

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AFFORDABLE WIRE MANAGEMENT, LLC,
Petitioner,

v.

CAMBRIA COUNTY ASSOCIATION FOR THE BLIND AND
HANDICAPPED, INC.,
Patent Owner.

IPR2024-00178
Patent 11,349,291 B2

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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1001	U.S. Patent No. 11,349,291 to Smith et al.
1002	Declaration of Dr. Beik and CV.
1003	U.S. Patent No. 7,520,476 to Caveney et al. (“Caveney”).
1004	U.S. Patent Publication No. 2010/0139731 to Almy (“Almy”).
1005	U.S. Patent No. 2,384,440 to Carr et al. (“Carr”).
1006	Reserved
1007	Underwriters Laboratories, “Safety Requirements for Wiring Systems and Connectors for Photovoltaic Systems,” 1984.
1008	SnakeTray, “Solar Snake Tray Announces New Cable Tray That Attached to Messenger Wire Rope for Solar Installations,” 2012, available at https://www.snaketray.com/solar-snake-tray-announces-new-cable-tray-that-attaches-to-messenger-wire-rope-for-solar-installations/ .
1009	National Fire Protection Association, “The National Electrical Code,” 2008 Edition.
1010	Department of the Army, the Navy, and the Air Force, “Technical Manual, Facilities Engineering, Electrical Exterior Facilities,” 1996.
1011	SolarPro Magazine, “PV Array Wire Management,” 2013.
1012	U.S. Patent No. 1,841,479 to Jessen.
1013	U.S. Patent No. 2,820,083 to Hendrix.
1014	Windpower Engineering, “Cable Spacers Solve Problem of Many Cables and Not Much Pole Space,” 2012, available at https://www.windpowerengineering.com/cable-spacers-solve-problem-of-many-cables-and-not-much-pole-space/ .
1015	File History of U.S. Patent No. 11,349,291.
1016	Las Vegas NECA 2012 Brochure.
1017	Electric Energy T&D Magazine, 2012.
1018	Jung, et al., “An In-depth Analysis for Optimal Cable Tray Support Span,” Sustainable Marine Structures, Volume 02, Issue 01, January 2020.
1019	IEEE Green Book 142, IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems, 2007.

1020	IEEE, National Electrical Safety Code Committee, Accredited Standards Committee C2, Interpretation, Rule 235G, 2002.
1021	Advanced Cable Ties, Inc., “Cable Tie ‘Type’ Classifications.”
1022	IEEE Std 525-2007, “IEEE Guide for the Design and Installation of Cable Systems in Substations,” 2007.
1023	IEEE Std 1185-2010, “IEEE Recommended Practice for Cable Installation in Generating Stations and Industrial Facilities,” 2011.
1024	Reserved
1025	Declaration of Andrew H. DeVoogd In Support of Motion for Pro Hac Vice Admission
1026	Declaration of Robert C. Sweeney In Support of Motion for Pro Hac Vice Admission
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1029	Hooks, Hangers & Mine Safety Products, Cambria County Association for the Blind and Handicapped (2010)
1030	2018 NECA Showstopper Awards
1031	Declaration of Joshua Phinney, filed as EX2064 in IPR2024-00139
1032	Cable Management in Solar PV Arrays: A Review of Requirements in the National Electrical Code and how CAB Cable Rings and Saddles Meet These Requirements, September 18, 2014, filed as EX1006 in IPR2024-00139
1033	Declaration of Jonathan Putnam, filed as EX2044 in IPR2024-00139
1034	Capital Dynamics and First Solar power on 280-MWac California Flats Solar Project, Solar Power World Online, available at https://www.solarpowerworldonline.com/2019/05/capital-dynamics-and-first-solar-power-on-california-flats-solar-project/
1035	Patents, Cambria County Association for the Blind and Handicapped, available at https://www.cabproducts.com/patents/
1036	Area nonprofit helps the blind & disabled -- & nets millions in the process, Daily American, available at https://www.dailyamerican.com/story/news/local/2017/10/06/area-nonprofit-helps-the-blind-disabled-nets-millions-in-the-process/116245386/

1037	Company Brochure, Cambria County Association for the Blind and Handicapped, available at https://7b950756.flowpaper.com/CABImageBrochure/#page=1
1038	Declaration of Joshua Weiner
1039	Joshua Weiner Curriculum Vitae
1040	UL 2703 Standard Scope Summary, available at https://www.shopulstandards.com/ProductDetail.aspx?UniqueKey=29007
1041	“Photovoltaic Module Grounding: Issues and Recommendations” White Paper prepared by BEW Engineering (April 2012)
1042	“91076_9.15.2011” 7-Post, 1000 VDC, TTI Tracker drawing for SPG Solar, dated September 15, 2011
1043	“2C_600V_Airguard_UL” multi-conductor cable assembly specification, dated January 18, 2011
1044	Images of SnakeTray mock-up at SPG Solar’s facility in Novato, CA, dated 2011
1045	“Solar Snake Tray Announces New Cable Tray that Attaches to Messenger Wire Rope for Solar Installations,” Snake Tray, available at https://www.snaketray.com/solar-snake-tray-announces-new-cable-tray-that-attaches-to-messenger-wire-rope-for-solar-installations/
1046	“Snake Tray Offers New Double Tier, Dual Purpose Cable Tray for MC Cables and Datacom Cables,” Snake Tray, available at https://www.snaketray.com/snake-tray-offers-new-double-tier-dual-purpose-cable-tray-for-mc-cables-and-datacom-cables/
1047	October 1, 2024 Deposition Transcript of Edward C. Kern, Jr., Ph.D.
1048	October 3, 2024, Deposition Transcript of Jonathan D. Putnam, Ph.D.
1049	October 11, 2024, Deposition Transcript of Mitchel Bowman
1050	October 8, 2024, Deposition Transcript of Joseph William Novak, P.E., MSE, MBA, S.P.
1051	October 10, 2024, Deposition Transcript of William Brooks, PE
1052	“Organize,” The American Heritage Desk Dictionary, 5th Ed. 2013
1053	“Organize,” Pocket Oxford English Dictionary, 11th Ed. 2013
1054	U.S. Patent No. 11,569,646
1055	Declaration of Minh P. Doan
1056	“Utility-Scale Solar, 2023 Edition,” Berkeley Lab, available at https://emp.lbl.gov/sites/default/files/emp-files/utility_scale_solar_2023_edition_slides.pdf

1057	“Solar Market Insight Report 2018 Year In Review,” Solar Energy Industries Association, available at https://seia.org/research-resources/solar-market-insight-report-2018-year-review/
1058	“World’s largest solar farm is up and running in California,” Tech Xplore, available at https://techxplore.com/news/2014-11-world-largest-solar-farm-california.html
1059	“Utility-Scale Solar: Technology Trends, 2007-2023,” Berkeley Lab, available at https://emp.lbl.gov/technology-trends

I. INTRODUCTION

CAB does not dispute, because it cannot, that all elements of the challenged claims are present in the prior art for Ground III. Its POR only disputes motivation to combine, and the Board has already preliminary decided—correctly—that there *is* motivation to combine. Substantial evidence, including testimony of CAB’s expert Dr. Kern, supports that preliminary finding. Nothing in the POR changes the Board’s preliminary determination, and none of CAB’s proposed claim constructions are correct, or even relevant, to any ground at issue.

Implicitly acknowledging the weakness of their non-obviousness position, CAB marshalled a significant amount of evidence regarding secondary considerations. But CAB failed to show any nexus between the offered evidence and the challenged claims, a prerequisite for evidence of secondary considerations to be afforded any weight.

The Board should find all challenged claims of CAB’s US 11,349,291 unpatentable for at least the following reasons:

- (1) Claim Construction: CAB’s proposed constructions are wrong and, more importantly, have zero bearing on any ground. Proper claim constructions must: (i) recognize that the preamble, if limiting, recites only an intended use and therefore a prior art combination need only be “capable of” performing the recited “organizing”; and (ii) does not impermissibly

narrow the meaning of the term “organizing” to “separating”. CAB’s do not.

(2) Motivation to Combine: CAB incorrectly argues that a POSITA would lack a motivation to combine *Caveney* and *Almy* or *Carr* and *Almy* are baseless—there is a strong motivation to combine based on industry pressures, and CAB’s declarants confirm this motivation.

(3) No Secondary Considerations: CAB fails to show any nexus between the challenged claims and the presented evidence. The offered evidence deserves no weight.

II. CLAIM CONSTRUCTION

CAB proposes two constructions related to the preamble of the independent claims.¹ Neither is relevant nor dispositive and both should be disregarded. CAB never applies them nor explains their relevance to showing a limitation is missing

¹ CAB’s POR does not dispute the Board’s construction that “electrical cables” are “wiring that conducts current or signals,” and CAB has waived any argument to the contrary. *See Parus Holdings, Inc. v. Google LLC*, 70 F.4th 1365, 1373 (Fed. Cir. 2023).

from the prior art. *See* POR, 25-48. Should CAB’s Sur-Reply argue that either claim construction affects the outcome of the IPR, both constructions are wrong.

The preambles are not limiting, and even if limiting, state only an intended use. Therefore, a prior art combination need only be **capable of** performing the recited use to satisfy the preamble, and it is undisputed that all prior art combinations are **capable of** satisfying the preamble. Moreover, the grounds as presented still satisfy the preambles, regardless of whether intended use is a limitation. Second, CAB’s construction of “organizing electrical cables...” impermissibly narrows the meaning of the term “organizing” to “separating.” AWM’s constructions are well-supported by the intrinsic record, common sense, and CAB’s own expert.

A. Even if the Preambles of Claims 1 and 6 Are Limiting, They Only Recite an Intended Use

CAB first argues that the preamble is limiting, but the body of the claims disclose all structural elements. The preambles merely provide reference points for the structural limitations: to organize a plurality of electrical cables extending from a plurality of solar panels. *See Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1342 (Fed. Cir. 2003). Thus, the preambles are not limiting. *Id.*; *Cochlear Bone Anchored Sols. AB v. Oticon Med. AB*, 958 F.3d 1348, 1355 (Fed. Cir. 2020).

Even if limiting, the preambles recite only an intended use, and a prior art structure that is capable of performing the intended use meets the claim. *See, e.g., In*

re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997). If the preambles are limiting, the Board need only find the combination in described in the Petition’s Grounds are **capable of** “organizing” to find the challenged claims unpatentable. This capability is undisputed.

B. CAB’s Articulation of the Plain and Ordinary Meaning of “Organizing Electrical Cables Extending from a Plurality of Solar Panels” Is Incorrect

If the preamble is limiting, CAB’s proposed plain and ordinary meaning is wrong. It effectively only replaces “organizing” with “separating.” Common knowledge dictates that “organizing” is broader than “separating.” “Organizing” is not a term of art, and is readily understood to lay persons. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005); EX1047, 111:21-112:2 (“organizing” not a term of art).

“Organizing” is to arrange or order, not merely to “separate.” *See, e.g.*, EX1052 (organize means “1. To put together into an orderly, functional, structured whole. 2. To arrange in a coherent form; systematize.”); EX1053 (“organize” means “arrange in an orderly way”). The claim language is consistent with this definition. “Organizing” meaning to “arrange or order” is consistent with the intrinsic record: the specification’s only use of the term “organize” distinguishes cable organization from cable separation. *See* EX1001, 4:60-67.

CABs own declarant Dr. Kern admitted that “**one way** to organize is to separate” and in the context of the patent, the terms do not necessarily have a one-to-one equivalency. EX1047, 102:9-103:4. This is unsurprising, as his declaration and CAB’s briefing use the terms distinctly. POR, 24; EX2038 ¶85. Further, Dr. Kern’s claim charts are replete with images of systems allegedly practicing the claimed invention, yet those images either show electrical cables bundled in a single cable carrying surface (**not** separated) or just DC cables separated in one hanger. *E.g.*, EX2038, 90-103; EX1047, 185:15-186:7. Dr. Kern’s application of CAB’s construction demonstrates the fundamental problem with CAB’s construction and also makes it unclear whether CAB’s construction requires separation of AC and DC cables, which “organization” does not inherently require.

Separated cables may be organized. But not all organized cables are necessarily separated. To the extent any construction of the term is necessary, AWM’s proposal should be adopted.

III. ALL CHALLENGED CLAIMS ARE OBVIOUS UNDER ANY PROPOSED CONSTRUCTION

A. GROUND 1: *Caveney* Teaches the Claimed Messenger Wire and Multi-Carrier Hangers

CAB challenges two aspects of AWM’s Ground 1, arguing that: 1) *Caveney* discloses pre-existing interior building structures, not a messenger wire and 2)

Caveney's hangers cannot be attached to a messenger wire because they require a threaded rod. As explained in the petition, *Caveney* renders the challenged claims obvious.

1. *Caveney* teaches the claimed messenger wire

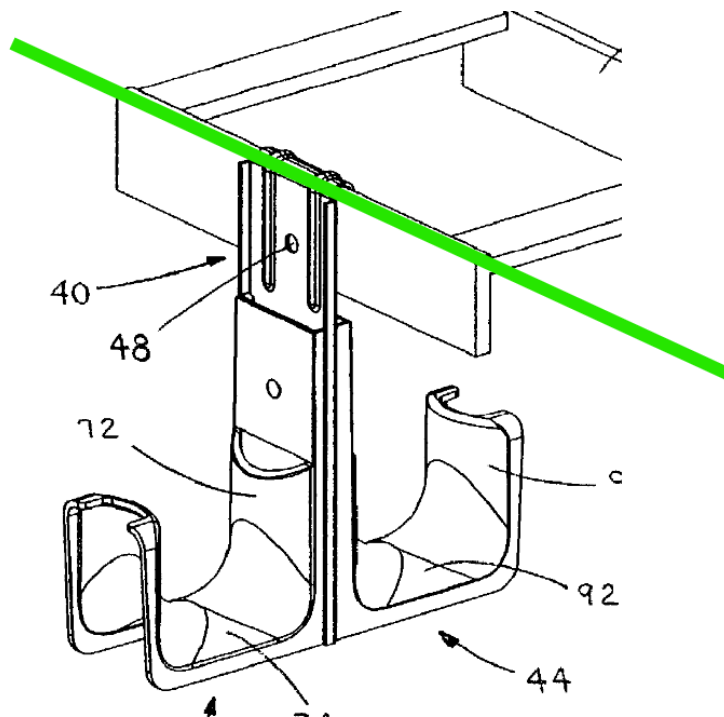
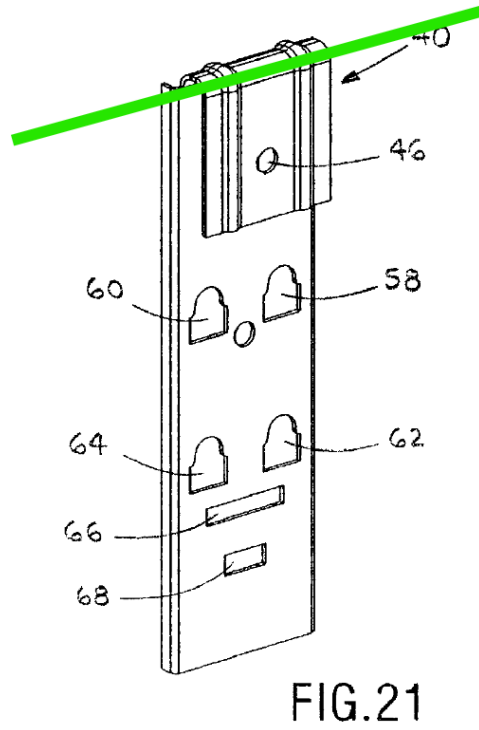
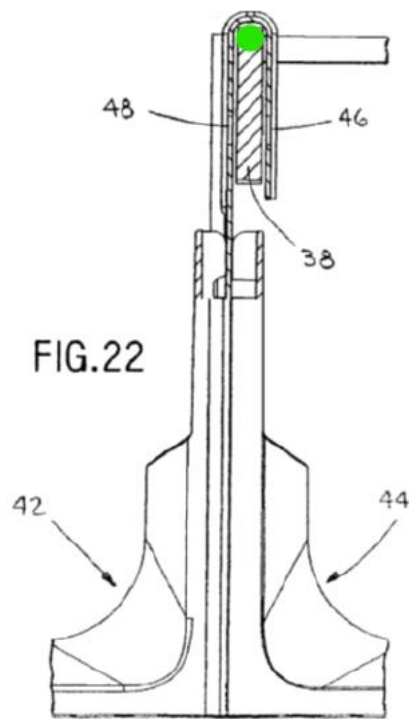
Caveney defines “structures” broadly, and nothing in *Caveney* limits them to “pre-existing building structures.”² See EX1003, 2:65-3:9; see also Petition, 25; EX2004, 110:14-115:5. Importantly, ladder racks are not pre-existing building structures at all—like messenger wires, they are cable support systems. EX1047, 116:17-118:2. As explained in the petition, in looking to create wire management systems in solar plants, a POSITA would use known wire management solutions from related industries. Petition, 3-5. Thus, a POSITA looking to improve wire management in solar plants would have known to use messenger wire as a “structure” for *Caveney*'s hangers. Regardless, CAB cannot dispute that *Caveney*

² CAB cites *Laughlin*, but nothing in *Caveney*'s discussion of *Laughlin* can be read as limiting *Caveney*'s disclosures to “pre-existing interior structures in a building.” POR, 29-30; EX1003, 1:9-25. *Caveney* only identifies *Laughlin* as an example of multi-tiered hangers that did not permit the ability to add additional cable support members. *Id.*

and the challenged claims suspend wires on hangers and organize wires on multiple cable support members.

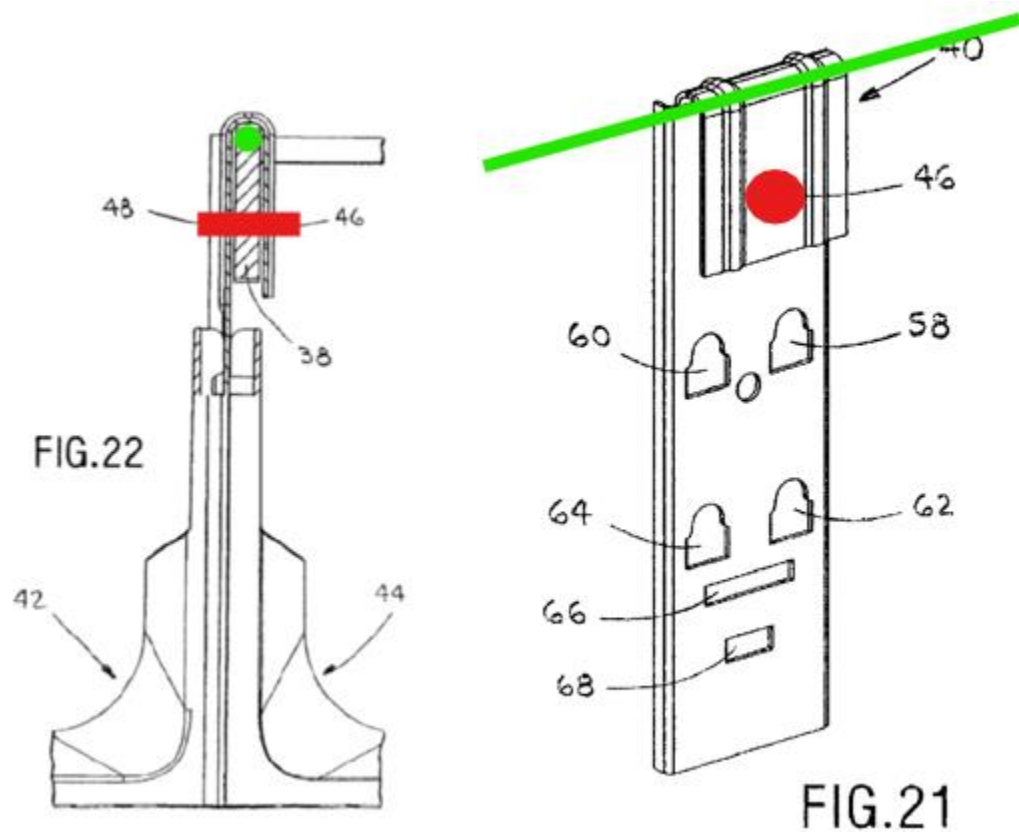
2. CAB Mischaracterizes AWM's arguments regarding how Caveney's cable hangers are disposed along and suspended from a messenger wire

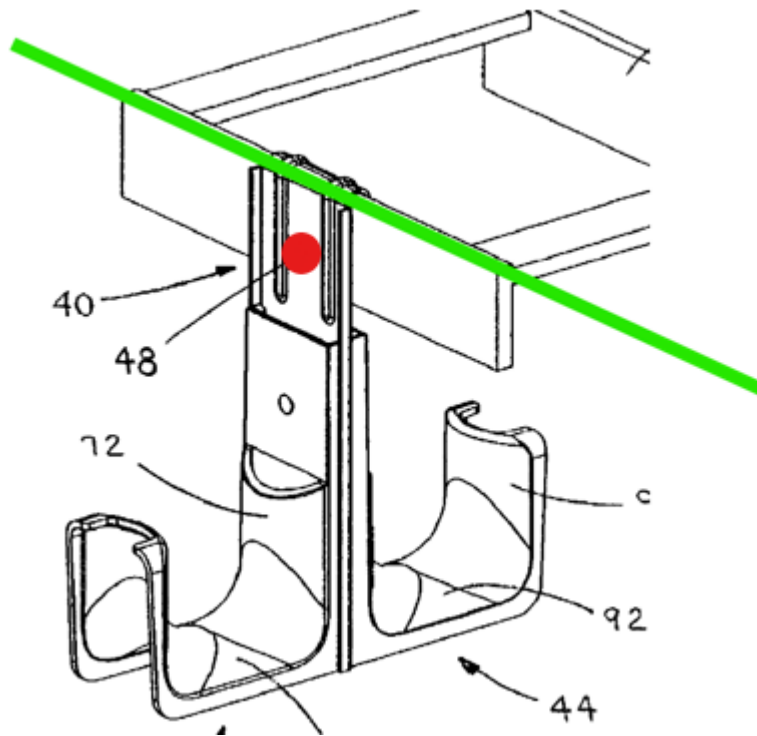
CAB's creates a strawman, suggesting that AWM contends *Caveney's* threaded rod could be attached to a messenger wire. POR, 30-34. But AWM argued that a POSITA would suspend Caveney's hangers using a messenger wire ***in place of*** a threaded rod or without the threaded rod. *See* Petition, 25-26. Specifically, Dr. Beik testified that a POSITA would have suspended hangers on a messenger in two ways: threading the messenger wire through apertures 46 and 48 or using the hook of the hanger in the ladder rack embodiment. Petition, 26; EX1002 ¶60. This is shown below, with the messenger wire represented in green:



EX1003, Figs. 20-22 (annotated).

Even if a threaded rod were necessary, Dr. Beik testified that using a threaded rod with the ladder rack embodiment and a messenger wire would not have presented a challenge to a POSITA. EX2004, 121:17-122:23. In fact, he testified that a POSITA would have known that using a threaded rod was one way to secure the hook-shaped portion to the messenger wire, with the thread rod shown in red:





EX1003, Figs. 20-22 (annotated); EX2004, 121:17-122:23. This use of *Caveney* would require minimal modification, and properly understood, *Caveney* in view of the knowledge of POSITA renders obvious the challenged claims.

B. GROUND 2: A POSITA Would Have Been Motivated to Combine *Caveney* and *Almy* Due to the Increased Cables In Solar Plants and NEC Requirements

As explained above, a POSITA would have been motivated to use *Caveney*'s hangers with messenger wire, which CAB concedes *Almy* discloses. See POR, 37. Further, a POSITA would have been motivated to use existing wire management solutions to improve wire organization in solar plants. See EX1050, 43:7-44:5; EX1038 ¶68; EX1038 ¶¶13-20, 24, 28. This motivation existed because increased

use of trackers increased the cables in solar plants around the priority date. EX2038 ¶56; EX2033 ¶47. Additionally, many industry participants understood changes to the 2014 NEC as requiring separation of those cables (AC, DC, and data cables). *Id.* POSITAs are “guided” by the NEC, which counseled POSITAs to use hanger-based systems to suspend conductors in solar installations. *See* EX1011, 7; EX1047, 53:18-56:11; EX1050, 25:14-28:14; EX1038 ¶¶16, 28.

This motivation is not hypothetical. The inventor testified that in 2012 SunPower,³ a company involved in solar power plants, after seeing CAB’s products used in mining applications, asked whether CAB had a line of messenger wire and hanger systems for solar applications. EX1028, 17:18-19:15. Thus, a POSITA would have been motivated to replace *Almy*’s wire loops with *Caveney*’s hangers. *See* Petition, 38-40. EX1002 ¶79.

C. GROUND 3: CAB Tacitly Admits that the Prior Art Discloses All Limitations of the Challenged Claims and Merely Challenges Motivation to Combine

CAB does not dispute that the combination of *Carr* and *Almy* discloses all limitations of the challenged claims. Instead, CAB alleges that a POSITA would lack

³ *Almy*’s correspondence address is SunPower. EX1004, 1.

a motivation to combine *Carr* and *Almy*. POR, 38-48.⁴ CAB’s arguments are not persuasive. As the petition explains, a POSITA would have been motivated to make the proposed combination for two independent reasons: (1) organizing AC, DC, and data cables would have been required due to increasing amount of cabling and NEC change in 2014; and (2) improving *Almy*’s wire-based wire way with *Carr*’s multi-saddle hanger would have been a natural (and obvious) step. CAB fails to refute either motivation.

1. POSITAs Would Be Motivated to Combine *Carr* and *Almy* Because of Increased Electrical Cabling and the NEC Change Immediately Before the Priority Date

First, a POSITA would have been motivated to combine *Carr* and *Almy* due to the increased electrical cabling in solar installations around the priority date. Section III.B; EX2038, ¶42. A POSITA would have recognized the advantages and limitations of existing above-ground systems such as *Almy*, which avoided the costs of trenching and cable trays. However, a POSITA would have known that *Almy*’s loops would not be able to address cross-induction between the increasing amounts

⁴ Ground 3 does not implicate CAB’s claim constructions. CAB does not refute that the combination discloses a system in solar that “organizes” electrical cables, under either construction.

of different types of cables. EX2004, 151:4-22. Thus, knowing that *Almy* teaches messenger wire systems in solar, a POSITA would have simply looked to existing hangers that provided the ability to reduce cross induction and ensure NEC compliance. EX1002 ¶¶98-99. As explained in the Petition, *Carr* was such a hanger.

The motivation to use *Carr* with the messenger wire supported cable management system taught by *Almy* would have been particularly strong in view of the NEC change in 2014. As CAB's declarants explain, and as detailed in the Petition, many industry participants viewed the 2014 change as imposing a new requirement to separate AC and DC cables. This change was released before the priority date and would have further motivated a POSITA to use multi-carrier hangers such as *Carr* in solar. EX1047, 53:18-56:11.

CAB's criticisms ignore the ***teachings*** of *Almy*. The Petition's proposed combination is not a bodily incorporation—the teachings of *Carr* and *Almy*, together with the knowledge of a POSITA and the state of the art at the time of the invention, would have provided a strong motivation to combine *Carr* and *Almy* with a reasonable expectation of success.

2. A POSITA Would Be Motivated To Combine *Carr* and *Almy* Because *Carr*'s Hangers Are More Robust than *Almy*'s Wire Loops

Replacing *Almy*'s wire loops with *Carr*'s steel hangers provides a second independent reason to combine *Carr* and *Almy*. CAB alleges that *Almy*'s wire loops would be more robust because *Carr* discloses its hanger as being made of “simple and cheap construction.” POR, 46-47. But “simple and cheap construction” is not “weak.” To the contrary, *Carr*'s hangers are an improvement over weaker hangers and made of “laminated steel” having considerable “hardness and resiliency” and able to withstand “relatively great tension” without “deformation”. EX1005, 2. Not only does *Carr* contradict CAB's assertions, but Dr. Kern confirmed that being of “simple and cheap construction” does not mean that *Carr*'s hangers are weak (and admitted that CAB's hangers are simple and cheap) and confirmed that a POSITA would be able to make hangers stronger or weaker by simply changing the dimensions (e.g., thickness) of the material used. EX1047, 193:9-18, 196:14-197:11. CAB's related argument that *Almy*'s loops would have been more robust because they support heavier DC cabling than the cables disclosed in *Carr* is also unfounded. As Dr. Kern admitted, neither *Almy* nor *Carr* discloses the size of their cables, so CAB has no basis to assume *Almy*'s cables are heavier. *See id.*

Accordingly, a POSITA would have been motivated to combine *Carr* and *Almy* to result in a system with a more robust hanger.

IV. CAB FAILS TO ESTABLISH SECONDARY CONSIDERATIONS OF NONOBVIOUSNESS BECAUSE IT FAILS TO SHOW NEXUS

For secondary considerations to be accorded substantial weight, the patentee bears the burden of establishing a nexus between the evidence and the patented invention. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). Importantly, where a product has unclaimed features, or other patents cover features of the product, the patentee bears the burden of proving that the evidence is attributable to the merits of the invention, not “prior art features in isolation or unclaimed features.” *Id.*, 1378.

Here, CAB does not meet its burden. While CAB proffers a large volume of evidence in support of secondary considerations, it fails to link that evidence to the challenged claims. Thus, CAB’s evidence is of little weight and cannot outweigh AWM’s strong obviousness case. *Ohio Willow Wood Co. v. Alps South, LLC*, 735 F.3d 1333, 1344 (Fed. Cir. 2013).

A. No Technical Nexus: CAB’s Conclusory Statements Fail to Show that Any Product Practices, Much Less Is Coextensive with Claims 1 and 6

CAB first contends that Claims 1 and 6 are coextensive with its “Standard System,” and it should be afforded a presumption of nexus. But CAB fails to carry

its burden that any product or combination of products practice those claims. As explained in AWM’s motion to strike, CAB merely incorporates by reference its expert’s declaration, and CAB’s arguments should be stricken or not considered. *See Cisco Sys., Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper 12, 7-10 (PTAB Aug. 29, 2014).

Even considering the arguments in Dr. Kern’s declaration, CAB still fails to show that any product or combination of products practice, much less are coextensive with, claims 1 and 6 for the following independent reasons.

1.

[REDACTED]

Seeking to oversimplify, CAB identifies a single allegedly patent-practicing product, the purported “Standard System.”⁵ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁵ Although CAB and Dr. Putnam contend that CAB’s “Integrated Grounding System” practices the ’291 patent, Dr. Kern never analyzed whether that system practices the ’291 patent. EX1047, 166:9-15, 176:5-10; *see generally* EX2038.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] CAB

and Dr. Kern define the Standard System as broad categories of products: “mid-pier kits, end-pier kits, galvanized steel messenger wire, and cable hangers of various configurations.” EX2038 ¶181.

But Dr. Kern merely identifies five “exemplary” part numbers for each category. EX2038 ¶188. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] EX1047, 177:16-181:20; EX2038, 92-101.

This is a critical failure of proof. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

2. No presumption of nexus can exist because CAB contends that its products are covered by multiple different patents

CAB contends that the purported “Integrated Grounding System” practices both the ’291 patent and the ’551 patent. Neither CAB nor Dr. Kern analyze whether the patents “generally cover the same invention,” but CAB does admit that the ’551 patent “further incorporates” grounding technology not claimed in the ’291 patent. *See Fox Factory*, 944 F.3d at 1377; POR, 58 n.4. The ’291 and ’551 patents do not share a specification, have different priority dates, and are unrelated. CAB does not—and cannot—show that the patents “generally cover the same invention,” and by CAB’s own admissions, the challenged claims are not coextensive with the Integrated Grounding System.

CAB’s patent marking website further underscores the point: neither purported CAB system is coextensive with the challenged claims. That website discloses that the allegedly practicing products also purportedly practice multiple other patents. [REDACTED]

[REDACTED] These other patents have limitations differing from the challenged claims, such as vertically arranged cable carrying surfaces. *See* EX1054, Claim 1.

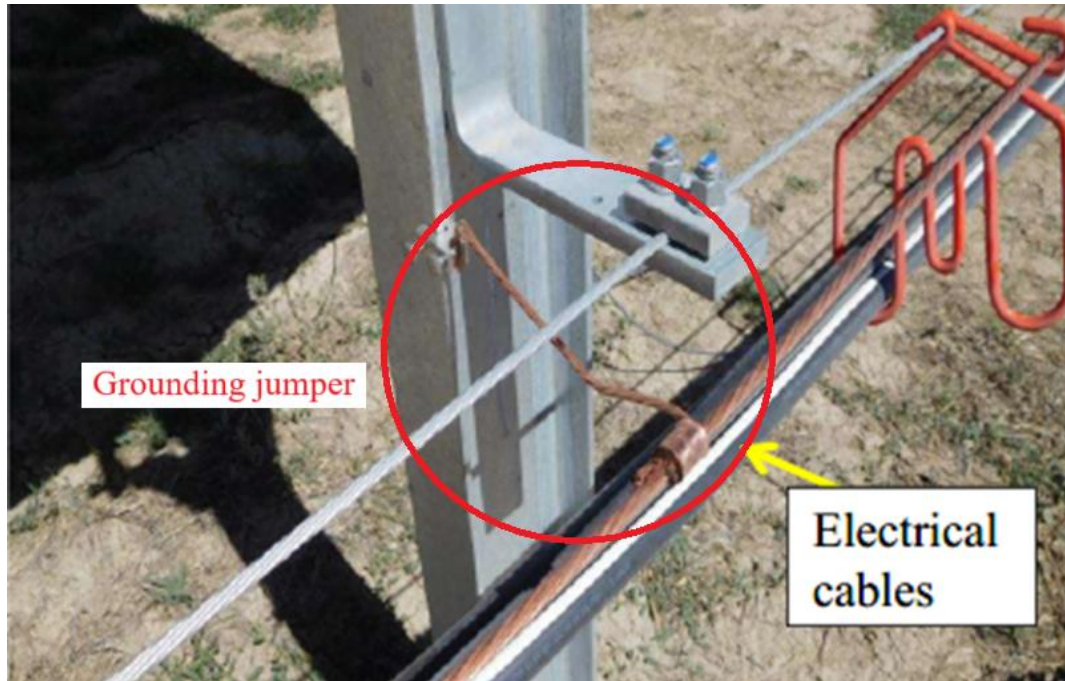
CAB does not acknowledge these patents’ nor explain whether they “generally cover the same invention” or cover unclaimed elements of the products.

3. Dr. Kern’s claim charts fail to demonstrate that CAB’s products practice claims 1 and 6

Finally, Dr. Kern’s charts allegedly showing how CAB’s products practice the challenged claims is conclusory and fails to identify specific CAB products., Worse, he points to components not recited in the claims—piles, mid-pier attachment L-brackets, and end-pier kits. *See, e.g.*, EX2038, 97-98.

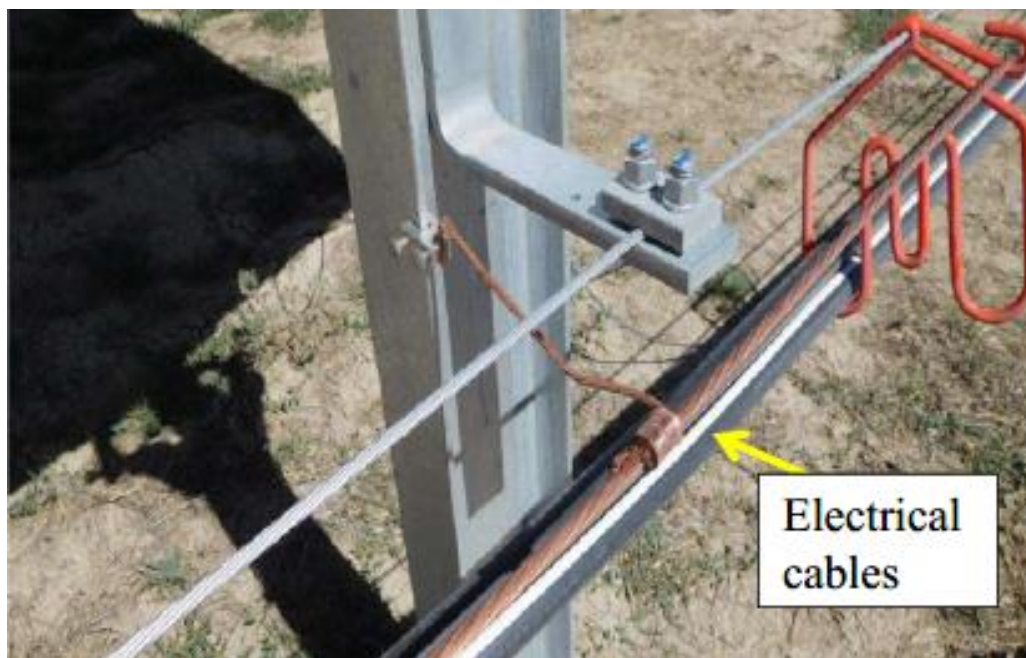
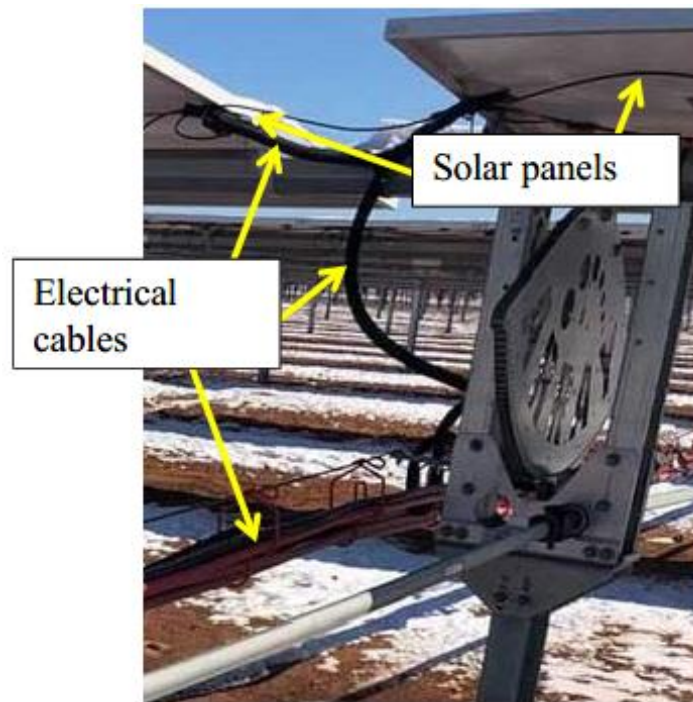
First, Dr. Kern fails to identify which products are shown, leaving the Board to guess whether, for example, the hangers depicted are [REDACTED], or another part number. More damning, Dr. Kern admitted that he did not know which parts were shown in his charts. EX1047, 174:6-21, 188:11-189:2. Thus, Dr. Kern failed to analyze whether any specific CAB product actually practices Claims 1 and 6. There is no nexus.

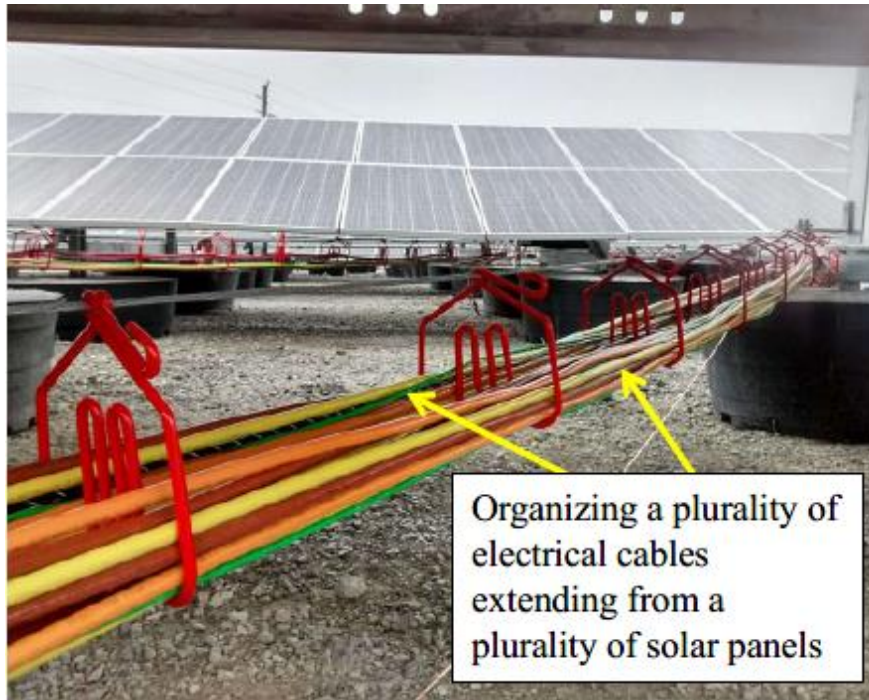
Second, the claim charts show that the depicted system(s) are not coextensive with the challenged claims. They show components (grounding jumpers) that are not identified in Dr. Kern’s definition of the “Standard System.”



Id., 90 (annotated). CAB admits that grounding is necessary for its “Standard System” but is unclaimed. See EX2006 ¶6. Accordingly, the “Standard System” is not coextensive with Claims 1 and 6.

Moreover, CAB fails to show it has a *nexus* to the claims. As Dr. Kern admitted, the claim charts do not show electrical cables extending from solar panels—the photos merely show cables present in a solar array and unconnected to solar panels:





EX2038, 91-92; EX1047, 60:1-10, 184:15-188:5. Thus, Dr. Kern’s opinions do not show that any CAB system practices the ’291 patent.

B. No Copying: CAB Fails to Compare the Allegedly Copied Design to a CAB Product

CAB asserts that a potential customer, First Solar, copied unspecified CAB products. POR, 51. But copying requires a comparison of a *specific CAB product* to the alleged copy, and CAB provides no evidence of what it provided to First Solar. *See Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010). Instead, CAB and its employee declarant merely state that CAB shared “proprietary designs,” “solar hangers,” and “hanger products” and none of the cited emails include any representations of the designs allegedly shared with First Solar. *See* EX2013,

EX2014, EX2015. CAB asks the Board to adopt their unsupported conclusion that the First Solar drawing was “essentially identical” to a design CAB allegedly shared. *See* POR, 51-53; EX2006 ¶¶48-53.

This is improper. On this record, no independent analysis of the alleged similarities between the CAB products and the First Solar drawing is possible. *See Cable Elec. Prods., Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1027 (Fed. Cir. 1985). This lack of evidence is entirely different than *Liqwd*, where the patent owner shared a then-confidential copy of the application that later issued as the challenged patent. *See Liqwd, Inc. v. L’Oreal USA, Inc.*, 941 F.3d 1133, 1135, 1138-39 (Fed. Cir. 2019). CAB has not shown copying, nor can it on this record.

C. No Commercial Success: CAB’s Methodology Is Unreliable and Fails to Show Nexus

CAB relies on the declaration of Dr. Putnam to establish the alleged commercial success of its “Standard System.” But CAB and Dr. Putnam’s analysis fails to show a nexus between the evidence and the patents for three independent reasons:

- (1) use of an irrelevant market comparator;
- (2) inclusion of non-practicing sales; and
- (3) use of an arbitrary 50% sales split between the ’291 patent and U.S.

Patent No. 10,177,551.

As explained below and in the declaration of Minh Doan, EX1055, each of these deficiencies alone render CAB's evidence of commercial success of little weight.

1. CAB and Dr. Putnam fail to use a relevant market comparator

Dr. Putnam's analysis centers on CAB's sales growth compared to the growth of the PV industry. But he does not use market share or industry revenue. Instead, he compares sales of CAB components to the amount of new energy generation capacity increase. EX 2044 ¶¶45-51. Without explanation or analysis, Dr. Putnam then *equates* net new energy generation capacity with sales, concluding that "industry sales growth" averaged 24.2% per year. *Id.* ¶48.

As Ms. Doan explains, this is not a reasonable or reliable assumption. EX1055 ¶¶50-54. Using capacity growth fails to consider factors that could affect CAB's sales growth such as increased needs for cable management depending on the types and numbers of trackers. *Id.* Dr. Putnam's failure to evaluate CAB's sales against a relevant metric or profits renders his excess sales analysis of little evidentiary value. *See In re Applied Materials, Inc.*, 692 F.3d 1289, 1300-01 (Fed. Cir. 2012); EX1055 ¶¶39-65.

2. CAB and Dr. Putnam fail to [REDACTED]
[REDACTED]

Dr. Putnam relies on the testimony of Dr. Kern to determine which sales are patent-practicing. As discussed above, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Finally, CAB’s attempt to categorize sales of (unclaimed) end-pier kits, (unclaimed) mid-pier kits, and messenger wire as practicing sales is undercut by its own website. Seeking to comply with § 287(a), CAB’s website lists patents CAB believes covers its products and associates patent numbers with part numbers. EX1035. Conspicuously, according to CAB, the ’291 patent covers only hangers, and no other components. *Id.* Outside of litigation, CAB does not appear to believe that end-pier kits, mid-pier kits, and messenger wire are patent practicing products. Sales attributable to these products therefore cannot establish nexus. *See Merck & Cie v. Gnosis S.p.A.*, 808 F.3d 829, 837 (Fed. Cir. 2015); EX1055 ¶¶55-58.

6 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

3. CAB and Dr. Putnam fail to attribute sales to the claimed features

Dr. Putnam has no basis to contend that “every CAB system embodies the claims of the ’291 patent.” *See id.* ¶59. He is not a technical expert and ***no technical expert has opined that any products comprising the “Integrated Grounding System” practice the ’291 patent.*** *See generally* EX2038; EX1031. Accordingly, no sales of products allegedly comprising the “Integrated Ground System” can be practicing sales.

Moreover, Dr. Putnam admits that it is ***impossible*** to “decompose” the drivers of sales between the ’291 and ’551 patents. EX2044 ¶¶56-63. Accordingly, he assigns an unsupported 50% figure to each of the patents because he has no idea of the true sales shares. EX2044 ¶62; EX1048, 186:19-190:7. Even he admits that “the non-identification of the true share is problematic from a statistical point of view,” yet he still uses the arbitrary 50% split to conclude that both patents are driving excess sales. *See id.* ¶62. As Ms. Doan explains, Dr. Putnam’s analysis is statistically problematic and insufficient to support commercial success—in fact, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

EX1055 ¶¶59-84. Accordingly, his opinions deserve little weight. *See Therasense*,

Inc. v. Becton, Dickinson & Co., 593 F.3d 1289 (Fed. Cir. 2010); *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366 (Fed. Cir. 2019).

D. No Industry Praise: No Nexus to the Alleged Inventions

CAB cites three industry “awards” that it alleges demonstrates industry praise. As CAB itself acknowledges, industry praise must be “linked to the patented invention.” *Geo M. Martin Co. v. Alliance Machine Systems International LLC*, 618 F.3d 1294, 1305 (Fed. Cir. 2010). Here, CAB’s alleged awards fail to establish that requisite link:

EX2009 is a single page that does not disclose the products for which it was awarded, the features of the products that merited the award, or that CAB was a recipient. The unsupported testimony of the inventor alleges the award was given for an unspecified “above-ground cable management system for solar” but this is insufficient to link the award to the alleged invention. EX2006.

EX2016 purports to be an article that identifies CAB’s “cable management rings and saddles” but does not specify which rings and saddles. EX2016, 6. [REDACTED] and it is unclear what constitute “saddles” and if those practice the challenged claims. Moreover, EX2016 emphasizes unclaimed properties, such as the PVC coating. EX2016, 6.

EX2018 is a self-promotional interview article with a CAB employee—akin to an advertisement—regarding CAB’s “aerial support systems.” EX2018.⁷ These self-serving statements are not industry praise. *See Bayer Healthcare Pharms., Inc. v. Watson Pharms., Inc.*, 713 F.3d 1369, 1377 (Fed. Cir. 2013).

CAB also relies upon declarants for praise, but the declarants fail to link the alleged praise to the challenged claims. For example, Mr. Bowman cited CAB’s reputation and above ground cable management in general, not the novel features of the claims. *See* EX2028 ¶¶26-49. This does not establish nexus between the praise and the challenged claims. *See Centripetal Networks, Inc. v. Cisco Sys.*, 847 Fed. App’x 881, 888-89 (Fed. Cir. 2021) (high level praise of a company is insufficient to establish nexus). Similarly, Mr. Novak testifies that he recommended CAB largely because above ground installations were preferable to trenching. EX2059 ¶55. This too is based on self-serving inventor statements and is untethered to the claimed invention. *See Bayer*, 713 F.3d at 1377.

⁷ The first paragraph of EX2018 supports AWM’s prima facie obviousness case and confirms that cable rings and hangers were used in related industries for decades, and CAB simply modified existing technology to achieve expected results.

E. No Long Felt But Unresolved Need: No Nexus and No “Long Felt” Need

CAB primarily relies on a 2013 Solar Pro article to establish long felt but unmet need. *See* POR, 62-63. Much of the article addresses challenges entirely unrelated to the alleged invention. *See, e.g.*, EX1011, 2-3 (discussing improper installation of cables, thermal fittings, and combiner boxes); EX1050, 82:3-83:8, 98:12-103:20. The article fails to establish any long felt but unsolved problem resolved by CAB’s claimed system and thus fails to establish a nexus. The article further suggests that POSITAs were finding various solutions to many challenges.⁸ EX1011, 9.

EX1011 also does not establish *long felt* but unresolved need. The article was written just one year before the priority date of the ’291 patent and does not indicate that any problems allegedly solved by CAB’s invention existed for a substantial amount of time prior to 2013. This is consistent with the testimony of Mr. Weiner, who explains that rapid development starting in 2010-12 led to new wire

⁸ EX1011 supports the obviousness of the claims by highlighting a POSITA’s awareness in 2013 that the NEC taught that hangers should be used to support aerial conductors in solar. *See* EX1011, 7 (“Per NEC 334.30, type USE conductors ‘shall be supported and secured by ... hangers, or similar fittings....”).

management challenges and solutions. EX1038, ¶¶13-26. One year—or even three years—is not “long felt.” *See Adapt Pharma Operations Ltd. v. Teva Pharms. USA, Inc.*, 25 F.4th 1354 (Fed. Cir. 2022).

F. No Industry Skepticism: Record Evidence Shows General Industry Caution, Routine Engineering, and Immediate Acceptance

CAB’s evidence of “skepticism” is minimal and comprises self-serving and unsupported statements by CAB employees, general industry skepticism in the field, and routine engineering. For example, the Novak declaration contains only unsupported hearsay based on inventor discussions and contains no evidence of skepticism specific to the claims. *See* POR, 64; EX2059 ¶¶42-43, 46-48.

The Smith and Bowman declarations make similarly unsupported allegations of skepticism. *See, e.g.*, EX2006 ¶¶22-45; EX2028 ¶¶36-47. But the relied upon evidence shows routine testing, routine engineering discussions, and rapid adoption. *See* EX2010 ([REDACTED]), EX2011 (same), EX2030 (noting purported advantages with no skepticism), EX2031 ([REDACTED]). Routine testing and engineering, with expected results, is not industry skepticism. *See Bayer Healthcare Pharms., Inc. v. Watson Pharms., Inc.*, 713 F.3d 1369, 1377 (Fed. Cir. 2013).

The record evidence instead shows a lack of initial skepticism, undoubtedly due to the strong motivation to use known solutions from related industries. *See* EX2011, 5-17 ([REDACTED]); EX1028, 17:18-19:15 (testifying that SunPower asked CAB if it had used its messenger and hanger mining products in solar); EX1038 ¶¶13-26, 28. Instead of skepticism, industry players began using CAB’s products immediately. *See, e.g.,* EX2028 ¶¶35-40 (approval of CAB’s system months after first seeing it at the 2013 SPI show); *see also* EX2006 ¶23 (industry “guru” Bill Brooks immediately agreeing to draft a white paper with no skepticism); EX2033 ¶43 (same).

Finally, CAB admits that any skepticism was driven by general industry skepticism and not by features of the challenged claims. POR, 64, 65. This general industry skepticism is insufficient to establish nonobviousness because “the evidence of skepticism must be specific to the invention, not generic to the field.” *Auris Health, Inc. v. Intuitive Surgical Operations, Inc.*, 32 F.4th 1154, 1159 (Fed. Cir. 2022).

V. CONCLUSION

Petitioner respectfully requests that claims 1-10, 14-22, and 24-25 of the ’291 Patent be found unpatentable.

Petitioner Reply
IPR2024-00178
Patent 11,349,291 B2

Dated: October 17, 2024

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner hereby certifies, in reliance on the word count of the word-processing system (Microsoft Word for Microsoft 365) used to prepare this response, that the number of words in this paper is 5,596. This word count excludes the tables of contents, tables of authorities, certificate of word count, certificate of service, and appendix of exhibits.

Dated: October 17, 2024

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CERTIFICATE OF SERVICE

I certify that a copy of AWM's Petitioner Reply was served by electronic mail
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