

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MERCEDES-BENZ USA, LLC
Petitioner,

v.

YECHEZKAL EVAN SPERO
Patent Owner.

U.S. Patent No. 10,894,503 to Spero

Case No: IPR2023-01027

**PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION
FOR *INTER PARTES* REVIEW UNDER 37 C.F.R. § 42.107**

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List of Exhibits

Exhibit No.	Description	Identifier
2001	Declaration of Matthew A. Turk, PhD	Turk Decl.
2002	Curriculum Vitae of Matthew A. Turk, PhD	Turk CV
2003	Best Practices and FAQs for Filing Requests for Reexamination Compliant with 37 CFR 1.510 and 1.915, PTAB, May 2010	Best Practices
2004	Intentionally left blank	
2005	Intentionally left blank	
2006	U.S. Published Patent Application US2003/0137849A1 to Alden, Prosecution History in the U.S. Patent and Trademark Office	Alden Prosecution History

I. Introduction

Pursuant to 37 C.F.R. § 42.107, Patent Owner, Yechezkal Evan Spero (“Patent Owner”), submits the following Preliminary Response (“Preliminary Response”) to the Petition for *Inter Partes* Review filed by Mercedes-Benz USA, LLC (“Petitioner”) that challenges Claims 37-70 (“Challenged Claims”) of U.S. Patent No. 10,894,503 (“the ’503 Patent”).

Patent Owner respectfully requests that the Patent Trial and Appeal Board (“the Board”) deny the Petition on every ground alleged by the Petitioner.

II. The Petition Fails to Meet the Statutory Threshold for *Inter Partes* Review

The Board may only grant a petition for *inter partes* review where “the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); 37 C.F.R. § 2.108(c). Petitioner bears the burden of showing that this statutory threshold has been met. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,765 (Aug. 14, 2012) [hereinafter “Practice Guide”] (“The Board . . . may institute a trial where the petitioner establishes that the standards for instituting the requested trial are met . . .”). If *inter partes* review is granted, Petitioner then has the burden of proving

unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e). As explained below, neither burden is met here.

As to Petitioner's claims of anticipation under 35 U.S.C. § 102, Petitioner must show where each claim limitation is found in a single reference, and the reference must enable one of skill in the field of the invention to make and use the claimed invention. *Merck & Co., Inc. v. Teva Pharmaceuticals USA, Inc.*, 347 F.3d 1367, 1372 (Fed. Cir. 2003); *Crown Packaging Technology, Inc. v. Ball Metal Beverage Container Corp.*, 635 F.3d 1373, 1383 (Fed. Cir. 2011) ("But disclosure of each element is not quite enough – [the Federal Circuit] has long held that '[a]nticipation requires the presence in a single prior art disclosure of a claimed invention arranged as in the claim.'" *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334-45 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).) Regarding its anticipation contentions, the applied reference relied upon by Petitioner is fatally ambiguous and its allegedly anticipatory disclosures are not enabled. As a result, Petitioner's anticipation arguments lack sufficient evidence, leaving Petitioner without a reasonable likelihood of prevailing as to any of the Challenged Claims.

Moreover, Petitioner's anticipation contentions are inadequate; they rely on a combination of incompatible elements picked from discrete embodiments in the Alden reference. "[T]he [prior art] reference must clearly and unequivocally

disclose the claimed [invention] or direct those skilled in the art to the [invention] without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference.’ *Net MoneyIN v. Verisign*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (citing *In re Arkley*, 455 F.2d 586, 587 (CCPA 1972)).” Yet picking, choosing, and combining embodiments from Alden that are not directly related to each other is exactly what Petitioner has done. However, Petitioner cannot simply contend that Alden allegedly includes elements that satisfy the features of the Challenged Claims. Instead, to demonstrate anticipation, Petitioner must show that Alden also arranges those elements comparably to those claims. Because Alden fails to do so, Petitioner’s anticipation contentions also fail.

Even for obviousness under 35 U.S.C. § 103, Petitioner must show where each claim limitation is found in the prior art. *See, e.g., Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1361 (Fed. Cir. 2012). Failure to do so defeats a claim of obviousness. (*Id.*) Here, the Alden reference relied upon by Petitioner lacks material features of all the independent claims. *See, e.g., Practice Guide*, 77 Fed. Reg. at 48,764. Additionally, Petitioner fails to offer a rationale to combine the different embodiments of Alden. Petitioner’s obviousness contentions lack the requisite specificity to explain why one of ordinary skill would have been motivated to combine those embodiments and how such a combination would have

worked. In short, Petitioner's alternative single-reference obviousness contentions are neither clearly articulated nor fully developed, again leaving Petitioner without a reasonable likelihood of prevailing as to any of the Challenged Claims.

Procedurally, the Petition should further be denied under § 314 because it lacks particularity. For Ground 1, except for statements that the primary reference discloses and renders obvious each claim, the Petition fails to specify the differences between its anticipation and obviousness assertions, resulting in vague and confusing arguments. This leaves both the Board and Patent Owner in a position where they must guess as to how the Petitioner is interpreting and applying the primary reference.

For these reasons, and others explained below, the Board should deny Petitioner's Petition for *inter partes* review.

III. Overview of the '503 Patent

The '503 Patent is directed to “a novel multi-light source approach to the design and construction of solid-state lighting fixtures (vs. solid state lamps), which is termed a ‘Digital Lighting Fixture’, due to the control of individual lighting element ‘digits’ to provide the ‘correct’ lighting solution for the situation at hand.” (Ex. 1001, 11:11-16.) The '503 Patent further explains that “[t]he terminology ‘digital’ as used herein refers to the discrete nature of the multiple LED lamps provided in the luminaire, whereby, ‘digital’ control results from the

The diagram illustrates a vehicle headlamp assembly. At the top, a "Cluster of LEDs" (282) is shown, which includes a row of LEDs (283) and a group of LEDs (284). Below this, a "Headlamp" (278) is depicted, containing a grid of LEDs (285) and a group of LEDs (286). A "Vehicle" (271) is shown at the bottom, with a headlamp assembly (270) mounted on its front. The headlamp assembly (270) includes a lens (291), a reflector (292), and a housing (293). The headlamp assembly (270) is connected to a power source (294) and a control unit (295). The headlamp assembly (270) is also connected to a cluster of LEDs (296) and a group of LEDs (297).

(Ex. 1001, Fig. 15, Annotated)

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it is possible to combine a task light having a very narrow ‘spot’ beam at the correct aiming with a general area lighting ‘flood’ beam into one fixture.” (*Id.*, 22:18-20; Ex. 2001, ¶24.)

More specifically, the ‘503 Patent describes methods of using a multi-LED light source to segment a field of view and deliver varied, optimized illumination to the different segments within the field of view based on the presence of a detected object therein, “covering a wide scope of applications”, including transportation. (Ex. 1001, 11:18-21, 4:20-24, 50:40-41; Ex. 2001, ¶25.)

In the context of headlights,

[a]dditional features can include an optional very narrow flashlight type of beam. . . Such a beam at the correct narrow aiming can continue to illuminate far ahead (in high beam) without blinding oncoming traffic. Analysis by a detector or an imaging system of the oncoming vehicles position (using its headlights for example) can be used to determine which exact aiming is the maximum allowable for any given traffic situation and road layout.

(Ex. 1001, 52:58-53:2; Ex. 2001, ¶26.)

Additionally, a spatially differentiated illumination pattern can be determined to differently illuminate segments of a field of view based on the detection of an object:

Using color and pattern recognition techniques it is possible to determine what is a sign. It is then possible to provide the equivalent of “task lighting” and use the controller and properly aimed SLS to follow and illuminate distant overhead and roadside signs for a longer time, yet not blind oncoming traffic due to the narrow beam.

(Ex. 1001, 53:3-8; Ex. 2001, ¶27.)

The claimed invention of the ’503 Patent is thus directed to multi-LED headlight systems that precisely determine anti-glaring illumination output to optimize illumination for the vehicle operator under a myriad of driving situations, whilst reducing glaring illumination for oncoming vehicles. (Ex. 2001, ¶28.)

IV. Level of Ordinary Skill

Patent Owner does not dispute Petitioner’s proposed skill level for a person of ordinary skill in the art (“POSA”). (Petition at 8-9.)

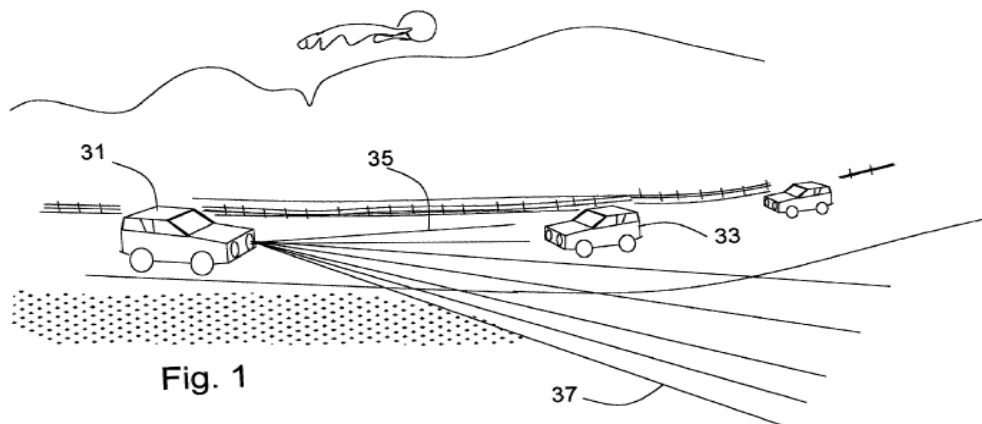
V. Claim Construction

No claim construction is necessary to deny institution because Patent Owner’s arguments for denial do not hinge on the outcome of an actual controversy about claim interpretation. *See Wellman, Inc. v. Eastman Chemical Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (citing *Vivid Technologies, Inc. v. American Science & Engineering, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’”). The deficiencies of the Petition are readily identifiable without

defining the bounds of any specific claim term or phrase. (*Id.*)

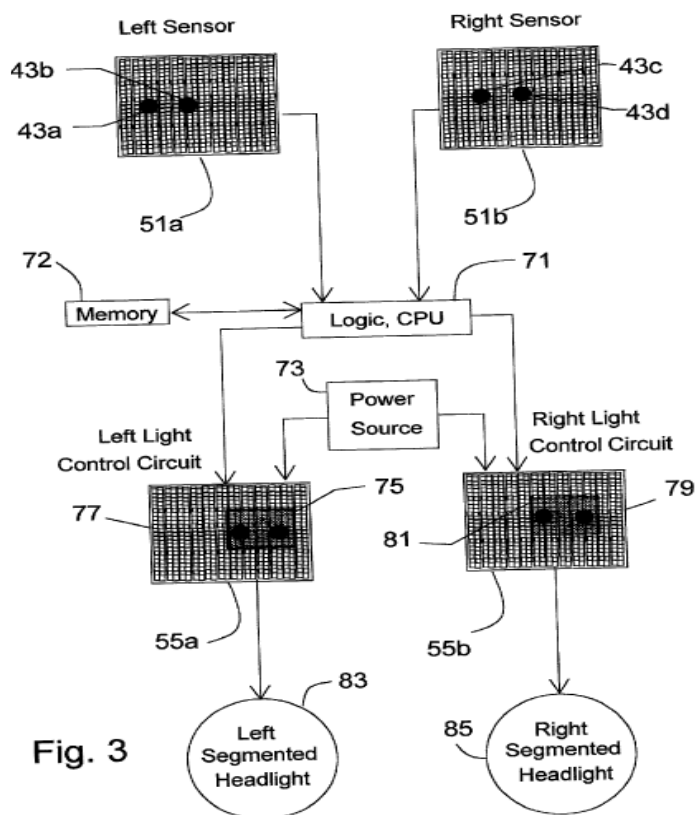
VI. The Primary Applied Reference: Alden

Alden is directed to controlling the distribution of light by a vehicle headlight. Alden's systems include headlights that produce multiple individually controllable beam segments of light, each illuminating a sector of the area ("distribution area") ahead of the vehicle equipped therewith ("equipped vehicle"). (Ex. 1005, ¶¶[0002, 0004-0006, 0008]; Ex. 2001, ¶32.)



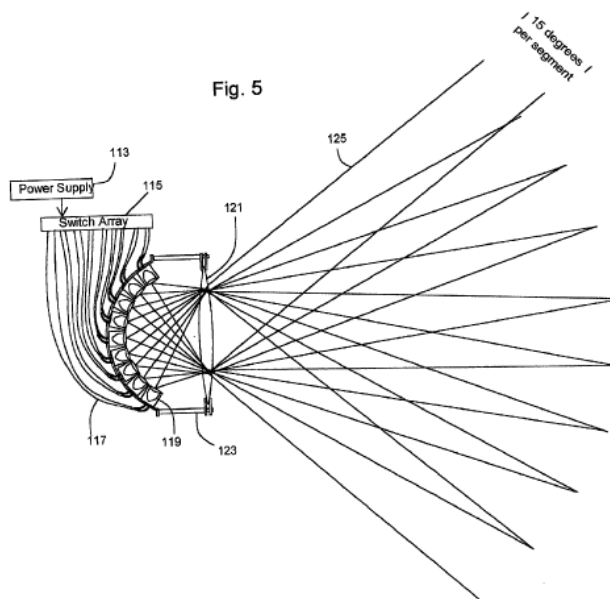
(Ex. 1005, FIGURE 1)

The systems also include sensors 51a, 51b for detecting incoming light received from the distribution area, which sensors 51a, 51b are divided into multiple sectors associated with sectors of the distribution area illuminated by the beam segments of the headlight of the equipped vehicle. (Ex. 1005, ¶¶[0027-0028], Fig. 4.; Ex. 2001, ¶33.) The systems further include a central processing unit (CPU) 71 that determines whether incoming light detected in each sector of the sensors 51a, 51b has an intensity that meets a threshold value. (*Id.*)



(Ex. 1005, FIGURE 3)

In one of the two types of embodiments described, illustrated in Figure 5, the headlight system dims the intensity of those beam segments produced by the headlight of an equipped vehicle that are incident on a sector or sectors in the distribution area. (Ex. 1005, ¶¶[0025, 0026, 0029]; Ex. 2001, ¶34.) In one example of this type of embodiment, shown in Figure 5, a headlight 123 employs a one-dimensional array of light emitting diode (LED) elements 119 and a convex lens 121 for directing the beam segment produced by each LED element 119 that illuminate different sectors of the distribution area. (*Id.*)

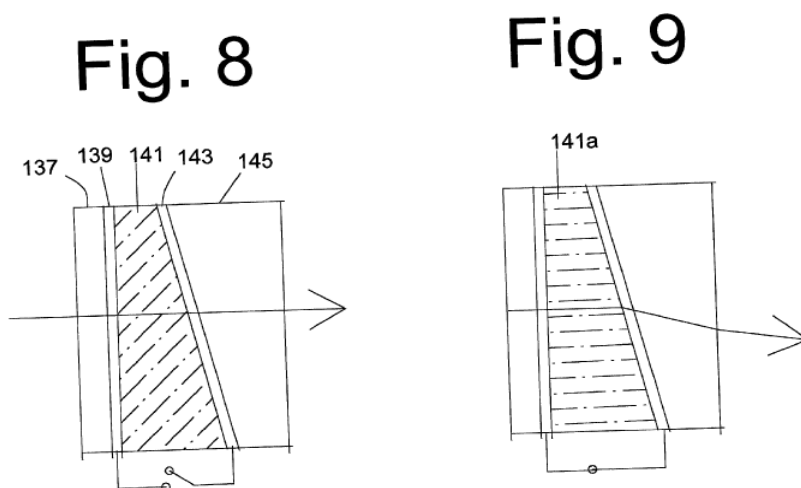


(Ex. 1005, FIGURE 5)

The CPU 71 determines the sector or sectors of the sensors 51a, 51b receiving incoming light from the distribution area that have a detected threshold intensity. (Ex. 1005, ¶¶0026-0029; Ex. 2001, ¶35.) In response, the CPU 71 controls the headlight 123 to dim those beam segments or segments produced by the individual LED elements 119 that illuminate the distribution area sector or sectors associated with any such sensor sectors. (*Id.*)

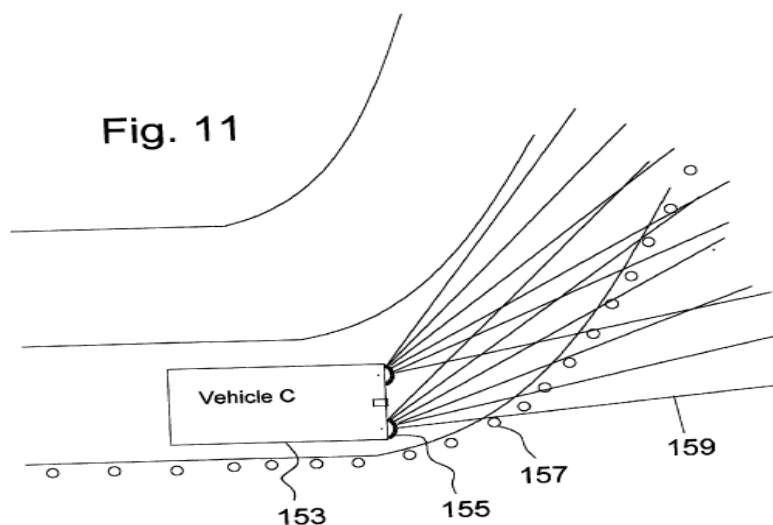
In the other of the two types of embodiments described, illustrated in Figures 8-15, the headlight system changes the direction of light produced by the headlights of an equipped vehicle. (Ex. 1005, ¶¶0032-0040; Ex. 2001, ¶36.) For example, light produced by the equipped vehicle headlights may be re-directed from a forward direction to a leftward or rightward direction to illuminate a turn in

the road, or from a forward direction to an upward or downward direction to illuminate an incline or decline in the road. In these embodiments, the headlight system employs a single point light source 129, a collimating reflector 131, electro-optical refractive elements 127, and a concave lens 133 to produce multiple light beam segments. (*Id.*)



(Ex. 1005, FIGURES 8, 9)

In one example of this second type of embodiment, the CPU 71 determines the sector or sectors of the sensors 51a, 51b receiving incoming light from the distribution area that have a detected threshold intensity. (Ex. 1005, ¶[0036], Figure 11; Ex. 2001, ¶37.) In response, the CPU 71 controls the electro-optical refractive elements 127 of the headlight to change the direction of the beam segments produced thereby to illuminate a turn in the road. (*Id.*)



(Ex. 1005, FIGURE 11)

Significantly, each of the two types of embodiments disclosed by Alden is discrete and includes features that are incompatible with the other type of embodiment. (Ex. 2001, ¶38.) For example, the headlight system embodiment described in connection with Figures 8-15 having electro-optical refractive elements 127 for changing the direction of headlight beam segments is designed to work with collimated light produced by single point light source 129, collimating reflector 131, and concave lens 133. (Ex. 1005, ¶¶[0036-0038]; Ex. 2001, ¶38.) However, the LED elements 119 of the headlight system embodiment described in connection with Figure 5 produce non-collimated light. (*Id.*) Non-collimated light cannot be directed in any meaningful fashion by the electro-optical refractive elements 127 of the headlight system embodiment described in connection with Figures 6-15. (*Id.*) Rather, non-collimated light would blend and have different

incident angles on those electro-optical refractive elements 127 thereby preventing any meaningful control of individual sectors as well as redirecting much of the non-collimated light they receive away from the desired segments of the distribution area. (*Id.*) Any combination of these different types of Alden's headlight system embodiments would therefore be incapable of meeting the basic requirements of a headlight, *i.e.*, effectively illuminating the area ahead of the equipped vehicle, let alone directing its emitted light in any meaningful fashion. (*Id.*) Indeed, rather than suggesting combinations of various features of its different headlight system embodiments, Alden only states generally that each of its two types of headlight system embodiments may employ the sensing elements 51a, 51b discussed in connection with Figures 3 and 4. (*Id.*)

Additionally, Alden is a theoretical reference that fails to enable much of its disclosure and is ambiguous in critical respects. (Ex. 1005, ¶[0027]; Ex. 2001, ¶[39].)¹ In that regard, the disclosure in Alden is directed to certain features of headlamp systems and general benefits such features and systems could provide

¹Notably, Alden contacted Gentex Corporation, an automotive industry supplier, regarding his segmented headlight system and was informed that Gentex's technical staff had determined the system to be "futuristic" and likely "years away from any practical use." (Ex. 2006 at 39; Ex. 2001, ¶[40].)

but lacks detailed explanations as to how those features and systems are practically implemented or how those benefits are realized. (*Id.*) For example, while Alden depicts control circuit switch array switches in Figure 3 for dimming certain headlight beam segments while leaving other beam segments on high intensity, it does not clearly describe or specifically demonstrate how such operations are accomplished using the one-dimensional array of LED elements 119 of headlight 123 illustrated in Figure 5. (*Id.*) In connection with Figure 4 Alden describes progressing through the sectors of sensors 51a, 51b of Figure 3 to detect incoming light, but it does not explain how those sensor sectors are mapped to either the one-dimensional array of LED elements 119 shown in Figure 5, the switches 115 for that array, or the distribution area sectors depicted therein. (*Id.*) In fact, Alden specifically states that the switch arrays of the light control circuits 55a, 55b shown in Figure 3 are merely for illustrative purposes. (*Id.*)

VII. The Board Should Deny Institution Because No Ground Has a Reasonable Likelihood of Success

As previously noted, the Petition challenges claims 37-70 (“Challenged Claims”). Claims 37, 59, and 65 are the only independent claims among the Challenged Claims. All other Challenged Claims depend directly or indirectly from one of those independent claims. (Petition at 5.)

For **Ground 1**, Petitioner attempts to rely on Alden to satisfy the elements of

claims 37-44, 47, 50-56, 58-62, 64, 65, 70. For **Ground 2**, Petitioner attempts to combine Alden (alone or in view of Stam) with Harbers to satisfy the elements of dependent claims 45, 68, and 69. For **Ground 3**, Petitioner attempts to combine Alden (alone or in view of Stam) with Bergkvist to satisfy the elements of dependent claim 46. For **Ground 4**, Petitioner attempts to combine Alden (alone or in view of Stam) with Beam to satisfy the elements of dependent claims 48, 57, and 63. For **Ground 5**, Petitioner attempts to combine Alden (alone or in view of Stam) with Kobayashi to satisfy the elements of dependent claim 49. For **Ground 6**, Petitioner attempts to combine Alden (alone or in view of Stam) with Braun to satisfy the elements of dependent claims 66 and 67.

Petitioner has failed to meet the requisite burden of showing a reasonable likelihood that it would prevail on any of these Grounds for at least the reason that Petitioner relies on the primary reference Alden to satisfy claim elements that Alden fails to teach.

A. A Reference that Does Not Disclose All Claim Features Cannot Anticipate

To demonstrate anticipation, Petitioner must show that Alden discloses each and every limitation of the claim, either expressly or inherently. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966); *Schering Corp. v. Geneva Pharmaceuticals, Inc.*, 339 F.3d 1373, 1379 (Fed. Cir. 2003); *Atlas Powder Co. v. Ireco, Inc.*, 190

F.3d 1342, 1346-1347 (Fed. Cir. 1999); *Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1269 (Fed. Cir. 1991). In that regard, a prior art reference does not anticipate if it must be modified to meet a disputed claim limitation. *Apple Inc. v. Corephotonics, Ltd.*, 861 F. App'x 443, 450 (Fed. Cir. 2021); *see also*, *Display Device Corp. v. Seoul Semiconductor Co.*, 909 F.3d 398, 405 (Fed. Cir. 2008). Similarly, ““inoperative embodiments cannot be anticipatory.”” *Apple Inc.*, 861 F. Appx. at 451 (quoting *In re Kehl*, 101 F.2d 193, 195 (CCPA 1939); *see also* *In re Dowty*, 118 F.2d 363, 366 (CCPA 1941) (“[A]n inoperative prior art device may not be relied upon as an anticipation.”” (quoting *In re Kehl*, 101 F.2d at 195))). Moreover, inherency requires a basis in fact and/or technical reasoning to reasonably support a determination that an allegedly inherent characteristic necessarily flows from the teaching of the applied reference. *See Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). That a certain result or characteristic may occur or be present in an applied reference is insufficient to establish inherency of that result or characteristic. *See In re Rijckaert*, 9 F.3d 1531, 1537 (Fed. Cir. 1993).

B. Combinations of Unrelated Embodiments from a Reference Cannot Anticipate

In addition, “it is not enough that the prior art reference . . . includes multiple, distinct teachings that [an ordinary] artisan might somehow combine to

achieve the claimed invention.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). Instead, the reference must “clearly and unequivocally disclose the claimed [invention] or direct those skilled in the art to the [invention] without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference.” *Id.* (quoting *In re Arkley*, 455 F.2d at 587 (emphasis in original)). Thus, anticipation cannot be proven merely by “multiple, distinct teachings in a single prior art document that the artisan might somehow combine to achieve the claimed invention.” *Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052, 1069 (Fed. Cir. 2017) (emphasis added). Instead, a reference may anticipate only if a POSITA “reading the reference, would at once envisage the claimed arrangement or combination.” *Id.*, 1068. That is, a single-reference obviousness ground requires that “it would have been obvious to modify that reference to arrive at the patented invention.” *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016).

C. An Ambiguous or Non-Enabling Reference Cannot Anticipate

Anticipation also requires that a single reference “describe the claimed invention *with sufficient precision and detail* to establish that the subject matter existed in the prior art.” *Wasica v. Continental Automotive*, 853 F.3d 1272, 1284 (Fed. Cir. 2017) (emphasis added); *see also, Verve, LLC v. Crane Cams, Inc.*, 311

F.3d 1116, 1120 (Fed. Cir. 2002). For this reason, as a matter of law, ambiguous references do not anticipate a claim. *See, e.g., W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554 (Fed. Cir. 1983) (refusing to find claims anticipated when the prior art references were “unacceptably vague”); *see also, In re Hughes*, 345 F.2d 184, 188 (CCPA 1965); *In re Turlay*, 304 F.2d 893, 899 (CCPA 1962) (“It is well established that an anticipation rejection cannot be predicated on an ambiguous reference.”).

To anticipate, a prior art reference must also “enable one of ordinary skill in the art to make the invention without undue experimentation.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009). That is, the claimed invention is not anticipated “if the allegedly anticipatory disclosures cited as prior art are not enabled.” *Elan Pharms, Inc. v. Mayo Foundation for Medical Education and Research*, 346 F.3d 1051, 1054 (Fed. Cir. 2003).

D. Ground 1: Alden Fails to Anticipate the Challenged Claims

1. Alden Fails to Anticipate Independent Claim 37

Petitioner contends that Alden teaches the following independent claim 37 features:

process the sensor data to **determine a light distribution pattern** for an adaptive headlight beam, such that a headlight beam adapted to the pattern substantially **illuminates a first subsection of the field-of-view including at least a portion of the second vehicle with an**

illuminance below a predefined threshold value, while the beam substantially illuminates at least the one or more second subsections of the field-of-view to either side of the first subsection with an illuminance above the predefined threshold value; and
instruct operation of at least two of the light clusters ***to create*** the **adapted headlight beam.**

(Petition at 18-22, 27-28, emphasis added.)

a. Alden is Fatally Ambiguous and Fails to Provide an Enabling Disclosure

Critically, however, Alden is fatally ambiguous regarding these claim features because it fails to disclose them clearly and unequivocally. Alden also fails to provide an enabling disclosure of these claim features because it does not disclose them with sufficient precision and detail to establish their existence as prior art.

Petitioner's anticipation contention concerning independent claim 37 relies on the headlight system embodiment of Figure 5 of Alden that includes a headlight 123 having LED elements 119 arranged in a one-dimensional array.² (Petition at

²The headlight system embodiment of Figure 5 is the only embodiment of Alden that involves multiple lights, as required by independent claim 37. In

13-15, 22-25.) Significantly, however, while Alden describes in connection with Figure 4 progressing through the two-dimensional arrays of sensors 51a, 51b shown in Figure 3 to detect incoming light (Ex. 1005, ¶¶[0027-0028]), it does not clearly describe or specifically demonstrate how those *two-dimensional arrays of sensors* are mapped to any of: (1) the *one-dimensional array of LED elements 119* shown in Figure 5; (2) the *switches 115 for that one-dimensional array of LED elements 119*; or (3) the *distribution area sectors ahead of the headlight 123*. (Ex. 2001, ¶45.)

Similarly, while Alden depicts two-dimensional control circuit switch arrays in Figure 3 for dimming certain LED elements 119 of headlight 123 while leaving others on high intensity (Ex. 1005, ¶[0027]), it does not clearly describe or specifically demonstrate how operation of such *two-dimensional switch arrays* is mapped to the *one-dimensional array of LED elements 119* of headlight 123 or the *switches 115 for that one-dimensional array of LED elements 119* illustrated in Figure 5. (Ex. 2001, ¶47.)

In that regard, Alden does not describe either the array of LED elements 119 or the switches 115 as multi-dimensional. Indeed, Alden indicates that LED contrast, the headlight system embodiment of Figures 6-15 of Alden involves a single point light source. (Ex. 1005, ¶[0029-0040].)

elements 119 are positioned along the focal point of the lens 121 in order to illuminate specific portions of the distribution area (Ex. 1005, ¶[0029]), with no explanation of how that could be accomplished with a multi-dimensional array of LEDs. (Ex. 2001, ¶48.) Alden also specifically states that the switch arrays of the light control circuits 55a, 55b shown in Figure 3 are merely for illustrative purposes. (Ex. 1005, ¶[0027]; Ex. 2001, ¶48.)

Alden thus fails to teach *how* the *one-dimensional array of LED elements 119* of headlight 123 depicted in Figure 5 *illuminates the distribution area sectors* shown therein based on light detected by the *two-dimensional sensor arrays* of sensors 51a, 51b depicted in Figure 3. (Ex. 2001, ¶49.) Similarly, Alden also fails to teach *how* the *one-dimensional array of LED elements 119 and the switches 115* of headlight 123 depicted in Figure 5 *illuminate the distribution area sectors* shown therein using the *two-dimensional switch arrays* depicted in Figure 3. (*Id.*) Consequently, Alden does not disclose the independent claim 37 features noted above clearly and unequivocally. Indeed, Alden fails to disclose such claim features with sufficient precision and detail to establish their existence as prior art. (Ex. 2001, ¶50.)

Alden is therefore fatally ambiguous and fails to provide an enabling

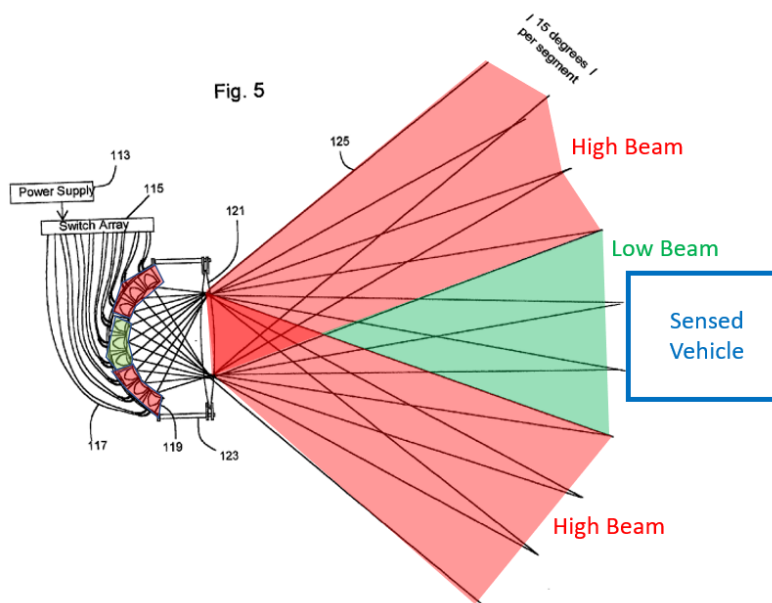
disclosure regarding at least the independent claim 37 features noted above.³ As a

³Alden also does not disclose clearly and unambiguously, nor describe with any precision or detail, the propagation of beam segments produced by headlight 123 beyond the endpoints illustrated in Figure 5. (Ex. 2001, ¶51.) In that regard, the beam segments of each LED element 119 exiting the lens 121 are illustrated in Figure 5 as collimated and propagating with a columnar shape, which would be unchanged with increasing distance from headlight 123. (Ex. 2001, ¶51.) However, Alden's contradictory description and notation in Figure 5 indicate that each such beam segment illuminates a 15° arc of the distribution area, which would continue to expand with increasing distance from headlight 123. (Ex. 1005, ¶[0029], Figure 5.) Thus, it is completely unclear how an oncoming vehicle at a properly scaled distance from headlight 123 (*i.e.*, well beyond the beam segment endpoints illustrated in Figure 5) would be illuminated by headlight 123, particularly in view of the statement in Alden that the intensity of light (high-beam/low-beam) produced by that headlight is determined by the distance between the equipped vehicle and the oncoming vehicle. (*Id.*, ¶¶[0027-0028]; Ex. 2001, ¶51.) Consequently, Alden is fatally ambiguous and fails to provide an enabling disclosure regarding the independent claim 37 features of a processor configured to determine a light distribution pattern for an adaptive headlight beam, such that a

result, Alden fails to anticipate independent claim 37. *In re Gleave*, 560 F.3d at 1334; *Elan Pharms. Inc.*, 346 F.3d at 1054; *Wasica*, 853 F.3d at 1284; *Verve, LLC*, 311 F.3d at 1120; *W.L. Gore*, 721 F.2d at 1554; *In re Hughes*, 345 F.2d at 188; *In re Turlay*, 304 F.2d at 899.

Petitioner also relies on its annotations of Figure 5 of Alden to support its contention. Petitioner's annotated version of Figure 5 is reproduced immediately below:

headlight beam adapted to the pattern substantially illuminates a first subsection of the field-of-view including at least a portion of the second vehicle with an illuminance below a predefined threshold value, while the beam substantially illuminates at least the one or more second subsections of the field-of-view to either side of the first subsection with an illuminance above the predefined threshold value, as claimed. (Ex. 1001, 100:15-26; Ex. 2001, ¶51, emphasis added.)



(Ex. 1005, FIGURE 5, Annotated by Petitioner)

Unlike elsewhere in its Petition, Petitioner has not here annotated Figure 5 to simply highlight elements of Alden's headlight system. Instead, with these annotations of Figure 5, Petitioner purports to show how headlight 123 operates in a specific scenario. However, none of the operations purportedly shown by these annotations of Figure 5 are expressly disclosed in Alden. (Ex. 2001, ¶54.) Petitioner's annotations are therefore mere speculation, *i.e.*, extrinsic evidence that cannot be used to fill gaps in Alden. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991) (*overruled on other grounds by Abbott Laboratories v. Sandoz, Inc.*, 566 F.3d 1282, 1293 (Fed. Cir. 2009)).

Moreover, in its annotations, Petitioner has clearly rendered the sensed oncoming vehicle shown using a completely inaccurate scale, with the width of

that vehicle being less than that of the headlight 123. (Petition at 24.) Properly scaled given the size of headlight 123, the sensed vehicle located at the distance shown in Petitioner's annotated version of Figure 5 would have a width that spans all the beam segments illuminating the distribution area. (Ex. 2001, ¶55.) According to this embodiment of Alden's headlight systems, this means that all the light LED elements 119 would be dimmed to produce low beam illumination. (Ex. 2001, ¶55.) As a result, Alden's system would fail to determine a light distribution pattern for an adaptive headlight beam, such that a headlight beam adapted to the pattern substantially illuminates a first subsection of the field-of-view including at least a portion of the second vehicle with an illuminance below a predefined threshold value, while the beam substantially illuminates at least the one or more second subsections of the field-of-view to either side of the first subsection with an illuminance above the predefined threshold value, as claimed.

It is only by rendering the annotated vehicle with a completely inaccurate scale relative to headlight 123 that Petitioner can pretend that Alden "teaches" these claim features. For these reasons, Alden again fails to provide an enabling disclosure of these independent claim 37 features and therefore again fails to anticipate. (Ex. 2001, ¶56.) *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009); *Elan Pharms.*, 346 F.3d at 1054.

Moreover, if the disclosure of Alden purportedly relating to these claim

features was clear, Petitioner's annotations of Figure 5 would be unnecessary. Petitioner's annotations are themselves a demonstration of Alden's ambiguity. Because it does not disclose these independent claim 37 features clearly and unequivocally, Alden is again fatally ambiguous and fails to anticipate. (Ex. 2001, ¶57.) *Wasica*, 853 F.3d at 1284; *Verve, LLC*, 311 F.3d at 1120; *W.L. Gore*, 721 F.2d at 1554; *In re Hughes*, 345 F.2d at 188; *In re Turlay*, 304 F.2d at 899.

Still further, Alden can only anticipate the claimed invention if it discloses every claim feature, either expressly or inherently. Once again, **none** of the operations purportedly shown by Petitioner's annotations of Figure 5 are expressly disclosed in Alden. (Ex. 2001, ¶58.) Thus, to anticipate these claim features, Petitioner's annotations must be inherently disclosed by Alden. Inherency requires a basis in fact and/or technical reasoning to reasonably support a determination that an allegedly inherent characteristic necessarily flows from the teaching of the applied reference. *See Ex parte Levy*, 17 USPQ2d at 1464. That a certain result or characteristic may occur or be present in an applied reference is insufficient to establish inherency of that result or characteristic. *See In re Rijckaert*, 9 F.3d at 1537.

As previously demonstrated, however, Petitioner's annotations of Figure 5 are clearly and completely inaccurate. As a result, those annotations do not and, indeed, cannot flow necessarily from the express disclosure in Alden. Petitioner's

annotations are therefore insufficient to demonstrate that Alden teaches these independent claim 37 features inherently. (Ex. 2001, ¶59.) Alden fails to anticipate. (*Id.*)

b. Petitioner’s Combinations of Unrelated Alden Embodiments Are Unsupported by Alden and Result in an Inoperative Device

Furthermore, to the extent Petitioner’s contentions of anticipation are based on picking, choosing, and/or combining various features of Alden’s different headlight system embodiments not directly related to each other, those contentions fail because any resulting headlight would be inoperative. (Petition at 16, 27, 34, 38; Ex. 2001, ¶60.) *Apple Inc.*, 861 F. App’x at 451 (“[I]noperative embodiments cannot be anticipatory.”); *see also In re Dowty*, 118 F.2d at 366 (“[A]n inoperative prior art device may not be relied upon as an anticipation.” (quoting *In re Kehl*, 101 F.2d at 195)).

In that regard, each of the two headlight system embodiments disclosed by Alden is discrete and includes features that are incompatible with the other embodiment. (Ex. 2001, ¶61.) More specifically, the headlight system embodiment described in Alden in connection with Figure 5 is directed to a headlight having a one-dimensional array of individually controlled LED elements 119 and a convex lens 121 for providing selective dimming and fixed direction (*i.e.*, forward) of non-collimated light produced by the LED elements 119. (Ex. 1005, ¶¶0025-0026,

0029, Figure 5]; Ex. 2001, ¶61.) In contrast, the headlight system embodiment described in Alden in connection with Figures 8-15 is directed to a headlight having a single point light source 129, a collimating reflector 131, electro-optical refractive elements 127, and a concave lens 133 for changing the direction (*i.e.*, forward, left, right, up, down) of multiple beams of columnated light produced by the single point light source 129 and collimating reflector 131. (Ex. 1005., ¶¶[0032-0040]; Ex. 2001, ¶61.)

Alden's non-collimated light producing LED elements 119 and convex lens 121 are incompatible with Alden's electro-optical refractive elements 127 and concave lens 133, which are designed to work with collimated light and, indeed, are inoperable with non-collimated light. (Ex. 2001, ¶62.) Non-collimated light cannot be directed in any meaningful fashion by the electro-optical refractive elements 127 of the headlight system embodiment described in connection with Figures 8-15 of Alden. (*Id.*) Rather, non-collimated light would blend and have different incident angles on those electro-optical refractive elements 127 thereby preventing any meaningful control of individual sectors as well as redirecting much of the non-collimated light they receive away from the desired segments of the distribution area. (*Id.*) The result of any combination thereof would therefore be incapable of meeting the basic requirements of a headlight, *i.e.*, effectively illuminating the area ahead of the equipped vehicle, let alone directing its emitted

light in any meaningful fashion. (*Id.*)

Moreover, in the context of anticipation, the question is not whether a prior art reference suggests a claim feature. Rather, the question is whether the reference discloses the claim feature. *AstraZeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1055 (Fed. Cir. 2011) (*citing In re Baxter Travenol Laboratories*, 952 F.2d 388, 390 (Fed. Cir. 1991)). Here, rather than suggesting combinations of various features of its two different headlight system embodiments, Alden does nothing more than state generally that each of those embodiments may employ the sensing elements discussed in connection with Figures 3 and 4. (Ex. 1005, ¶¶[0036-0038]; Ex. 2001, ¶63.)

Thus, Petitioner's contentions that Alden anticipates these independent claim features again fail because they are unsupported by Alden and any resulting headlight system based on a combination of incompatible features from Alden's discrete embodiments would be inoperative. *AstraZeneca*, 633 F.3d at 1055; *In re Baxter Travenol Labs.*, 952 F.2d at 390; *Apple*, 861 F. App'x 443; *In re Dowty*, 118 F.2d at 366; *In re Kehl*, 101 F.2d at 195.

Petitioner also contends that Alden not only anticipates these independent claim 37 features but also renders the claimed invention obvious. Yet nowhere in its petition does Petitioner explain this contention at any level of detail. Instead, Petitioner's obviousness contention is based on nothing more than cursory and

completely conclusory statements consisting of no more than a single sentence — essentially: “It’s obvious.”⁴ (Petition at 11, 22, 28, 32, 34, 35.)⁵

Petitioner has utterly failed to establish or even identify which elements are required to support an obviousness conclusion, including explaining *how* Alden must be modified (*i.e.*, identifying the differences between the claimed invention and Alden, or those claim elements not taught by but obvious in view of Alden) and explaining *why* a POSA would be motivated to so modify Alden (*i.e.*, providing some articulated reasoning with some rational underpinning to support an obviousness conclusion). *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) at 418; *Graham*, 383 U.S. at 17-18. In short, Petitioner cannot argue that Alden anticipates these claim features and then, when that argument proves insufficient,

⁴Petitioner’s obviousness contentions are also unsupported by its experts’ declaration, which merely parrots the completely conclusory contentions set forth in the Petition. (Ex. 1003, ¶¶50, 64, 74, 80, 84.)

⁵Petitioner also contends that independent claims 37, 59, and 65 are rendered obvious by Alden in view of Stam. (Petition at 11, 28, 34.) However, Petitioner cites Stam only in connection with those features of independent claims 37, 59, and 65 relating to a threshold illuminance and does not rely on Stam with respect to any other features of those independent claims. (*Id.*, 26-27, 33, 35.)

simply assert in the alternative — with what amounts to nothing more than a wink and a nod — that Alden renders the claimed invention and/or these claim features obvious.

In that regard, Petitioner cannot simply treat the various features of Alden’s embodiments as interchangeable, particularly for anticipation, but also for obviousness. Instead, Alden’s disclosure must support any contention of interchangeability. *Net MoneyIN*, 545 F.3d at 1371; *Microsoft*, 878 F.3d at 1068-1069. Extrinsic evidence, such as an expert declaration, on what Alden’s different embodiments could include or would accommodate are not the same as what Alden specifically discloses. *Scripps Clinic & Rsch Found.*, 927 F.2d at 1576 (*overruled on other grounds by Abbott Labs.*, 566 F.3d 1282); *see also*, *ActiveVideo Networks, Inc. v. Verizon Communications, Inc.*, 649 F.3d 1312, 1327 (Fed. Cir. 2012) (“The expert failed to explain how specific references could be combined, which combination(s) of elements in specific references would yield a predictable result, or how any specific combination would operate or read on the asserted claims,” such that the “expert’s testimony on obviousness was essentially a conclusory statement.”); *KSR Int’l*, 550 U.S. at 418 (“A patent composed of several elements is not proved obvious by merely demonstrating that each of its elements was, independently, known in the prior art.”). *Raytheon Technologies, Corp. v. General Electric Co.*, 993 F.3d 1374, 1381 (Fed. Cir. 2021) (“In the

absence of such other supporting evidence to enable a skilled artisan to make the claimed invention, a standalone §103 reference must enable the portions of its disclosure being relied upon.”).

Petitioner must provide a sufficient rationale to combine Alden’s different embodiments. Having failed to explain sufficiently *why* a POSA would have found it obvious to combine those embodiments, any contentions by Petitioner of obviousness based thereon fail. *KSR*, 550 U.S. at 418.

The requirements for demonstrating anticipation and obviousness are well-established and Petitioner bears the burden of proof for each. However, regarding anticipation, Petitioner has failed to cite a prior art reference that enables and unambiguously discloses, either expressly or inherently, the claimed invention. Regarding obviousness, Petitioner has offered nothing more than conclusory statements, failing to provide any articulated reasoning with a rational underpinning to support those statements.

Petitioner has had ample time and opportunity to meet its burdens of proof and, having failed to do so, should not now be assumed to have proffered arguments not expressly included in its Petition, nor be heard to plead for leave to file a reply to Patent Owner’s Preliminary Response when that Response has simply demonstrated the failure of Petitioner’s contentions rather than raised any new issues. Indeed, Petitioner is “master of its complaint.” *SAS Institute, Inc. v.*

Iancu, 138 S.Ct. 1348, 1355 (2018). The Board is constrained by the arguments and evidence presented and developed in the Petition and is not at liberty to “raise, address, and decide . . . theories never presented by [Petitioner] and not supported by record evidence.” *In re Magnum Oil Tools International, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016). Moreover, the lack of clarity in Petitioner’s asserted obviousness ground might enable Petitioner to deviate from the arguments initially presented in the Petition in a manner that may prejudice Patent Owner. *See Wasica*, 853 F.3d at 1286 (explaining that “[s]hifting arguments” during the course of a trial are “foreclosed by statute, [Federal Circuit] precedent, and Board guidelines”).

2. Alden Fails to Anticipate Independent Claim 59

Petitioner contends that Alden teaches the following independent claim 59 features:

process the sensor data to identify *a first subsection, of a field of view*, that includes at least a portion of the second vehicle;

determine light output for the headlight system that aims illumination at the first subsection, **the illumination aimed at the first subsection substantially resulting in light below a first predefined illuminance in the first subsection**, and that aims illumination at *one or more second subsections of the field of view to either side of the first subsection*, the illumination aimed at the one or more second subsections substantially resulting in light above

the first predefined illuminance in the one or more second subsections; and
instruct adjustment of one or more of the light sources to achieve the determined output.

(Petition at 31-33, emphasis added.)

However, for the same reasons set forth previously in connection with independent claim 37, Alden fails to disclose these independent claim 59 features clearly and unequivocally. Alden also does not disclose these independent claim 59 features with sufficient precision and detail to establish their existence as prior art. (See, Response, §VII.D.1., *supra*.)

Alden is therefore fatally ambiguous and fails to provide an enabling disclosure regarding at least these independent claim 59 features.⁶ As a result, and

⁶Once again, Alden also does not disclose clearly and unambiguously, nor describe with any precision or detail, the propagation of beam segments produced by headlight 123 beyond the endpoints illustrated in Figure 5. (Ex. 2001, ¶70.) In that regard, the beam segments of each LED element 119 exiting the lens 121 are illustrated in Figure 5 as collimated and propagating with a columnar shape, which would be unchanged with increasing distance from headlight 123. (Ex. 2001, ¶70.) However, Alden's contradictory description and notation in Figure 5 indicate that

for the same reasons set forth previously (*see*, Response, §VII.D.1., *supra*), Alden

each such beam segment illuminates a 15° arc of the distribution area, which would continue to expand with increasing distance from headlight 123. (Ex. 1005, ¶[0029], Figure 5.) Thus, it is completely unclear how an oncoming vehicle at a properly scaled distance from headlight 123 (i.e., well beyond the beam segment endpoints illustrated in Figure 5) would be illuminated by that headlight, particularly in view of the statement in Alden that the intensity of light (high-beam/low-beam) produced by that headlight is determined by the distance between the equipped vehicle and the oncoming vehicle. (*Id.*, ¶¶[0027-0028]; Ex. 2001, ¶70.) Consequently, for yet another reason, Alden is fatally ambiguous and fails to provide an enabling disclosure regarding the independent claim 59 features of a processor configured to determine light output for the headlight system that aims illumination at the first subsection, the **illumination** aimed at the first subsection substantially resulting in light below a first predefined illuminance in the first subsection, and that aims illumination at **one or more second subsections of the field of view to either side of the first subsection**, the illumination aimed at the one or more second subsections substantially resulting in light above the first predefined illuminance in the one or more second subsections, as claimed. (Ex. 2001, ¶70.)

fails to anticipate independent claim 59. *In re Gleave*, 560 F.3d at 1334; *Elan Pharms.*, 346 F.3d at 1054; *Wasica*, 853 F.3d at 1284; *Verve, LLC*, 311 F.3d at 1120; *W.L. Gore*, 721 F.2d at 1554; *In re Hughes*, 345 F.2d at 188; *In re Turlay*, 304 F.2d at 899.

Moreover, for the same reasons as set forth above concerning independent claim 37, it is only by rendering the annotated “sensed” vehicle with a completely inaccurate scale relative to headlight 123 that Petitioner can pretend that Alden “teaches” these independent claim 59 features.⁷ (*See*, Response, §VII.D.1., *supra*.)

⁷In that regard, properly scaled given the size of headlight 123, the sensed vehicle located at the distance shown in Petitioner’s annotated version of Figure 5 would have a width that spans all the beam segments illuminating the distribution area. According to this embodiment of Alden’s headlight systems, this means that *all* the light elements 119 would be dimmed to produce low beam illumination. (Ex. 2001, ¶72.) As a result, Alden’s system would fail to **determine light output for the headlight system that aims illumination at the first subsection, the illumination aimed at the first subsection substantially resulting in light below a first predefined illuminance in the first subsection, and that aims illumination at one or more second subsections of the field of view to either side of the first subsection, the illumination aimed at the one or more second subsections**

(Ex. 2001, ¶71.) Alden thus again fails to provide an enabling disclosure of these independent claim 59 features and therefore fails to anticipate. *In re Gleave*, 560 F.3d at 1334; *Elan Pharms.*, 346 F.3d at 1054.

Alden also does not inherently disclose these independent claim 59 features for the same reasons as set forth above in connection with independent claim 37. Petitioner has also completely failed to support its contention that Alden renders these independent claim 59 features obvious for the same reasons as set forth above in connection with independent claim 37. (*See*, Response, §VII.D.1., *supra*; *see also*, Petition 11, 22, 28, 32, 34, 35.) (Ex. 2001, ¶73.) Thus, Alden again fails to anticipate the above-noted independent claim 59 features; Petitioner's contention that such features are obvious based on Alden also fails. *Wasica*, 853 F.3d at 1284; *Verve, LLC*, 311 F.3d at 1120; *W.L. Gore*, 721 F.2d at 1554; *In re Hughes*, 345 F.2d at 188; *In re Turlay*, 304 F.2d at 899.

3. Alden Fails to Anticipate Independent Claim 65

Petitioner contends that Alden teaches the following independent claim 65 features:

substantially resulting in light above the first predefined illuminance in the one or more second subsections, as claimed. (Ex. 2001, ¶72.)

determining illumination for at least a first subsection including the second vehicle and at least one or more second subsections, *to either side of the first subsection*, including determining an illumination level for the first subsection that substantially illuminates the first subsection below a predefined illuminance, and determining an illumination level for the one or more second subsections that substantially illuminates the one or more second subsections above the predefined illuminance;

determining control instructions for controlling one or more directional light sources included in the adaptive headlight system *to achieve the determined illumination levels for at least the first and one or more second subsections*; and

controlling the light sources to emit the headlight beam *in accordance with the control instructions*.

(Petition at 35-36, emphasis added.)

However, for the same reasons set forth previously in connection with independent claim 37, Alden does not disclose these independent claim 65 features clearly and unequivocally. Alden also does not disclose these independent claim 65 features with sufficient precision and detail to establish their existence as prior art. (See, Response, §VII.D.1., *supra*.)

Alden is therefore fatally ambiguous and fails to provide an enabling

disclosure regarding at least these independent claim 65 features.⁸ As a result, and

⁸Again, Alden also does not disclose clearly and unambiguously, nor describe with any precision or detail, the propagation of beam segments produced by headlight 123 beyond the endpoints illustrated in Figure 5. (Ex. 2001, ¶76.) In that regard, the beam segments of each LED element 119 exiting the lens 121 are illustrated in Figure 5 as collimated and propagating with a columnar shape, which would be unchanged with increasing distance from headlight 123. (*Id.*) However, Alden's contradictory description and notation in Figure 5 indicate that each such beam segment illuminates a 15° arc of the distribution area, which would continue to expand with increasing distance from headlight 123. (Ex. 1005, ¶[0029], Figure 5.) Thus, it is completely unclear how an oncoming vehicle at a properly scaled distance from headlight 123 (*i.e.*, well beyond the beam segment endpoints illustrated in Figure 5) would be illuminated by that headlight, particularly in view of the statement in Alden that the intensity of light (high-beam/low-beam) produced by the headlight 123 is determined by the distance between the equipped and oncoming vehicles. (*Id.*, ¶¶[0027-0028]; Ex. 2001, ¶76.) Consequently, for yet another reason, Alden is fatally ambiguous and fails to provide an enabling disclosure regarding the independent claim 65 features of determining illumination for at least a first subsection including the second vehicle and at least one or more

for the same reasons set forth previously (*see*, Response, §VII.D.1., *supra*), Alden fails to anticipate independent claim 65. *In re Gleave*, 560 F.3d at 1334; *Elan Pharms.*, 346 F.3d at 1054; *Wasica*, 853 F.3d at 1284; *Verve, LLC*, 311 F.3d at 1120; *W.L. Gore*, 721 F.2d at 1554; *In re Hughes*, 345 F.2d at 188; *In re Turlay*, 304 F.2d at 899.

Moreover, for the same reasons as set forth above concerning independent claim 37, it is only by rendering the annotated “sensed” vehicle with a completely inaccurate scale relative to headlight 123 that Petitioner can pretend that Alden “teaches” these independent claim 65 features.⁹ (*See*, Response, §VII.D.1., *supra*.)

second subsections, *to either side of the first subsection*, including determining an illumination level for the first subsection that substantially illuminates the first subsection below a predefined illuminance, and determining an illumination level for the one or more second subsections that substantially illuminates the one or more second subsections above the predefined illuminance, as claimed. (*Id.*)

⁹Once again, properly scaled given the size of headlight 123, the sensed vehicle located at the distance shown in Petitioner’s annotated version of Figure 5 would have a width that spans all the beam segments illuminating the distribution area. (Ex. 2001, ¶78.) According to this embodiment of Alden’s headlight systems, this means that *all* the light elements 119 would be dimmed to produce low beam

(Ex. 2001, ¶77.) Alden thus again fails to provide an enabling disclosure of these independent claim 65 features and therefore fails to anticipate. *In re Gleave*, 560 F.3d at 1334; *Elan Pharms.*, 346 F.3d at 1054.

Alden also fails to inherently disclose these independent claim 65 features for the same reasons as set forth above in connection with independent claim 37. Petitioner has also completely failed to support its contention that Alden renders these independent claim 65 features obvious for the same reasons as set forth above in connection with independent claim 37. (*See*, Response, §VII.D.1., *supra*; *see also*, Petition 11, 22, 28, 32, 34, 35.) (Ex. 2001, ¶79.) Thus, Alden again fails to anticipate the above-noted independent claim 65 features and Petitioner's contention that such features are obvious based on Alden also fails. *Wasica*, 853

illumination. (*Id.*) As a result, Alden's system would fail to perform the functions of determining illumination for at least a first subsection including the second vehicle and at least one or more second subsections, *to either side of the first subsection*, including determining an illumination level for the first subsection that substantially illuminates the first subsection below a predefined illuminance, and determining an illumination level for the one or more second subsections that substantially illuminates the one or more second subsections above the predefined illuminance, as claimed. (*Id.*)

F.3d at 1284; *Verve, LLC*, 311 F.3d at 1120; *W.L. Gore*, 721 F.2d at 1554; *In re Hughes*, 345 F.2d at 188; *In re Turlay*, 304 F.2d at 899.

E. Ground 1: Alden Fails to Render the Challenged Claims Obvious

As previously noted, Petitioner contends that Alden not only anticipates independent claims 1, 20, and 26 but also renders each of those independent claims obvious. Yet nowhere in its Petition does Petitioner explain these obviousness contentions at *any* level of detail. Instead, Petitioner's obviousness contention is based on nothing more than cursory and completely conclusory statements consisting of no more than a single sentence -- essentially: "It's obvious." (Petition at 11, 22, 28, 32, 34, 35.)¹⁰

Petitioner has utterly failed to establish or demonstrate multiple elements that are required to support an obviousness conclusion, including explaining *how* Alden must be modified (*i.e.*, identifying the differences between the claimed invention and Alden) and explaining *why* a POSA would be motivated to so modify Alden (*i.e.*, providing some articulated reasoning with some rational

¹⁰Petitioner's obviousness contentions are also unsupported by its experts' declaration, which merely parrots the completely conclusory contentions set forth in the Petition. (Ex. 1003, ¶¶50, 64, 74, 80, 84.)

underpinning to support an obviousness conclusion). *KSR*, 550 U.S. at 418; *Graham*, 383 U.S. at 17-18. In short, Petitioner cannot argue that Alden anticipates these claim features and then, when that argument proves insufficient, simply **assert** in the alternative — with what amounts to nothing more than a wink and a nod — that Alden renders the claimed invention and/or these claim features obvious.

Petitioner cannot simply treat the various features of Alden’s embodiments as interchangeable, particularly for anticipation, but also for obviousness. Instead, Alden’s disclosure must support any contention of interchangeability. *Net MoneyIN*, 545 F.3d at 1371; *Microsoft*, 878 F.3d at 1068-1069. Extrinsic evidence, such as an expert declaration, on what Alden’s different embodiments could include or would accommodate are not the same as what Alden specifically discloses. *Scripps Clinic & Rsch Found.*, 927 F.2d at 1576 (*overruled on other grounds by Abbott Labs.*, 566 F.3d 1282); *see also ActiveVideo Networks, Inc.*, 649 F.3d at 1327 (“The expert failed to explain how specific references could be combined, which combination(s) of elements in specific references would yield a predictable result, or how any specific combination would operate or read on the asserted claims,” such that the “expert’s testimony on obviousness was essentially a conclusory statement.”) *KSR Int’l*, 550 U.S. at 418 (“A patent composed of several elements is not proved obvious by merely demonstrating that each of its

elements was, independently, known in the prior art.”). *Raytheon Techs, Corp.*, 993 F.3d at 1381 (“In the absence of such other supporting evidence to enable a skilled artisan to make the claimed invention, a standalone §103 reference must enable the portions of its disclosure being relied upon.”).

Petitioner must provide a sufficient rationale to combine Alden’s different embodiments. Having failed to explain sufficiently *why* a POSA would have found it obvious to combine those embodiments, any contentions by Petitioner of obviousness based thereon fail. *KSR*, 550 U.S. at 418.

The requirements for demonstrating anticipation and obviousness are well-established and Petitioner bears the burden of proof for each. Regarding anticipation, Petitioner has failed to cite a prior art reference that enables and unambiguously discloses, either expressly or inherently, the claimed invention. Regarding obviousness, Petitioner has offered nothing more than conclusory statements, failing to provide any articulated reasoning with a rational underpinning to support those statements.

Petitioner has had ample time and opportunity to meet its burdens of proof and, having failed to do so, should not now be assumed to have proffered arguments not expressly included in its Petition, nor be heard to plead for leave to file a reply to Patent Owner’s Preliminary Response when that Response has simply demonstrated the failure of Petitioner’s contentions rather than raised any

new issues. Indeed, Petitioner is “master of its complaint.” *SAS Inst.*, 138 S. Ct. at 1355. The Board is constrained by the arguments and evidence presented and developed in the Petition and is not at liberty to “raise, address, and decide . . . theories never presented by [Petitioner] and not supported by record evidence.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d at 1381. Moreover, the lack of clarity in Petitioner’s asserted obviousness ground might enable Petitioner to deviate from the arguments initially presented in the Petition in a manner that may prejudice Patent Owner. *See Wasica*, 853 F.3d at 1286 (explaining that “[s]hifting arguments” during the course of a trial are “foreclosed by statute, [Federal Circuit] precedent, and Board guidelines”).

VIII. The Board Should Deny Institution on Procedural Grounds Because the Petition Lacks Particularity Under § 312(a)(3)

Under 35 U.S.C. § 312(a)(3), it is Petitioner’s burden to adequately explain its challenge and the references it uses. Here, the Petition creates “teachings” and combines features of the applied references in a vague manner, resulting in an LED headlight system that does not and cannot function to provide controlled light delivery as claimed. (*See, e.g.*, Response, §VII.D., *supra*.)

An IPR petition must identify “with particularity, each *claim* challenged, the *grounds* on which the challenge to each claim is based, and the *evidence* that supports the grounds for the challenge to each claim.” 35 U.S.C. § 312(a)(3). “In

an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v Avid Technology, Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3)). The Consolidated Trial Practice Guide (CTPG) advises that “parties should avoid submitting a repository of all the information that a judge could possibly consider, and instead focus on concise, well-organized, easy-to-follow arguments supported by readily identifiable evidence of record.” (CTPG at 39.) Further, “[t]he petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4).

“The statutory requirement of particularity in a petition for IPR takes on heightened importance when considered in conjunction with SAS’s ‘all-or-nothing’ approach,” and “the Board may consider whether a lack of particularity as to one or more of the asserted grounds justifies denial of an entire petition.” *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 (PTAB March 6, 2019) (Informative). Further, “where a petition contains voluminous or excessive grounds, Office guidance indicates ‘[t]he panel will evaluate the challenges and determine whether, in the interests of efficient administration of the Office and integrity of the patent system (*see* 35 U.S.C. § 316(b)), the entire petition should be denied under 35 U.S.C. § 314(a).’” *Id.* at 18 (*citing* SAS Q&As (June 5, 2018))

(“SAS Q&As”), 11 at Part D, Effect of SAS on future challenges that could be denied for statutory reasons, Question D2).

The USPTO also discourages lumping of challenges: “***Do NOT lump*** together multiple proposed rejections based on different grounds. [] Separate rejections based on anticipation and rejections based on obviousness.” (Ex. 2003 at 3, Best Practices and FAQs for Filing Requests for Reexamination Compliant with 37 CFR 1.510 and 1.915, PTAB, May 2010 (emphasis in original)). The Petition does not identify with particularity “the ***grounds*** on which the challenge to each claim is based,” and therefore should be denied institution under 35 U.S.C. § 312(a)(3). Petitioner’s lack of particularity leaves the Board and Patent Owner in a position where they must guess how the Petition is interpreting and applying the references.

Here, the Petitioner has improperly lumped grounds together in its Petition. Indeed, Petitioner *expressly* denominates Ground 1 as an anticipation ground based on Alden, an obviousness ground based on Alden, or an obviousness ground based on Alden in view of Stam. (Petition at 5.) Thus, as shown in the table below, Ground 1 of the Petition is actually ***three*** alternative grounds, but the Petition does not clearly state which of those alternatives from “Lumped Ground #1” are relied upon by Petitioner. It is therefore unclear as to which ground the Patent Owner is

expected to respond, and which ground the Board must undertake in its review of the Petition.

Grounds		Basis	Disputed Claim(s)	Reference(s)
Lumped Ground #1	1A	102	37-44. 47, 50-56, 58-62, 64, 65, 70	Alden
	1B	103	37-44. 47, 50-56, 58-62, 64, 65, 70	Alden
	1C	103	37-44. 47, 50-56, 58-62, 64, 65, 70	Alden in view of Stam

For example, Petitioner repeatedly states that “Alden anticipates and renders obvious (alone or in view of Stam)” a Challenged Claim or that “Alden alone discloses and renders obvious” a Challenged Claim feature. (Petition at 11, 22, 28, 32, 34-36, 38, 39, 45-50, 52, 53.) However, as previously demonstrated, Petitioner never clearly articulates these obviousness positions and never provides any support for its conclusory statements. With respect to these Challenged Claims, Petitioner’s alternative arguments amount to nothing more than: “It’s obvious.”¹¹

¹¹Petitioner’s obviousness contentions are also unsupported by its experts’ declaration, which merely parrots the completely conclusory contentions set forth in the Petition. (Ex. 1003, ¶¶50, 64, 74, 80, 84.)

(*Id.*; *see also, e.g.*, Response, §VII.D., *supra.*) Petitioner’s obviousness contentions therefore fail for lack of particularity because Petitioner has not presented any obviousness analysis with respect to even a single independent claim feature.

It is Petitioner’s burden, from the onset, to fully develop any contentions with particularity so that Patent Owner is given adequate notice and opportunity to respond. Neither the Board nor the Patent Owner is obliged to develop or divine Petitioner’s arguments, and Petitioner cannot be allowed to rely on the Board or the Patent Owner to do so. Indeed, Petitioner is “master of its complaint.” *SAS Inst.*, 138 S. Ct. at 1355. The Board is constrained by the arguments and evidence presented and developed in the Petition and is not at liberty to “raise, address, and decide . . . theories never presented by [Petitioner] and not supported by record evidence.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d at 1381. Moreover, the lack of clarity in Petitioner’s asserted obviousness ground might enable Petitioner to deviate from the arguments initially presented in the Petition in a manner that may prejudice Patent Owner. *See Wasica*, 853 F.3d at 1286 (explaining that “[s]hifting arguments” during the course of a trial are “foreclosed by statute, [Federal Circuit] precedent, and Board guidelines”).

Review, if instituted, must be instituted on all grounds asserted in a petition. *SAS Inst.*, 138 S. Ct. at 1354, 1359-60. The proceedings cannot be limited to only a subset of those grounds asserted to remedy a failure to identify and set forth with

particularity each of the grounds on which challenges to the claims are based. For the reasons set forth above, the Petition does not identify with particularity “the *grounds* on which the challenge to each claim is based” and therefore should be denied institution under 35 U.S.C. § 312(a)(3).

IX. Conclusion

In light of the remarks herein, Patent Owner respectfully requests that the Board deny the Petition for *inter partes* review of the '503 Patent.

Respectfully submitted,

Dated: October 20, 2023

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Certificate of Service

The undersigned hereby certifies that the foregoing **PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES* REVIEW UNDER 37 C.F.R. § 42.107**, including any attachments and exhibits, was served in its entirety on **October 20, 2023** upon the following parties by electronic mail:

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Certificate of Compliance Pursuant to 37 C.F.R. § 42.24

This paper complies with the type-volume limitation of 37 C.F.R. § 42.24. The paper contains 10,213 words, excluding the parts of the paper exempted by § 42.24(a).

This paper also complies with the typeface requirements of 37 C.F.R. § 42.6(a)(ii) and the type style requirements of § 42.6(a)(iii)&(iv).

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