

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.

IPR2024-00139
Patent 10,177,551

Before JAMES P. CALVE, FRANCES L. IPPOLITO, and NATHAN A. ENGELS,
Administrative Patent Judges.

PATENT OWNER'S NOTICE OF APPEAL

Pursuant to 35 U.S.C. §§ 141(c), 142, and 319; and 37 C.F.R. §§ 90.2 and 90.3; Federal Rule of Appellate Procedure 15; and Federal Circuit Rule 15, Patent Owner Cambria County Association for the Blind and Handicapped, Inc. (“CAB” or “Patent Owner”) hereby respectfully provides notice that it appeals to the United States Court of Appeals for the Federal Circuit from the Patent Trial and Appeal Board’s (“Board”) Final Written Decision entered on March 7, 2025 (Paper No. 63) (the “Final Written Decision”), and from all underlying findings, orders, decisions, rulings, and opinions that are adverse to Patent Owner.

For the limited purpose of providing the Director with the information requested in 37 C.F.R. § 90.2(a)(3)(ii), Patent Owner further provides notice that the issues on appeal include, but are not limited to, the following:

1. The Board’s determination that Claims 1-19 of U.S. Patent No. 10,177,551 (the “’551 Patent”) are unpatentable as obvious under 35 U.S.C. § 103.
2. The Board’s construction of the claim term “multi-function line.”
3. The Board’s failure to properly consider and weigh evidence of secondary considerations of non-obviousness.
4. The Board’s consideration of new arguments presented by Petitioner for the first time in its Reply.
5. The Board’s failure to adequately explain its rationales for its findings and rulings.

6. Any and all findings or determinations supporting or related to the aforementioned issues, as well as all other issues decided adversely to Patent Owner in any orders, decisions, rulings, or opinions.

Pursuant to 35 U.S.C. § 142 and 37 C.F.R. § 90.2(a), this Notice of Appeal is being filed with the Director of the United States Patent and Trademark Office. Simultaneous with this submission, a copy of the Notice of Appeal is being filed electronically with the Patent Trial and Appeal Board. In addition, a copy of this Notice of Appeal, along with the required docketing fees, is being filed with the Clerk's Office for the United States Court of Appeals for the Federal Circuit.

Respectfully submitted

Dated: May 6, 2025

/ Daniel J. Melman /

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CERTIFICATE OF SERVICE

The undersigned certifies that, in addition to being filed electronically through the Patent Trial and Appeal Board's P-TACTS system, a true and correct copy of the foregoing Notice of Appeal is being filed by electronic mail to efileSO@uspto.gov in accordance with 37 C.F.R. § 90.2(a).

I hereby certify that on May 6, 2025, a true and correct copy of the foregoing Patent Owner's Notice of Appeal, and the filing fee, is being filed with the Clerk's Office of the United States Court of Appeals for the Federal Circuit, via CM/ECF.

I also hereby certify that a true and correct copy of the foregoing Patent Owner's Notice of Appeal is being served by electronic mail on May 6, 2025 to the Petitioner by serving Petitioner's counsel of record at the e-mail addresses set forth below for IPR2024-00139:

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IPR2024-00139
Patent 10,177,551 B1

Before JAMES P. CALVE, FRANCES L. IPPOLITO, and
NATHAN A. ENGELS, *Administrative Patent Judges*.

ENGELS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Affordable Wire Management, LLC (“Petitioner”) filed a Petition (Paper 1 (“Pet.”)), seeking *inter partes* review of claims 1–19 (the “challenged claims”) of U.S. Patent No. 10,177,551 B1 (Ex. 1001 (“the ’551 patent”)). See Pet. 1. Cambria County Association for the Blind and Handicapped, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 14 (“Prelim. Resp.”).

Based on the preliminary record, we determined that Petitioner had shown a reasonable likelihood it would prevail in establishing the unpatentability of at least one challenged claim, and we instituted an *inter partes* review on all asserted grounds. Paper 21 (“Inst. Dec.”). During trial, Patent Owner filed a Response (Paper 30¹ (“PO Resp.”)), Petitioner filed a Reply (Paper 48² (“Reply”)), and Patent Owner filed a Sur-reply (Paper 54³ (“Sur-reply”)). Oral arguments were heard at a hearing on February 11, 2025, and a copy of the hearing transcript was entered in the record. Paper 62 (“Tr.”).

We have jurisdiction pursuant to 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the challenged claims. Having considered the full record

¹ Paper 30 is a publicly-available version of the PO Response. Patent Owner also filed a non-public Response. Paper 29.

² Paper 48 is a publicly-available version of the Reply. Petitioner also filed a non-public Reply. Paper 47.

³ Paper 54 is a publicly-available version of the Sur-reply. Patent Owner also filed a non-public Sur-reply. Paper 55.

at trial, we determine Petitioner has shown by a preponderance of the evidence that claims 1–19 are unpatentable.

A. Related Matters

The parties indicate that the '551 patent is the subject of *Cambria County Association for the Blind and Handicapped, Inc. v. Affordable Wire Management, LLC*, No. 1:23-cv-00080 (D. Del.). Pet. 95; Paper 6, 1.

B. Real Parties-in-Interest

The parties identify themselves as the real parties in interest. Pet. 95; Paper 6, 1.

C. The '551 Patent (Ex. 1001)

The '551 patent, titled “Grounding System,” relates to a grounding system for electrical power lines “that includes conductive elements whereby grounding cables do not need to be spliced into a conductor wire disposed adjacent a messenger wire, and, to a system wherein a multi-function line provides support and a current path.” Ex. 1001, 1:9–13, code (54). The '551 patent states that in solar, mining, and electrical industries there is a need for electrical cables to extend from a power or signal source to a location of application and such cables are usually supported by a number of poles or piles, a messenger wire, and a number of cable hangers. Ex. 1001, 1:17–23. A messenger wire is a robust cable structured to support a number of other wires, but the messenger wire is not structured to carry a current. Ex. 1001, 1:24–28. To protect against lightning strikes or electrical shorts, for example, in the prior art, “a conductor or grounding wire is disposed adjacent the messenger wires” and coupled to a current path to the ground. Ex. 1001, 1:67–2:4. The '551 patent states, however, that the grounding systems and methods of the prior art wires were difficult, time

consuming, and expensive. Ex. 1001, 2:12–16. Among other things, the '551 patent describes a “multi-function line” assembly and conductive mounting assemblies that connect a “multi-function line” to conductive piles to provide a path to ground for current in the multi-function line assembly. Ex. 1001, 2:27–35.

D. Challenged Claims

Petitioner challenges claims 1–19 of the '551 patent. Pet. 1. Independent claim 1 is illustrative of the challenged claims and is reproduced below with Petitioner's labeling added.

1[a]. A grounding system structured to ground a number of cables supported by a support assembly, said support assembly including a plurality of spaced, conductive piles, said grounding system comprising:

1[b] a multi-function line assembly including a multi-function line;

1[c] a number of conductive mounting assemblies, each said conductive mounting assembly structured to be coupled to said multi-function line and to a conductive pile; and

1[d] wherein said multi-function line assembly is coupled to, and in electrical communication with, said number of conductive mounting assemblies.

E. The Alleged Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 24):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–12, 18, 19	103	Grushkowitz ⁴
1–19	103	CAB Website, ⁵ CAB Whitepaper ⁶
1–19	103	Petersen ⁷
13–17	103	Petersen, MacLean ⁸
13–17	103	CAB Website, CAB Whitepaper, MacLean

Among other additional evidence, Petitioner also cites the Declaration of Omid Beik, Ph.D. in support of the Petition (Ex. 1002), and Patent Owner cites the Declaration of Joshua Phinney, Ph.D. in support of its Response (Ex. 2064).

II. ANALYSIS

A. Legal Standards

Petitioner bears the burden to demonstrate unpatentability, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A claim is unpatentable for obviousness if “the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the

⁴ US 10,003,298 B2; issued Jun. 19, 2018. Ex. 1003.

⁵ CAB Cable Rings and Saddles for Solar PV Arrays Website, Wayback Machine (February 4, 2015) (“CAB Website”). Ex. 1005.

⁶ Cable Management in Solar PV Arrays; Brooks Engineering; Sept. 18, 2014. Ex. 1006.

⁷ US 3,001,749; issued Sept. 26, 1961. Ex. 1004.

⁸ MacLean, “Pole Line Hardware Catalog,” published May 2010 (“MacLean”). Ex. 1027.

claimed invention pertains.” 35 U.S.C. § 103; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.⁹ *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art (“POSITA”) “would have had a bachelor’s degree in a pertinent discipline, such as electrical engineering, civil engineering, mechanical engineering or equivalent with 2–3 years of experience in electrical utility systems, planning, and design” and “the number of years of experience could be higher or lower given the level of education and vice versa.” Pet. 23. In its Preliminary Response, Patent Owner contended Petitioner’s level of ordinary skill is too high. Prelim. Resp. 32. According to Patent Owner, a POSITA would have had “an associate degree in an engineering discipline, and 1–2 years’ experience in electrical power systems” and “[a] lack of work experience can be remedied by additional education, and vice versa.” Prelim. Resp. 31 (citing Ex. 2001 ¶ 21).

Our Institution Decision states that we preliminarily determined a POSITA would have had a bachelor’s degree in an engineering discipline and two years of experience in electrical power systems. Inst. Dec. 5–6. Patent Owner’s Response states that Patent Owner applies the Board’s

⁹ The parties have not directed our attention to any objective evidence of obviousness or non-obviousness.

preliminary determination (PO Resp. 6, n.3), and Petitioner did not subsequently address the issue. Based on the full record, we determine a POSITA would have had a bachelor's degree in an engineering discipline and two years of experience in electrical power systems. We are satisfied that this comports with the level of skill necessary to understand and implement the teachings of the '291 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1354–55 (Fed. Cir. 2001) (explaining the applied prior art may reflect an appropriate level of skill).

C. Claim Construction

We apply the same claim construction standard used in district court actions under 35 U.S.C. § 282(b), namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b) (2021). In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Both parties identify “multi-function line” as a claim element requiring construction. Petitioner contends the '551 patent's specification explicitly defines “multi-function line” as “‘a tension member that supports current wires and/or cable hangers’ and ‘is conductive.’” Pet. 23 (quoting Ex. 1001, 2:37–40). In its Reply, Petitioner states that “[t]he inventor

defined ‘multi-function line’ as a conductive tension member that supports current wires and/or cable hangers—that is a messenger wire that does not require a separate grounding conductor.” Reply 10.

Patent Owner argues “‘multi-function line’ means ‘a tension member that supports current wires and/or cable hangers, as a messenger wire, and which provides a current path, as a grounding conductor.’” PO Resp. 25 (citing Ex. 2064 ¶ 82). According to Patent Owner, that construction derives directly from the specification, which “describes various conditions that require the use of a ‘grounding conductor,’ including when a messenger wire, which is not ‘structured to’ (intended or designed to) carry current, nevertheless has current imposed on it, such as in the event of a lightning strike or failure of a current wire resulting in a fault.” PO Resp. 25–26.

Patent Owner additionally argues that “the purpose of a ‘grounding conductor’ as defined by the specification is to provide an ‘effective ground fault current path.’” PO Resp. 26 (citing Ex. 2064 ¶ 46; Ex. 2004, 26:22–27:17); *see* Sur-reply 1–4. Further, according to Patent Owner, “a POSITA would understand that a ‘multi-function line’ must be more than just conductive – it must act as a grounding conductor that provides an effective ground fault current path,” and Patent Owner argues that merely having metal parts connected to each other is not sufficient to disclose the multi-function limitation. PO Resp. 28.

Based on the complete record, we determine Petitioner has correctly defined “multi-function line,” and we disagree with Patent Owner’s proposed interpretation. First, the claim language provides that the multi-function line is part of multi-function line assembly. Claim 1 states that the multi-function line assembly is coupled to and in electrical communication

with a number of conducting mounting assemblies, which are also recited to be coupled to a conductive pile. Claim 9, which depends from claim 1, recites “wherein said multi-function line assembly does not include any grounding splices,” meaning that the multi-function line assembly of independent claim 1 can include grounding splices. Claim 11, which also depends from claim 1, recites “wherein said multifunction line includes one of a highly conductive body or a partially conductive body.” And claim 13, which ultimately depends from claim 1, further defines the “grounding system” and “multi-function line assembly” by reciting “wherein said multi-function line assembly terminal support includes a conductive thimble-eye.” So the claim language indicates that the multi-function line of claim 1 alone need not define a path to ground.

The specification is consistent with this understanding. The specification distinguishes a “multi-function line” from messenger wires of the prior art, stating that in the prior art, “a conductor or grounding wire [was] disposed adjacent the messenger wires; hereinafter, such a wire is identified as a grounding conductor.” Ex. 1001, 1:67–2:3. Next, the specification states that the grounding system of the ’551 patent includes a “multi-function line assembly and a number of conductive mounting assemblies.” Ex. 1001, 2:27–29 (emphasis added). So while a multi-function line is distinguished from a messenger wire disposed adjacent to a grounding wire or grounding conductor, the specification provides that the multi-function line itself is not the complete grounding system.

The specification also states that “[e]ach conductive mounting assembly is structured to be, and is, coupled to the multi-function line and to a conductive pile. This configuration provides a path to ground for a current

in the multi-function line assembly.” Ex. 1001, 2:29–33. Thus, again, the multi-function line is not by itself a path to ground. It does not, by itself, provide a path to ground.

The specification continues: “Further, the multi-function line supports the cable hangers (which support the current wires, data wires and other wires). That is, a single multi-function line supports the cable hangers, *as a messenger wire*, and *provides a current path, as a grounding conductor*.” Ex. 1001, 2:33–37 (emphasis added). And the sentence following that passage, which is cited by both parties, states: “Accordingly, as used herein, a ‘multi-function line’ means a tension member that supports current wires and/or cable hangers, and, *which is conductive*.” Ex. 1001, 2:37–40 (emphasis added). The sentences immediately following that sentence provide additional context, stating: “That is, a messenger wire is not a ‘multi-function line.’ Similarly, *a conductor that does not support other constructs* is not a ‘multi-function line.’” Ex. 1001, 2:40–42 (emphasis added). Thus, the specification indicates that a multi-function line is a tension member, “is conductive,” and supports other constructs such as current wires and/or cable hangers. In contrast, the specification does not mention “effective ground fault current path.”

The relevant intrinsic record also includes certain parts of the prosecution history of the ’551 patent. In relevant part, the Examiner rejected certain claims as anticipated by Korman,¹⁰ stating that Korman discloses the claimed multi-function line that includes a tension line because “the weight of [Korman’s] line 60 (mass + gravity) creates weight force

¹⁰ US 2012/0024563 A1, published Feb. 2, 2012.

which is pulling down on the line between connectors 42, 43 and this forms a tension line.” Ex. 1037, 131. Among other things, the Applicant argued in response that in Korman, ““the dc grounding conductor path 60’ is via the frames which are coupled via the connectors 42, 43. That is, Korman never discloses a wire, cable, or any other tension member.” Ex. 1037, 142 (emphasis omitted); *accord* Ex. 1037, 141 (“Korman discloses a system wherein metal frames and metal units coupled to the frame are in electrical communication via electrical couplings, *i.e.*, plugs. Simply put, the Korman system does not include any cables, wires or any other tension member.” (emphasis omitted)), 143 (“Nothing in Korman discloses that element 60 is a tension member.” (emphasis omitted)). The Applicant subsequently argued in an appeal brief that “tension member” means “a construct that has a maximum length when exposed to tension, but is otherwise substantially flexible, such as, but not limited to, a chain or a cable. That is, the term ‘tension member’ is used to describe the ‘multi-function line’ which replaces the messenger wire used in the prior art.” Ex. 1037, 173. The Applicant also reiterated in the appeal brief the arguments that Korman does not disclose a cable or wire. Ex. 1037, 179–182. The Examiner then issued a notice of allowability in response to the appeal brief. Ex. 1037, 207. From this portion of the intrinsic record, we understand a multi-function line to be a tension member such as a cable or wire, but this discussion also does not support Patent Owner’s suggestion that a multi-function line must be an “effective ground fault current path.”

Thus, on the complete record, we determine that the appropriate construction of “multi-function line” is a tension member that supports current wires and/or cable hangers and is conductive. We do not agree with

Patent Owner that the claimed multi-function line must also be “an effective ground fault current path” or an “equipment grounding conductor.” A multi-function line could be part of a system that acts as an effective ground fault current path or an equipment grounding conductor, but nothing in the intrinsic evidence supports reading “effective ground fault current path” or “equipment grounding conductor” into the interpretation of “multi-function line.” Similarly, even if a POSITA would understand that implementing a multi-function line would require complying with NEC requirements, the NEC requirements are extrinsic evidence and do not define a multi-function line. *See Seabed Geosolutions (US) Inc. v. Magseis FF LLC*, 8 F.4th 1285, 1287 (Fed. Cir. 2021) (“If the meaning of a claim term is clear from the intrinsic evidence, there is no reason to resort to extrinsic evidence.”).

We determine no other claim terms require express construction. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Alleged Obviousness of Claims 1–19 Based on CAB Website and CAB Whitepaper

Petitioner provides a limitation-by-limitation comparison of each of claims 1–19 to the teachings of CAB Website and CAB Whitepaper. Pet. 13–50. We address Petitioner’s contentions and Patent Owner’s responsive arguments regarding each claim 1 below.

1. *Independent Claim 1*

- a. *1[a]. A grounding system structured to ground a number of cables supported by a support assembly, said support assembly including a plurality of spaced, conductive piles, said grounding system comprising:*

Petitioner does not address whether some or all of the preamble is limiting, but Petitioner states that to the extent that the preamble is limiting, “the CAB Website in view of the CAB [Whitepaper] discloses it or renders it obvious.” Pet. 48. According to Petitioner, the CAB Website “depicts a support assembly supporting current-carrying cables comprising a plurality of spaced conductive piles, mounting brackets, and a messenger wire (multi-function line).” Pet. 48–50 (citing Ex. 1005, 5; Ex. 1002 ¶ 108). Petitioner also states that the CAB Whitepaper discloses the same grounding and support system structured to ground current conducting cables that are supported by a support assembly, as well as spaced conductive piles. Pet. 50–51 (citing Ex. 1006, 3; Ex. 1002 ¶ 111).

Patent Owner does not address Petitioner’s showings for claim element 1[a]. Based on the complete record, to the extent that it is limiting, we determine Petitioner has shown that the teachings of the CAB Website and CAB Whitepaper satisfy claim element 1[a].

- b. *1[b] a multi-function line assembly including a multi-function line;*

Citing its proposed definition of “multi-function line” addressed above, Petitioner contends the CAB Website “depicts a metal, and therefore conductive, messenger wire that supports current-carrying cables and hangers.” Pet. 51–52 (citing Ex. 1005, 5; Ex. 1002 ¶ 113). Petitioner further

states that the CAB Whitepaper depicts a metal messenger wire attached to spaced piles supporting current carrying cables and hangers. Pet. 52–53 (citing Ex. 1006, 6, 8).

Petitioner further states that a POSITA “would have understood that the messenger wire depicted in the CAB Website and CAB Whitepaper is metal (i.e. conductive), and subject to tensile forces from gravity and the weight current wires and/or cable hangers supported thereon.” Pet. 53 (Ex. 1002 ¶¶ 114–115). Further, according to Petitioner, “[t]hough the CAB Website and CAB Whitepaper do not expressly disclose the terminal support portion of the multi-function line assembly, it would have been obvious to a POSITA that terminal supports are necessary in order for the assembly to be NEC compliant, and provide adequate support for the weight of the multi-function line.” Pet. 53–54 (citing Ex. 1002 ¶¶ 115, 151).

- c. 1[c] a number of conductive mounting assemblies, each said conductive mounting assembly structured to be coupled to said multi-function line and to a conductive pile; and*

Petitioner contends the CAB Website depicts mounting assemblies comprised of metallic (conductive) components structured to couple a multi-function line and to a metallic (conductive) pile. Pet. 54 (citing Ex. 1005, 5; Ex. 1002 ¶ 117). Petitioner also contends the CAB Whitepaper depicts a nearly identical conductive mounting assembly. Pet. 55 (citing Ex. 1006, 3; Ex. 1002 ¶ 118).

d. 1[d] wherein said multi-function line assembly is coupled to, and in electrical communication with, said number of conductive mounting assemblies.

Petitioner contends the CAB Website and the CAB Whitepaper disclose a multi-function line assembly coupled to a conductive mounting assembly. Pet. 55. Petitioner also states that a POSITA would have understood that connecting metallic (conductive) components would result in such components being in electrical communication with one another. Pet. 55–56 (citing Ex. 1002 ¶ 120). Petitioner further states that the CAB Whitepaper discloses utilizing a grounded steel messenger wire, “which a POSITA would have understood to mean the messenger wire (multi-function line) is in electrical communication with the mounting assembly, and conductive pile.” Pet. 56 (citing Ex. 1002 ¶ 121).

e. Patent Owner’s Arguments

Patent Owner argues a POSITA would not have understood that the CAB Website or the CAB Whitepaper “disclose[s] the claimed invention simply because the references disclose metal parts in contact with each other, or simply because the references do not show a separate grounding conductor from the depicted messenger wire.” PO Resp. 35. According to Patent Owner, a POSITA viewing the CAB Website would not even be thinking about a grounding system and would not have found anything on any of the website links to any components of a grounding system. PO Resp. 36 (citing Ex. 2064 ¶¶ 106–107). Further, Patent Owner argues a POSITA looking at the CAB Website would need more information to know if the metal parts depicted on the website were sufficient to provide an effective ground fault current path (*id.* at 36–38) and “a POSITA would not

have assumed that the CAB Website’s and CAB Whitepaper’s depiction of the mounting hardware components that connect the ‘messenger wire’ to the pile are properly bonded as shown” (*id.* at 38). According to Patent Owner, “[w]hat must be shown is that these components are properly bonded, and a POSITA would need to confirm—not merely assume—whether the components are properly bonded.” *Id.*

Patent Owner advances similar arguments to contend that the CAB Website and the CAB Whitepaper do not disclose a multi-function line. *Id.* at 39–44. According to Patent Owner, “the installation of CAB’s hangers suspended from a messenger wire, and the messenger wire connected to a metal pile is, in fact, not a professional or functional installation – it was a mock-up put together for marketing purposes, i.e., to include on CAB’s Website.” *Id.* at 40 (citing Ex. 2016 ¶¶ 14–19; Ex. 2033 ¶¶ 56–62). And Patent Owner contends there are “multiple red flags” that would have indicated to a POSITA that the CAB Website or the CAB Whitepaper were merely a mock-up and “[p]rior to the time of the ’551 invention, the use of a messenger wire to serve as a grounding conductor while also supporting cable hangers and current wires was not even known.” *Id.* at 41 (citing Ex. 2064 ¶ 148). Patent Owner argues “Petitioner has offered no evidence that, at the time of the invention, it was known to use a messenger wire that served the dual purpose of supporting cable hangers and current wires and providing an effective ground fault current path as a grounding conductor.” *Id.* at 42–43 (citing Ex. 2064 ¶¶ 156–159). According to Patent Owner, the CAB Whitepaper’s reference to a “grounded steel messenger wire” would not have suggested a grounding conductor that provides an effective ground

fault current path. *Id.* at 43–44 (citing Ex. 2033 ¶¶ 63–64; Ex. 2064 ¶¶ 160–168).

Next, Patent Owner argues the CAB Website or the CAB Whitepaper do not disclose the recited conductive mounting assemblies, arguing the claims require “a number of conductive mounting assemblies, each said conductive mounting assembly *structured to*, i.e., intended and designed to, be coupled to said multi-function line.” *Id.* at 44. Patent Owner argues “a POSITA would understand that [the conductive mounting assemblies] must be sufficiently conductive so that, when coupled to the multi-function line, an effective ground fault current path is provided” but “there is no disclosure that these structures are configured, intended or designed to be couple to a multi-function line so as to provide an effective ground fault current path.” *Id.* at 45 (citing Ex. 2064 ¶¶ 174–176).

f. Discussion

Based on the complete record, we agree with Petitioner that the combined teachings of the CAB Website and the CAB Whitepaper teach or reasonably suggest the invention of claim 1. First, as explained above, claim 1 does not recite or otherwise require an effective ground fault current path, and Patent Owner’s arguments premised on such an interpretation are misplaced. Even to the extent that a POSITA would understand that a system installation would require “properly bonded” components and compliance with NEC requirements, the claims do not require “bonded” components nor otherwise invoke NEC requirements. On the other hand, a POSITA’s knowledge of grounding and the NEC requirements would have been part of the lens through which the POSITA would have viewed the CAB Website and the CAB Whitepaper. Even if a

POSITA would have needed more information to know if the components depicted in the CAB Website and the CAB Whitepaper are properly bonded, Patent Owner's own arguments reflect that a POSITA would have understood the need to properly bond components to provide a path to ground. Petitioner does not need to show that a POSITA would have "assumed" or "confirmed" that the CAB Website and the CAB Whitepaper show a properly bonded or grounded system (*see* PO Resp. 36–40); the test for obviousness is whether the claimed invention would have been obvious to a POSITA in view of the prior art. Thus, even though the record includes evidence that the structures depicted in the CAB Website and the CAB Whitepaper were merely mock-ups, the critical question is what a POSITA would have understood from such mock-ups.

Notably, in a subsection titled "Grounding and Bonding of Cable Supports," the CAB Whitepaper includes Figure 5, copied below.



Figure 5: CAB Cable Rings and Saddles Installation

Ex. 1006, 14. Figure 5 of the CAB website depicts three hangers and saddles hanging from a "grounded steel messenger wire." *Id.* As stated in the CAB Whitepaper: "In Figure 5, the hangers are actually in full contact with a grounded steel messenger wire. It could be argued that even if the conductor insulation were ever to be damaged, the cable rings and saddles would stay at or near ground potential." *Id.* We agree with Petitioner that a

POSITA would have understood that the “grounded steel messenger wire” in Figure 5 and related discussions depicts a tension member (wire) that supports cable hangers and also is conductive. In fact, the CAB Website and CAB Whitepaper both include multiple depictions of metal wires supporting wire hangers. *See* Ex. 1005, 3, 5, 10, 13, 18; Ex. 1006, Figs. 2, 5. Thus, we determine that the combination of the CAB Website and the CAB Whitepaper teaches the claimed multi-function line.

In addition to a similar depiction of a metal wire supporting cable hangers, copied below is a picture from the CAB Website depicting such a wire in a photovoltaic panel installation.



Ex. 1005, 5. The picture from the CAB Website depicts a metal wire supporting numerous cable hangers that are attached by metal mounting brackets to metal piles. We agree with Petitioner that a POSITA would have understood that this picture and the references’ similar pictures depict a grounding system that includes a plurality of piles that are spaced apart and conductive because a POSITA would have understood that the piles are depicted to be made of metal. Similarly, we agree with Petitioner that the CAB Website and the CAB Whitepaper teach or suggest to a POSITA conductive mounting assemblies that are structured to be, and in fact are,

coupled to the multi-function line and to the conductive piles. Likewise, we agree with Petitioner that the references thus teach the recited “multi-function line assembly is coupled to, and in electrical communication with, said number of conductive mounting assemblies.”

Based on the entire record, Petitioner shows that the combination of the CAB Website and the CAB Whitepaper satisfy the limitations of claim 1. We also agree with Petitioner that a POSITA would have had reason to combine the references’ teachings, at least because the CAB Website expressly refers to the CAB Whitepaper, suggesting to a POSITA that the references’ teachings should be considered together. Pet. 47–48; *see* Reply 6–8.

g. Secondary Considerations

Patent Owner argues that objective evidence of nonobviousness exists in the form of commercial success, industry praise, overcome industry skepticism, and addressing a long-felt but unresolved need. PO Resp. 61–71. Citing the testimony of Dr. Phinney, Patent Owner argues it sells an Integrated Grounding System for use in photovoltaic installations that “embodies the features of, and is coextensive with, at least claim 1” such that it is entitled to a presumption of a nexus between the claimed invention and the objective evidence of nonobviousness. PO Resp. 63 (citing Ex. 2064 ¶¶ 295–309; App’x A). Dr. Phinney states that he prepared a claim chart comparing claim 1 to “various photographs of [Patent Owner’s] Integrated Grounding System” from Patent Owner’s website and from several of Patent Owner’s documents. Ex. 2064 ¶¶ 298–303 (citing Ex. 2041, 2043, 2054, 2066). Among other things, Dr. Phinney states that “[e]xemplary CAB product part numbers that constitute its Integrated Grounding System

include CAB-9605 (copper-clad grounding messenger wire); CAB-9705 (grounding Mid Pier Kit); CAB-9760 (cable hangers); and CAB-9607 (grounding end-pier attachment kit). Ex. 2064 at ¶ 304 (citing Ex. 2054). Dr. Phinney’s Declaration also includes a claim chart purporting to compare each element of claim 1 to different photographs and descriptions of Patent Owner’s products. *Id.* at App’x A.

First, we agree with Petitioner that Patent Owner has not shown that the cited products are coextensive with, and have the required nexus between, the products and claim 1. *See* Reply 18–29. Even if Patent Owner sells an “Integrated Grounding System” that satisfies each limitation of claim 1, that system is undeniably comprised of “various” “exemplary” interchangeable parts that have uses outside of the claimed invention, that at least purportedly relate to many other of Patent Owner’s patents, and that were known in the prior art. *E.g.*, Ex. 2064, ¶ 304 (identifying “exemplary” product part numbers, including CAB-9605, CAB-9705, CAB-9760, and CAB-9607), n.10; App’x A, A5 (identifying a part number “representative” part the “mid-pierkit”); Ex. 1049, 6–7 (identifying Patent Owner’s patent’s relating to different part numbers). For example, Patent Owner identifies two patent numbers purportedly protecting its “grounding Mid Pier Kit,” the ’551 patent and US Pat. No. 10,461,518. Ex. 1049, 6–7. Patent Owner identifies three of its patents as protecting its copper messenger wire, part number CAB-9605: (i) the ’551 patent, (ii) US Pat. No. 10,461,518, and (iii) US Pat. No. 10,811,859. *Id.* And Patent Owner identifies *eight* different patents, but *not* the ’551 patent, as protecting the cited cable hangers, CAB-9760. *Id.* And as explained in the analysis above, all of these parts were known and available in the prior art, as evidenced by the CAB Website and

the CAB Whitepaper. We can discern no nexus between the features of the '551 patent and the alleged objective evidence of nonobviousness given that the so-called “Integrated System” includes multiple, interchangeable, and “exemplary” part numbers that were known in the prior art. *See Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1364 (Fed. Cir. 2023) (“But our case law makes clear that objective evidence of nonobviousness lacks a nexus if it exclusively relates to a feature that was *known* in the prior art—not necessarily well-known.” (internal quotations and citations omitted)); *see also Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1369 (Fed. Cir. 2011) (“If commercial success is due to an element in the prior art, no nexus exists.”).

Second, even if we were to afford considerable weight to Patent Owner’s evidence, we determine that the evidence is not sufficient to overcome Petitioner’s strong showing that the asserted references teach claim 1. Indeed, reflecting the strength of Petitioner’s arguments, Petitioner’s claim chart comparing the CAB Website and the CAB Whitepaper to claim 1 is substantially similar to Dr. Phinney’s claim chart comparing claim 1 to Patent Owner’s products.

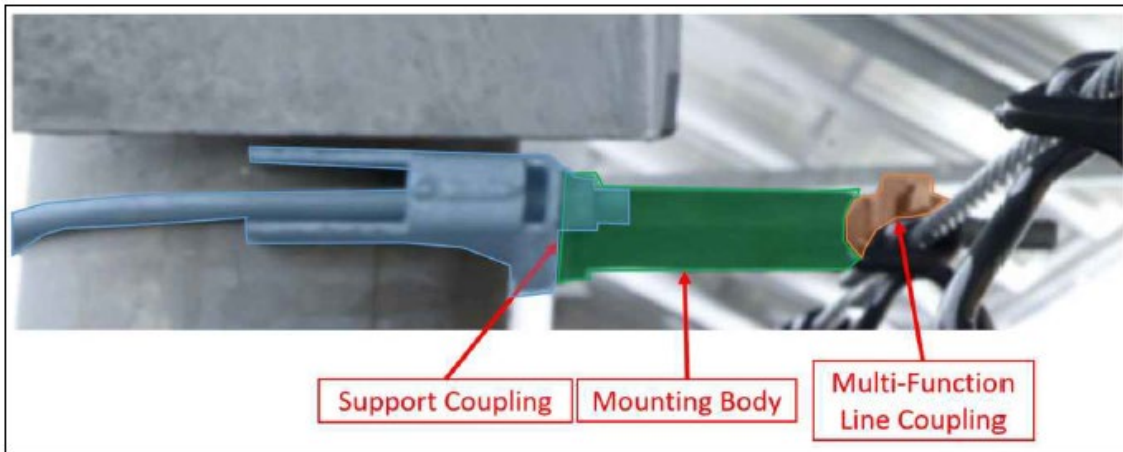
h. Conclusion For Claim 1

Based on the complete evidence of record, we determine Petitioner has proven by a preponderance of the evidence that claim 1 is unpatentable in view of the CAB Website and the CAB Whitepaper.

2. Claim 2

Claim 2 recites: “The grounding system of claim 1, wherein each said conductive mounting assembly includes a mounting body, a support coupling, and a number of multi-function line couplings; and each said

multi-function line coupling defines a conductive path.” Petitioner argues the CAB Website and the CAB Whitepaper depict the claimed conductive mounting assembly as illustrated in the annotated picture copied below from the CAB Website.



Pet. 57 (citing Ex. 1005, 5). Petitioner’s annotated picture identifies a multi-function line coupling shaded in orange, a mounting body shaded in green, and a support coupling shaded in blue. Petitioner argues that a POSITA would have understood that using these components with a grounded steel messenger wire (multi-function line) as described in the CAB Whitepaper would have defined a conductive path. Pet. 57–58.

Patent Owner addresses claim 2 only by arguing that the CAB Website and the CAB Whitepaper fail to disclose the claimed conductive mounting assemblies of claim 1 and therefore cannot satisfy claim 2. PO Resp. 46.

We disagree with Patent Owner for the reasons explained above regarding claim 1, and we agree with Petitioner that the CAB Website and the CAB Whitepaper teach the additional requirements of claim 2. Accordingly, we determine Petitioner has proven by a preponderance of the

evidence that claim 2 is unpatentable in view of the CAB Website and the CAB Whitepaper.

3. Claim 3

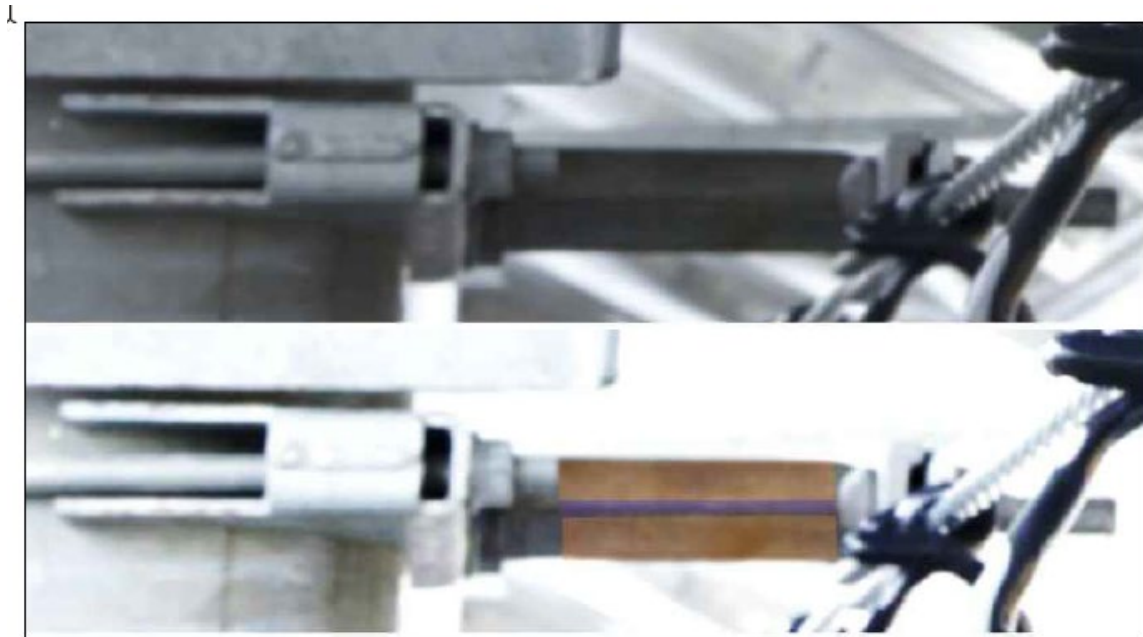
Claim 3 recites: “The grounding system of claim 2 wherein each said mounting body is one of a conductive body or a conductive body assembly.” Petitioner argues the CAB Website and the CAB Whitepaper depict that the mounting body is made of metal and is therefore conductive. Pet. 58.

Patent Owner does not address or rebut Petitioner’ showings for claim 3.

We agree with Petitioner that the CAB Website and the CAB Whitepaper depict that the mounting body is made of conductive metal. Pet. 58. Accordingly, we determine Petitioner has proven by a preponderance of the evidence that claim 3 is unpatentable in view of the CAB Website and the CAB Whitepaper.

4. Claim 4

Claim 4 recites: “The grounding system of claim 3 wherein each said mounting body has a simplified shape.” According to Petitioner, the ’551 patent defines “simplified shape” as “a body or assembly including generally planar portions and transitional bends or welds between the generally planar portions.” Pet. 58 (quoting Ex. 1001, 9:62–64). Petitioner cites the picture of the mounting body copied below to argue that the mounting bodies depicted in the CAB Website and the CAB Whitepaper have generally planar portions and traditional welds between the planar portions.



Ex. 1005, 5. Petitioner's picture from the CAB Website includes two pictures of a mounting body, with the top picture being an original reproduction and the bottom picture being a color corrected duplication.

Patent Owner does not address or rebut Petitioner's showings for claim 4.

We agree with Petitioner that the CAB Website and the CAB Whitepaper teach a mounting body having the claimed simplified shape in that it has generally planar portions and traditional bends or welds between the planar portions. Accordingly, we determine Petitioner has shown by a preponderance of the evidence that claim 4 is unpatentable in view of the CAB Website and the CAB Whitepaper.

5. Claim 5

Claim 5 recites: "The grounding system of claim 2 wherein: each said mounting body is a conductive body; and each said mounting body conductive body is a partially conductive body." Petitioner argues the CAB Website and the CAB Whitepaper satisfy the limitations of claim 5 for the

same reasons addressed above for claim 2 and additionally because the '551 patent defines “partially conductive” as any material that “conducts electricity,” including galvanized steel. Pet. 59–60 (citing Ex. 1001, 8:18–28).

Patent Owner does not address or rebut Petitioner’s showings for claim 5.

The '551 patent states that “a ‘partially conductive’ (sub-)element is one that conducts electricity, but with some resistance or wherein electricity does not pass through all portions of the element. For example, galvanized steel or a steel wire with copper cladding are examples of ‘partially conductive’ elements.” Ex. 1001, 8:23–28. We agree with Petitioner that the '551 patent, the CAB Website, and the CAB Whitepaper depict galvanized steel components of the mounting body. Accordingly, we determine Petitioner has proven by a preponderance of the evidence that claim 5 is unpatentable in view of the CAB Website and the CAB Whitepaper.

6. Claim 6

Claim 6 recites: “The grounding system of claim 2 wherein each said multi-function line coupling is a clamping assembly.” Petitioner contends the CAB Website and the CAB Whitepaper depict two different clam-shell type clamping assemblies. Pet. 60–62 (citing Ex. 1005, 5, 18).

Patent Owner does not address or rebut Petitioner’s showings for claim 6.

We agree with Petitioner that the CAB Website and the CAB Whitepaper depict clam-shell type clamping assemblies for the multi-function line couplings. Accordingly, we determine Petitioner has proven

by a preponderance of the evidence that claim 6 is unpatentable in view of the CAB Website and the CAB Whitepaper.

7. Claim 7

Claim 7 recites: “The grounding system of claim 6 wherein each said multi-function line coupling includes one of a clam-shell assembly, a split bolt, a U-bolt, or a lay-in lug assembly.” Petitioner cites the same reasons addressed above regarding claim 6. Pet. 62.

Patent Owner does not address or rebut Petitioner’s arguments for claim 7.

For the same reasons addressed above, we agree with Petitioner that the CAB Website and the CAB Whitepaper depict clam-shell type clamping assemblies for the multi-function line couplings. Accordingly, we determine Petitioner has proven by a preponderance of the evidence that claim 7 is unpatentable in view of the CAB Website and the CAB Whitepaper.

8. Claim 8

Claim 8 recites: “The grounding system of claim 2 wherein: said number of multi-function line couplings includes a plurality of multi-function line couplings; and each said multi-function line coupling spaced one of a first effective distance, a second effective distance, or a third effective distance from another multi-function line coupling.” In addition to the arguments addressed above regarding claim 2, Petitioner contends a POSITA would have been motivated to space the multi-function line couplings as disclosed by the CAB Website at a first, second, or third effective distance because such distances were known in the art. Pet. 62–64 (citing Ex. 1001, 11:2–7; Ex. 1002 ¶¶ 143–144).

Patent Owner does not address or rebut Petitioner's showings for claim 8.

We are persuaded that a POSITA would have been motivated to space the multi-function line couplings at effective distances as claimed as was known in the art. Accordingly, we determine Petitioner has shown by a preponderance of the evidence that claim 8 is unpatentable in view of the CAB Website and the CAB Whitepaper.

9. Claims 9, 10, 15, and 16

Claim 9 recites: "The grounding system of claim 1 wherein said multi-function line assembly does not include any grounding splices." Claim 10 recites: "The grounding system of claim 1 wherein said multi-function line assembly does not include any medial grounding splices." Claim 15 recites: "The grounding system of claim 13 wherein said multi-function line assembly does not include any grounding splices." Claim 16 recites: "The grounding system of claim 13 wherein said multi-function line assembly does not include any medial grounding splices."

Petitioner contends a POSITA would have understood that the system disclosed by the CAB Website and the CAB Whitepaper would not have required the addition of grounding splices because each mounting assembly disclosed by the CAB Website and the CAB Whitepaper is grounded by virtue of coupling together conductive components. Pet. 64 (citing Ex. 1002 ¶ 145).

Patent Owner does not address or rebut Petitioner's showings for claims 9, 10, 15, and 16.

We agree with Petitioner that the CAB Website and the CAB Whitepaper do not show grounding splices and that a POSITA would have

understood the references to teach the mounting assembly is grounded by virtue of coupling together conductive components. Accordingly, we determine Petitioner has proven by a preponderance of the evidence that claims 9, 10, 15, and 16 are unpatentable in view of the CAB Website and the CAB Whitepaper.

10. Claims 11 and 17

Claim 11 recites: “The grounding system of claim 1 wherein said multi-function line includes one of a highly conductive body or a partially conductive body.” Claim 17 recites: “The grounding system of claim 13 wherein said multi-function line includes one of a highly conductive body or a partially conductive body.” Petitioner contends the CAB Website and the CAB Whitepaper teach metal strand multi-function lines, such as a “grounded steel messenger wire.” Pet. 65–66 (citing Ex. 1005, 5; 1006, 3, 14; Ex. 1001, 8:26–28; Ex. 1002 ¶¶ 148–149).

Patent Owner does not address or rebut Petitioner’s showing for claims 11 and 17.

We agree with Petitioner that the CAB Website and the CAB Whitepaper depict metal strand wires and that the CAB Whitepaper describes a grounded steel messenger wire that would be partially conductive. Accordingly, we determine Petitioner has proven by a preponderance of the evidence that claims 11 and 17 are unpatentable in view of the CAB Website and the CAB Whitepaper.

11. Claim 12

Claim 12 recites: “The grounding system of claim 1 wherein said multi-function line includes strands selected from the group consisting of: copper strands, copper-clad steel strands, galvanized strands, conductive

alloy strands, partially conductive, alloy strands, or composite strands.” Petitioner argues the CAB Website and CAB Whitepaper teach multi-function lines comprised of strands of metal. Pet. 66. Petitioner further argues that to the extent it is not expressly disclosed by the CAB Website and the CAB Whitepaper, it would have been obvious to a POSITA to use a multi-function line that includes copper strands, copper-clad steel strands, galvanized strands, conductive alloy strands, partially conductive, alloy strands, or composite strands because those materials were known in the art. Pet. 66–67 (citing Ex. 1002 ¶ 150).

Patent Owner does not address or rebut Petitioner’s showings for claim 12.

We agree with Petitioner that the CAB Website and the CAB Whitepaper teach multi-function lines made of strands of metal as shown, for example, in the figures and pictures copied above, and we are persuaded that selecting one of the metal strands recited in claim 12 would have been obvious to a POSITA as the materials were known in the art to be suitable for this purpose. Accordingly, we determine Petitioner has shown by a preponderance of the evidence that claim 12 is unpatentable in view of the CAB Website and the CAB Whitepaper.

12.Claims 13 and 18

Claim 13 recites: “The grounding system of claim 12 wherein said multi-function line assembly terminal support includes a conductive thimble-eye.” Claim 18 recites: “The grounding system of claim 1 wherein said multi-function line assembly includes a conductive terminal support.”

Petitioner argues a POSITA would have been motivated to combine the CAB Website and CAB Whitepaper with a conductive thimble-eye in

order to provide terminal support for a multi-function line because conductive metal thimble-eye couplings were known in the art and commonly used to couple multi-function lines to conductive terminal supports and because conductive thimble-eye couplings were required to have an NEC-compliant system. Pet. 67 (citing Ex. 1002 ¶¶ 151–153), 68–69 (citing Ex. 1002 ¶ 161).

Patent Owner does not address or rebut Petitioner’s showings for claims 13 and 18.

We are persuaded that a POSITA would have been motivated to use a conductive thimble-eye coupling to connect a multi-function line to a conductive terminal support because the record reflects that doing so was known in the art and required for NEC compliance. *See id.* Accordingly, we determine Petitioner has proven by a preponderance of the evidence that claims 13 and 18 are unpatentable in view of the CAB Website and the CAB Whitepaper.

13.Claim 14

Claim 14 recites: “The grounding system of claim 13 wherein said multi-function line is structured to be operational with solar electrical equipment.” Petitioner contends the CAB Website and the CAB Whitepaper teach a grounding system having a multi-function line that is structured to be operational with solar electric equipment such as “solar wiring” and cable management for solar photovoltaic arrays. Pet. 67 (citing Ex. 1005, 3, 6; Ex. 1006, 3; Ex. 1002 ¶¶ 154–155).

Patent Owner does not address or rebut Petitioner’s showings for claim 14.

We agree with Petitioner that the CAB Website and the CAB Whitepaper teach a grounding system having a multi-function line structured to be operational with solar equipment because, among other things, the references refer to solar wiring and depict installations with photovoltaic arrays. *See id.* Accordingly, we determine Petitioner has proven by a preponderance of the evidence that claim 14 is unpatentable in view of the CAB Website and the CAB Whitepaper.

14.Claim 19

With limitations similar to claim 1, claim 19 recites:

A mounting assembly for a grounding system structured to ground a number of cables supported by a support assembly, said support assembly including a plurality of spaced, conductive piles, said grounding system including a multi-function line assembly with a multi-function line, said mounting assembly comprising:

a mounting body, a support coupling, and a number of multi-function line couplings;

each said multi-function line couplings structured to be coupled to said multi-function line;

each said support coupling structured to be coupled to a conductive pile; and

wherein, when said multi-function line assembly is coupled to, and in electrical communication with said multi-function line couplings, each said multi-function line coupling defines a conductive path.

Petitioner cites its arguments for claim 1 to address the equivalent limitations of claim 19. Pet. 69–70.

Patent Owner argues that the CAB Website and the CAB Whitepaper do not teach a multi-function line. PO Resp. 46–48. Patent Owner

additionally argues “because the claimed multi-function line couplings are intended and designed to be coupled to the multi-function line, a POSITA would understand that the couplings must be sufficiently conductive so that, when coupled to the multi-function line, an effective ground fault current path is provided.” PO Resp. 47.

For the same reasons addressed above, we disagree with Patent Owner that the claims require an effective ground fault current path. Further, for the same reasons addressed above with respect to claim 1, we agree with Patent Owner that the combination of the CAB Website and the CAB Whitepaper teach the claimed multi-function line and the claimed mounting assembly of claim 19. Accordingly, we determine Petitioner has proven by a preponderance of the evidence that claim 19 is unpatentable in view of the CAB Website and the CAB Whitepaper.

III. CONCLUSION

Based on the evidence presented with the Petition, the evidence introduced during the trial, and the parties’ respective arguments, Petitioner has shown by a preponderance of the evidence that claims 1–19 are unpatentable. Because the ground based on the combination of the CAB Website and the CAB Whitepaper is dispositive as to all challenged claims, we need not reach the remaining grounds. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that the “Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to decide additional instituted

grounds once the petitioner has prevailed on all its challenged claims”).

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–12, 18, 19	103	Grushkowitz		
1–19	103	CAB Website, CAB Whitepaper	1–19	
1–19	103	Petersen		
13–17	103	Petersen, MacLean		
13–17	103	CAB Website, CAB Whitepaper, MacLean		
Overall Outcome			1–19	

IV. ORDER

Accordingly, it is:

ORDERED that claims 1–19 of U.S. Patent No. 10,177,551 B2 are determined to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of this Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2024-00139
Patent 10,177,551 B1

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