

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SIMPSON STRONG-TIE COMPANY INC.,
Petitioner,

v.

COLUMBIA INSURANCE COMPANY,
Patent Owner.

PGR2024-00050
Patent 11,920,339 B2

Before JEFFREY N. FREDMAN, NEIL T. POWELL, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION
Granting Institution of Post-Grant Review
35 U.S.C. § 324

I. INTRODUCTION

Simpson Strong-Tie Company Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting post-grant review of claims 1–31 (the “Challenged Claims”) of U.S. Patent No. 11,920,339 B2 (Ex. 1001, “the ’339 patent”). Columbia Insurance Company (“Patent Owner”) filed a Preliminary Response. Paper 10 (“Prelim. Resp.”).

We have authority to determine whether to institute a post-grant review. 35 U.S.C. § 324(c) (2018); 37 C.F.R. § 42.4(a) (2023). Institution of a post-grant review is authorized by statute when “the information presented in the petition . . . would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a). When instituting post-grant review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim. 37 C.F.R. § 42.208(a).

Applying that standard on behalf of the Director (37 C.F.R. § 42.4(a)) and in consideration of the Petition, Preliminary Response, and the evidence of record, we determine that the information presented shows that it is more likely than not that Petitioner would prevail in establishing unpatentability of at least one of claims 1–31 of the ’339 patent. Accordingly, we institute a post-grant review as to the Challenged Claims of the ’339 patent on all grounds raised in the Petition.

This decision to institute trial is not a final decision as to patentability of claims for which post-grant review is instituted. Our final decision will be based on the full record developed during trial.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies Simpson Strong-Tie Company Inc. and its parent company, Simpson Manufacturing Co., Inc. as the real parties-in-interest. Pet. 181. Patent Owner identifies Columbia Insurance Company, a subsidiary of BH Columbia, Inc., which is a subsidiary of Berkshire Hathaway Inc., as real parties-in-interest. Paper 5, 2. Patent Owner identifies MiTek Inc. as the exclusive licensee of the '339 patent and states that MiTek Inc. is a subsidiary of MiTek Holdings, Inc., which is a subsidiary of MiTek Industries, Inc., which is a subsidiary of Berkshire Hathaway Inc. Paper 5, 2.

B. *Related Matters*

Petitioner states, regarding related matters, that the '339 patent is part of a family of patents including U.S. Patent No. 11,649,626 ("'626 patent"), U.S. Patent No. 11,021,867 ("'867 patent"), and U.S. Patent No. 10,316,510 ("'510 patent") that are currently involved in post-grant reviews: PGR2023-00047, PGR2023-00048, and PGR2023-00049 ('626 patent); PGR2021-00109 ('867 patent); PGR2019-00063 ('510 patent). Pet. 181. Petitioner and Patent Owner each indicates that Patent Owner has asserted these patents against Petitioner in the following lawsuits: *Columbia Insurance Company et al. v. Simpson Strong-Tie Company Inc.*, Civil Action No. 3:19-cv-04683-TJH (N.D. Cal.), filed August 12, 2019; *Columbia Insurance Company et al. v. Simpson Strong-Tie Company Inc.*, Civil Action No. 5:23-cv-02432 (N.D. Cal.), filed May 17, 2023; and *Columbia Insurance Company et al. v.*

Simpson Strong-Tie Company Inc., Civil Action No. 5:24-cv-01652 (N.D. Cal.), filed March 15, 2024. Pet. 181–2; Paper 5, 2–3.¹

C. The '339 Patent

The '339 patent is titled “Method of Constructing a Fire-Resistive Wall Assembly” and issued on March 5, 2024, from U.S. Patent Application 18/112,843 filed February 22, 2023. Ex. 1001, codes (45), (21), (22). The '339 patent recites an extensive list of priority and provisional applications, including U.S. Provisional Patent Application 61/922,531 (“the '531 provisional”), filed on the earliest claimed priority date of December 31, 2013. *Id.*, code (63), (60).

The '339 patent pertains to “a truss hanger for connecting a truss to a wall including fire retardant sheathing.” Ex. 1001, 1:25–26. Figure 2 of the '339 patent is reproduced below:

¹ We remind the parties of their duty of candor pursuant to 37 C.F.R. § 42.11 and duty to update mandatory notices pursuant to 37 C.F.R. § 42.8(a)(3).

FIG. 2

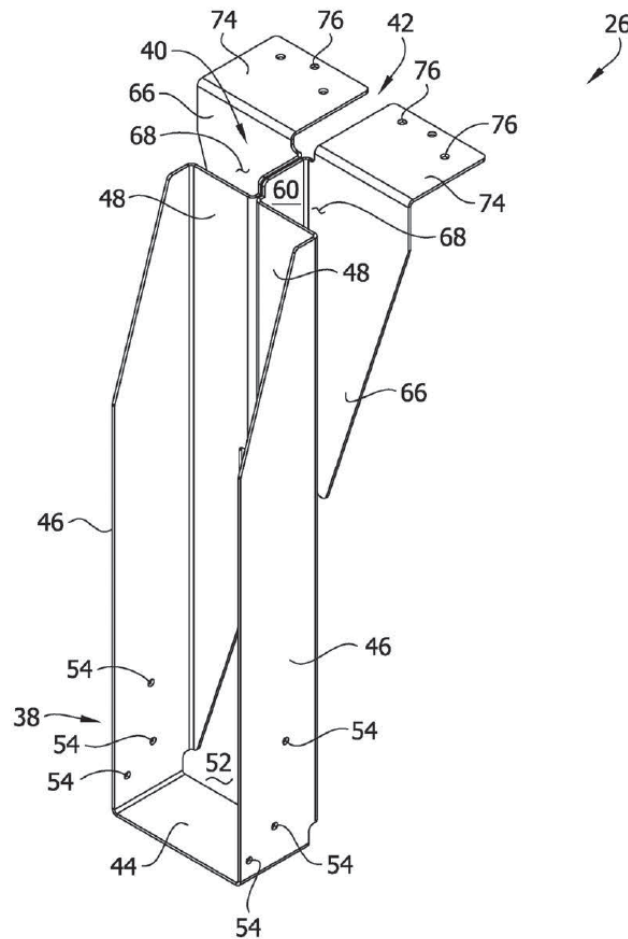


Figure 2 is a perspective view of truss hanger 26 that

includes a channel-shaped portion **38**, an extension portion **40**, and a connection portion **42**. The channel-shaped portion **38** is configured to receive the floor truss **12**. The channel-shaped portion **38** includes a seat or base **44** and a pair of side panels **46** extending upward from the base. When installed, the base **44** is generally horizontal, and the side panels **46** extend generally vertical from the base. A back panel **48** extends from each of the side panels **46**. Each back panel **48** is generally perpendicular to both the side panels **46** and the base **44**. When installed, each back panel **48** extends generally parallel to an interior face 50 of the fire retardant sheathing **34**. The base **44**, side panels **46**, and back panels **48** form a channel **52** configured to receive the floor truss **12**.

Id. at 4:37–50. The '339 patent explains that a slot 72 may be cut in fire retardant sheathing 34 for extension flanges 60 of the truss in Figure 2 above. *See id.* at 5:35–36. Figure 9 depicts sheathing 34 after slot 72 has been cut and truss hanger 26 mounts to framing of a wall during construction as shown in Figure 10 of the '626 patent, reproduced below:

FIG. 9

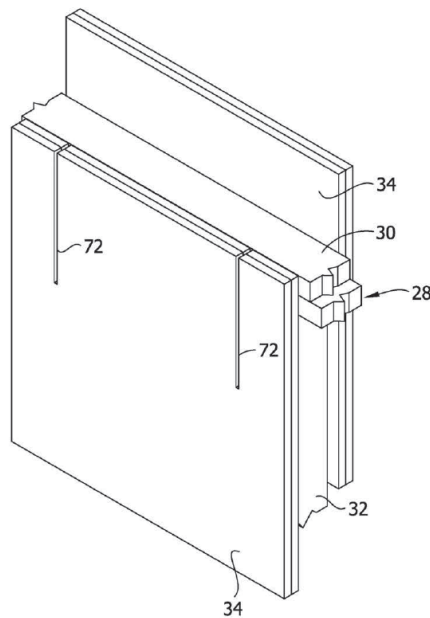


FIG. 10

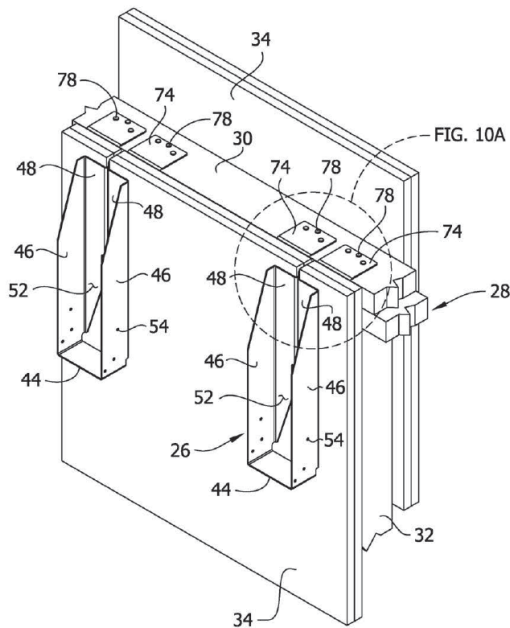


Figure 9 “is a perspective of a wall having fire retardant sheathing with a slot cut in the sheathing to receive the truss hanger.” *Id.* at 3:4–6. Figure 10 “is the perspective of FIG. 9, but showing two of the truss hangers mounted thereon.” *Id.* at 7–8.

After installation of the truss hanger 26, a portion of fire retardant sheathing 34 extends into each sheathing channel 68 and is secured between back panels 48 and back flanges 66. *Id.* at 5:41–44. A floor truss 12 may be attached to truss hanger 26 as shown in Figure 14 below:

FIG. 14

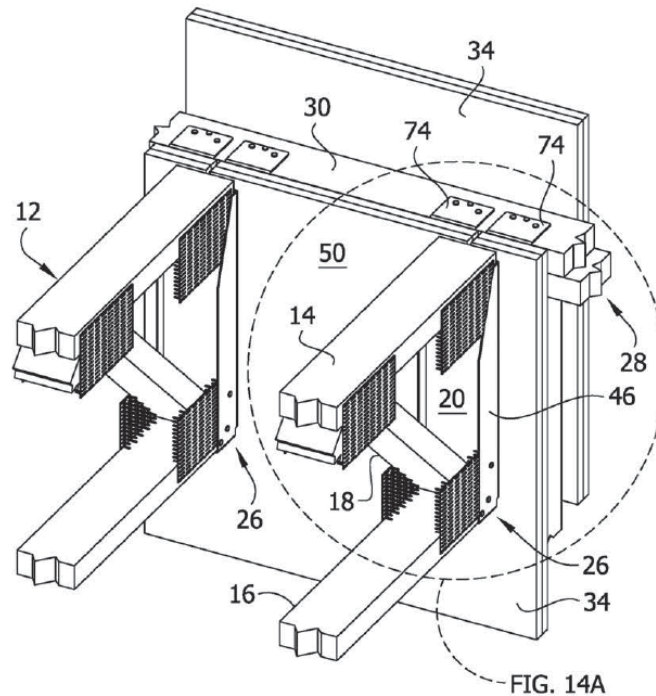


Figure 14 shows

the floor truss **12** is received in the channel **52** to attach the floor truss to the wall **28**. The bottom chord **16** of the floor truss **12** engages and rests upon (i.e., is supported by) the base **44**. The end member **20** of the floor truss **12** is positioned against the back panels **48** between the side panels **46**. The truss hanger **26** includes fastening structure for attaching the floor truss **12** to the truss hanger.

Id. at 4:51–58.

According to the '339 patent, the use of truss hanger 26 allows for the mounting of joists or beams to fire separation walls with less interruption to the wall's fire retardant sheathing, thus minimizing any reduction in the wall's fire resistant rating. *See id.* at 4:29–36.

D. Post-Grant Review Eligibility

As a threshold issue, we must determine whether the '339 patent is eligible for post-grant review. There are two requirements that must be met for post-grant review to be available. First, post-grant review is only available if the petition is filed within nine months of the issuance of the challenged patent. 35 U.S.C. § 321(c). The Petition was filed on August 30, 2024, which is within nine months of the '339 patent's March 5, 2024 issue date. Ex. 1001, code (45).

Second, post-grant review is available only for patents that issue from applications that at one point contained at least one claim with an effective filing date of March 16, 2013 or later. *See Leahy-Smith America Invents Act*, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA") §§ 3(n)(1), 6(f)(2)(A). The earliest priority date for the '339 patent is that of the '531 provisional, filed on December 31, 2013. Ex. 1001, code (60). Thus, the challenged claims all have a priority date after March 16, 2013, and this requirement is met.

III. ILLUSTRATIVE CLAIM

Independent claim 1 is illustrative of the challenged claims in the '339 patent and recites:

1. [1P] A method of constructing a fire-resistive wall assembly, the method comprising:
 - [1.A] mounting a fire wall hanger on a frame wall, the frame wall including a top plate and a plurality of studs extending down from the top plate, and
 - [1.B] the fire wall hanger including a channel-shaped portion sized and shaped to receive a structural component, a connection portion configured for attachment to the frame wall and an extension portion interconnecting the channel-shaped portion and the connection portion and

spacing the channel-shaped portion from the connection portion,

- [1.C] said step of mounting the fire wall hanger includes securing the connection portion of the fire wall hanger to the top plate of the frame wall so that the channel-shaped portion is spaced from the frame wall;
- [1.D] cutting an opening into an exterior edge of fire retardant sheathing, the opening extending through a front face of the fire retardant sheathing and through a rear face of the fire retardant sheathing and opening outwardly from the exterior edge of the fire retardant sheathing; and
- [1.E] after mounting the fire wall hanger on the frame wall and after cutting the opening into the exterior edge of the fire retardant sheathing, installing the fire retardant sheathing with respect to the frame wall so the rear face of the fire retardant sheathing faces toward the studs of the frame wall,
- [1.F] said step of installing the fire retardant sheathing includes: inserting the fire retardant sheathing between the channel-shaped portion of the fire wall hanger and the frame wall; and
- [1.G] moving the fire retardant sheathing relative to the fire wall hanger mounted on the frame wall so that an edge of the fire retardant sheathing bounding the opening moves alongside the extension portion and the fire wall hanger extends through the opening in the fire retardant sheathing.

Ex. 1001, 12:21–56 (formatting modified and brackets added corresponding to Petitioner’s labeling of elements of claim 1).

IV. ASSERTED GROUNDS

Petitioner contends that the Challenged Claims are unpatentable based on a number of grounds, as set forth in the following table. Pet. 4–5.

Ground	References	35 U.S.C. § ²	Claim(s) Challenged
1		§ 112(a)	1–31
2		§ 112(b)	1–31
3	Cullen, ³ Bundy, ⁴ Allan ⁵	§ 103	1–11, 13–22, 24, 25, 27–31
4	Cullen, Bundy, Allan, Rice ⁶	§ 103	12
5	Yamaguchi, ⁷ Bundy, Allan	§ 103	1–3, 7–11, 13– 21, 24, 27–29
6	Yamaguchi, Bundy, Allan, Rice	§ 103	12
7	Robinson, ⁸ Bundy, Allan	§ 103	1–10, 13–19, 24, 25, 27–31
8	Robinson, Bundy, Allan, Rice	§ 103	12
9	ArchRecord, ⁹ Commins, ¹⁰ Cullen	§ 103	1–7, 9–11, 13– 22, 24, 25, 27– 31
10	ArchRecord, Commins, Cullen, Bundy	§ 103	8
11	ArchRecord, Commins, Cullen, Rice	§ 103	12

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. §§ 102, 103, and 112 effective March 16, 2013. Based on the uncontested assertion that December 31, 2013 is the earliest possible priority date for the ’339 patent, we apply the AIA versions of §§ 102, 103, and 112 in this Decision. *See* Pet. 2.

³ Cullen et al., GB 2,451,853 A, published Feb. 18, 2009. Ex. 1004.

⁴ Bundy et al., US 9,394,680 B2, issued July 19, 2016. Ex. 1005.

⁵ Allan, J., US 4,827,684, issued May 9, 1989. Ex. 1006.

⁶ Rice, G., US 4,696,113, issued Sept. 29, 1987. Ex. 1009.

⁷ Yamaguchi, English Language translation of JP D1213894, issued Aug. 9, 2004. Ex. 1007.

⁸ Robinson, J., GB 2,433,522 A1, published June 27, 2007. Ex. 1011.

⁹ ArchRecord, *Mass Timber and Wood Framing*, Architectural Record Magazine, McGraw Hill Construction 165–169 (Nov. 2012). Ex. 1031.

¹⁰ Commins, A., US 4,714,372, issued Dec. 22, 1987. Ex. 1032.

Petitioner relies on the Declaration of W. Andrew Fennell. Ex. 1003.
Patent Owner relies on the Declaration of Richard Kaczkowski. Ex. 2001.

V. DISCRETIONARY DENIAL – 35 U.S.C. § 325(d)

Patent Owner argues the Board should exercise its discretion to deny institution of post-grant review under 35 U.S.C. § 325(d) because several of Petitioner’s asserted prior art references, namely Robinson, Bundy, Allan, Yamaguchi, and Cullen, were previously presented to the Office during prosecution of the ’339 patent, and allegedly Petitioner has not demonstrated that the Office erred in allowing the ’339 patent over that prior art. Prelim. Resp. 148–151. Based on the record before us, we decline to deny institution of post-grant review under § 325(d), for the reasons discussed below.

Section 325(d) provides that, in determining whether to institute a post-grant review, “the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d). The Board uses a two-part framework in determining whether to exercise its discretion under § 325(d), specifically:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH,
IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential)
 (“*Advanced Bionics*”).

In applying the two-part framework, we consider the non-exclusive factors set forth in *Becton, Dickinson and Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential in relevant part), which “provide useful insight into how to apply the framework” under § 325(d). *Advanced Bionics*, Paper 6 at 9. Those non-exclusive factors include:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art [or Patent Owner distinguishes the prior art];
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, Paper 8 at 17–18. “If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.”

Advanced Bionics, Paper 6 at 10.

Under the first part of the § 325(d) framework, the evidence demonstrates that the same references relied upon in the Petition, namely Robinson, Bundy, Allan, Yamaguchi, and Cullen, previously were presented to the Office during prosecution of the ’339 patent. Ex. 1001, code (56); *see*

generally Ex. 1002. Petitioner asserts that “[n]either Commins nor ArchRecord has been before the Office, which has thus not considered ArchRecord-Commins-Cullen.” Pet. 179. Petitioner concedes that “the other references applied herein were cited in prosecution” but argues “there is no evidence that the Office substantively considered the combinations or arguments applied herein.” *Id.* Patent Owner asserts “[e]ach prior art reference relied on in Ground[s] 3-8 with respect to the independent claims 1 and 27 were previously presented and considered during prosecution of the ‘339 Patent.” Prelim. Resp. 150.

Because we determine that the same art was before the Examiner during examination, we need not consider *Becton, Dickinson* factors (b) and (d), and turn to the second prong of the *Advanced Bionics* framework (i.e., *Becton, Dickinson* factors (c), (e), and (f)). See *Ocado Group, PLC v. AutoStore Technology AS*, IPR2021-00398, Paper 10 at 20 (PTAB July 21, 2021).

Becton Dickinson factor (c) considers “the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection.” *Becton Dickinson*, Paper 8 at 17. Petitioner asserts “[t]here is no record that the Office considered the arguments presented herein regarding Allan in combination with any of the other references applied herein.” Pet. 179. Patent Owner asserts “Allan was presented to the Examiner with citations to [Petitioner’s] similar arguments in the prior PGR briefing. EX1002: 17, 353. Notably, Allan was even used as a search term within the Examiner’s search history.” Prelim. Resp. 150. Patent Owner asserts “[t]hese statements demonstrate the Examiner did not

make a material error with regard to [Allan] but instead understood Bundy teaches away from cutting an opening in fire retardant sheathing.” *Id.*

The Examiner did not issue any rejections in the prosecution of the ’339 patent, and did not address the Allan reference directly, but did write multiple separate Reasons for Allowance. The first method claim was submitted Nov. 20, 2023. *See* Ex. 1002, 340. In one of the Reasons for Allowance mailed Dec. 6, 2023, the Examiner did state “Bundy does not teach method steps of cutting the fire retardant sheathing and moving the fire retardant sheathing relative to the fire wall hanger and the wall frame, as in independent claim 74.” Ex. 1002, 421. The Examiner did also state

none of Tsukamoto, Gilb ’155, Gilb ’792, Gilb ’416, Robinson, Yamaguchi, Adams and Cullen teach or adequately disclose, inter alia fire retardant sheathing having an opening such that the fire retardant sheathing is mounted on a frame wall, and an extension portion of a fire wall hanger extends through the opening in the fire retardant sheathing.

Id. However, the fact that none of these primary references were used as the basis of rejection weighs against exercising discretion to deny institution under § 325(d). *See Intel Corp. v. Qualcomm Inc.*, IPR2019-00128, Paper 9 at 16 (PTAB May 29, 2019).

Becton Dickinson factor (e) considers “whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art.” *Becton Dickinson*, Paper 8 at 18. Petitioner asserts:

As the Petition demonstrates, a POSA would have found it obvious to apply Allan in combination with Cullen, Yamaguchi, or Robinson to arrive at the claims. Allan teaches cutting an opening through drywall to enable a portion of a structural connector to extend therethrough—the very feature the Examiner found to be (allegedly) missing during prosecution.

Pet. 180 (citing Ex. 1002, 421). Patent Owner asserts “the Examiner did not make a material error with regard to [Allan] but instead understood Bundy teaches away from cutting an opening in fire retardant sheathing . . . (for which Allan is applied) and no reference—including Allan—discloses the claimed installation sequence.” Prelim. Resp.

150–151.

We agree with Petitioner that the Examiner did not identify the pertinence of Allan’s disclosure, and did not issue a rejection based on such disclosure or combined teachings with the other art asserted by Petitioner, and that this constitutes Examiner error. As discussed below in Section VIII, we determine that Petitioner has established that it is more likely than not that at least claims 1–22, 24, 25, and 27–31 of the ’339 patent are unpatentable. Accordingly, *Becton Dickinson* factor (e) weighs against exercising discretion to deny institution under § 325(d).

Becton Dickinson factor (f) considers “the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.” *Becton Dickinson*, Paper 8 at 18. Petitioner identifies the Declaration of Mr. Fennell as new evidence that was not presented to the Examiner and that warrants consideration. *See, e.g.*, Pet. 26. Patent Owner does not challenge that the Fennell Declaration is new evidence. *See generally* Prelim. Resp. As cited below in our discussion of the prior art, we find the Fennell Declaration probative of issues of patentability and helpful to our consideration of the prior art combinations that were not addressed by the Examiner. Accordingly, *Becton Dickinson* factor (f) weighs against exercising discretion to deny institution under § 325(d).

Upon review of the relevant prosecution history, the art at issue, and the parties' arguments, we find that Petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims in the '339 patent, and that the *Becton Dickinson* factors, when considered as a whole, do not weigh in favor of denying institution of post-grant review under 35 U.S.C. § 325(d). Accordingly, we decline to deny institution under § 325(d).

VI. LEVEL OF ORDINARY SKILL IN THE ART

We consider the grounds of unpatentability in view of the understanding of a person having ordinary skill in the art as of the effective filing date of the challenged claims. Petitioner contends that

[a] person having ordinary skill in the art ("POSA") at the time of the earliest claimed filing date of the Patent-at-Issue would have had an education background of, or practical experience providing an equivalent to, a Bachelor of Science in Mechanical Engineering, Structural Engineering or a related/equivalent field and at least four years of work experience in construction connector design/development.

Pet. 7 (citing Ex. 1003 ¶ 15). Patent Owner contends

[t]he level of ordinary skill in the art is a person that at the time of the earliest priority date of the '339 Patent would have acquired a body of knowledge gained through formal education, or practical experience providing an equivalent to, a Bachelor of Science in Mechanical Engineering, Civil/Structural Engineering, or a related/equivalent field, and at least four years of work experience in: (1) construction connector design, development, or use, (2) drywall construction practices/sequencing, and (3) performance requirements related to fire-rated drywall construction.

Prelim. Resp. 19–20 (citing Ex. 2001 ¶¶ 1–6, 21; Ex. 2002).

While we appreciate that the parties differ slightly on the details of experience that an ordinary artisan would possess, we do not find a difference that affects our Decision. The analysis below would be the same under both proposed levels of ordinary skill. The parties may provide briefing at trial, if appropriate, to explain why adoption of one definition over the other changes the remaining analysis.

We also note the level of ordinary skill in the art usually is evidenced by the prior art references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

VII. CLAIM CONSTRUCTION

In a post-grant review, we interpret a claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.200(b). Under this standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

We first address the claim interpretations expressly raised by Petitioner. We then address implicit or inferred claim constructions raised by Patent Owner in its Preliminary Response.

Any claim construction arguments presented during trial should be set forth under a separate heading in the briefing and should not be relegated to or hidden within arguments relating to patentability challenges.

A. “extend through,” “extending from,” “rigidly fixed,” and “lie in vertical planes”

Petitioner submits that the phrases “extend through,” “extending from,” and “rigidly fixed” were construed in PGR2019-00063 as

- “extend through”: “in the context of element A ‘extend[ing] through’ element B, [] ‘element A extends into one side and out the other of element B’” (FWD [Paper 52], 45);
- “extending from”: “in the context of element B extending from element A, the beginning of element B’s extension is on element A” (FWD, 110);
- “rigidly fixed”: “components are connected such that they do not move freely with respect to each other” (FWD, 98).

Pet. 8. Petitioner also contends that the phrase “lie in vertical planes” should be construed consistent with PGR2019-00063 as “for each planar extension plate a vertical plane is within the extent of the extension plate.” *Id.* at 9.

Patent Owner does not dispute the interpretations of these terms. *See* Prelim. Resp. 20.

For purposes of this Institution Decision, we preliminarily accept and adopt Petitioner’s claim interpretations of these terms.

B. “planar extension plate”

The term “planar extension plate” appears in claims 20–23, 25, and 26 of the ’339 patent. Petitioner states:

A POSA would have understood the term “plate” to mean “a smooth flat thin piece of material.” EX1003, ¶¶22-23; EX1035, 6. A plane is a flat two-dimensional construct having no thickness. Accordingly, the term “planar extension plate” in the Patent-at-Issue should be construed as “a flat portion of the extension flange between any bent portions.” Thus, to the extent an extension flange includes a bent portion, such a bent portion is not part of an extension plate.

Pet. 9.

Patent Owner states that “[c]laim constructions for terms and phrases disputed by the parties, such as ‘planar extension plate’ and ‘bounding,’ are addressed in the grounds in which they appear [in the Preliminary Response].” Prelim. Resp. 20. Patent Owner states that Petitioner

relies on an improper claim construction of “planar extension plates”—that excludes portions of the bends at the ends of the plate that connect the plate to the other elements (e.g., channel-shaped and connection portions) of the fire wall hanger—to justify their lack of written description argument. Pet: 9, 13; EX2001: ¶¶115-116. However, under a proper construction, a “planar [] plate” includes portions of bends at the ends of the plate connecting the plate to other elements. EX2001: ¶117.

Id. at 95. Patent Owner contends that, based on claim 23, “the POSA understands by virtue of the ‘connected to’ language the planar extension plates are required to *connect directly to* the channel-shaped portion/connection portion and thus each of the recited bends is merely part of the respective components forming the recited bends.” *Id.* at 95–96 (citing Ex. 2001 ¶ 119). Patent Owner contends:

The specification likewise reinforces the bends are part of the elements forming the bends by explaining “[e]ach flange 60 ***extends from*** one of the back panels 48,” and “[a] back flange 66 ***extends from*** each of the extension flanges 60” even though these elements are connected to one another via a bend. EX1001: 5:6-7, 5:22-23, Fig. 2; EX2001: ¶120. Given the Board’s construction of “extending from” in the prior PGRs, which [Petitioner] has adopted, it is clear each of the bends is being treated as a part of the elements which form the bend.

Id. at 96.

Patent Owner further cites other patents, not the ’339 patent or its parent applications, that they contend “consider a portion of a bend at the

end of a ‘planar’ plate to be part of the plate.” *Id.* at 97–108. Patent Owner concludes that based on these other patents, some of which are assigned to Petitioner, Petitioner’s “own statements demonstrate—and are consistent with the understanding of a POSA—the proper construction of ‘planar extension plate’ includes portions of *de minimis* bends at the ends of the plate connecting the plate to other elements.” *Id.* at 108.

We first turn to the ’339 patent specification, as the specification is “[i]n most cases, the best source for discerning the proper context of claim terms.” *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1360 (Fed. Cir. 2004).

The ’339 patent recites the term “bend” a single time in the Specification, stating that “extension portion includes extension flanges extending from the channel-shaped portion forming a **bend** between each extension flange and the channel-shaped portion.” Ex. 1001, 2:15–18 (emphasis added). Claim 23 of the ’339 patent recites the term “bend” multiple times, stating:

The method of claim 22, wherein the first and second planar extension plates each include opposite first and second ends, the first end of the first planar extension plate being connected to the channel-shaped portion by a first **bend**, the second end of the first planar extension plate being connected to the connection portion by a second **bend**, the first end of the second planar extension plate being connected to the channel-shaped portion by a third **bend**, and the second end of the second planar extension plate being connected to the connection portion by a fourth **bend**.

Id. at 14:45–54 (emphasis added). We appreciate that a patentee “is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its scope.” *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362,

1367 (Fed. Cir. 2012). There is no such redefinition or disavowal in the '339 patent.

We note that the instant claims, such as claim 20, differ from the claims in the '867 patent at issue in PGR2021-00109 as to the recitation of “planar extension plate.” *Simpson Strong-Tie Company Inc. v. Columbia Insurance Company*, PGR2021-00109, Paper 73 at 8–9 (PTAB Mar. 15, 2023). Instant claim 20 is reproduced below:

20. The method of claim 1, wherein said step of moving the fire retardant sheathing relative to the fire wall hanger includes positioning the fire retardant sheathing relative to the extension portion of the fire wall hanger so that only first and second planar extension plates of the extension portion of the fire wall hanger extend through the opening in the fire retardant sheathing.

Ex. 1001, 14:32–38 (emphasis added). However, claim 1 of the '867 patent required an extension portion with “each extension flange lying in an extension flange plane.” Thus, claim 1 of the '867 patent imposed a limitation on the extension portion based on a location of a plane within which the extension flange lay. In contrast, instant claim 20 requires that the extension plate itself, not a plane defined by an extension flange, extend through the opening.

The term “bend” in a “planar extension plate” in instant claim 20 is therefore different than in the claims in PGR2021-00109, where the Board found “the bends (or bent portions) at the ends of the extension flanges disclosed in Figure 7, for example, have radiuses small enough to allow an extension flange plane to remain *within the extent* of the extension flange *from* the channel-shaped portion *to* the connection portion.”

PGR2021-00109, Paper 73 at 28. Instant claim 20 is not drawn to an extension flange plane but rather to a “planar extension plate” itself.

This understanding is also consistent with the Federal Circuit’s decision in *Simpson Strong-Tie Company Inc. v. Columbia Insurance Company*, 2025 WL 39807 (Fed. Cir. 2025), which distinguishes between the plane in which the extension flanges fall and the extension flanges themselves. *Simpson*, 2025 WL 39807 at *5.

For purposes of this Institution Decision, we preliminarily agree with Petitioner and interpret the claim term “planar extension plate” consistent with the Specification of the ’339 patent and the Final Written Decision in PGR2021-00109 as not including bent portions but rather being limited to the “planar extension plate” itself.

C. “*bounding*”

Petitioner asserts that “[b]ounding,’ when used as a transitive verb, means to ‘enclose’ or ‘confine.’ EX1003 ¶¶97-98; EX1035, 5. Nowhere in the ’339 patent is the edge of the sheathing described as ‘bounding’ the opening.” Pet. 12.

Patent Owner asserts that “the term ‘bounding’ has its plain and ordinary meaning: ‘to set the limits or bounds to,’ ‘to form the boundary of.’” Prelim. Resp. 81 (citing Ex. 1035, 5; Ex. 2010, 4; Ex. 2011, 4 (“form[ing] the boundary of”); Ex. 2001 ¶ 92). Patent Owner asserts “the term ‘bounding’ *does* allow for a single-edge to bound an opening—per a dictionary example: ‘the ground was bounded by a main road on one side and a meadow on the other.’” *Id.* at 81–82 (citing Ex. 2011, 4; Ex. 2001 ¶¶ 92, 95–96).

We again turn to the ’339 patent Specification, but the ’339 patent Specification does not recite the word “bounding” even once. *See, e.g.*, Ex. 1003 ¶ 98. We next turn to the extrinsic evidence submitted by the

parties. Both Petitioner’s and Patent Owner’s declarants recite the same definition argued by their respective parties. *See* Ex. 1003 ¶ 98; Ex. 2001 ¶ 92. Patent Owner and their declarant also point to the usage of “bounding” in a patent owned by Petitioner¹¹ as broadly describing a boundary to one side of an element. *See* Prelim. Resp. 82; Ex. 2001 ¶¶ 93–94.

Petitioner cites to a Merriam Webster Dictionary that recites three definitions of “bound” relevant to the usage in the instant context, which we reproduce below:

²**bound** *n* [ME, Ir. OF *bodne*, fr. ML *bodina*] (13c) **1 a** : a limiting line : BOUNDARY - usu. used in pl. . . . **2** *usu pl a* : BORDERLAND **b** : the land within certain bounds . . .

³**bound** *vt* (14c) **1** : to set limits or bounds to : CONFINE **2** : to form the boundary of : ENCLOSE **3** : to name the boundaries of

⁴**bound** *adj* [ME *bounden*, fr. pp. of *binden* to bind] (14c) . . . **2 a** : fastened by or as if by a band : CONFINED <*desk-bound*>
. . .

Ex. 1035, 5; *cf.* Ex. 2010, 4. Mr. Fennell states “[a]n open-edged shape (such as the single edge recited in claim 14) does not ‘bound’ a space.” Ex. 1003 ¶ 98.

Patent Owner cites to the New Oxford American Dictionary for definitions of “bound”, the relevant definitions reproduced below:

bound² ► *n.* (often **bounds**) a territorial limit; a boundary: *the ancient bounds of the forest.* . . .

v. [trans.] (usu. **be bounded**) form the boundary of; enclose: *the ground was bounded by a main road on one side and a meadow on the other.* ■ place within certain limits . . .

PHRASES □ in bounds *Sports* inside the regular playing area. □ out of bounds (of a place) outside the limits of where one is

¹¹ Daudet et al., US 11,065,667 B2, issued July 20, 2021. Ex. 2012.

permitted to be: his kitchen was *out of bounds* to me at mealtimes. ■ *Sports* outside the regular playing area: he hit his third *shot out of bounds* at the 17th.

Ex. 2011, 4–5. Mr. Kaczkowski states “[b]ounding’ is not co-extensive with ‘enclose’ or ‘confine’ as advanced by [Petitioner], and, more particularly, is not coextensive with ‘fully or completely enclose or confine’ as Petitioner’s arguments inherently require.” Ex. 2001 ¶ 92.

The two cited definitions are broad enough to suggest that “bounding” may either fully confine or may partially limit a particular area. For example, the definition in the Merriam Webster Dictionary of “bound” as “the land within certain bounds” does appear to fully limit the area recited. However, the next definition “to form the boundary of” reasonably suggests a partial limit as, for example, the boundary of the United States and Canada does not provide the full limits to the territories of either country. Similarly, the definition of “bound” in the New Oxford American Dictionary as “in bounds” in sports also appears to fully limit the area at issue. However, the definition of “a boundary” represents a partial limit, as does the example of “the ground was bounded by a main road on one side and a meadow on the other.” In that example, the main road formed a boundary, as did the meadow, but neither alone fully limited the territory. The evidence of record supports a finding that the term “bound” broadly encompasses situations in which a particular area is fully surrounded or limited and where a particular area is partially surrounded or limited.

On this record, we preliminarily agree with Patent Owner that the term “bounding” is not reasonably interpreted as necessarily “enclosing” or fully surrounding. We therefore preliminarily interpret “bounding” as

encompassing both fully and partially “enclosed” or “confined” areas on the current record.

D. Conclusion

At this point, we interpret only the claim language discussed above. We determine that we currently need not expressly construe any other claim terms for the purpose of deciding whether to institute post-grant review. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe 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)).

Any final written decision entered in this case may include final claim constructions that differ from the preliminary understanding of the claims set forth above. Any final claim constructions will be based on the full trial record.

VIII. PRELIMINARY ANALYSIS OF PETITIONER’S
PATENTABILITY CHALLENGES

A. Principles of Law

In a post-grant review, as in an *inter partes* review, “the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

To satisfy the written description requirement under 35 U.S.C. § 112(a), the specification must “reasonably convey[] to those skilled in the

art that the inventor had possession” of the claimed invention as of the filing date. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). An adequate description does not require any particular form of disclosure or that the specification recite the claimed invention *in haec verba*, but must do more than render the claimed invention obvious. *Id.* at 1352. In evaluating the adequacy of the disclosure, a court may consider “the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, [and] the predictability of the aspect at issue.” *Capon v. Eshhar*, 418 F.3d 1349, 1359 (Fed. Cir. 2005) (cited with approval in *Ariad*, 598 F.3d at 1352); *see also Boston Sci. Corp. v. Johnson & Johnson*, 647 F.3d 1353, 1366 (Fed. Cir. 2011) (holding that because the assessment for written description is made from the perspective of a person of ordinary skill in the art, in some instances, a patentee can rely on information that is “well-known in the art” to satisfy written description).

Under *Nautilus*, “[a] patent is invalid for indefiniteness if its claims, read in light of the patent’s specification and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 899 (2014). “[A] patent must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them,” but the standard for indefiniteness recognizes that “absolute precision is unattainable.” *Id.* at 899 (internal quotation marks omitted).

Regarding obviousness, the Supreme Court in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness set forth in *Graham v. John Deere Co.*, 383 U.S. 1

(1966). In *KSR*, the Court summarized the four factual inquiries set forth in *Graham* (383 U.S. at 17–18) that are applied in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103 as follows:

(1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art;¹² and (4) considering objective evidence indicating obviousness or non-obviousness.¹³ *KSR*, 550 U.S. at 406.

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. “[W]hen the question is whether a patent claiming the combination of elements of prior art is obvious,” the answer depends on “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 417.

The motivation-to-combine analysis is a flexible one. “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed,” [but the] “analysis ‘need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.’”

Intel Corp. v. PACTXXP Schweiz AG, 61 F.4th 1373, 1379–80 (Fed. Cir. 2023) (quoting *KSR*, 550 U.S. at 418, 420 (emphasis added)). “[I]f there’s a known technique to address a known problem using ‘prior art elements according to their established functions,’ then there is a motivation to

¹² See *supra* Section VI.

¹³ There is no asserted evidence pertaining to objective indicia of non-obviousness. See *generally* Prelim. Resp.

combine,” because *KSR* explains that “‘if a technique has been used to improve one device [or method], and a person of ordinary skill in the art would recognize that it would improve similar devices [or methods] in the same way, using the technique is obvious unless its actual application is beyond his or her skill.’” *Id.* at 1380 (quoting *KSR*, 550 U.S. at 417; and *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797 (Fed. Cir. 2021)). If addressing a known problem, the prior art combination need not be “the *best* option, only . . . a *suitable* option.” *Id.* (quoting *Intel*, 21 F.4th at 800 (emphasis original)).

We analyze the asserted grounds of unpatentability in accordance with these principles to determine whether Petitioner has met its burden to establish that it would more likely than not prevail at trial.

A. Ground 1 – Written Description

1. Claims 1–31

Petitioner asserts “the Patent-at-Issue’s original provisional application nowhere describes a method where sheathing is installed *after* mounting the hanger, as recited in the claims. The provisional only describes installing the sheathing *before* the hanger.” Pet. 10. Petitioner asserts: “New matter was added to the first non-provisional specification: ‘truss hangers 26 can be installed on the wall 28 before the sheathing 34 is mounted on the wall.’” *Id.* (citing Ex. 1001, 7:65–67; 11:7–9).

Patent Owner states:

The specification describes three different ways of constructing a fire-resistive wall assembly: (1) mounting the fire retardant sheathing having a preformed opening on the frame wall before mounting the hanger on the frame wall (EX1001: 7:26-53); (2) mounting the fire retardant sheathing without a pre-formed opening on the frame wall before mounting the hanger on the

frame wall (EX1001:7:54-64; and (3) mounting the hanger on the frame wall *before* mounting the fire retardant sheathing (EX1001: 7:65-8:21). EX2001: ¶77. The ‘339 Patent’s claims cover this last method. *Id.*

Prelim. Resp. 75. Patent Owner asserts, as to mounting the hanger before mounting the fire retardant sheathing, that ‘339 patent states “the truss hangers **26** can be installed on the wall **28** before the sheathing **34** is mounted on the wall.” Ex. 1001, 7:65–67.

On the current record, we find that Patent Owner has the better position. The ‘339 patent itself expressly discloses an order of installation in which the truss hanger is first installed followed by installation of the fire retardant sheathing. *See* Ex. 1001, 7:65–67. To the extent that Petitioner is addressing teachings of a provisional patent application, presumably the ‘531 provisional, Petitioner does not identify any prior art that relies upon a prior art date between the December 31, 2013 filing date of the ‘531 provisional and the November 26, 2014 filing date of the earliest parent application of U.S. Patent Application 14/555,049, now U.S. Patent No. 10,024,049. *See* Ex. 1001, codes [60], [63]. The prior art all relies on dates prior to December 31, 2013, either by publication or priority. Therefore, our preliminary determination on the current record is that the claims comply with the written description requirement for priority to U.S. Patent Application 14/555,049 for the order of sheathing installation, and we need not evaluate priority to the ‘531 provisional.

2. *Claims 1–26*

Petitioner asserts:

Just as the Board determined that “bounding” as applied to the hanger vis-à-vis the sheathing opening was unsupported by the specification in PGR2021-00109, the Board should similarly

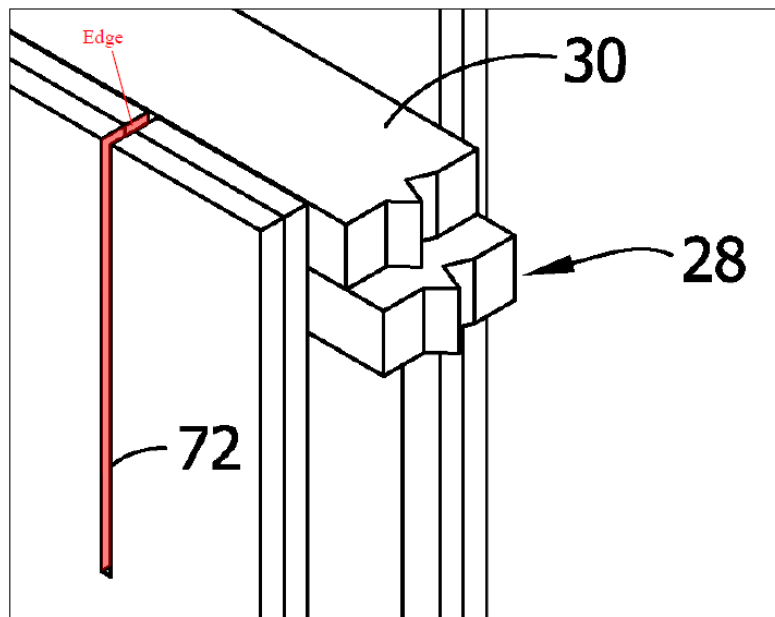
determine that “bounding” as applied to the sheathing vis-à-vis the opening for the hanger is unsupported by the specification here. “Bounding,” when used as a transitive verb, means to “enclose” or “confine.” EX1003 ¶¶97-98; EX1035, 5. Nowhere in the Patent-at-Issue is the edge of the sheathing described as “bounding” the opening.

Pet. 11–12.

Patent Owner asserts:

Applying bounding’s plain and ordinary meaning, it is clear Columbia was in possession of “an edge of the fire retardant sheathing bounding the opening” in the fire retardant sheathing. EX2001: ¶97. Figs. 9-12 and 13A of the ‘339 Patent (annotated below) illustrate an edge of the fire retardant sheathing (34) bounding the opening (72) (e.g., one side thereof). EX2001: ¶98; *Vas-Cath*, 935 F.2d at 1564 (“drawings alone *may* be sufficient to provide the ‘written description of the invention’ required by § 112”).

Prelim. Resp. 83. Patent Owner asserts “[s]uch an edge is the necessary result of moving a ‘spiral bit ... to cut the slot 72’ along the narrow portion (98c) of the slot (98) of the template (82), as explained by the specification.” *Id.* at 86 (citing Ex. 1001, 6:14–17, 6:31–36; Ex. 2001 ¶99). Patent Owner shows the portion they consider the “edge” bounding the opening in annotated Figure 9, reproduced below:



Prelim. Resp. 83 (citing Ex. 1001, Figure 9).

We rely on the preliminary definition from the claim construction discussion above of “bounding” as partially “enclosed” or “confined.” Based on this preliminary record and claim construction, we agree with Patent Owner that the recitation of “an edge of the fire retardant sheathing bounding the opening moves alongside the extension portion” has descriptive support because Figure 9 shows edges on three sides of the fire wall hanger that enclose and confine the fire wall hanger.

Therefore, our preliminary determination on the current record is that the claims comply with the written description requirement regarding the term “bounding.”

3. *Claims 9–11*

Petitioner asserts the “specification contains no disclosure relating the area of the opening (slot 72) to the area of an end of the structural component, as recited in claim 9, since any size structural component that fits within the channel-shaped portion may be used.” Pet. 12. Petitioner

asserts, “absent an indication that the drawings are to scale, the drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.” *Id.* at 12–13 (citing *Hockerson-Halberstadt, Inc. v. Avia Group Int’l, Inc.*, 222 F.3d 951 (Fed. Cir. 2000)).

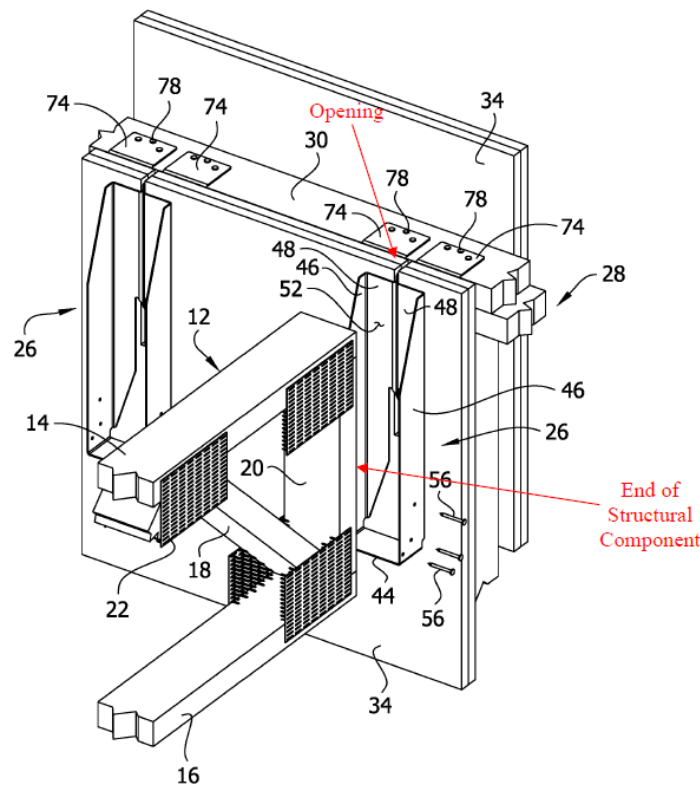
Patent Owner asserts “the figures can be relied upon for the claimed proportions because [the] ’339 Patent’s specification provides scale information.” Prelim. Resp. 88. Patent Owner cites:

As illustrated, the top plate 30 is formed by two 2×4’s in stacked relation. Fire retardant sheathing 34 is mounted on both sides of the wall 28, as illustrated. In one embodiment, the fire retardant sheathing is gypsum board, such as *two layers of 5/8" gypsum board* mounted on each side of the wall 28 *as illustrated*.”

Id. (citing Ex. 1001, 4:20–25; Ex. 2001 ¶¶ 105–106.) Patent Owner asserts the Specification discloses “the size of the opening (72) in the fire retardant sheathing (34), stating the opening ‘has an area less than or equal to 6 square inches’ and ‘is about 10 inches long.’” *Id.* at 88 (citing Ex. 1001, 5:37–38, 7:34; Ex. 2001 ¶ 108).

Patent Owner shows the relevant and annotated portion of Figure 12, reproduced below:

FIG. 12



Id. at 90. Patent Owner asserts Figure 12 shows “the height and width of the end of the structural component is clearly and indisputably greater than the corresponding height and width of the opening (72).” *Id.* at 89–90. Patent Owner also asserts, as to claim 10, that Figure 12 shows “the height of the opening (72) is clearly less than the height of the channel-shaped portion (38).” *Id.* at 92–93.

On the current record, we find that Patent Owner has the better position. Claim 9, in relevant part, requires “cutting the opening to have an area less than an area of an end of the structural component facing toward the f[r]ame wall, the area of the opening being taken at and parallel to the front face of the fire retardant sheathing.” Figures 9, 12, and 14A unambiguously show that opening 72 is smaller than the structural

component of truss 12. In *Hockerson-Halberstadt*, a figure image was insufficient to overcome statements by the applicant during prosecution constituting disclaimer of a particular claim scope. *See Hockerson-Halberstadt*, 222 F.3d at 956–57. We think this situation is closer to *Paice LLC v. Ford Motor Co.*, 722 F. App’x 1015, 1022 (Fed. Cir. 2018), where the Court found the figures provided some scale information. And as in *Paice*, Patent Owner relies on their declarant’s statement that the figures provided evidence on the components, explaining that “as area is a function of height x width in this context, the area of the opening (72) will be less than the area of the end of the structural component (12).” Prelim. Resp. 90 (citing Ex. 2001 ¶ 111). Indeed, Petitioner’s declarant also stated “[i]n some figures, it may appear that the opening cut in the sheathing has an area less than an area of an end of the structural component.” Ex. 1003 ¶ 100. For similar reasons, we agree with Patent Owner that claims 10 and 11 also have written description in the cited figures of the ’339 patent.

Accordingly, our preliminary determination on the current record is that claims 9–11 comply with the written description requirement.

4. *Claims 20–23*

Petitioner asserts

claim 20 requires that the planar, flat portion of the extension flange between any bends extends into one side and out the other of the sheathing. However, the specification does not support this. Nowhere does the specification refer to an “extension plate,” saying only that the extension *flanges* extend through the sheathing without distinguishing between its constituent parts. As illustrated in FIG. 10A, the bends in the extension flange start within the opening, meaning that the “planar extension plates”

do not actually reach the face of the sheathing and thus do not “extend through” the sheathing opening as recited.

Pet. 13.

Patent Owner asserts that Petitioner “relies on an improper claim construction of ‘planar extension plates’—that excludes portions of the bends at the ends of the plate that connect the plate to the other elements (e.g., channel-shaped and connection portions) of the fire wall hanger—to justify their lack of written description argument.” Prelim. Resp. 95 (citing Pet: 9, 13; Ex. 2001 ¶¶ 115–116). Patent Owner asserts that “under a proper construction, a ‘planar [] plate’ includes portions of bends at the ends of the plate connecting the plate to other elements.” *Id.* (citing Ex. 2001 ¶ 117).

Patent Owner asserts that the Board and Petitioner’s own patents previously indicated that bends are “part of the elements which form the bend.” Prelim. Resp. 96–107 (citing PGR2019-00063, Paper 52 at 106–110; Ex. 1005, 4:13–16, 29–30, 54–55; Ex. 2005 ¶¶ 39, 45, 46; Ex. 2004, 4:38–39, 23–26; Ex. 2013 ¶ 21; Ex. 2014, 5:33–36; Ex. 2015, 6:15–20). Patent Owner asserts that Figures 11 and 36 of the ’339 patent “show the planar extension plates (60, 160), with portions of the bends at the front and rear ends thereof, extend through the opening in the fire retardant sheathing.” Prelim. Resp. 108–110.

As discussed above, we interpret the claim term “planar extension plate” consistent with the Specification of the ’339 patent and the Final Written Decision in PGR2021-00109 as not including bend portions but rather being limited to the “planar extension plate” itself.

Patent Owner’s citation to other patents does not support a different interpretation. For example, Patent Owner states

Bundy describes the side members (11) as being “connected to” back plate members (9) along an “angular joint 47 ... [where back edges of the side members 11] *meet* the first and second inner edges 20 of the ... back plate members 9.” EX1005: 4:13-16, 4:57-61; EX2001: ¶¶125-126. This “meet” statement demonstrates [Petitioner] considers the bends connecting the “planar” back plate members (9) and “planar” side members (11) to be part of those members. EX2001: ¶127.

Prelim. Resp. 98. Patent Owner similarly points to language in Exhibit 2005 stating “the seat member (12) and the side members (11) ‘interconnect[]’ along ‘an angular joint 48 [i.e. a bend], where [the edges of the seat member] *meet* the first and second bottom edges 34 of the first and second side members 11.” *Id.* at 101 (citing Ex. 2005 ¶¶45–46). More significantly, Patent Owner cites Exhibit 2013 as stating “[Petitioner] describes ‘[t]he first and second *plates* [16, 17] are *joined to each other at a bend*.’ (‘the second plate is *attached to* the first plate at an orthogonal bend’).” *Id.* at 104–105 (citing Ex. 2013 21; Claim 13).

However, several of the cited patents do not use the word “bend,” and Patent Owner must interpolate that word. And whether the patents use the word “joint” or “bend,” they clearly indicate that the flat components disclosed are separate and distinct elements from the “joint” or “bend” elements. That is, there is no indication that simply because two elements meet to form a “joint” or “bend,” the resulting “joint” or “bend” is part of the element instead of being a distinct element itself.

And on this record, this is clear from claims 20–23 of the ’339 patent, as claim 21 even recites “only the first and second planar extension plates of the extension portion of the fire wall hanger are disposed in the opening in the fire retardant sheathing.” Ex. 1001, 14:39–42. But no portion of the plates is in the opening, solely the bends connecting the plates. *See* Pet. 13;

Ex. 1001, Figure 10A. Patent Owner is the master of their claim. And like the courts, the Board “may not rewrite a claim even if giving a disputed claim its plain meaning would lead to a ‘nonsensical result.’” *Source Vagabond Sys. Ltd. v. Hydrapak, Inc.*, 753 F.3d 1291, 1301 (Fed. Cir. 2014). Facially, neither claims 20–23 nor the ’339 patent Specification expressly recite any reason to interpret the “bend” that connects the plates as a distinct portion of the planar extension plates themselves and rely upon that “bend” as the sole portion that extends through the opening in the fire retardant sheathing as required by these claims.

Accordingly, our preliminary determination on the current record is that claims 20–23 more likely than not do not comply with the written description requirement as to planar extension plates that must “extend through the opening.”

5. *Claims 20–23 and 26*

Petitioner asserts:

The specification provides no disclosure supporting the exclusionary “only” in claim 20. First, the specification does not support a distinction between the “extension portion” of the hanger and “first and second planar extension plates” such that “only” the “extension plates”—but not other parts of the extension portion—extend through the opening.

Pet. 14. Petitioner asserts the “patent-at-issue provides no support for language excluding other hanger elements (or non-hanger elements, such as fire-resistive wools/putties) from extending through the opening.” *Id.*

Petitioner asserts that “[w]hile claim 26 uses the word ‘entirely’ instead of ‘only,’ such an absolute term lacks written description for similar reasons as claims 20 and 21.” *Id.*

Patent Owner asserts:

The '339 Patent demonstrates Columbia was in possession of the planar extension plates being the “only” elements “extend[ing] through the opening in the fire retardant sheathing,” as recited by claim 20. EX2001: ¶¶151-152. The '339 Patent states the “two extension flanges 60 [] extend through the fire retardant sheathing 34” and “the extension flanges 60 extend through a slot 72 in the fire retardant sheathing 34.” EX1001: 5:5-6, 5:35-36. Further, at least Figs. 11, 13A, and 36 . . . show only the planar extension plates extending through the opening in the fire retardant sheathing. EX2001: ¶153.

Prelim. Resp. 112. Patent Owner asserts the '339 patent does provide a reason to have only the planar extension plates extend through the fire retardant sheathing when explaining ““the integrity of the fire retardant sheathing should be maintained and *interruptions of the sheathing kept to a minimum.*”” *Id.* at 115–116 (citing Ex. 1001, 1:44–46). Patent Owner asserts that, in claim 26, “the term ‘entirely’ is a positive structural limitation used to positively state the position of elements (e.g., back and top flange) relative to other elements.” *Id.* at 117.

On the current record, the '339 patent appears to provide at least one reason to limit the number of components that “extend through the opening in the fire retardant sheathing” as recited in claims 20–23 and 26. As Patent Owner argues, the '339 patent describes that “interruptions of the sheathing [should be] kept to a minimum.” Ex. 1001, 1:45–46. The '339 patent states:

Installation of the truss hanger minimally disrupts the continuity of the sheathing and therefore does not reduce the fire resistive rating of a fire rated assembly. The extension flanges **60**, **160** extend through the fire retardant sheathing **34** so that the sheathing is interrupted only by the slot **72** required to receive the flanges.

Ex. 1001, 11:35–41. The plain reading of the ’339 patent is, on the current record, reasonably understood to motivate limiting components that extend through the fire resistant sheathing and the ordinary artisan would have recognized that the only necessary elements passing through this sheathing would have been the extension flanges.

Accordingly, our preliminary determination on the current record is that claims 20–23 and 26 comply with the written description requirement as to the use of the words “only” and “entirely.”

B. Ground 2 – Indefiniteness

1. Claims 1–31 – “Fire Wall Hanger”

Petitioner asserts a “POSA would not be able to determine the difference in scope between a joist or truss hanger that constitutes a ‘fire wall hanger’ and one that does not fall within the scope of a ‘fire wall hanger.’” Pet. 15. Petitioner asserts “[Patent Owner] has previously identified hangers with those features as not suitable for fire-resistive wall assemblies. *See, e.g.*, PGR2021-00109, POR, pp. 105-107; PGR2019-00063, POR, pp. 34-39. Because the scope of what hangers constitute ‘fire wall hangers’ would not be evident to a POSA, the term is indefinite.” *Id.*

Patent Owner asserts a “POSA understands a fire wall hanger is a hanger having a channel-shaped portion, an extension portion, and a connection portion. EX2001: ¶182. Accordingly, the term ‘fire wall hanger’ is definite and fails to provide a basis for institution. EX2001: ¶183.” Prelim. Resp. 122.

On this record, we find the evidence better supports Patent Owner’s argument. A “claim is not indefinite just because it is broad.” *Niazi Licensing Corp. v. St. Jude Medical S.C., Inc.*, 30 F.4th 1339, 1347 (Fed. Cir

2022). And while the term “fire wall hanger” might reasonably be applicable to any hanger used to install a fire wall, that breadth alone does not make the claim indefinite. Indeed, Mr. Fennell states a “POSA would have understood that there are a variety of hangers that could be used in fire-resistive wall assemblies as well as non-fire-resistive wall assemblies.” Ex. 1003 ¶ 114. Mr. Fennell further states “it was common for an installer, when building a fire-resistive wall assembly, to use any hanger that already existed in the market so long as it was suitable for use in the specific assembly being built, whether or not it was marked specifically as a ‘fire wall hanger.’” *Id.* Petitioner’s own declarant acknowledges that the ordinary artisan recognized any suitable hanger may function as a “fire wall hanger.” That supports our reasoning that the term “fire wall hanger” is broad, and it also suggests that the ordinary artisan was able to decide which hangers would function with fire walls and which would not.

This understanding is also supported by Mr. Kaczkowski, who states a “POSA would understand that the term ‘fire wall hanger’ refers to a hanger that may be used in the construction of a fire-rated wall assembly. The term ‘fire wall’ is a well-recognized term of art in the construction industry that is applied to fire rated walls.” Ex. 2001 ¶ 178 (citing Ex. 2042, 21). Mr. Kaczkowski further points to a number of exhibits that use the term “fire wall hanger” without distinguishing from hangers that would not function with fire walls. *See id.* ¶ 179.

Accordingly, our preliminary determination on the current record is that the term “fire wall hanger” complies with the definiteness requirement of 35 U.S.C. § 112(b).

2. Claims 1–31 – “Opening Outwardly”

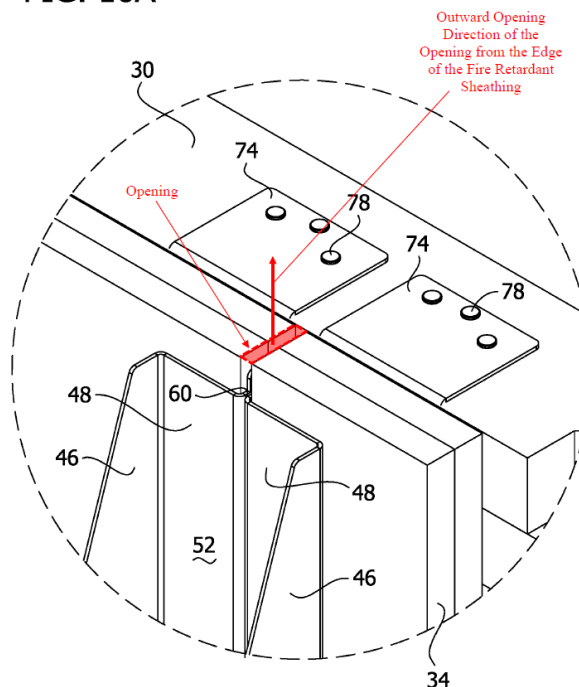
Petitioner asserts “[i]t is unclear what is meant by claims 1 and 27’s ‘opening . . . opening *outwardly* from the exterior edge,’ and such a phrase is thus indefinite.” Pet. 16. Petitioner explains that “[a]s part of a method that begins with an uncut piece of sheathing, ‘cutting an opening *into* an exterior edge,’ as recited creates an opening *into* the body of the sheathing – not ‘*outwardly* from the exterior edge.’” *Id.*

Patent Owner asserts:

In view of the claim language itself and the specification, this limitation is abundantly definite. EX2001: ¶188. This claim limitation describes the physical characteristics of the “opening” after it has been formed by the “cutting” step—that the opening (72) opens outwardly of the edge of the fire retardant sheathing (34), as shown below. EX2001: ¶189.

Prelim. Resp. 122–123. Patent Owner provides an annotated version of Figure 10A, reproduced below:

FIG. 10A



EX1001: Fig. 10A (annotated)

Patent Owner asserts that the Figure 10A annotation shows “the opening (e.g., the open top thereof) at the edge of the fire retardant sheathing faces outward from the edge of the fire retardant sheathing.” *Id.* at 124–125 (citing Ex. 2001 ¶ 190). Patent Owner points to a variety of other patents that use the phrase “opening outwardly.” *See id.* at 125–130. Patent Owner asserts the phrase “opening outwardly” “informs the POSA that ‘outwardly’ provides a directionally opposite ‘into’ the fire retardant sheathing.” *Id.* at 131 (citing Ex. 2001 ¶ 198).

On the current record, we find the evidence better supports Petitioner. Patent Owner not only fails to identify a definition for the phrase “opening outwardly,” it also does not identify a single use of the phrase “opening outwardly” in the ’339 patent Specification. While Patent Owner points to the top of the opening as the exterior edge from which the sheathing is “opening outwardly,” it would be at least equally reasonable to interpret “opening outwardly” as referring to opening from the exterior edges of the front face of the fire retardant sheathing. *See, e.g.,* Pet. 16; Ex. 1003 ¶ 117. Patent Owner points to no evidence in the prosecution history or Specification that clearly distinguishes these two constructions. The “scope of claim language cannot depend solely on the unrestrained, subjective opinion of a particular individual purportedly practicing the invention. . . . Some objective standard must be provided in order to allow the public to determine the scope of the claimed invention.” *Datamize, LLC vs. Plumtree Software, Inc.*, 417 F.3d 1342, 1350 (Fed. Cir. 2005). With at least two plausible and incompatible constructions of “opening outwardly,” we agree with Petitioner on this record that this claim element read in light of the specification delineating the patent, and the prosecution history, fails to

inform, with reasonable certainty, those skilled in the art about the scope of the invention. *See Nautilus*, 572 U.S. at 901.

Accordingly, our preliminary determination on the current record is that the term “opening outwardly” fails to comply with the definiteness requirement of 35 U.S.C. § 112(b).

3. *Claims 1–26 – “Bounding”*

Petitioner asserts “[b]ecause the opening is cut into the exterior edge of the sheathing, there is no sheathing on at least one side (e.g., top) of the opening.” Pet. 16–17. Petitioner asserts “a single vertical edge of the sheathing cannot ‘bound’ the opening. This ambiguity renders claim 1 and dependent claims 2–26 indefinite.” *Id.* at 18.

Patent Owner asserts “the plain and ordinary meaning of ‘bounding’ allows for a single-edge of the sheathing to bound an opening.” Prelim. Resp. 134 (citing Ex. 2011, 4). Patent Owner asserts “[w]ith this correct understanding, the term ‘bounding’ is definite.” *Id.* (citing Ex. 2001 ¶ 205).

As already discussed above, on the current record we preliminarily agree with Patent Owner that the term “bounding” is not reasonably interpreted as necessarily “enclosing” or fully surrounding. We therefore preliminarily interpreted “bounding” as broadly encompassing both fully and partially “enclosed” or “confined” areas on the current record. Even “undue breadth is not indefiniteness.” *In re Johnson*, 558 F.2d 1008, 1016 n.17 (CCPA 1977). Therefore, the term “bounding” is not indefinite, just broad.

Accordingly, our preliminary determination on the current record is that the term “bounding” complies with the definiteness requirement of 35 U.S.C. § 112(b).

4. *Claims 13 and 14 – “Close Conformance”*

Petitioner asserts:

While the specification provides an example wherein “the gap between the extension flanges 60 and the edge of the slot 72 is less than or equal to 1/8”, nowhere does the specification liken such measurements to “close conformance” or otherwise provide advantages attributable to the example’s gap size. EX1001, 5:37-39.

Pet. 18. Petitioner asserts “[b]ecause ‘close conformance’ is a term of degree and the specification does not provide certainty regarding acceptable clearance tolerances . . . it remains unknown by what standard or measure of ‘close conformance’ a potential infringer would be judged.” *Id.* at 19.

Patent Owner asserts “‘close conformance’ means the edge of the fire retardant sheathing is within a short distance away and corresponding in form or shape to the exterior face of the extension portion. EX2001: ¶210. This is the plain and ordinary meaning of the phrase. EX2030: 4.” Prelim. Resp. 135. Patent Owner asserts this understanding is reflected in Petitioner’s own patents. *See id.* at 135–138. Patent Owner also asserts “the ‘339 Patent’s figures provide a clear example to a POSA of the planar edge of the fire retardant sheathing (34) matching the form of and being within a short distance of the planar exterior face of the extension portion (40).” *See id.* at 139–143 (citing Ex. 2001 ¶ 218). Lastly, Patent Owner cites portions of the ’339 patent that “inform the POSA on the meaning of ‘close conformance,’ to keep sheathing interruptions to a minimum to maintain the integrity and fire protection capabilities of the fire-resistive wall assembly.” *Id.* at 143–44 (citing Ex. 1001, 4:34–36, 11:33–41; Ex. 2001 ¶ 219).

On the current record, we find the facts better support Patent Owner’s position. The Federal Circuit has “rejected the proposition that claims

involving terms of degree are inherently indefinite.” *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017). We agree with Patent Owner that the ’339 patent Specification states:

Installation of the truss hanger minimally disrupts the continuity of the sheathing and therefore does not reduce the fire resistive rating of a fire rated assembly. The extension flanges **60**, **160** extend through the fire retardant sheathing **34** so that the sheathing is interrupted only by the slot **72** required to receive the flanges.

Ex. 1001, 11:35–41. Thus, the ordinary artisan would have found it necessary to conform the hanger and fire sheathing as closely as reasonably possible to maximize the fire resistivity of the assembly. The ’339 patent Specification exemplifies such a situation with close conformance, stating “[p]referably, the slot has an area less than or equal to 6 square inches, and the gap between the extension flanges **60** and the edge of the slot **72** is less than or equal to $\frac{1}{8}$.” *Id.* at 5:37–39. This understanding is reinforced by Mr. Kaczowski’s statement that “when seeking out the objective boundaries of this limitation, the POSA would look to the specification for statements about the physical relationship between the fire retardant sheathing (34) (of which the claimed ‘edge’ is a part of) and the extension portion (40) and/or extension flanges (60).” Ex. 2001 ¶ 217.

Accordingly, our preliminary determination on the current record is that the term “close conformance” complies with the definiteness requirement of 35 U.S.C. § 112(b). That said, we encourage the parties to brief how the skilled artisan in view of the Specification would distinguish between, on the one hand, a hanger element and sheathing being in “close conformance,” and, on the other hand, a hanger element and sheathing *not* being in “close conformance.”

C. Overview of the Asserted Prior Art

We review and summarize the asserted prior art below. There is currently no dispute that each asserted reference is prior art.

1. *Cullen (Ex. 1004)*

Cullen is a UK patent publication that is directed to a “bracket [i.e., hanger] for use in timber constructions.” Ex. 1004, 3:1–3. Figures 1 and 3 of Cullen are reproduced below:

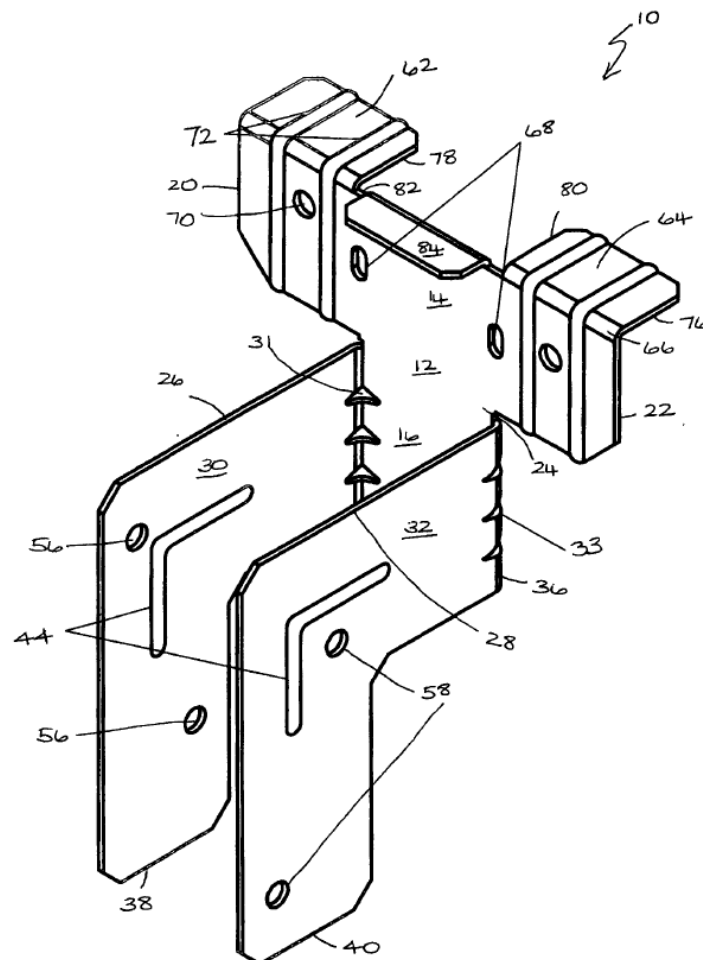
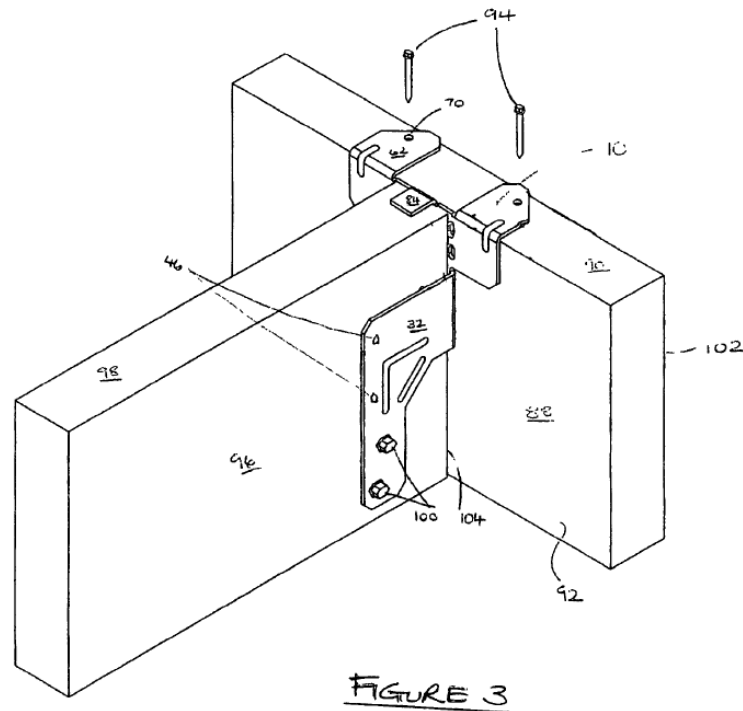


FIGURE 1

“Figure 1 is a perspective view of a bracket according to an embodiment of the present invention.” *Id.* at 9:28–29.



“Figure 3 illustrates the bracket 100 being located on the sill 88 with the joist 96 in place.” *Id.* at 16:23–24.

Cullen’s hanger 10 includes “a back plate 12 for location against a support heading member or bearing member”; “side walls 30, 32 extend[ing] forward of the back plate 12 sitting parallel to each other and perpendicular to the back plate 12”; and legs 38, 40 “extend[ing] downwardly” from sidewalls 30, 32 to “provide an increased surface area to support a joist.” *Id.* at 10:16–11:1. Cullen also discloses hanger 10 as including “a seat . . . located on the legs 38, 40 . . . to cradle a joist.” *Id.* at 17:20–23. As shown above in Figure 1, legs 38, 40 are separated from back plate 12 by a distance corresponding to the length of sidewalls 30, 32. *Id.*, Fig. 1.

2. *Bundy (Ex. 1005)*

Bundy is a U.S. patent and is generally directed to “a joist hanger adapted to secure a joist to a header or other support member with a first

drywall panel between the back of the joist hanger and the front of the header,” as shown, for example, in Figure 1, reproduced below. Ex. 1005, 1:6–11.

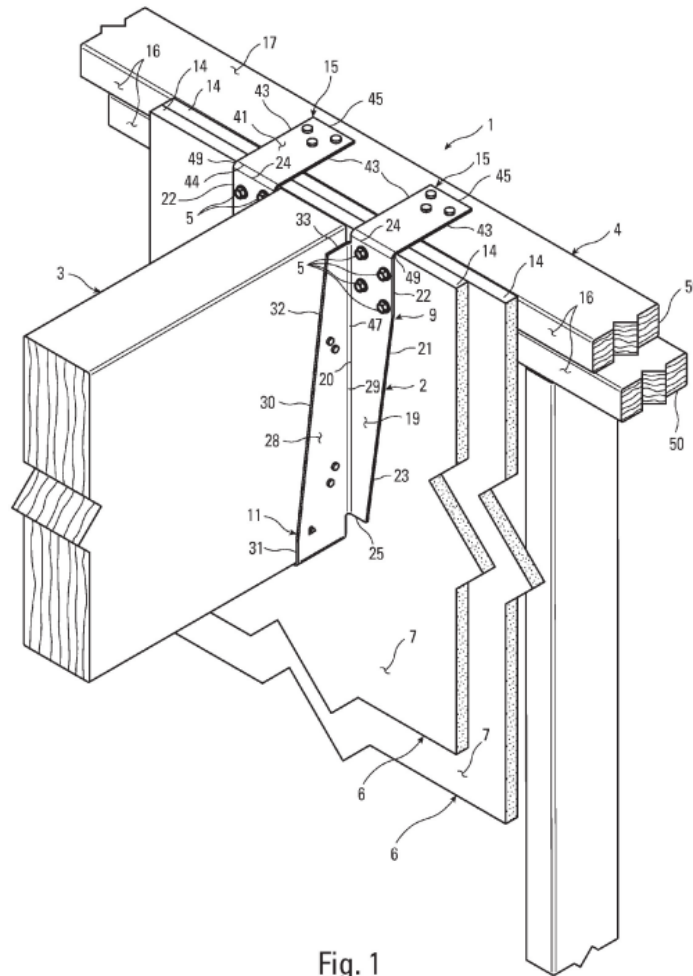


Fig. 1

Figure 1 “is an upper right perspective view of a connection formed according to the present invention in which the joist hanger has a pair of top flanges.” *Id.* at 3: 7–9. Figure 1 shows “a connection 1 utilizing a joist hanger 2 to hang a substantially horizontal joist 3 from a wood structural support member 4 in cooperation with a first plurality of fasteners 5 and one or more substantially vertical drywall panels 6.” *Id.* at 3:55–59. Bundy discloses that “[t]he one or more panels 6 preferably are drywall panels 6,”

and explains “[c]ommon panel thicknesses are 1/2-inch and 5/8-inch,” and “[i]n the present invention, two layers of 5/8-inch drywall is preferred.” *Id.* at 5:10–22.

3. *Allan (Ex. 1006)*

Allan is a U.S. patent directed to a “an anchor for tying a masonry veneer wall to the framing of an architectural structure.” Ex. 1006, 1:6–8. Figure 3 of Allan is reproduced below:

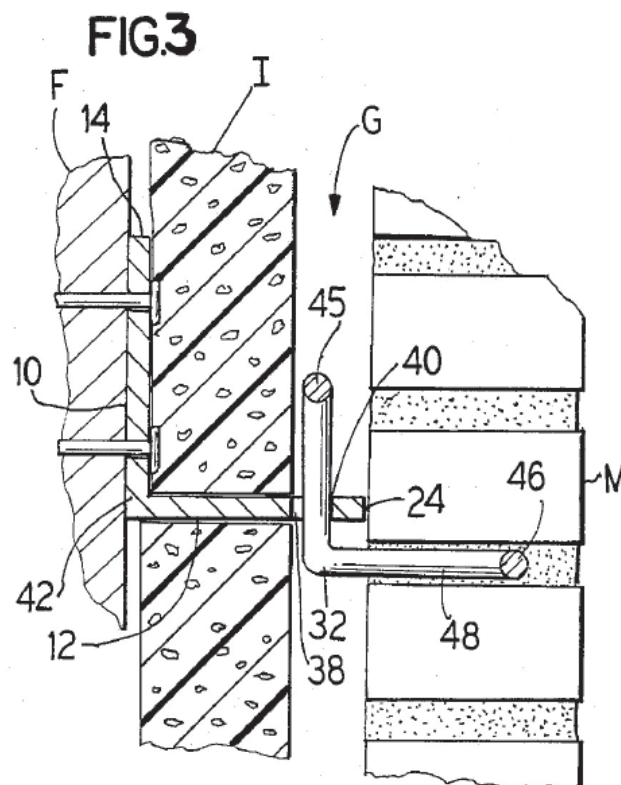


Figure 3 is a vertical sectional view of a masonry veneer wall construction. *See id.* at 2:67–3:2. Allan discloses that “the length of the outstanding leg **12** between corner joint **42** and the side **38** of the elongated slot or opening **30** may be varied to accommodate varying thicknesses of the insulation layer or plasterboard [damage to the plasterboard] sheet I.” *Id.* at 3:55–59. Allan also discloses that “slots may be cut into the insulation layers

or plasterboard sheets I through which the outstanding leg is inserted.” *Id.* at 4:10–12.

4. *Rice (Ex. 1009)*

Rice is a U.S. Patent directed to “tools for locating an accessory such as an electrical receptacle with respect to a vertical wall stud so that an opening can be formed in a wall panel to accommodate the receptacle prior to the installation of the panel on the wall.” Ex. 1009, 1:8–11. Figure 3 of Rice is reproduced below:

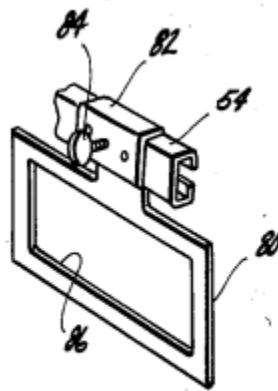


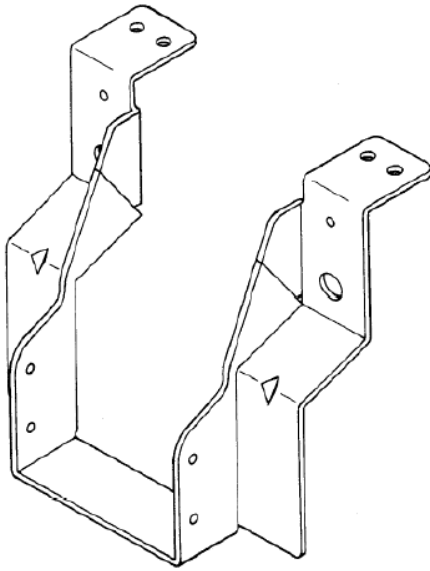
Fig. 3

Figure 3 illustrates a “template 80 which can be mounted on horizontal arm 54, using collar 82 and thumb screw 84. In this case template 80 has a rectangular opening 86 to define the outline of an electrical receptacle box.” *Id.* at 3:1–5. Rice discloses that a template “is selected from a group of templates to accommodate the particular accessory that is to be received through an opening in the panel.” *Id.* at 2:46–48.

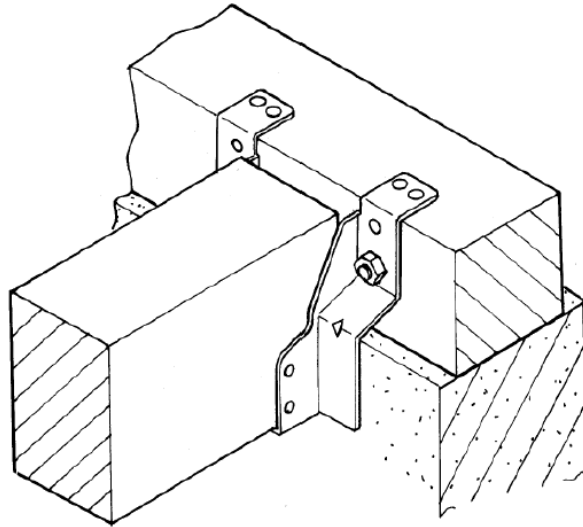
5. *Yamaguchi (Ex. 1007)*

Yamaguchi is a Japanese design publication and generally is directed to “a joist bracket [i.e., a hanger] that is attached to [a] sill[] and bears a joist

bridging the sill[] [to another sill],” as shown, for example, in a “Perspective View” (page 2) and “Reference Diagram Illustrating Usage State” view (page 5), reproduced below. Ex. 1007, 1, 2, 4, 5.



[Perspective View]



[Reference Diagram Illustrating Usage State]

6. *Robinson (Ex. 1011)*

Robinson is a UK patent and is directed to “a joist hanger, and in particular to a joist hanger for affixing a timber joist to masonry.” Ex. 1011, 1:2–3. Figure 6 of Robinson is reproduced below:

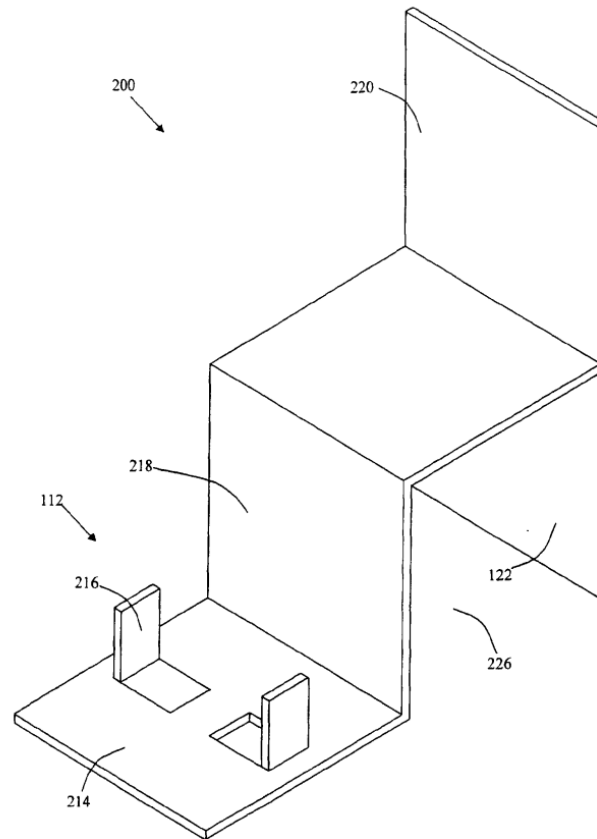


Figure 6

“Figure 6 shows a joist hanger 200 The joist hanger 200 includes a shoe 212 for supporting a joist, and a flange 220 for suspending the hanger 200 from masonry or the like.” *Id.* at 5:15–17.

D. Ground 3 – Obviousness over Cullen, Bundy, and Allan
Under Ground 3, Petitioner asserts that claims 1–11, 13–22, 24, 25, and 27–31 are unpatentable as obvious over the combination of Cullen, Bundy, and Allan. Pet. 20–63.

1. Claim 1

a) Preamble [1.P]: “A method of constructing a fire-resistive wall assembly”

Petitioner asserts “Cullen explicitly discloses using hanger 10 for timber building construction, but not explicitly a *fire-resistive wall*

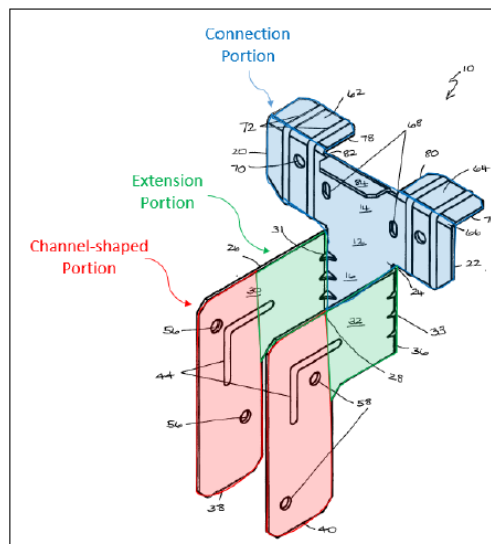
assembly.” Pet. 27 (citing Ex. 1004, 3:1–2). Petitioner asserts “a POSA would have understood that Cullen’s hanger would apply to a wall covered with fire-retardant sheathing (drywall), as taught by Bundy.” *Id.* at 28 (citing Ex. 1005, 2:37–41).

b) Element [1A] – “mounting a fire wall hanger on a frame wall, the frame wall including a top plate and a plurality of studs extending down from the top plate”

Petitioner asserts “Bundy teaches mounting a hanger to a frame wall that includes a top plate 4 (also referred to as ‘wood structural support member’) and a plurality of ‘vertically disposed studs’ extending down from the top plate.” Pet. 28 (citing Ex. 1005, 3:55–67; Fig. 2).

c) Element [1B] – “the fire wall hanger including a channel-shaped portion sized and shaped to receive a structural component, a connection portion configured for attachment to the frame wall and an extension portion interconnecting the channel-shaped portion and the connection portion and spacing the channel-shaped portion from the connection portion”

Petitioner provides an annotated image of Figure 1 of Cullen, reproduced below:



Petitioner asserts:

The Cullen-Bundy hanger includes a *channel-shaped portion* (legs 38, 40, and seat) *sized and shaped to receive a structural component* (joist). EX1004, 10:29–11:1, 17:20–25. The hanger includes a *connection portion* (including bearing plates 62, 64 and back plate 12) *configured for attachment to the frame wall*. EX1004, 3:3–7, 10:16–22, 11:24–29; §VII.A. The hanger includes an *extension portion* (sidewalls 30, 32) that *interconnects the channel-shaped portion and the connection portion, and spaces the channel-shaped portion from the connection portion*. EX1004, 10:25–11:1; EX1003, ¶164.

Pet. 29.

d) Element [1C] – “said step of mounting the fire wall hanger includes securing the connection portion of the fire wall hanger to the top plate of the frame wall so that the channel-shaped portion is spaced from the frame wall”

Petitioner asserts “the Cullen-Bundy hanger includes a channel-shaped portion that is spaced from the connection portion. The arrangement of the hanger is such that when the hanger is mounted to the top plate of the frame wall, the channel-shaped portion is also spaced from the frame wall.”

Pet. 30 (citing Ex. 1004, 16:1–10; Ex. 1003 ¶ 165).

e) Element [1D] – “cutting an opening into an exterior edge of fire retardant sheathing, the opening extending through a front face of the fire retardant sheathing and through a rear face of the fire retardant sheathing and opening outwardly from the exterior edge of the fire retardant sheathing; and”

Petitioner asserts “cutting sheathing to fit around obstructions was a known method of installing sheathing, as evidenced by Allan. A POSA would have understood from Allan that it was well known to cut an opening into sheathing to accommodate a structural connector, such as Cullen’s legs

30, 32.” Pet. 30–31 (citing Ex. 1032, 4:27–41, Ex. 1031, 2; Ex. 1003 ¶¶ 166–171).

We note that the Board is able to assess the merits of Petitioner’s obviousness grounds despite the potential indefiniteness of “opening outwardly” discussed above. *See Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 813 (Fed. Cir. 2021) (“The indefiniteness of a limitation . . . precludes a patentability determination only when the indefiniteness renders it logically impossible for the Board to reach such a decision.”); *Samsung Elecs. Am., Inc. v. Prisua Eng’g Corp.*, 948 F.3d 1342, 1355 (Fed. Cir. 2020) (indefiniteness “does not necessarily preclude the Board from addressing the patentability of the claims on section 102 and 103 grounds”).

f) Element [1E] – “after mounting the fire wall hanger on the frame wall and after cutting the opening into the exterior edge of the fire retardant sheathing, installing the fire retardant sheathing with respect to the frame wall so the rear face of the fire retardant sheathing faces toward the studs of the frame wall,”

Petitioner asserts

a POSA would have understood that Cullen’s hanger would be installed before the sheathing because apertures 68 would not be accessible after sheathing installation. The resulting installation would be such that the rear face of the sheathing faces toward the studs of the frame wall (*see* discussion and figures for elements [1.A], [1.D]).

Pet. 32 (citing Ex. 1003 ¶¶ 172–173).

g) Element [1F] – “said step of installing the fire retardant sheathing includes: inserting the fire retardant sheathing

between the channel-shaped portion of the fire wall hanger and the frame wall; and”

Petitioner asserts since “it was known to insert sheathing around obstructions, a POSA would have known to insert the sheathing (having openings cut therein) up between the channel-shaped portion and connection portion such that the openings lined up with plates 30, 32 of the hanger’s extension portion.” Pet. 32 (citing Ex. 1003 ¶¶ 174–175).

h) Element [1G] – “moving the fire retardant sheathing relative to the fire wall hanger mounted on the frame wall so that an edge of the fire retardant sheathing bounding the opening moves alongside the extension portion and the fire wall hanger extends through the opening in the fire retardant sheathing.”

Petitioner asserts:

Given that the hanger is installed at the top plate prior to installing the sheathing (*see* element [1.E]), that it was known to add sheathing up to the top plate for firewall construction, and that it was known to insert sheathing around obstructions, a POSA would have known to insert the sheathing (having openings cut therein, *see* element [1.D]) up between the channel-shaped portion and connection portion such that the openings moved alongside plates 30, 32 of the hanger’s extension portion.

This would cause an edge of the sheathing bounding the opening to move alongside the extension portion. This would also enable the extension portion to extend through the openings of the sheathing to fit the sheathing in place between the channel-shaped portion and the connection portion of the hanger.

Pet. 33–34 (citing Ex. 1003 ¶¶ 176–177).

i) Motivation for Claim 1

Petitioner asserts:

A POSA would have recognized that Cullen’s sidewalls 30, 32 could easily be adapted to extend through narrow openings in the

drywall to enable the drywall to be installed over the back plate, while still shielding the top plate of the frame wall. EX1003, ¶¶136-140. Specifically, a POSA would have optimized the size of Cullen’s legs to accommodate drywall as Bundy taught. EX1005, 5:10-22. This modification would have been nothing more than applying a known technique (Bundy’s spacing a hanger seat from a wall frame by a distance sufficient to accommodate drywall for fire resistance) to a similar device (Cullen’s hanger) to obtain the predictable result of a firewall hanger configured to receive fire-resistant drywall, thereby “protect[ing] the structural members of a building.” EX1005, 5:18–20; EX1003, ¶¶136-140.

Pet. 22–23.

2. *Analysis of Claim 1*

Based on the preliminary record, Petitioner has met its institution burden and demonstrated that it is more likely than not that it will prevail in showing claim 1 would have been obvious over Cullen, Bundy, and Allan. We address Patent Owner’s arguments below.

a) Method step limitations

Patent Owner asserts that Petitioner “*repeatedly* fails to identify or provide *any citation* to where claim limitations are taught within the asserted prior art” Prelim. Resp. 22. Patent Owner specifically asserts that “the Petition never states the prior art basis” for the precise order of operations performed in steps [1.E], [1.F], [1.G] in claim 1, and steps [27.E], [27.F], [27.G] in claim 27. *See id.* Patent Owner asserts:

Of [Petitioner’s] asserted references, Yamaguchi, Cullen, and Robinson provide absolutely no disclosure regarding fire retardant sheathing, nor the manner of constructing fire-resistive wall assemblies including installing the fire retardant sheathing ***after*** the fire wall hanger is mounted to the frame wall as claimed. EX1004; EX1007; EX1011; EX2001: ¶300.

Bundy and ArchRecord are the only references teaching mounting fire retardant sheathing on a frame wall. EX2001: ¶301. But Bundy teaches mounting the sheathing *before* mounting the fire wall hanger on the frame wall. EX1005:Fig. 2, 2:20-25.

Id. at 23. Patent Owner similarly asserts the other cited prior art fails to teach installing sheathing after mounting the fire wall hanger. *Id.* at 23–30. Patent Owner asserts

[Petitioner] and its expert rely on circular arguments to fill in these missing limitations. First, [Petitioner] claims because it was “obvious” to receive sheathing between a channel-shaped portion and the wall frame, the POSA would have “understood” or found it “obvious” to mount the hanger prior to installing the sheathing as required in limitation 1.E/27.E. Pet: 32 (incorporating 23-27), 80 (incorporating 65-72), 115-116 (incorporating 102-109), 158-159 (incorporating 144-153). But [Petitioner] then reverses course and argues because the hanger would have been installed prior to the sheathing, a POSA would have “known” to insert the sheathing between the channel-shaped portion and the frame wall as required in limitations 1.F/27.F. Pet: 32-34, 80-83, 116-119, 159-160. [Petitioner’s] motivation for the steps of limitations 1.E/27.E, 1.F/27.F and 1.G/27.G rely on each other in circular fashion.

Id. at 31. Patent Owner asserts “the step of installing the fire retardant sheathing *after* mounting the fire wall hanger plays a major role because it drives a number of the other claim limitations.” *Id.* at 33.

On the current record, we do not find Patent Owner’s argument persuasive. As an initial matter, we note that the Board has twice already determined that claims in related applications to the truss hangers themselves were unpatentable as obvious. *See Simpson Strong-Tie Co. v. Columbia Insurance Co.*, PGR2021-00109, 2023 WL 2598961 (PTAB Mar. 15, 2023); *Simpson Strong-Tie Co. v. Columbia Insurance Co.*, PGR2019-

00063, 2021 WL 935027 (PTAB Mar. 11, 2021). On appeal, the Federal Circuit affirmed those decisions. *See, e.g., Columbia Insurance Company v. Simpson Strong-Tie Company, Inc.*, No. 2021-2145, 2023 WL 2733427 (Fed. Cir. Mar. 31, 2023); *Simpson Strong-Tie Co. v. Columbia Insurance Co.*, No. 2023-1944, 2025 WL 39807 (Fed. Cir. Jan. 7, 2025). In *Columbia*, the Court stated the “claims at issue are apparatus claims that only cover the hanger itself, not the sheathing.” *Columbia*, 2023 WL 2733427, at *5. The Court stated “the only remaining issue is whether the Board erred in finding these claims obvious over Gilb ’155, Bundy, and Allan. We find no such error. The Board’s decision depends from underlying findings of fact that are supported by substantial evidence.” *Id.* at *6.

On the current record, Patent Owner does not, at this time, appear to challenge the obviousness of the truss hanger itself but rather challenges whether the method steps of installation of the truss hanger and fire retardant sheathing would have been obvious. *See, e.g., Prelim. Resp.* 22. Patent Owner acknowledges that Bundy teaches “a connection that allows a joist hanger to be attached to a supporting structural member with drywall panels interposed between them without damaging the drywall panels or compromising the strength of the connection.” Ex 1005, 2:37–41. That is, Bundy is reasonably understood as teaching mounting the drywall panels first and then installing the joint hanger. *See id.*

However, as to reversing the order of installation, with installation of the joist hanger prior to mounting the drywall, Mr. Fennell states that, at the time of invention, “it was well known in the industry to cut drywall around joists attached to frame walls.” Ex. 1003 ¶ 147. Mr. Fennell, in discussing the background knowledge of an ordinary artisan, states that Rice teaches

“[a] problem with installing panels or drywall sheets is that frequently the plumbing, electrical and other fixtures have already been installed with outlets extending beyond the wall supporting structure. An opening must be formed in the panel to accommodate such fixtures before the panel is installed.” EX1009, 1:12-17. Harrison also teaches that cutting drywall to fit around already installed structural elements is “a standard element of commercial and residential construction.” EX1010, ¶¶2-3. Commins also teaches a hurricane tie 22 that has extension portion 23 that “extends into the clear opening between the intersection of top plate member 14 and wood base member 15,” which may be the bottom chord of a truss member. EX1032, 4:27-41. Thus, “if it were desired to sheet rock the inside wall, a notch would have to be made in the gypsum board around extension 23 of the hanger tie member 24.” EX1032, 4:27-41.

Id. ¶ 148. Mr. Fennell further stated that Russo teaches that after a “frame wall (including the framing bracket) is installed, the wall material is inserted into a ‘partial enclosure 26’ (i.e., extension portion) of the bracket configured to receive the wall material.” *Id.* ¶ 152 (citing Ex. 1013, 1:21–43, 2:36–50, Figs. 3, 6). Mr. Fennell states Leathe “teaches installing a ledger board in an extension portion of a joist hanger after the hanger is mounted to the building.” *Id.* ¶ 153 (citing Ex. 1014, 2:20–35, 4:54–64).

Based on this prior art knowledge, Mr. Fennell states a

POSA would have further understood that the Cullen hanger would be installed before the drywall because apertures 68 (which affix the back plate 12 to the sill) would not be accessible after the drywall is installed. That is, the drywall would block access to the apertures 68, preventing the hanger from being attached to the frame wall. *See* EX1004, 12:6-13, 12:27-29, 16:6-10. A POSA would have thus found it obvious to mount Cullen’s hanger before installing the drywall so that the installer would have clear access to the apertures 68.

Id. ¶ 150. Mr. Fennell also relied on a *KSR* rationale for modifying the installation order including that a “POSA would have recognized that there

were only two potential orders of assembly: the fire wall hanger is installed first and then the drywall is slid in place, or vice versa—the drywall is installed first and then the hanger is slid over the drywall.” *Id.* ¶ 155 (citing Ex. 1004, 16:23-17:7 (“two methods of assembly are available”)). That is, Mr. Fennell stated “[e]ach of these options would predictably result in the installation as I have described herein with drywall positioned between the channel-shaped portion and the frame wall.” *Id.*

We do not agree with Patent Owner that Petitioner’s reasoning is circular or lacks basis in the prior art. Rather, we find that Mr. Fennell persuasively grounds his statements in substantive prior art evidence and agree that where “there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.” *KSR*, 550 U.S. at 421. Based on the current record, this appears to be the precise situation where a person of ordinary skill in the art is “left with two design choices,” in which case the Federal Circuit has explained that “[e]ach of these two design choices is an obvious combination of prior-art elements.” *ACCO Brands Corp. v. Fellowes, Inc.*, 813 F.3d 1361, 1367 (Fed. Cir. 2016).

In contrast, we find Mr. Kaczkowski focuses much of his analysis on the specific elements in the prior art without addressing the logic of the combination or the knowledge in the prior art. For example, Mr. Kaczkowski states that “Bundy explicitly teaches away from [Petitioner’s] proposed Cullen-Bundy combination of cutting an opening in the drywall panels for Cullen’s hanger to extend through.” Ex. 2001 ¶ 238. “Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of

references [The reference] must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

In addressing Mr. Fennell’s reliance on known drywall cutouts, Mr. Kaczkowski states “the installer would have either stopped the sheathing below the joist—in which case the joist and unfinished portion of the wall would likely be concealed by installing a ceiling—or cut the sheathing around the joist and hanger similar to the images at pgs. 42 and 64 of EX1029.” Ex. 2001 ¶ 251. However, this statement fails to acknowledge the use of the fire wall hangers themselves as obvious, as already decided by the Board and affirmed by the Federal Circuit. *See, e.g., Columbia*, 2023 WL 2733427 at 5; *Simpson*, 2025 WL 39807 at 3. The issue is how the POSA would have performed an installation with a fire wall hanger rendered obvious by Cullen, Bundy, and Allan and fire retardant sheathing, not an installation using some other device. On the current record, we find Mr. Fennell’s position better supported by the evidence. Ex. 1003 ¶¶ 147–155.

b) Impermissible hindsight recreation

Patent Owner asserts

the ‘339 Patent’s claims positively claim the frame wall, the fire retardant sheathing, and the installation steps for mounting the hanger and installing sheathing. Accordingly, it is not enough for Cullen, Yamaguchi, or Robinson have components that could arguably act as a separate “channel shaped portion” to hold the joist and “extension portion” to extend through sheathing if used according to the claimed method.

Prelim. Resp. 34. Patent Owner asserts that “[Petitioner’s] use of Cullen, Yamaguchi, and Robinson is based on nothing more than selecting prior art

hangers that could conceivably fit the parameters of the claimed invention.” *Id.* at 35. Patent Owner cites statements from a deposition of Mr. Fennell in PGR2021-00109 and purports that these statements demonstrate Petitioner’s declarant was engaging in hindsight, asserting “[s]tarting from the point of finding prior art hangers having structures recastable as a potential ‘extension portion’ and then working backwards to justify why the hanger reference would be used with a wood frame wall having a fire barrier—*i.e.*, two layers of 5/8-inch thick sheathing—is textbook hindsight.” *Id.* at 36 (*cf.* Ex. 2037, 92:13–93:1, 115:3–5). Patent Owner states Petitioner’s declarant “further explained once he identified a reference theoretically useable with sheathing, he ‘work[ed] backwards.’” *Id.* at 36 (citing Ex. 2037, 115:3–5).

Patent Owner also asserts “there is ***no need*** to make these combinations when Bundy and ArchRecord already teach fire wall assemblies with drywall shielding the frame wall from fire.” *Id.* at 38. Patent Owner asserts “a POSA when presented with these references would not look to combine them in the manner asserted by [Petitioner] to ‘enable the drywall to shield the frame wall from fire’ because Bundy and ArchRecord already do this by themselves. The POSA would simply go straight to Bundy and ArchRecord.” *Id.*

While we are fully aware that hindsight bias may plague determinations of obviousness, *Graham*, 383 U.S. at 36, we are also mindful that the Supreme Court has clearly stated that the “combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 416. On the current record, we do not find Patent Owner’s argument persuasive as Petitioner’s reasoning “takes into account only knowledge which was within

the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure." *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971). Mr. Fennell provides detailed evidence-based reasoning explaining why an ordinary artisan would have combined the teachings of Cullen, Bundy, and Allan to configure, install, and mount a fire wall hanger with the fire retardant sheathing installed after the fire wall hanger was mounted. Ex. 1003 ¶¶ 132–156. In particular, Mr. Fennell explains that a

POSA would have further understood that the Cullen hanger would be installed before the drywall because apertures 68 (which affix the back plate 12 to the sill) would not be accessible after the drywall is installed. That is, the drywall would block access to the apertures 68, preventing the hanger from being attached to the frame wall. *See* EX1004, 12:6-13, 12:27-29, 16:6-10. A POSA would have thus found it obvious to mount Cullen's hanger before installing the drywall so that the installer would have clear access to the apertures 68.

Id. ¶ 150.

As to Mr. Fennell's deposition statements in PGR2021-00109, the full context reads:

Q What specific modifications are you making to the Bundy – or I mean, excuse me. It's getting late. What specific modifications are you making to the Timothy retrofit hanger in order – in your combinations listed here?

A Working backwards, I've adapted the sheathing space to be the two layers of 5/8ths disclosed and taught by Bundy. And then I'm adopting the retrofit configuration for the extension portions and how they attach to the wall, in this case a wood-framed wall. I'm also recognizing elsewhere in the literature that the U-shaped portion that receives the joist, I'm keeping that outside of the sheathing zone. I describe in the text here how I think there's a drafting anomaly or a line was left out that it was unclear as to where the back of the channel actually terminates.

I'm, in my modification, terminating the channel at the face of the sheathing, the outer face, so that the channel and the joist are all outboard of the sheathing. The only thing that penetrates the sheathing is the little connection pieces.

Q So trying to unpack that a little bit so that – just to talk about the items a little bit individually that you just mentioned, and probably working backwards a little . . .

Ex. 2037, 114:20–116:2. Read in context, the more reasonable reading of Mr. Fennell's statements does not support Patent Owner's assertion that he is expressly relying on hindsight, but rather that Mr. Fennell is simply guiding the listener as to the organization and order by which he will answer the question being asked. Indeed, in the full context, Mr. Fennell demonstrates care and detail in explaining how the ordinary artisan would have looked at, and applied, the prior art. *Id.* The Supreme Court explained that "[r]igid preventative rules that deny factfinders recourse to common sense . . . are neither necessary under our case law nor consistent with it." *KSR*, 550 US at 421.

We also find unpersuasive Patent Owner's argument that because the need for fire wall assemblies with drywall shielding was satisfied by Bundy and ArchRecord, there would have been no reason to further improve the technology. *See* Prelim. Resp. 38. "We start from the self-evident proposition that mankind, in particular, inventors, strive to improve that which already exists." *Pro-Mold & Tool Co., Inc. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996). The existence of one particular solution does not render all future solutions already satisfied else this decision would have been carved in cuneiform onto clay tablets, rather than written on a computer program. The Supreme Court explained that "[w]hen a work is available in one field of endeavor, design incentives and other

market forces can prompt variations of it, either in the same field or a different one.” *KSR*, 550 U.S. at 417. And Mr. Fennell provided evidence-based reasoning that, on this record, provides support for the obviousness of the claimed method. *See* Ex. 1003 ¶¶ 132–156.

c) Motivation to combine Cullen and Bundy

Patent Owner asserts that Petitioner

provides no reason a POSA would have considered Cullen—disclosed for “use in timber construction such as decking” (EX1004: Abstract) rather than fire wall assemblies—as a suitable candidate to receive drywall between Cullen’s back plate and the joist.

Only by applying hindsight, does [Petitioner] artificially distinguish a channel-shaped portion (which includes legs (38, 40)) and an extension portion (sidewalls (30, 32)) capable of extending through narrow openings in the drywall. Contrary to [Petitioner’s] artificial distinction, Cullen does not contemplate any spacing between the joist and the back plate, much less the use of the side walls (30, 32) as extension portions for extending through sheathing. EX2001: ¶230.

Prelim. Resp. 40–41. Patent Owner asserts that “Cullen’s principle of operation relies on the joist (96) **abutting** the back plate (12).” *Id.* at 41 (citing Ex. 2001 ¶¶ 231–232). Patent Owner asserts that

Cullen’s side walls (30, 32) are intended to engage the joist until the joist meets both the barbs (31, 33) present between the side walls and back flange and the location tab (84) . . . In other words, Cullen teaches away from spacing the end of the joist from the wall to receive any sheathing there-between.

Id. (citing Ex. 2001 ¶ 233). Patent Owner also asserts “[b]ecause Bundy requires installing the hanger **over** the drywall panels, Bundy explicitly teaches away from [Petitioner’s] proposed Cullen-Bundy combination—

cutting an opening in the drywall panels which Cullen's hanger extends through." *Id.* at 45 (citing Ex. 2001 ¶ 238).

On the current record, we find Patent Owner's arguments unpersuasive. Mr. Fennell has provided specific reasons to consider Cullen in the context of hanging joists, stating:

Given that Cullen's hanger is intended broadly for "timber building construction," not just "decking," a POSA would have sought to use Cullen's hanger 10 to secure a joist to a wooden frame wall—a common application for a joist hanger in timber building construction settings—as taught by Bundy. EX1004, 1:4, 5:7–8. A POSA would have readily understood that numerous different types and configurations of joist hangers—including Cullen's—would be used to attach to a frame wall.

Ex. 1003 ¶ 135. We recognize that Mr. Kaczkowski disagrees, stating

by spacing the end of the joist away from the supporting or bearing members—as suggested by [Petitioner's] Cullen-Bundy combination—the downward force transferred from the joist to the hanger is now farther offset and thus introduces a larger moment reaction on the hanger. This, in turn, results in additional stresses on the hanger that would reduce its structural load carrying capacity. This reduction in load carrying capacity is undesirable in a structural hanger, and hence a POSA would not be motivated to make this modification.

Ex. 2001 ¶ 234.

As we balance these two opinions, we find Mr. Fennell more persuasive on this record, as he notes that, contrary to Mr. Kaczkowski's opinion, "[j]oist hangers used in these applications often include a space between the end of a joist and the wall for a number of reasons, including to receive drywall, as evidenced by Bundy." Ex. 1003 ¶ 136 (citing Ex. 1004, 1:4, 5:7–8; Ex. 1005, 2:10–24, 5:10–20). Bundy expressly teaches "a connection in which a joist hanger is held away from the wood supporting

structural member to which it is attached” to allow “drywall panels [to be] interposed between” the joist hanger and supporting structural member. *See* Ex. 1005, 2:37–47. Thus, the evidence shows that Mr. Kaczkowski’s concern for load carrying capacity did not dissuade ordinary artisans such as Bundy from spacing the joist hanger away from the supporting beam.

We find all of Patent Owner’s arguments asserting teaching away unpersuasive as Patent Owner fails to identify any statement in any prior art that discourages, discredits, or criticizes spacing joist hangers away from supporting beams or from cutting drywall to fit around joist hangers. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (“The prior art’s mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed”).

d) Motivation to combine Cullen, Bundy, and Allan

Patent Owner asserts “[w]hile Allan explains slots may be cut into the **insulation** layer to permit the leg to extend through the insulation layer toward the masonry veneer wall, Bundy teaches away from having an opening cut in the drywall panels of its **firewall** assembly.” Prelim. Resp. 55 (citing Ex. 2001 ¶ 281). Patent Owner also asserts “Allan is not a ‘structural hanger’ or a joist hanger. Nor is Allan pertinent to any of the design issues a POSA would have considered in designing or modifying joist hangers, such as those disclosed in Cullen, Yamaguchi, Robinson, or Bundy.” *Id.* at 57 (citing Ex. 2001 ¶ 277). Patent Owner asserts that “[w]here cutting a hole in insulation simply results in a lesser degree of insulation provided, cutting a hole in a fire barrier can result in the complete loss of the fire barrier’s fire-resistance and rating.” *Id.* Patent Owner asserts “[n]either Allan, nor any of

the other asserted references, provided any hint of a suggestion to insert sheathing between existing components of an already complete firewall hanger while installing the sheathing.” *Id.* at 59 (citing Ex. 2001 ¶ 283).

On the current record, we find Patent Owner’s arguments unpersuasive. Mr. Fennell states, regarding installation of drywall and anchors, that

Allan provides an example of this installation technique being used in a similar context. Allan discloses a structural hanger (anchor) mounted on a wooden building frame member that connects a wall to the frame member. EX1006, 3:12-20. Allan also discloses one or more drywall layers interposed between the frame F and the wall. EX1006, 3:12-20. Allan teaches that “slots may be cut into the” drywall layers so that a leg of the hanger can extend through the drywall while also coupled to the wall. EX1006, 4:1-14. . . .

Thus, Allan shows that cutting openings into drywall to accommodate structural connectors, such as hangers, was well known and well within the grasp of a POSA using ordinary creativity and common sense.

Ex. 1003 ¶¶ 145–146.

“Prior art is analogous if it is from the same field of endeavor or if it is reasonably pertinent to the particular problem the inventor is trying to solve.” *Circuit Check Inc. v. QXQ Inc.*, 795 F.3d 1331, 1335 (Fed. Cir. 2015). As to the field of endeavor, *Bigio* requires us “to determine the appropriate field of endeavor by reference to explanations of the invention’s subject matter in the patent application, including the embodiments, function, and structure of the claimed invention.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

The ’339 patent Specification states the field of the invention as the “invention generally relates to connections for structures, and more

specifically, a truss hanger for connecting a truss to a wall including fire retardant sheathing.” Ex. 1001, 1:24–26. The ’339 patent Specification further states that in “one aspect of the present invention, a hanger for connecting a structural component to a wall having sheathing mounted thereon includes a channel-shaped portion configured to receive the structural component.” *Id.* at 1:50–53.

Therefore, as to the first prong of the analogous art test, the ’339 patent broadly identifies the field of endeavor as encompassing hangers that connect structural components to a wall with sheathing. *See id.* Allan teaches “an anchor for tying a masonry veneer wall to the framing of an architectural structure.” Ex. 1006, 1:6–8. Allan specifically teaches the anchor is designed to allow “a desired thickness of drywall or insulating material to be placed in the gap between the building frame member and the veneer wall.” *Id.* at 2:30–33. We find, on the current record, that the evidence shows that Allan is in the same field of endeavor as that recited by the ’339 patent Specification.

As to whether Allan is pertinent to the inventor’s problem, the ’339 patent Specification states:

Floor trusses or joists are attached to or hung from the walls including the gypsum board, but cannot be hung from the gypsum board itself. . . . A cutout for the entire cross section of the truss leaves a large discontinuity in the fire retardant sheathing. However, building codes require that the fire separation wall maintain a certain fire resistant rating. Thus, the integrity of the fire retardant sheathing should be maintained and interruptions of the sheathing kept to a minimum.

Ex. 1001, 1:37–46. The problem addressed by the ’339 patent Specification is reasonably identified as the need for an indirect attachment to the walls

which will limit the interruptions in fire retardant drywall sheathing placed between the connection device and the wall. *See id.*

Allan is directly pertinent to the need to limit drywall interruptions in connecting building members, stating that “slots may be cut into the insulation layers or plasterboard sheets I through which the outstanding leg is inserted. With any of these approaches, minimal energy losing air gaps in the insulation may be achieved.” Ex. 1006, 4:10–13. Thus, while Patent Owner is correct that Allan does not address limiting cuts for fire protection reasons, Allan directly teaches to minimize cuts or gaps for another reason. And Mr. Fennell has explained that

the modification to Cullen to incorporate drywall, as taught by Bundy and Allan, would have been nothing more than applying known techniques (Bundy’s spacing a hanger seat from a wall frame by a distance sufficient to accommodate drywall for fire resistance, Allan’s notching of drywall and order of installation) to a similar device (Cullen’s hanger having sidewalls of indeterminate length) to obtain the predictable result of a method of installing a firewall hanger having sidewalls long enough to space a channel-shaped portion from a wall frame for receiving fire-resistant drywall therebetween, thereby “protect[ing] the structural members of a building.” EX1005, 5:18-20.

Ex. 1003 ¶ 156.

e) Conclusion for Claim 1

Accordingly, Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 1 would have been unpatentable as obvious over Cullen, Bundy, and Allan.

3. *Claims 2–11, 13–22, 24, 25, 27–31*

We find on this record that Petitioner comes forward with sufficient argument and evidence to show it is more likely than not that claims 2–11,

13–22, 24, 25, and 27–31 would have been obvious over Cullen, Bundy, and Allan. *See* Pet. 34–64. Patent Owner does not, at this time, separately argue claim 27 or any of the dependent claims. *See generally* Prelim. Resp.

E. Ground 4 – Obviousness over Cullen, Bundy, Allan, and Rice

Under Ground 4, Petitioner challenges the patentability of claim 12 as obvious over Cullen, Bundy, Allan, and Rice. *See* Pet. 64–65.

1. *Claim 12 – “The method of claim 1, wherein said step of cutting the opening into the exterior edge of the fire retardant sheathing includes placing a template on the fire retardant sheathing and cutting the opening using the template.”*

Petitioner asserts “Rice teaches a template for cutting ‘an opening . . . in a panel or sheet of dry wall to accommodate the accessory before the panel is attached to the wall.’” Pet. 64 (citing Ex. 1009, abstract). Petitioner asserts:

A POSA would have been motivated to use Rice’s templates to provide accurate, precise openings, and to avoid wasting sheathing (due to inaccurate cutting). Such implementation would have merely amounted to the use of a known technique (cutting drywall using templates) to improve similar devices (Rice’s and Cullen-Bundy-Allan’s drywall panels) in the same way (accurately cutting drywall to accommodate interfering structural elements).

Id. at 65 (citing Ex. 1003 ¶¶ 235–236).

Patent Owner does not, at this time, contest Petitioner’s assertions as to Ground 4, other than to raise the points made regarding the same art and Ground 3. *See generally* Prelim. Resp.

2. *Conclusion for Claim 12*

Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 12 is unpatentable as obvious over Cullen, Bundy, Allan, and Rice.

F. *Ground 5 – Obviousness over Yamaguchi, Bundy, and Allan*

Petitioner asserts that claims 1–3, 7–11, 13–21, 24, and 27–29 would have been obvious over the combination of Yamaguchi, Bundy, and Allan. Pet. 65–102.

1. *Claim 1*

a) *Preamble [1.P]: “A method of constructing a fire-resistive wall assembly”*

Petitioner asserts a “POSA would have understood that Yamaguchi’s hanger would be applicable to a fire separation wall having sheathing mounted on a frame wall, as suggested by Bundy.” Pet. 72 (citing Ex. 1005, 2:36–41, 5:10–22; Ex. 1003 ¶¶ 262–264).

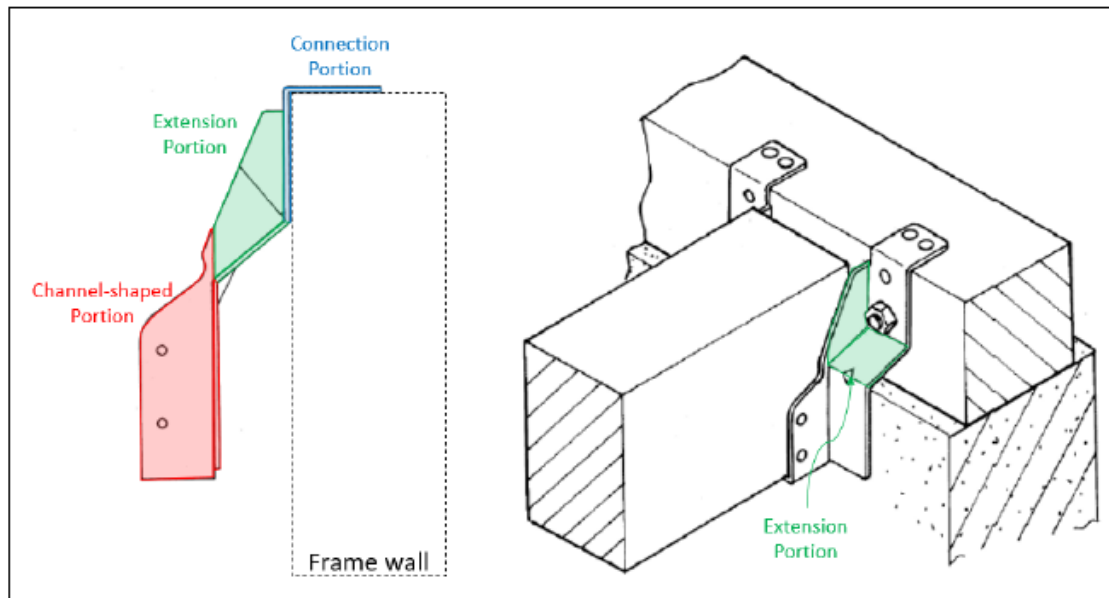
b) *Element [1A] – “mounting a fire wall hanger on a frame wall, the frame wall including a top plate and a plurality of studs extending down from the top plate”*

Petitioner asserts “Bundy teaches mounting a joist hanger to a frame wall that includes a top plate 4 and a plurality of ‘vertically disposed studs’ extending down from the top plate.” Pet. 72 (citing Ex. 1005, 3:55–67; Fig. 2).

c) *Element [1B] – “the fire wall hanger including a channel-shaped portion sized and shaped to receive a structural component, a connection portion configured for attachment to the frame wall and an extension portion interconnecting the channel-shaped portion and the*

connection portion and spacing the channel-shaped portion from the connection portion”

Petitioner provides annotated figures from Yamaguchi, reproduced below, and states “Yamaguchi discloses a channel-shaped portion (in red below) sized and shaped to receive a structural component.” Pet. 74 (citing Ex. 1007, 1–5; Ex. 1003 ¶¶ 268–271). Petitioner also states “Yamaguchi discloses a connection portion (in blue below) arranged to attach to a top plate of the frame wall, as Bundy taught. EX1007, 2–5. The combined hanger would attach to Bundy’s frame wall in a similar manner as Yamaguchi’s hanger attaches to the sill.” *Id.* at 75 (citing Ex. 1007, 1; Ex. 1005, 4:17–28, 5:45–52; Ex. 1003 ¶ 269).



EX1007, Side, Usage State Views.

Petitioner asserts “Yamaguchi also discloses an extension portion (in green [above]) interconnecting the channel-shaped portion and the connection portion and spacing the channel-shaped portion from the connection portion. When mounted to the frame wall, the extension portion spaces the

channel-shaped portion from the connection portion.” *Id.* (citing Ex. 1003 ¶¶ 270–271).

d) Element [1C] – “said step of mounting the fire wall hanger includes securing the connection portion of the fire wall hanger to the top plate of the frame wall so that the channel-shaped portion is spaced from the frame wall”

Petitioner asserts “the Yamaguchi-Bundy hanger includes a channel-shaped portion that is spaced from the connection portion. The arrangement of the hanger is such that, when the hanger is mounted to the top plate of the frame wall, the channel-shaped portion is also spaced from the frame wall.” Pet. 76–77 (citing Ex. 1007, 1–5; Ex. 1003 ¶ 272).

e) Element [1D] – “cutting an opening into an exterior edge of fire retardant sheathing, the opening extending through a front face of the fire retardant sheathing and through a rear face of the fire retardant sheathing and opening outwardly from the exterior edge of the fire retardant sheathing; and”

Petitioner asserts

cutting sheathing to fit around obstructions was a known method of installing sheathing, as evidenced by Allan. A POSA would have found it obvious to adapt Yamaguchi’s hanger to accommodate insertion of one or more layers of drywall (*fire retardant sheathing*) between Yamaguchi’s channel-shaped portion and the connection portion, as taught by Bundy.

Pet. 77 (citing Ex. 1003 ¶¶ 273–277).

f) Element [1E] – “after mounting the fire wall hanger on the frame wall and after cutting the opening into the exterior edge of the fire retardant sheathing, installing the fire retardant sheathing with respect to the frame wall so the rear face of the fire retardant sheathing faces toward the studs of the frame wall,”

Petitioner asserts

a POSA would have found it obvious to install the drywall (fire retardant sheathing) after mounting the hanger on the frame wall and cutting the openings into the sheathing. The resulting installation would be such that the rear face of the sheathing faces toward the studs of the frame wall (see element [1.A], [1.D] discussion).

Pet. 80 (citing Ex. 1003 ¶¶ 278–279).

g) Element [1F] – “said step of installing the fire retardant sheathing includes: inserting the fire retardant sheathing between the channel-shaped portion of the fire wall hanger and the frame wall; and”

Petitioner asserts since “it was known to insert sheathing around obstructions, a POSA would have known to insert the sheathing (having openings cut therein) up between the channel-shaped portion and the connection portion such that the openings lined up with the extension portion.” Pet. 80 (citing Ex. 1003 ¶¶ 280–281).

h) Element [1G] – “moving the fire retardant sheathing relative to the fire wall hanger mounted on the frame wall so that an edge of the fire retardant sheathing bounding the opening moves alongside the extension portion and the fire wall hanger extends through the opening in the fire retardant sheathing.”

Petitioner asserts

when installing the sheathing after mounting the hanger, a POSA would have found it obvious to slide the sheathing layer(s) relative to the mounted hanger such that the openings in the sheathing align with the extension portion. This would cause an edge of the sheathing bounding the opening to move alongside the extension portion and would also enable the extension portion to extend through the openings of the sheathing to fit the sheathing in place between the channel-shaped portion and the connection portion of the hanger.

Pet. 81 (citing Ex. 1003 ¶¶ 282–283).

i) *Motivation for Claim 1*

Petitioner asserts:

Given that Yamaguchi's hanger is intended for securing a joist to a wall, a POSA would have sought to use Yamaguchi's hanger to secure a joist to a wooden frame wall, as taught by Bundy. EX1007, 1-5; EX1005, 3:55-67; EX1003, ¶¶239-240. As explained in §VII.A, Bundy teaches advantages of installing the joist hanger with fire-retardant sheathing for fire-resistivity. A POSA would have been motivated to receive drywall between Yamaguchi's back plate and legs to enable the drywall to shield the frame wall from fire as Bundy taught. In adapting the hanger to receive drywall, a POSA would have sought to install the drywall between Yamaguchi's channel-shaped portion and connection portion. EX1007, 1-5; EX1003, ¶¶241-246. Specifically, a POSA would have optimized the size of the spacing between Yamaguchi's connection and extension portions to accommodate drywall as taught by Bundy. EX1005, 5:10-22. As with Cullen-Bundy, this modification to Yamaguchi would have been nothing more than applying a known technique to a similar device to obtain the predictable result of a hanger having sidewalls long enough to receive drywall between the channel-shaped portion and wall frame.

Pet. 66–67 (citing Ex. 1005, 5:18–20; Ex. 1003 ¶ 246).

2. *Analysis of Claim 1*

Based on the preliminary record, Petitioner has met its institution burden and demonstrated that it is more likely than not that it will prevail in showing claim 1 would have been obvious over Yamaguchi, Bundy, and Allan. We address Patent Owner's arguments below.

a) Hindsight

We have already addressed Patent Owner's assertions that Petitioner's proposed combinations improperly rely on hindsight above. The same reasoning applies to this combination with Yamaguchi.

b) Motivation to combine Yamaguchi and Bundy

Patent Owner asserts the

only stated motivation to combine the teachings of Yamaguchi and Bundy is they are both "directed to joist hangers." Pet. 66. [Petitioner] fails to address whether there is a motive to modify the method of constructing a wall disclosed by Yamaguchi according to the method of constructing a firewall disclosed by Bundy.

Prelim. Resp. 47 (citing Ex. 2001 ¶ 245). Patent Owner asserts a "POSA would not have considered the Yamaguchi's hanger to be designed to allow sheathing to be inserted between the end of the joist and the foundation wall." *Id.* at 48 (citing Ex. 2001 ¶ 250). Patent Owner asserts Petitioner

fails to explain the motivation for changing the construction of the firewall assembly of Bundy to use the re-sized Yamaguchi hanger. EX2001: ¶¶252-256. This would require cutting the sheathing to receive portions of the Yamaguchi hanger. EX2001: ¶256. However, Bundy teaches away from cutting openings in the firewall, as discussed above in regard to the Cullen-Bundy combination. EX2001: ¶¶257-258.

Id. at 49.

On the current record, we find Patent Owner's arguments less persuasive than Petitioner's. Mr. Fennell has provided specific reasons to consider Yamaguchi in the context of joist hangers that can accommodate fire retardant sheathing drywall, stating

Bundy explains that it is advantageous to position drywall over frame walls, as shown in Figure 1, because "[d]rywall is naturally fire resistant and can be used to cover and protect the

structural members of a building.” EX1005, 5:18-22, *see also* 2:10-18. . . . a POSA would have been motivated to receive drywall between Yamaguchi’s back flange and channel-shaped portion to provide a shielded fire resistant wooden frame wall, while also enhancing the wall for other applications, such as soundproofing or improved aesthetic appeal. EX1005, 2:10–24.

Ex. 1003 ¶¶ 241–242.

Mr. Kaczkowski disagrees, stating

the POSA would not have considered Yamaguchi’s hanger to be designed to allow sheathing to be inserted between the end of the joist and the foundation wall. Yamaguchi shows the joist inserted as deep into the hanger as possible, with the foundation wall itself abutting and providing bearing support at the end of the joist.

Ex. 2001 ¶ 250.

As we balance these two opinions, we find Mr. Fennell more persuasive on this record, as he notes that, contrary to Mr. Kaczkowski’s opinion, “a POSA would have optimized the size of the spacing between Yamaguchi’s connection and extension portions to accommodate, for instance, two layers of 5/8-inch-thick drywall according to the size preference described by Bundy for optimal fire protection and wall integrity.” Ex. 1003 ¶ 246 (citing Ex. 1005, 5:10–22). Bundy expressly teaches “a connection in which a joist hanger is held away from the wood supporting structural member to which it is attached” to allow “drywall panels [to be] interposed between” the joist hanger and supporting structural member. *See* Ex. 1005, 2:37–47. Thus, the evidence shows that Mr. Kaczkowski’s statement that a POSA would prefer deep insertion of a joist did not dissuade ordinary artisans such as Bundy from spacing the joist hanger away from the supporting beam to allow for insertion of drywall panels.

We find Patent Owner’s argument asserting teaching away unpersuasive as Patent Owner fails to identify any statement in any prior art that discourages, discredits, or criticizes spacing joist hangers away from supporting beams or from cutting drywall to fit around joist hangers. *Fulton*, 391 F.3d at 1201 (“The prior art’s mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed”).

c) Motivation to combine Yamaguchi, Bundy, and Allan

We have already addressed Patent Owner’s assertions challenging Petitioner’s proposed combination with Allan on analogous art and reason to combine grounds. The same reasoning applies to this combination with Yamaguchi.

3. Conclusion for Claim 1

Accordingly, Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 1 would have been unpatentable as obvious over Yamaguchi, Bundy, and Allan.

4. Claims 2, 3, 7–11, 13–21, 24, and 27–29

We find on this record that Petitioner comes forward with sufficient argument and evidence to show it is more likely than not that claims 2, 3, 7–11, 13–21, 24, and 27–29 would have been obvious over Yamaguchi, Bundy, and Allan. *See* Pet. 83–102. Patent Owner does not, at this time, separately argue claim 27 or any of the dependent claims. *See generally* Prelim. Resp.

G. Ground 6 – Obviousness over Yamaguchi, Bundy, Allan, and Rice

Under Ground 6, Petitioner challenges the patentability of claim 12 as obvious over Yamaguchi, Bundy, Allan, and Rice. *See* Pet. 102.

Patent Owner does not, at this time, separately contest Petitioner’s assertions as to Ground 6, other than to raise the points made regarding the same art and Ground 5. *See generally* Prelim. Resp.

Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 12 would have been unpatentable as obvious over Yamaguchi, Bundy, Allan, and Rice.

H. Ground 7 – Obviousness over Robinson, Bundy, and Allan

Petitioner asserts that claims 1–10, 13–19, 24, 25, and 27–31 would have been obvious over the combination of Robinson, Bundy, and Allan. Pet. 102–144.

1. Claim 1

a) Preamble [1.P]: “A method of constructing a fire-resistive wall assembly”

Petitioner asserts “a POSA would have understood that Robinson’s hanger would be applicable to a wall covered with drywall (sheathing) for fire resistance, as taught by Bundy.” Pet. 109–110 (citing Ex. 1005, 2:36–41; Ex. 1011, 4:5–19, 6:1–52; Ex. 1003 ¶¶ 351–352).

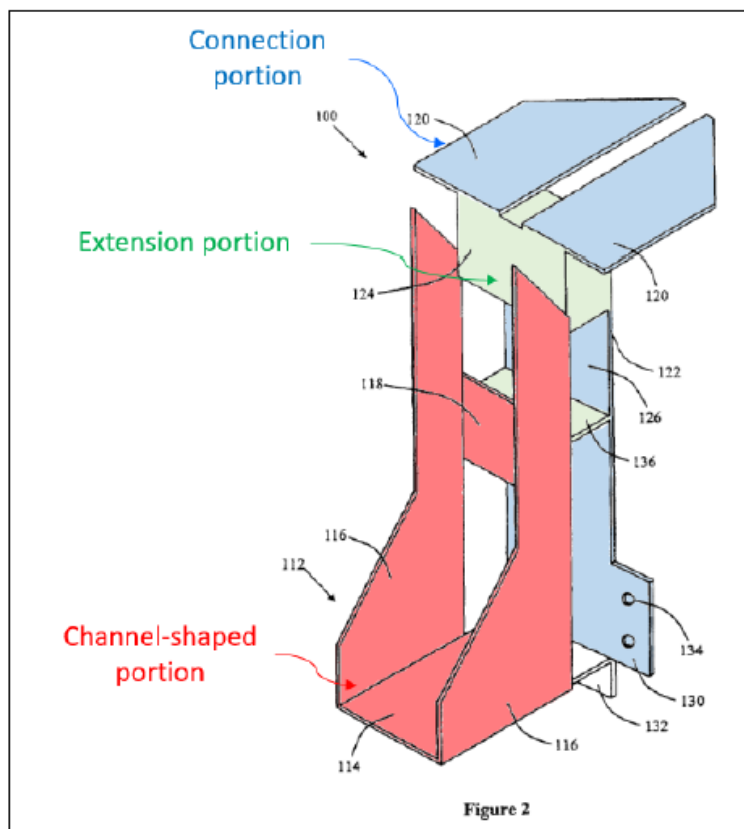
b) Element [1A] – “mounting a fire wall hanger on a frame wall, the frame wall including a top plate and a plurality of studs extending down from the top plate”

Petitioner asserts “Robinson discloses mounting ‘timber-to-timber.’ EX1011, 6:1-5. Bundy teaches mounting a joist hanger² to a frame wall that includes a top plate 4 (also referred to as ‘wood structural support member

4') and a plurality of 'vertically disposed studs' extending down from the top plate." Pet. 110 (citing Ex. 1005, 3:55–67; Fig. 2).

c) Element [1B] – “the fire wall hanger including a channel-shaped portion sized and shaped to receive a structural component, a connection portion configured for attachment to the frame wall and an extension portion interconnecting the channel-shaped portion and the connection portion and spacing the channel-shaped portion from the connection portion”

Petitioner asserts “Robinson’s hanger includes a channel-shaped portion: platform 114, side gussets 116, and first surface 118.” Pet. 111. Petitioner’s annotated version of Figure 2 of Robinson is reproduced below:



EX1011, FIG. 2.

Petitioner describes annotated Figure 2, stating

The channel-shaped portion is sized and shaped to receive a joist that “abuts the first surface 118.” EX1011, 5:10-13. The hanger also includes a connection portion: flanges 120 and second surface 122. EX1011, 4:5-11. The connection portion is configured to attach to a support surface, such as timber. EX1011, 4:1-2, 5:10-13, 6:1-5.

Id. at 111.

d) Element [1C] – “said step of mounting the fire wall hanger includes securing the connection portion of the fire wall hanger to the top plate of the frame wall so that the channel-shaped portion is spaced from the frame wall”

Petitioner asserts “the Robinson-Bundy hanger includes a channel-shaped portion that is spaced from the connection portion. When the hanger is mounted to the top plate of the frame wall, the channel-shaped portion is also spaced from the frame wall.” Pet. 113 (citing Ex. 1011, 4:13–19; Ex. 1003 ¶ 358; *see also* Ex. 1011, 4:1–2, 4:21–23, 5:10–13; Ex. 1005, 3:55–67, Fig. 2).

e) Element [1D] – “cutting an opening into an exterior edge of fire retardant sheathing, the opening extending through a front face of the fire retardant sheathing and through a rear face of the fire retardant sheathing and opening outwardly from the exterior edge of the fire retardant sheathing; and”

Petitioner asserts

Allan provides motivation for cutting such openings in an exterior edge of the drywall to enable the drywall to fit around mount 124 between the channel-shaped portion and connection portion. Thus, a POSA would have found it obvious to cut the drywall such that the base of the opening would extend the width of the hanger just below the dividing wall 136.

Pet. 114–115 (citing Ex. 1003 ¶¶ 359–362).

f) Element [1E] – “after mounting the fire wall hanger on the frame wall and after cutting the opening into the exterior edge of the fire retardant sheathing, installing the fire retardant sheathing with respect to the frame wall so the rear face of the fire retardant sheathing faces toward the studs of the frame wall,”

Petitioner asserts a “POSA would have found it obvious to install the drywall (*fire retardant sheathing*) after mounting the hanger on the frame wall and cutting the openings into the sheathing. The resulting installation would be such that the rear face of the drywall faces toward the studs of the frame wall.” Pet. 115–116 (citing Ex. 1003 ¶¶ 363–364).

g) Element [1F] – “said step of installing the fire retardant sheathing includes: inserting the fire retardant sheathing between the channel-shaped portion of the fire wall hanger and the frame wall; and”

Petitioner asserts since “it was known to insert sheathing around obstructions, a POSA would have known to insert the sheathing (having openings cut therein) in the duct opening between the channel-shaped portion of the hanger and the frame wall.” Pet. 116 (citing Ex. 1003 ¶¶ 365–366).

h) Element [1G] – “moving the fire retardant sheathing relative to the fire wall hanger mounted on the frame wall so that an edge of the fire retardant sheathing bounding the opening moves alongside the extension portion and the fire wall hanger extends through the opening in the fire retardant sheathing.”

Petitioner asserts

when installing the sheathing after mounting the hanger, a POSA would have found it obvious to slide the sheathing relative to the mounted hanger such that the opening in the sheathing aligns with the extension portion. Specifically, given that the hanger is installed prior to installing the sheathing (*see element [1E]*), that

it was known to add sheathing up to the top plate for firewall construction, and that it was known to insert sheathing around obstructions, a POSA would have known to insert the sheathing (having openings cut therein) up between the channel-shaped portion and connection portion such that the openings moved alongside mount 124 of the hanger's extension portion.

Pet. 118 (citing Ex. 1003 ¶¶ 367–368).

i) *Motivation for Claim 1*

Petitioner asserts

a POSA would have sought to use Robinson's hanger to secure a joist to a wooden frame wall in conjunction with fire-retardant sheathing, as taught by Bundy. EX1011, 6:1-5; EX1005, 5:18-22, *see also* 2:10-24. Recognizing the benefits of enabling drywall to extend all the way up to the top plates of a frame wall, a POSA would have been motivated to use Robinson's hanger to secure a joist to a wooden frame wall and to adapt Robinson's hanger to receive drywall to enable the drywall to protect the top plate of a frame wall from fire, as taught by Bundy.

Pet. 103–104 (citing Ex. 1005, 5:18–20; Ex. 1003 ¶ 329–337).

2. *Analysis of Claim 1*

Based on the preliminary record, Petitioner has met its institution burden and demonstrated that it is more likely than not that it will prevail in showing claim 1 would have been obvious over Robinson, Bundy, and Allan. We address Patent Owner's arguments below.

a) *Hindsight*

We have already addressed Patent Owner's assertions that Petitioner's proposed combinations improperly rely on hindsight above. The same reasoning applies to this combination with Robinson.

b) Motivation to combine Robinson and Bundy

Patent Owner asserts that Petitioner’s “argument entirely skips over that the Robinson hanger was designed for an entirely different wall construction than Bundy’s firewall assembly.” Prelim. Resp. 50 (citing Ex. 2001 ¶ 260). Patent Owner asserts

Robi[n]son’s key feature is incompatible with [Petitioner’s] proposed combination of Robinson and Bundy. EX2001: ¶ 262. The principle of operation for Robinson is the inclusion of a cavity and/or duct opening (126, 226) between the end of the joist and masonry (or other supporting structure) to allow cables and pipes or a ventilation duct to pass through the gap. EX1011: 2:1-6, 2:20-24, 3:11-15, 4:13-19, 5:12-13; EX2001: ¶ 263. Contrary to this principle of operation, [Petitioner’s] combination would block the access to the cavity/duct opening, making it inaccessible for cables, pipes, and ventilation ducts.

Id. at 51 (citing Ex. 2001 ¶ 264). Patent Owner asserts “Bundy teaches away from modifications to a hanger which would require cutting the drywall to perform the steps of constructing a firewall.” *Id.* at 53 (citing Ex. 2001 ¶¶ 267, 268, 271). Patent Owner asserts “[b]ecause Bundy contemplated installing the hanger over the drywall panels, it explicitly taught away from having a back flange (such as the second surface (122) of Robinson in [Petitioner’s] proposed combination) engaging the wall behind the sheathing”. *Id.* at 53.

On the current record, we find Patent Owner’s arguments less persuasive than Petitioner’s. Mr. Fennell has provided specific reasons to consider Robinson in the context of joist hangers that can accommodate fire retardant sheathing drywall, stating

Robinson teaches that the duct opening can be used as a ventilation duct and/or for holding various components, such as cables and pipes. EX1011, 2:20-24. A POSA would have

understood that the gap could also be used to accommodate other building materials such drywall, as taught by Bundy. Thus, a POSA would have sought to optimize the size of the gap between Robinson's second surface 122 and first surface 118 to accommodate one or more layers of drywall as described by Bundy for optimal fire protection and wall integrity. EX1005, 5:10-22. A POSA would have recognized this as a natural application for Robinson's duct opening in view of Bundy's teachings.

Ex. 1003 ¶ 335.

Mr. Kaczkowski disagrees, stating Petitioner's

combination would block the access to the cavity or duct opening (126, 226) with sheathing in a way that would make them inaccessible for cables, pipes, and ventilation ducts. Robinson's intended application and [Petitioner's] proposed application are shown side by side demonstrating how [Petitioner's] modification changes and entirely defeats the purpose of Robinson's invention.

Ex. 2001 ¶ 264.

As we balance these two opinions, we find Mr. Fennell more persuasive on this record because his testimony addresses the references in combination rather than separately. That is, while Robinson identified a particular use for the opening in the hanger as running cables and pipes, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR*, 550 US at 420. We note that Bundy expressly teaches “a connection in which a joist hanger is held away from the wood supporting structural member to which it is attached” to allow “drywall panels [to be] interposed between” the joist hanger and supporting structural member. *See* Ex. 1005, 2:37–47. Thus, the evidence of record is sufficient to show that the need for firewall protection would motivate an ordinary artisan

to select the hanger of Robinson for combination with the hanger of Bundy to maximize fire safety. *See* Ex. 2001 ¶¶ 263–264.

We find Patent Owner’s argument asserting teaching away unpersuasive as Patent Owner fails to identify any statement in any prior art that discourages, discredits, or criticizes spacing joist hangers away from supporting beams or from cutting drywall to fit around joist hangers. *Fulton*, 391 F.3d at 1201 (“The prior art’s mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed”).

c) Motivation to combine Robinson, Bundy, and Allan

We have already addressed Patent Owner’s assertions challenging Petitioner’s proposed combination with Allan on analogous art and reason to combine grounds. The same reasoning applies to this combination with Robinson.

3. Conclusion for Claim 1

Accordingly, Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 1 would have been unpatentable as obvious over Robinson, Bundy, and Allan.

4. Claims 2–10, 13–19, 24, 25, and 27–31

We find on this record that Petitioner comes forward with sufficient argument and evidence to show it is more likely than not that claims 2–10, 13–19, 24, 25, and 27–31 would have been obvious over Robinson, Bundy, and Allan. *See* Pet. 119–144. Patent Owner does not, at this time, separately argue claim 27 or any of the dependent claims. *See generally* Prelim. Resp.

I. Ground 8 – Obviousness over Robinson, Bundy, Allan, and Rice

Under Ground 8, Petitioner challenges the patentability of claim 12 as obvious over Robinson, Bundy, Allan, and Rice. *See* Pet. 144.

Patent Owner does not, at this time, separately contest Petitioner’s assertions as to Ground 8, other than to raise the points made regarding the same art and Ground 7. *See generally* Prelim. Resp.

Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 12 would have been unpatentable as obvious over Robinson, Bundy, Allan, and Rice.

J. Ground 9 – Obviousness over ArchRecord, Commins, and Cullen

Under Ground 9, Petitioner asserts that claims 1–7, 9–11, 13–22, 24, 25, and 27–31 would have been obvious over the combination of ArchRecord, Commins, and Cullen. Pet. 144–178.

1. Claim 1

a) Preamble [1.P]: “A method of constructing a fire-resistive wall assembly”

Petitioner asserts

ArchRecord teaches a fire-resistive wall assembly by disclosing a frame wall with “5/8' inch Type-X Gypsum” extended across the top plate of the frame wall, along with a method of construction: “continue gypsum to bottom of [floor] sheathing.” EX1031, 166. ArchRecord teaches that this assembly provides “fire safety” and is fire-rated for “2HR. Wall/1HR. Floor.”

Pet. 154 (citing Ex. 1031, 166; Ex. 1003 ¶¶ 443–444).

b) Element [1A] – “mounting a fire wall hanger on a frame wall, the frame wall including a top plate and a plurality of studs extending down from the top plate”

Petitioner asserts “ArchRecord’s frame wall includes a top plate and a plurality of studs extending down from the top plate. As explained in §XIII.A [of the Petition], a POSA would have found it obvious to mount Cullen’s hanger to ArchRecord’s frame wall, as claimed.” Pet. 154 (citing Ex. 1031, 166; Ex. 1004, 16:23–17:7; Ex. 1032, 4:27–41; Ex. 1003 ¶¶ 445–447).

c) Element [1B] – “the fire wall hanger including a channel-shaped portion sized and shaped to receive a structural component, a connection portion configured for attachment to the frame wall and an extension portion interconnecting the channel-shaped portion and the connection portion and spacing the channel-shaped portion from the connection portion”

Petitioner asserts “Cullen teaches this element for the reasons provided in §VII.B.3 [of the Petition].” Pet. 156 (citing Ex. 1003 ¶ 448).

d) Element [1C] – “said step of mounting the fire wall hanger includes securing the connection portion of the fire wall hanger to the top plate of the frame wall so that the channel-shaped portion is spaced from the frame wall”

Petitioner asserts “ArchRecord-Commings-Cullen includes a channel-shaped portion that is spaced from the connection portion (*see* element [1.B]). When the hanger is mounted to the top plate of the frame wall, the channel-shaped portion is spaced from the frame wall.” Pet. 156. An annotated Figure 1 of Cullen is reproduced below:

f) Element [1E] – “after mounting the fire wall hanger on the frame wall and after cutting the opening into the exterior edge of the fire retardant sheathing, installing the fire retardant sheathing with respect to the frame wall so the rear face of the fire retardant sheathing faces toward the studs of the frame wall,”

Petitioner asserts a “POSA would have found it obvious to install the gypsum (*fire retardant sheathing*) after mounting the hanger on the frame wall and cutting the openings into the sheathing. The resulting installation would be such that the rear face of the sheathing faces toward the studs of the frame wall.” Pet. 158–159 (citing Ex. 1003 ¶¶ 455–456).

g) Element [1F] – “said step of installing the fire retardant sheathing includes: inserting the fire retardant sheathing between the channel-shaped portion of the fire wall hanger and the frame wall; and”

Petitioner asserts “ArchRecord-Commings-Cullen teaches cutting openings into an exterior edge of the sheathing layer(s).” Pet. 159 (citing Ex. 1003 ¶¶ 457–458).

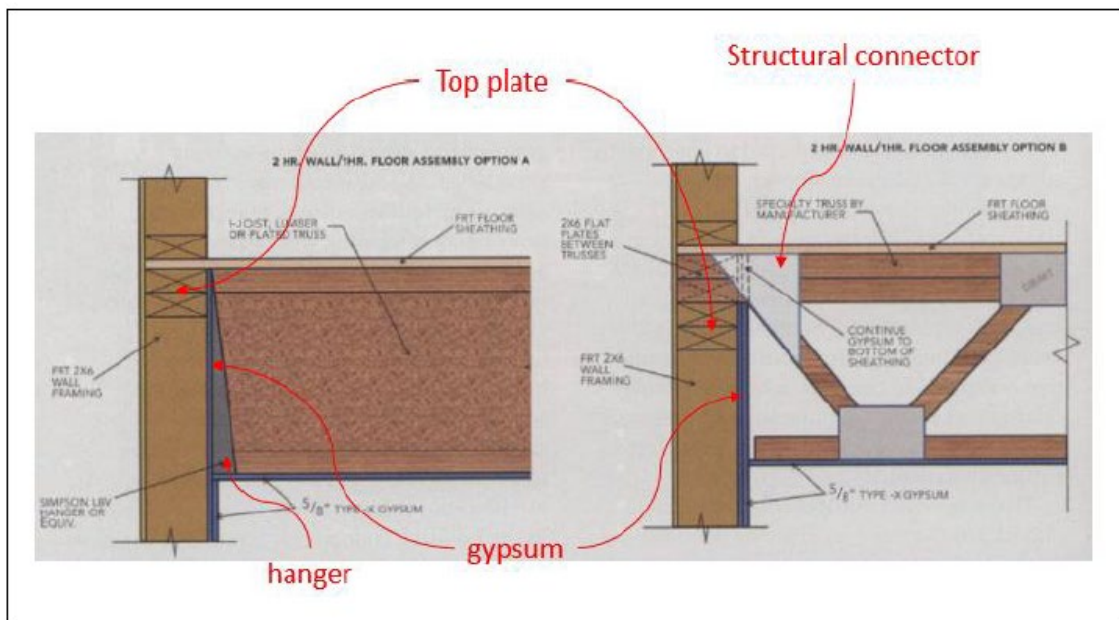
h) Element [1G] – “moving the fire retardant sheathing relative to the fire wall hanger mounted on the frame wall so that an edge of the fire retardant sheathing bounding the opening moves alongside the extension portion and the fire wall hanger extends through the opening in the fire retardant sheathing.”

Petitioner asserts “when installing the sheathing after mounting the hanger, a POSA would have found it obvious to slide the sheathing layer(s) relative to the mounted hanger such that the openings in the sheathing align

with the side walls 32 of the extension portion.” Pet. 159 (citing Ex. 1003 ¶¶ 459–460).

i) *Motivation for Claim 1*

Petitioner asserts “ArchRecord teaches that it was well-known to install gypsum sheathing up behind a truss to a top plate of a frame wall for ‘fire safety.’” Pet. 144. Petitioner cites an annotated image from ArchRecord, reproduced below:



EX1031, 166.

Petitioner describes the image, stating “‘Option A’ in the [above] figure (left) depicts gypsum sheathing installed between a ‘hanger’ supporting a ‘plated truss’ and a ‘wall framing,’ while ‘Option B’ (right) depicts gypsum sheathing installed between a truss and the wall framing, both installations up to the top plate’s top.” *Id.* at 145 (citing Ex. 1031, 166).

In the ArchRecord image, Petitioner asserts the “truss is also braced using a structural connector that couples to the top chord and a truss web. The structural connector extends through the sheathing to couple to the top

chord.” *Id.* at 145. Petitioner further notes a “POSA would have recognized that the dashed lines in the gypsum in this cross-section indicate that the gypsum is on both sides of—i.e., has been notched around—the structural connector.” *Id.* at 146 (citing Ex. 1003 ¶¶ 418–419).

Petitioner asserts “Commins teaches an example of notching gypsum around a structural connector (i.e., the prior art ties). . . . [A] POSA would have recognized the applicability of such notching to accommodate hangers with extension portions that may block sheathing from extending to the top plate.” *Id.* at 149 (citing Ex. 1003 ¶¶ 421–423).

Petitioner asserts

in view of ArchRecord and Commins, a POSA would have sought to install gypsum sheathing over a top plate of a frame wall and to notch the sheathing to accommodate any structural connectors connecting the top plate to a truss or joist. A POSA would have further understood that joist hangers were commonly used for such connections, as illustrated in ArchRecord (which specifically identifies Petitioner’s LBV hanger or equivalent).

Id. at 149 (citing Ex. 1003 ¶¶ 424–425). Petitioner further asserts a “POSA would have further understood that the Cullen hanger would be installed before the drywall because apertures 68 (which affixes the back plate 12 to the sill) would not be accessible after the drywall is installed.” *Id.* at 153 (citing Ex. 1003 ¶ 434).

2. *Analysis of Claim 1*

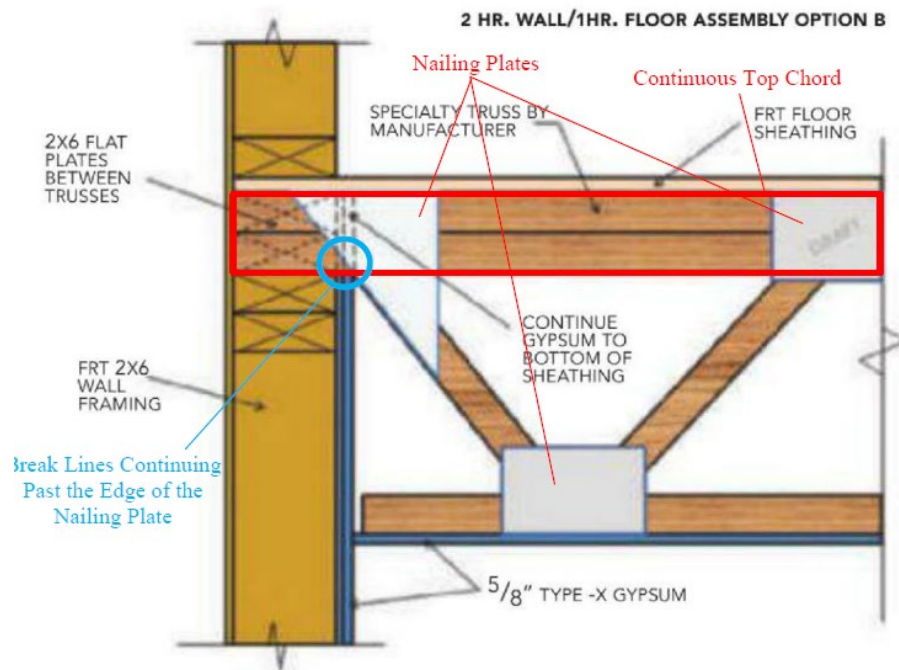
Based on the preliminary record, Petitioner has met its institution burden and demonstrated that it is more likely than not that it will prevail in showing claim 1 would have been obvious over ArchRecord, Commins, and Cullen. We address Patent Owner’s arguments below.

a) Motivation to combine ArchRecord, Commins, and Cullen

Patent Owner asserts “[i]t is not clear which teaching of ArchRecord [Petitioner] is suggesting to combine with Cullen.” Prelim. Resp. 60 n.6. Patent Owner asserts that ArchRecord’s Option A, even in combination with Cullen, “would not yield all of the elements require to invalidate the claims.” *Id.* at 62. Patent Owner asserts that ArchRecord’s

Option B **does not use a hanger** or any other structural connector for coupling the truss to the frame wall. EX2001: ¶289. Instead, the top chord of the truss is elongated compared to the bottom chord, such that the top chord is simply stacked on top of the wall’s top plate.

Id. at 62–63. Patent Owner’s annotation of Option B is reproduced below:



EX2008: 6 (annotated).

Patent Owner asserts the annotated image only shows “a triangular-shaped nailing plate on the side of the truss holding the top chord and truss web together.” *Id.* at 63–64 (citing Ex. 2001 ¶ 291). Patent Owner asserts “the

cross-section does not indicate a notch around the plate, but rather the break lines continue below the edge of the plate—demonstrating a cutout around the top chord’s entire cross-section.” *Id.*

Patent Owner asserts:

As the “structural connector” of ArchRecord Option B is simply a flat nailing-plate laying flush along the side of the top chord of the truss, there is no logical motivation to incorporate Commins’s teaching to notch the sheathing around the structural connector as proposed by [Petitioner]. EX2001: ¶294. Nor would a POSA consider using the Cullen hanger in conjunction with the framing method disclosed in Option B of ArchRecord, as the Option B framing method does not use a hanger. *Id.*

Id. at 64–65. Patent Owner also asserts “[n]one of the asserted references provided any hint of a suggestion to insert sheathing between an already installed hanger and the wall assembly.” *Id.* at 65. Patent Owner asserts “Cullen’s hanger is not designed or intended to define a space between its back plate (12) and a channel-shaped portion, much less the use of the side walls (30, 32) as extension portions for extending through sheathing.” *Id.* at 65 (citing Ex. 2001 ¶ 297).

On the current record, we find Patent Owner’s arguments less persuasive than Petitioner’s because they fail to address the combination as proposed by Petitioner. Mr. Fennell explains that “a POSA would have found it obvious to mount Cullen’s (adapted) hanger onto ArchRecord’s wall framing, and then to install gypsum sheathing by notching the sheathing and inserting it between the mounted hanger and the wall framing.” Ex. 1003 ¶ 444. In response to this straightforward combination, Patent Owner and Mr. Kaczkowski apparently misinterpret this issue by asserting that it is unclear whether “Option A” or “Option B” of ArchRecord is being relied upon. *See* Prelim. Resp. 60 n.6; Ex. 2001 ¶ 286 (“It is not clear which

teaching of ArchRecord [Petitioner] and Mr. Fennell are suggesting to combine with Cullen.”).

Petitioner’s proposed combination is straightforward. Petitioner proposes substituting the hanger in Option A of ArchRecord with the functionally equivalent hanger of Cullen. Pet. 150 (“[g]iven that Cullen’s hanger is intended broadly for ‘timber building construction,’ a POSA would have sought to use Cullen’s hanger 10 to secure a joist to a wooden frame wall, as taught by ArchRecord and Commins”) Petitioner relies on Option B to demonstrate that the fire sheathing is installed in a way to abut and notch around the joist hanger. *Id.* at 146 (“A POSA would have recognized that the dashed lines in the gypsum in this cross-section indicate that the gypsum is on both sides of—i.e., has been notched around—the structural connector.”). Petitioner also relies on Commins to teach notching fire sheathing around a structural connector. *Id.* at 149.

Petitioner relies upon Cullen for the order of assembly as discussed above. *See id.* at 153 (“A POSA would have further understood that the Cullen hanger would be installed before the drywall because apertures 68 (which affixes the back plate 12 to the sill) would not be accessible after the drywall is installed.”)

3. *Conclusion for Claim 1*

Accordingly, Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 1 would have been unpatentable as obvious over ArchRecord, Commins, and Cullen.

4. *Claims 2–7, 9–11, 13–22, 24, 25, and 27–31*

We find on this record that Petitioner comes forward with sufficient argument and evidence to show it is more likely than not that claims 2–7,

9–11, 13–22, 24, 25, and 27–31 would have been obvious over ArchRecord, Commins, and Cullen. *See* Pet. 160–178. Patent Owner does not, at this time, specifically and separately argue claim 27 or any of the dependent claims. *See generally* Prelim. Resp.

K. Ground 10 – Obviousness of claim 8 over ArchRecord, Commins, Cullen, and Bundy

Under Ground 10, Petitioner challenges the patentability of claim 8 as obvious over ArchRecord, Commins, Cullen, and Bundy. *See* Pet. 178.

Petitioner relies on the analysis for Cullen and Bundy, asserting:

In combining the teachings of Bundy with Cullen, a POSA would have been motivated to provide Cullen’s hanger with a stop to engage the joist’s end, as taught by Bundy, to ensure that the joist’s end does not impede or press against sheathing installed into the space defined between Cullen’s back plate and legs. In this arrangement, the sheathing would be inserted between the end of the structural component (engaged with the stop) and the frame wall.

Pet. 41.

Patent Owner does not, at this time, separately contest Petitioner’s assertions as to Ground 10, other than to raise the points made regarding the same art and Ground 9. *See generally* Prelim. Resp.

Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 8 would have been unpatentable as obvious over ArchRecord, Commins, Cullen, and Bundy.

L. Ground 11 – Obviousness of claim 12 over ArchRecord, Commins, Cullen, and Rice

Under Ground 11, Petitioner challenges the patentability of claim 12 as obvious over ArchRecord, Commins, Cullen, and Rice. *See* Pet. 178.

Patent Owner does not, at this time, separately contest Petitioner's assertions as to Ground 11, other than to raise the points made regarding the same art and Ground 9. *See generally* Prelim. Resp.

Petitioner has demonstrated, on this record, they will more likely than not prevail on their assertion that claim 12 would have been unpatentable as obvious over ArchRecord, Commins, Cullen, and Rice.

IX. CONCLUSION

Petitioner has, at this stage, established that they would more likely than not prevail in showing that at least one of the challenged claims is unpatentable. This determination is, however, based on a preliminary record and is not final on any issues of patentability. We will make a final determination on the patentability of the challenged claims, applying the preponderance of the evidence standard, based on a fully developed record through trial. *See* 35 U.S.C. § 326(e).

X. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 324(a), post-grant review of claims 1–31 of the '339 patent is hereby *instituted* on the grounds set forth in the Petition, commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 324(c) and 37 C.F.R. § 42.4(c), notice is hereby given of the institution of a trial; and

FURTHER ORDERED that the trial will be conducted in accordance with a separately issued Scheduling Order.

PGR2024-00050
Patent 11,920,339 B2

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