (Ex. 1074)

Malmros discusses an “imaging system” that includes an “LED assembly” and “camera lens.” Ex. 1074 ¶¶ 2, 51–53, Figs. 28–30. The light

sources used may be “broad-spectrum high intensity light sources, a filtered high intensity light source, specific wavelength lasers, or other light sources known to the skilled artisan.” *Id.* ¶ 94.

4. *Claims 8, 13, 19, and 27*

Having already decided one limitation of independent claims 1, 14 and 25 has not been shown, Petitioner has not shown a reasonable likelihood that dependent claims 8, 13, 19, and 27 would have been obvious over Olympus and Hansen/Malmros, which are not relied on to show the “support structure.”

J. *Obviousness of Claim 24 over Olympus and Brydegaard*

Petitioner alleges claim 24 would have been obvious over Olympus and Brydegaard. Pet. 6, 73–75. The Talghader Declaration is cited as support. Ex. 1004 ¶¶ 147–148.

1. *Olympus (Ex. 1040)*

Olympus is described in Section IV.D.1 above.

2. *Brydegaard (Ex. 1043)*

Brydegaard teaches the use of Delrin in the construction of optical systems. Ex. 1043, 4.

3. *Claim 24*

Having already decided one limitation of independent claim 14 has not been disclosed, Petitioner has not shown a reasonable likelihood that dependent claim 24 would have been obvious over Olympus and Brydegaard, which is not relied on to show the “support structure.”

K. *Obviousness of Claim 24 over GBox, Olympus and Brydegaard*

Petitioner alleges claim 24 would have been obvious over GBox, Olympus, and Brydegaard. Pet. 6, 81. The Talghader Declaration is cited as support. Ex. 1003 ¶¶ 147–148.

1. GBox (Ex. 1044)

GBox is described in Section IV.F.1 above.

2. Olympus (Ex. 1040)

Olympus is described in Section IV.D.1 above.

3. Brydegaard (Ex. 1043)

Brydegaard teaches the use of Delrin in the construction of optical systems. Ex. 1043, 4.

4. Claim 24

Having already decided one limitation of independent claim 14 has not been shown, Petitioner has not shown a reasonable likelihood that dependent claim 24 would have been obvious over GBox, Olympus and Brydegaard, which is not relied on to show the “support structure.”

V. CONCLUSION

Petitioner has not shown a reasonable likelihood that claims 1, 3, 4, 7, 9–11, 14–17, 23, and 25 would have been anticipated by Olympus.

Petitioner has not shown a reasonable likelihood that claims 1–23 and 25–27 would have been obvious over GBox and Olympus.

Petitioner has not shown a reasonable likelihood that claims 2, 5, and 20 would have been obvious over Olympus.

Petitioner has not shown a reasonable likelihood that claims 6, 10–12, 18, 21–22, and 26 would have been obvious over Olympus and Frangioni.

Petitioner has not shown a reasonable likelihood that claims 8, 13, 19, and 27 would have been obvious over Olympus and Hansen/Malmros.

Petitioner has not shown a reasonable likelihood that claim 24 would have been obvious over Olympus and Brydegaard.

Petitioner has not shown a reasonable likelihood that claim 24 would have been obvious over GBox, Olympus, and Brydegaard.

VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that *inter partes* review is not instituted with respect to any grounds of unpatentability raised in the Petition.

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