

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.

PGR2021-00109
Patent 11,021,867 B2

Before SCOTT A. DANIELS, NEIL T. POWELL, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

BELISLE, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Case Posture*

Simpson Strong-Tie Company Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting a post-grant review of claims 1–23 of U.S. Patent No. 11,021,867 B2 (Ex. 1001, “the ’867 patent”). Petitioner identifies itself and its parent company, Simpson Manufacturing Co., Inc., as real parties in interest. Pet. 121. Columbia Insurance Company (“Patent Owner”) identifies itself as a real party in interest (Paper 4, 2), and timely filed a Preliminary Response to the Petition (Paper 7, “Prelim. Resp.”). In addition, with prior authorization from the Board (Paper 6), Patent Owner requested a Certificate of Correction pursuant to 35 U.S.C. § 255 to correct certain mistakes in the ’867 patent (Ex. 2003). A Certificate of Correction subsequently issued concerning claims 5, 11, 16, and 17 of the ’867 patent. Ex. 2032.

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) (2021). We may not institute a post-grant review “unless . . . 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 those standards, and upon consideration of the information presented in the Petition and Preliminary Response, we determine that Petitioner has established that it is more likely than not that at least one claim of the ’867 patent is unpatentable. Accordingly, we institute a post-

grant review as to all challenged claims of the '867 patent on all grounds raised in the Petition. We base our factual findings and conclusions at this stage of the proceeding on the evidentiary record developed so far. This is not a final decision as to the construction of any claim term or the patentability of any claim. Any final decision shall be based on the full trial record, including any response timely filed by Patent Owner. Any arguments not raised by Patent Owner in a timely filed response may be deemed waived, even if they were presented in the Preliminary Response.

B. Related Proceedings

The parties identify the '867 patent as a continuation of U.S. Patent No. 10,316,510 (“the '510 patent”). Pet. 121; Paper 4, 2. The '510 patent was involved in post-grant proceeding *Simpson Strong-Tie Company Inc. v. Columbia Insurance Company*, PGR2019-00063, Paper 52 (PTAB Mar. 11, 2021), which is on appeal and cross-appeal in *Columbia Insurance Company v. Simpson Strong-Tie Company Inc.*, Appeal Nos. 2021-2145, 2021-2157, in the U.S. Court of Appeals for the Federal Circuit. Pet. 121; Paper 4, 2. The '510 patent also is involved in a civil action in *Columbia Insurance Company et al. v. Simpson Strong-Tie Company Inc.*, No. 3-19-cv-04683 (N.D. Cal.) (“Related Litigation”). Pet. 121; Paper 4, 2.

Patent Owner also identifies pending U.S. Patent Application No. 17/235,349, filed April 20, 2021, as claiming benefit of the '867 patent. Paper 4, 2.

C. The '867 Patent

The '867 patent is titled “Hanger For Fire Separation Wall,” and issued on June 1, 2021, from U.S. Application No. 16/433,799, filed June 6,

2019. Ex. 1001, codes (10), (21), (22), (45), (54). The '867 patent claims priority through a series of continuing applications to U.S. Provisional Application No. 61/922,531, filed December 31, 2013. Ex. 1001, codes (60), (63).

The '867 patent generally relates to “a truss hanger for connecting a truss to a wall including fire retardant sheathing.” Ex. 1001, 1:19–21. Figure 2 of the '867 patent is reproduced below.

FIG. 2

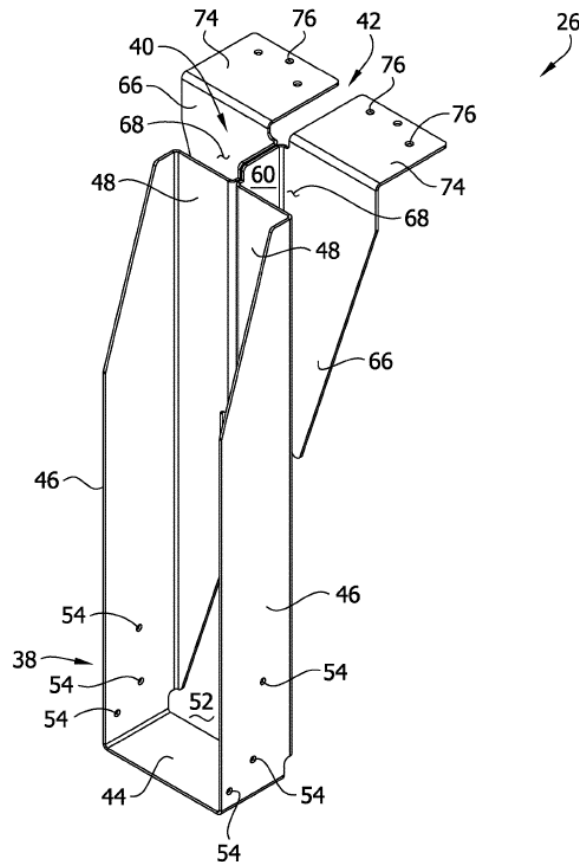


Figure 2 is a perspective view of a truss hanger.
Id. at 2:59–60.

Figure 2 shows truss hanger 26 having three main portions: channel-shaped portion 38, extension portion 40, and connection portion 42.

Ex. 1001, 4:34–36. Channel-shaped portion 38 is configured to receive floor truss 12 (not shown), and includes seat or base 44 and a pair of side panels 46 extending upward from base 44. *Id.* at 4:36–39. When installed, base 44 is generally horizontal, and side panels 46 extend generally vertical from base 44. *Id.* at 4:39–41. Back panel 48 extends from each of side panels 46, and each back panel 48 is generally perpendicular to both side panels 46 and base 44. *Id.* at 4:41–44. When installed, each back panel 48 extends generally parallel to interior face 50 of fire retardant sheathing 34 (not shown). *Id.* at 4:44–47.

Extension portion 40 includes two extension flanges 60 configured to extend through fire retardant sheathing 34 (not shown). Ex. 1001, 5:1–3. Each flange 60 extends from one of back panels 48, and is “positioned in opposed, face-to-face relation,” “preferably engag[ing] each other along a juncture.” *Id.* at 5:3–6. Back flange 66 extends generally perpendicular from each of extension flanges 60, and is oriented generally parallel to back panels 48. *Id.* at 5:19–22.

Connection portion 42 includes a pair of connector tabs 74 extending from back flanges 66. Ex. 1001, 6:37–39. Each connector tab 74 extends generally perpendicular from one of back flanges 66, and is generally horizontal when hanger 26 is installed. *Id.* at 6:39–42.

Truss hanger 26 mounts to framing of a wall during construction as shown in Figure 10 of the '867 patent, reproduced below. Ex. 1001, 5:32–41.

FIG. 10

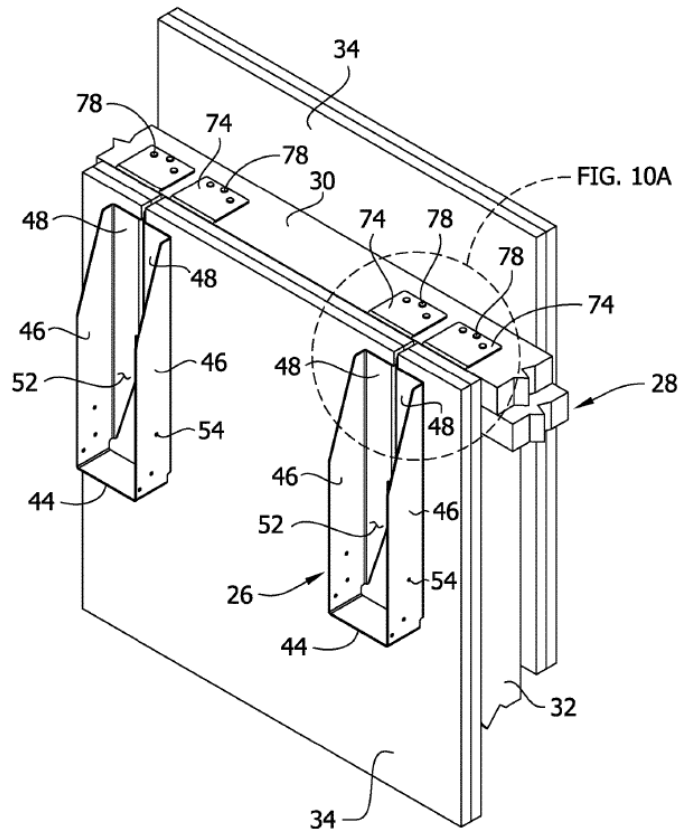


Figure 10 is a perspective view of wall 28 having fire retardant sheathing 34 with a slot cut in the sheathing to receive truss hanger 26.

Id. at 3:4–5. Once installed, 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 5:38–41. According to the '867 patent, an exemplary embodiment of fire retardant sheathing 34, as shown in Figure 10 for example, is gypsum board, such as two layers of 5/8" gypsum board. *Id.* at 4:18–24.

According to the '867 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* Ex. 1001, 1:25–41.

D. Illustrative Claim

The '867 patent includes twenty three claims, all of which are challenged. Claims 1 and 16 are independent claims. Claim 1 is illustrative and reproduced below.

1. A hanger for connecting a structural component to a wall adapted to have sheathing mounted thereon, the hanger comprising:
 - a channel-shaped portion configured to receive the structural component, the channel-shaped portion including a base configured to receive an end portion of the structural component thereon to support the structural component, the base having an upper surface configured to engage the structural component, the upper surface lying in a base plane;
 - a connection portion configured for attachment to the wall, the connection portion including a back flange having an upper edge, the back flange extending from the upper edge in a direction generally toward the base plane, the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another; and
 - an extension portion including first and second extension flanges extending from the channel-shaped portion to the connection portion, each extension flange being configured to extend through the sheathing, each extension flange lying in an extension flange plane, the extension flange planes being generally perpendicular to the base plane, the back flange and the channel-shaped portion defining a sheath space sized and shaped to receive the sheathing therein so that the channel-shaped

portion is located on one side of the sheathing and the back flange is located on an opposite side of the sheathing when the hanger and sheathing are installed on the wall.

Ex. 1001, 12:15–44.

E. Applied References

Petitioner relies upon the following references:

Gilb, U.S. Patent No. 4,422,792 (Ex. 1035, “Gilb ’792”), issued December 27, 1983.

Timony, U.S. Patent Publication No. 2005/0155307 A1 (Ex. 1008, “Timony”), published July 21, 2005.

Tsukamoto, Japanese Patent Publication No. JPH0314482Y2 (Ex. 1009, “Tsukamoto”), published October 16, 1987 (citations herein to Tsukamoto are to the certified translation thereof included in Ex. 1009).

Bundy et al., U.S. Patent No. 9,394,680 B2 (Ex. 1007, “Bundy”), filed December 14, 2013 and issued July 19, 2016.

Pet. 1–3. Petitioner also relies upon the Declaration of W. Andrew Fennell (Ex. 1003). Patent Owner supports its Preliminary Response with the Declaration of Reynaud Serrette, Ph.D. (Ex. 2001).

F. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–23 of the ’867 patent based on the following grounds. Pet. 2–3.

Claims Challenged	35 U.S.C. §	References
1–23	112(b)	N/A
5, 17	112(a)	N/A
1–12, 15–17, 21–23	103	Gilb ’792, Bundy

1–4, 6, 10, 11	102	Timony
5, 7–9, 12, 15– 17, 21–23	103	Timony, Bundy
1–12, 15–17, 21–23	103	Tsukamoto, Bundy

II. 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 each of Petitioner’s four asserted prior art references, namely Gilb ’792, Timony, Tsukamoto, and Bundy, previously was presented to the Office during prosecution of the ’867 patent, and allegedly Petitioner has not demonstrated that the Office erred in allowing the ’867 patent over that prior art. Prelim. Resp. 71–88. 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 four references relied upon in the Petition, namely Gilb ’792, Timony, Tsukamoto, and Bundy, previously were presented to the Office during prosecution of the ’867 patent. Ex. 1001, code (56); *see generally* Ex. 1002. Petitioner concedes that “some of the applied art—Gilb’792, Timony, and Bundy—was either cited by the Examiner or applied during prosecution.” Pet. 25. As for the remaining reference, Tsukamoto, Petitioner argues “Tsukamoto was not considered by the Examiner during prosecution” (Pet. 25), but provides no basis for making such an allegation, particularly given that Tsukamoto is the first foreign patent listed on the face of the ’867 patent (Ex. 1001, code (56)). To the extent Petitioner’s argument here concerning Tsukamoto is based on the ’867 patent’s file history lacking a certified translation of Tsukamoto (*see* Ex. 3004), we are not persuaded the lack thereof has a meaningful impact on this analysis in this case, because the parties primarily rely on Tsukamoto’s hanger drawings in arguing their cases, and various documents filed in the Related Litigation or in PGR2019-00063 discussing Tsukamoto were presented to the Office during prosecution of the ’867 patent. *See, e.g.*, Ex. 1001, code (56) (citing our Final Written Decision in PGR2019-00063, which discusses Tsukamoto); Prelim. Resp. 78–80; *see also* Prelim. Resp. 71–83. Because we determine that the same art was before the Examiner during examination, we need not consider *Becton, Dickinson* factors (b) and (d), and instead 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 argues “*none* of the primary references—Gilb’792, Timony, and Tsukamoto—in the asserted combinations served as the basis for rejection,” and “the applicant made no arguments whatsoever during examination against the prior art combinations applied [in the Petition].” Pet. 26–27. Patent Owner does not dispute this. *See* Prelim. Resp. 83–88. The fact that none of these primary references were the basis of rejection weighs against exercising discretion to deny institution under § 325(d). *See Intel Corp. v. Qualcomm Inc.*, IPR2019-00128, Paper 9, 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 argues:

[T]he Examiner erred during examination by not substantially considering Gilb’792 and Timony. At no point during prosecution were Gilb’792 and Timony discussed by either the Examiner or the applicant. Yet as the Petition demonstrates, both Gilb’792 and Timony provide key teachings, namely a hanger having a connection portion and a channel-shaped portion being in a fixed, spaced apart relation to define a sheath space therein. Pet. 27. Patent Owner argues “claim charts and fully briefed arguments applying the exact[] same combinations of references *to a related patent* sharing an essentially identical specification and *similar claims* were

presented to the Examiner” (Prelim. Resp. 84 (emphases added)), and concludes that “[r]ather than failing to recognize the relevance of Tsukamoto, Gilb’792, or Timony, the Examiner simply found the Gilb ‘155/Bundy combination more pertinent than the Tsukamoto/Bundy, Gilb ‘792/Bundy, and Timony/Bundy prior art combinations” (*id.* at 87). But notably, although the claims at issue in the ’510 patent in PGR2019-00063 and in the ’867 patent in this case may be “similar” in the sense they share many of the same limitations, the claims in both cases also contain substantively different (and dispositive) limitations.

We agree with Petitioner that the Examiner did not identify the pertinence of Timony’s disclosure or of the combined teachings of Gilb ’792/Bundy and Timony/Bundy (and Tsukamoto/Bundy), and did not issue a rejection based on such disclosure or combined teachings, and that this constitutes Examiner error. As discussed below in Section III, we determine that Petitioner has established that it is more likely than not that at least claims 1–12, 15–17, and 21–23 of the ’867 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. Pet. 28. Patent Owner disagrees, arguing “[P]etitioner fails to identify any meaningful difference between the purported additional facts and evidence presented

with the Petition for this PGR—namely Mr. Fennell’s declaration—and Mr. Fennell’s prior declarations addressing the very same prior art references with respect to the ‘510 Patent.” Prelim. Resp. 87–88. But as noted above, Mr. Fennell’s declaration concerning the ’510 patent in PGR2019-00063 was directed to a set of claims with substantively different (and dispositive) limitations as compared to this case.

We agree that the Fennell Declaration in this case, although similar in many respects to declarations filed in PGR2019-00063, contains new, material, non-cumulative evidence. As cited below in our discussion of the prior art, we find the Fennell Declaration probative to 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 ’867 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).

III. PATENTABILITY

A. *Applicable Law*

Petitioner challenges the patentability of claims 1–23 of the ’867 patent on the grounds that certain claims are indefinite, lack sufficient written description, or are anticipated under 35 U.S.C. § 102 or obvious

under 35 U.S.C. § 103 in light of various references including: Gilb '792, Timony, Tsukamoto, and Bundy. In a post-grant review, the petitioner has the burden from the onset to show *with particularity* why the patent it challenges is unpatentable. *See* 35 U.S.C. § 322(a)(3) (requiring post-grant review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”); *cf. Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (“[I]t was [Petitioner’s] burden to explain to the Board how [the combination of prior art] rendered the challenged claims unpatentable.”). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

1. Indefiniteness

Under 35 U.S.C. 112(b), a patent specification “shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor . . . regards as the invention.” This is commonly referred to as the definiteness requirement.

The Board applies in post-grant reviews the same indefiniteness standard as used in federal courts and the U.S. International Trade Commission under *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014), and its progeny. USPTO Memorandum, *Approach To Indefiniteness Under 35 U.S.C. § 112 In AIA Post-Grant Proceedings* (Jan. 6, 2021). 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*, 572 U.S. at 898–99 (emphasis added). “[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 present standard recognizes that “absolute precision is unattainable.” *Id.* at 899 (internal quotation marks omitted).

2. *Written Description*

Under 35 U.S.C. 112(a), a patent specification shall contain a “written description” of the invention. The purpose of the written description requirement is to ““ensure that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor’s contribution to the field of art as described in the patent specification.”” *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 920 (Fed. Cir. 2004) (quoting *Reiffin v. Microsoft Corp.*, 214 F.3d 1342, 1345 (Fed. Cir. 2000)). This requirement protects the *quid pro quo* between inventors and the public, whereby the public receives “meaningful disclosure in exchange for being excluded from practicing the invention for a limited period of time.” *Enzo Biochem, Inc. v. Gen-Probe Inc.*, 323 F.3d 956, 970 (Fed. Cir. 2002).

To satisfy the written description requirement, the disclosure must reasonably convey to skilled artisans that the inventor possessed the claimed invention as of the filing date. *See Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). “One does that by such descriptive means as words, structures, *figures*, diagrams, formulas, etc., that fully set forth the claimed invention.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (emphasis added). “The invention is,

for purposes of the ‘written description’ inquiry, *whatever is now claimed.*” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991). Such description need not recite the claimed invention *in haec verba* but must do more than merely disclose that which would render the claimed invention obvious. *Univ. of Rochester*, 358 F.3d at 923; *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1566–67 (Fed. Cir. 1997); *see also PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306–07 (Fed. Cir. 2008) (explaining that § 112, ¶ 1 “requires that the written description actually or inherently disclose the claim element”).

3. *Anticipation*

To serve as an anticipatory reference under 35 U.S.C. § 102, “the reference must disclose each and every element of the claimed invention, whether it does so explicitly or inherently.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009). “The identical invention must be shown in as complete detail *as is contained in the . . . claim.*” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989) (emphasis added). The elements must be arranged as required by the claim, “but this is not an ‘*ipsissimis verbis*’ test,” i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 832–33 (Fed. Cir. 1990) (citing *Akzo N.V. v. United States Int’l Trade Comm’n*, 808 F.2d 1471, 1479 & n.11 (Fed. Cir. 1986)).

4. *Obviousness*

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when of record, objective evidence of obviousness or non-obviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Secondary considerations may include the following: “commercial success, long felt but unsolved needs, failure of others, etc.”¹ *Id.* The totality of the evidence submitted may show that the challenged claims would not have been obvious to one of ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *Id.* at 415. Whether a patent claiming a combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. To reach this conclusion, however, requires more than a mere

¹ At this stage of the proceeding, Patent Owner has not presented objective evidence of non-obviousness.

showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.* “To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art, at the time of the effective filing date of the ’867 patent, “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. 13 (citing Ex. 1003 ¶ 15). Similarly, Patent Owner contends that the skilled artisan “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 construction connector design/development.” Prelim. Resp. 26; *see* Ex. 2001 ¶ 19.

Neither party argues that the outcome of this case would differ based on our adoption of any particular definition of the level of ordinary skill in the art. Although slight differences exist in the formulation of such skill level between the parties, we discern no meaningful differences because none of those differences would affect the outcome of our analysis. Accordingly, we apply the level of skill set forth in the preceding paragraph, which also is consistent with the prior art before us. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (determining that the Board of Patent Appeals and Interferences did not err in concluding that the level of ordinary skill in the art was best determined by the references of record).

C. Claim Construction

We apply the claim construction standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.200(b). Under *Phillips*, claim terms are afforded “their ordinary and customary meaning.” *Phillips*, 415 F.3d at 1312. “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1313. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record

in determining “the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317. Only terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an *inter partes* review).

In PGR2019-00063, which involved the ’510 patent (an immediate parent of the ’867 patent), we construed certain claim limitations also relevant to this case, namely:

(1) “*extend through*”: in the context of element A “extend[ing] through” element B, “extend through” means “element A extends into one side and out the other side of element B” (*Simpson Strong-Tie Company Inc. v. Columbia Insurance Company*, PGR2019-00063, Paper 52 (Ex. 2006), 44–45 (PTAB Mar. 11, 2021);

(2) “*configured to extend through*” the sheathing: in the context of “an extension portion extending from the channel-shaped portion and configured to extend through the sheathing,” an “extension portion . . . configured to extend through the sheathing” means (or requires structurally) “an extension portion extending from the channel-shaped portion towards the connection portion and defining a space to receive sheathing” (*id.* at 51; *see id.* at 41–52);

(3) “*extending from*”: in the context of element B extending from element A, “extending from” means “the beginning of element B’s extension is on element A” (*id.* at 110; *see id.* at 106–110); and

(4) “*rigidly fixed*”: “rigidly fixed” means “components are connected such that they do not move freely with respect to one another” (*id.* at 98; *see id.* at 96–98). We maintain these same constructions for these terms in this case for the same reasons given in PGR2019-00063. *See* Pet. 14 (“Given that the Specification is identical between the present patent and the ’510 Patent (the subject of the Board’s prior decision), Petitioner applies the same construction to the same terms in the present claims.”); Prelim. Resp. 27 (“For the purposes of this Preliminary Response, [Patent Owner] does not dispute [Petitioner’s] constructions of ‘extend through,’ ‘extending from,’ and ‘rigidly fixed.’”). We note that Petitioner submits “[w]hile the term ‘rigidly fixed’ does not appear in the ’867 Patent claims, the term ‘fixed’ does,” and “[g]iven that the Board’s prior construction of ‘rigidly fixed’ appears to have relied on portions of the shared specification using the word ‘fixed,’ Petitioner uses the same construction herein for the term ‘fixed.’” Pet. 14. To the extent necessary, we further address the meaning of “fixed” (versus “rigidly fixed”) in our unpatentability analysis below.

In this case, Petitioner and Patent Owner also collectively advance constructions for four other claim limitations, namely, (1) “planar,” as recited in, for example, dependent claim 2 (Pet. 14–15; Prelim. Resp. 52–53); (2) “each extension flange lying in an extension flange plane,” as recited in, for example, independent claim 1 (Prelim. Resp. 28–44); (3) “extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of the sheathing,” as recited in, for example, dependent claim 5 (Prelim. Resp. 44–49); and (4) “configured to,”

as recited in, for example, independent claim 1, including as recited in the limitation “configured to extend through” that we already construed in PGR2019-00063 as noted above (Prelim. Resp. 49–52). However, at this stage of the proceeding, the parties have not fully controverted each other’s proposed constructions here. Nevertheless, to the extent necessary, we further address claim interpretation in our unpatentability analysis below.

D. Unpatentability of Claims 1–23 Based on Indefiniteness

Petitioner contends claims 1–23 are unpatentable under 35 U.S.C. § 112(b) for indefiniteness. Pet. 15–23. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 28–49, 53–66. Based on the record before us, we determine that Petitioner has established that it is more likely than not that claims 5 and 17 (but not claims 1–4, 6–16, and 18–23) are unpatentable under § 112 for indefiniteness, as discussed below.

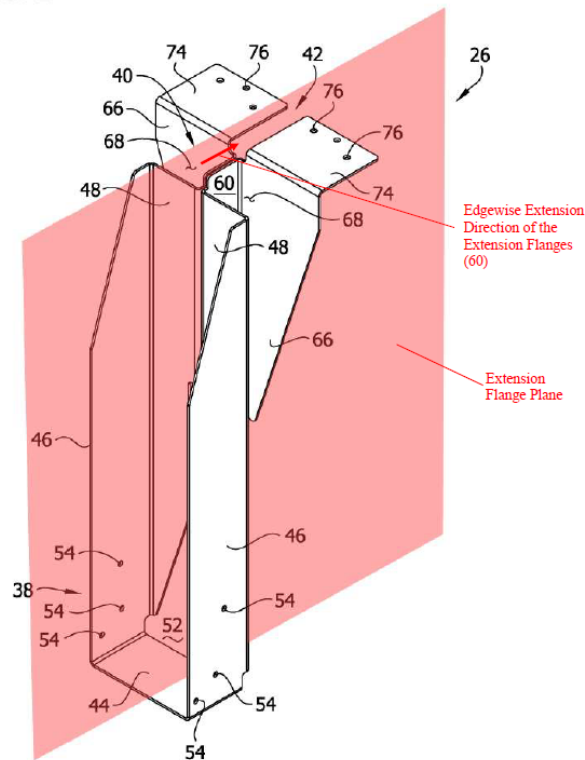
1. Claims 1–15: “each extension flange lying in an extension flange plane”

Petitioner contends the limitation “each extension flange lying in an extension flange plane” as recited in independent claim 1 is indefinite. Pet. 15–20; Ex. 1001, 12:35–36. In particular, Petitioner argues this limitation “fails to inform with reasonable certainty where the ‘extension flange’ is located relative to the ‘extension flange plane,’ specifically which surface of the ‘extension flange’—and how much of such surface—lies ‘in’ the ‘extension flange plane.’” Pet. 15. Petitioner further argues “claim 1 defines the location of the ‘extension flange plane’ based on a *three-dimensional, multiplanar object*—the extension flange—without identifying any particular surface or cross-section on the extension flange,” and that

because “[e]ach extension flange has multiple surfaces, which surfaces also include curves,” “[t]his renders the claimed location of the ‘extension flange plane’ ambiguous.” Pet. 16; *see* Pet. 17 (“Across its thickness, extension flange 60 lies in an infinite number of imaginary two-dimensional planes.”).

Patent Owner argues Petitioner “fails to apply a proper construction of what is means to ‘lie in a plane’” in view of claim 1, the Specification, and knowledge of the skilled artisan. Prelim. Resp. 53–54. In particular, Patent Owner argues Petitioner “erroneously asserts, without any claim construction support, that this limitation requires the identification of a specific surface of the extension flange that lies in the extension flange plane, and that the limitation is indefinite because no specific surface of the extension flange is identified by claim 1.” *Id.*; *see id.* at 57 (“‘[L]ying in a . . . plane’ is commonly used in the mechanical arts, including joist hangers, to describe the arrangement of a three dimensional object—particularly an object such as a flange that has a smaller thickness in relation to the dimensions of its major surfaces—relative to a plane.” (citing Ex. 2001 ¶ 164)). Patent Owner submits the limitation “each extension flange lying in an extension flange plane” is not indefinite, and means “for each extension flange an extension flange plane is within the extent of the extension flange from the channel-shaped portion to the connection portion.” *Id.* at 54. Patent Owner argues, based on this proposed construction, “it is readily apparent to [the skilled artisan] where the arrangement of the extension flange plane is relative to the extension flange” (*id.*, citing Ex. 2001 ¶ 158), and to illustrate this provides an annotated version of Figure 2 of the ’867 patent, reproduced below.

FIG. 2



The above illustration shows Patent Owner's understanding of an extension flange plane applied to Figure 2 of the '867 patent.

Prelim. Resp. 55 (citing Ex. 2001 ¶¶ 159–160); *see* Ex. 1001, Fig. 2.

We agree with Patent Owner's arguments, and turn first to the construction of the limitation at issue.

As noted above, Patent Owner argues *the skilled artisan* would understand the limitation “each extension flange lying in an extension flange plane” to mean “for each extension flange an extension flange plane is within the extent of the extension flange from the channel-shaped portion to the connection portion.” Prelim. Resp. 29–30, 54. Patent Owner argues the context of claim 1 itself supports this construction:

[The skilled artisan] would recognize that when the phrase “lying in a . . . plane” is used in reference to a three dimensional object—in this case the extension flange—the end-to-end extension of the object can be effectively described as being arranged in the plane. Ex. 2001 at ¶ 119. With respect to the extension flange of the claimed hanger, claim 1 identifies this plane in which the end-to-end extension is arranged as an “extension flange plane.” *Id.* Claim 1 further provides the starting point (“extending from the channel shaped portion”) and ending point (“to the connection portion”) of the extent of each of the extension flanges. *Id.* at ¶ 120. Finally, claim 1 provides the orientation of the extension flange plane as being “generally perpendicular to the base plane,” thus establishing the orientation of the extension flange relative to the base plane. *Id.* at ¶ 121.

Id. at 29; *see* Ex. 2001 ¶¶ 112–121. Patent Owner argues the Specification supports this construction (Prelim. Resp. 30–32), and submits “it is readily apparent [as shown in annotated Figure 2 reproduced above] that for each extension flange there is an extension flange plane *within the extent of the extension flange* from the channel-shaped portion.” *Id.* at 30 (citing Ex. 2001 ¶¶ 122–124) (emphasis added).

In addition, Patent Owner argues “prior art references all show that [Patent Owner’s] proposed claim construction for this limitation is consistent with its ordinary usage in the art,” and discusses several instances where prior art patents or published patent applications for joist or structural component hangers describe various three-dimensional objects or flanges as lying in planes. Prelim. Resp. 33–43 (citing Ex. 2001 ¶¶ 128–144); *see In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999) (“Prior art references may be ‘indicative of what all those skilled in the art generally believe a certain term means . . . [and] can often help to demonstrate how a disputed term is

used by those skilled in the art.”) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996)). Notably, for example, a published patent application of Simpson Strong-Tie International, Inc. (Ex. 2015) describes certain three-dimensional aspects of a joist hanger as lying in planes: “The stiffening elements (25) *lie in a plane* substantially parallel with a plane including the side flanges (30, 40)”’; and “The return leg(s) *lie in a plane* approximately parallel to a plane including the back flange(s).” Ex. 2015, 10 (emphases added). This Simpson application also claims, for example, “side flanges *in a plane* approximately perpendicular to *planes including* the adjoining side flange and the seat.” *Id.* at 15 (emphases added). We find Patent Owner’s exposition of various prior art references that describe objects, particularly joist hanger objects, lying in planes supports Patent Owner’s proposed claim construction and contradicts Petitioner’s indefiniteness argument.

Based on the foregoing and the record before us, we agree with Patent Owner’s arguments as supported by the above-cited evidence, and find Patent Owner’s proffered construction reasonable. Accordingly, for purposes of institution, we construe the limitation “each extension flange lying in an extension flange plane” to mean “for each extension flange an extension flange plane is within the extent of the extension flange from the channel-shaped portion to the connection portion.”

We also note that Petitioner identifies extension flanges lying in extension flange planes in three different asserted prior art references, namely (1) Gilb ’792 (“Gilb ’792’s extension flanges (gusset members 15’/22’) maintain the same generally perpendicular relationship with the

base plane as is illustrated in the '867 Patent.” (Pet. 39)); (2) Timony (“Timony’s retrofit plates 230a/230b maintain the same relationship with the base plane as is illustrated in the '867 Patent.” (Pet. 68–69 (annotating Ex. 1008, Fig. 4 to show “Extension Flange Plane”)); and (3) Tsukamoto (“Tsukamoto discloses that each extension flange has a surface (connection plates 2D’/3D’) that lies in a plane, the planes being generally perpendicular to the base plane.” (Pet. 102 (annotating Ex. 1009, Fig. 3 to show “Extension Flange Plane”))). Although arguing indefiniteness and obviousness in the alternative, we find in this instance that Petitioner’s identification of such planes lends merit to Patent Owner’s proposed meaning of an “extension flange lying in an extension flange plane.”

Based on the foregoing and the record before us, and given our construction above of the limitation at issue, we are not persuaded that the limitation, namely “each extension flange lying in an extension flange plane,” would not inform the skilled artisan, with reasonable certainty, about the scope of the claimed invention. *See Nautilus*, 572 U.S. at 899 (“absolute precision is unattainable”). Accordingly, at this stage of the proceeding, we determine that Petitioner does not demonstrate that it is more likely than not that claims 1–15² are unpatentable under 35 U.S.C. § 112(b) for indefiniteness based on this limitation.

² As noted above in Section I, Patent Owner obtained a Certificate of Correction that, in part, added the term “portion” after the last use of the term “channel-shaped” in claim 11. Ex. 2032. We find this change does not affect our indefiniteness analysis here. Thus, we need not and do not decide

2. *Claims 16–23: “a channel-shaped portion configured to receive the structural component” and “a base configured to receive an end portion of the structural component thereon to support the structural component”*

Petitioner contends the limitations “a channel-shaped portion configured to receive *the structural component*” and “a base configured to receive an end portion of *the structural component* thereon to support *the structural component*” as recited in independent claim 16 are indefinite. Pet. 20–22; Ex. 1001, 13:34–14:18. In particular, Petitioner argues these limitations “lack proper antecedent basis for the term ‘structural component,’ thereby failing to inform with reasonable certainty what object—a joist or a structural component—is intended to be used with the recited hanger.” Pet. 21. According to Petitioner, because claim 16 introduces “a joist” in the preamble and then later introduces “the structural component” without proper antecedent basis, the skilled artisan “would not have been able to determine with reasonable certainty whether the recited hanger is intended to be used with a joist (a specific type of structural member having standard, uniform sizes) or a structural component (a generic term covering various structural members (e.g. a truss) having different shapes and sizes).” Pet. 21–22.

Patent Owner, quoting *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359 (Fed. Cir. 2001), argues “the failure to provide explicit antecedent basis for

at this juncture whether the Certificate of Correction, which issued subsequent to the filing of the Petition, has effect in this proceeding.

terms does not always render a claim indefinite. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite.” Prelim. Resp. 59; *see In re Moore*, 439 F.2d 1232, 1235 (CCPA 1971) (“[T]he definiteness of the language employed must be analyzed—not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art.”). Patent Owner argues the skilled artisan “would readily ascertain and understand that the term ‘a joist’ provides antecedent basis for the term ‘the structural component’ based on the claim language, the specification, and the knowledge possessed by the [skilled artisan].” Prelim. Resp. 60 (citing Ex. 2001 ¶¶ 168–178). Patent Owner argues the skilled artisan “knows a joist is a type of structural component,” and highlights that “[Petitioner] even agrees with this point.” *Id.* (citing Ex. 2001 ¶ 172; Pet. 21–22 (“a joist (a specific type of structural member[])”)). Patent Owner argues the skilled artisan would understand “the term ‘a joist’ provides antecedent basis for the term ‘the structural component’ as these terms are generally used interchangeably.” *Id.* (citing Ex. 2001 ¶ 173); *see id.* at 60–63 (discussing use of “structural component” in the Specification and Petition). We agree with Patent Owner’s arguments.

Based on the foregoing and the record before us, we are not persuaded that the limitations “a channel-shaped portion configured to receive the structural component” and “a base configured to receive an end portion of the structural component thereon to support the structural component” would not inform the skilled artisan, with reasonable certainty, about the scope of

the claimed invention. *See Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1370 (Fed. Cir. 2006) (“When the meaning of the claim would reasonably be understood by persons of ordinary skill when read in light of the specification, the claim is not subject to invalidity upon departure from the protocol of ‘antecedent basis.’”). Accordingly, at this stage of the proceeding, we determine that Petitioner does not demonstrate that it is more likely than not that claims 16–23 are unpatentable under 35 U.S.C. § 112(b) for indefiniteness based on these limitations.

As noted above in Section I, Patent Owner obtained a Certificate of Correction that, in part, replaces the term “joist” in claim 16 with the term “structural component.” Ex. 2032. The Certificate of Correction was filed and issued after Petitioner filed the Petition. Our determination as to Petitioner’s indefiniteness challenge is based on the original phrasing of claim 16. As indicated in our analysis, we are currently persuaded that the term “a joist” provides antecedent basis for the term “the structural component.” Thus, we would reach the same result regardless of whether the Certificate of Correction has effect in this proceeding. In any event, we need not and do not decide at this juncture whether the Certificate of Correction has effect in this proceeding.

3. *Claims 5 and 17: “extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of the sheathing”*

Petitioner contends the limitation “extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of the sheathing” as recited in dependent claims 5 and 17 is indefinite.

Pet. 22–23; Ex. 1001, 12:53–56, 14:19–22. In particular, Petitioner argues this limitation “fails to inform with reasonable certainty *how* the recited function of maintaining a 2 hour fire resistance rating *further limits the claimed hanger*.” Pet. 22 (emphases added). Petitioner argues “the recited function of maintaining a 2 hour fire resistance rating of sheathing *does not clarify what is required by the hanger*, because the fire resistance rating is based on the entire wall assembly, not just the conformance between the sheathing and the hanger.” Pet. 23 (citing Ex. 1003 ¶ 86) (emphasis added).

Patent Owner argues the skilled artisan “would recognize that the phrase ‘a 2 hour fire resistance rating of the sheathing’ as recited in claims 5 and 17 is describing ‘a 2 hour fire resistance rating of a wall assembly including the [wall (claim 5)/frame wall (claim 17)] and the sheathing.’” Prelim. Resp. 46 (citing Ex. 2001 ¶ 155); *see id.* at 44–49. Patent Owner argues the skilled artisan “would understand, with reasonable certainty, what the limitation the ‘extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of a wall assembly including the wall and the sheathing’ requires.” *Id.* Patent Owner does so without citing any supporting evidence, and without identifying what structural attributes *the claimed hanger* allegedly “requires” to meet this 2-hour fire resistance feature, let alone what the claimed structural difference(s) are between (1) extension flanges configured to extend through sheathing and (2) extension flanges configured to extend through sheathing *while maintaining a 2 hour fire resistance rating of the sheathing*. We find Patent Owner’s argument unavailing, and agree with Petitioner (Pet. 22) that the subject limitation, whether interpreted as “while maintaining a 2 hour

fire resistance rating of the sheathing” or “while maintaining a 2 hour fire resistance rating of a wall assembly including the frame wall and the sheathing,” fails to inform with reasonable certainty *how* the limitation allegedly *further limits the claimed hanger* (i.e., affects the scope of the claimed *apparatus*).

Accordingly, at this stage of the proceeding, we determine that Petitioner demonstrates that it is more likely than not that claims 5 and 17 are unpatentable under 35 U.S.C. § 112(b) for indefiniteness.

In addition, as noted above in Section I, Patent Owner obtained a Certificate of Correction that, in part, amended the phrase “while maintaining a 2 hour fire resistance rating of the sheathing” in claims 5 and 17 to instead recite “while maintaining a 2 hour fire resistance rating of *a wall assembly including the frame wall and the sheathing.*” Ex. 2032 (emphasis added). As discussed above, we find this change does not affect our indefiniteness analysis here. Thus, we need not and do not decide at this juncture whether the Certificate of Correction, which issued subsequent to the filing of the Petition, has effect in this proceeding.

E. Unpatentability of Claims 5 and 17 Based on Lack of Written Description

Petitioner contends claims 5 and 17 also are unpatentable under 35 U.S.C. § 112(a) for lack of written description. Pet. 24–25 (“[T]he subject matter of dependent claims 5 and 17 is not disclosed expressly or inherently in the ’867 Patent specification, and thus lack[s] written description support.”). Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 44–49, 67–70. Based on the record before us, we determine

that Petitioner has established that it is more likely than not that claims 5 and 17 are unpatentable under § 112 for lack of written description.

“Sufficiency of written description is a question of fact.” *Gen. Hosp. Corp. v. Sienna Biopharmaceuticals, Inc.*, 888 F.3d 1368, 1371 (Fed. Cir. 2018). Whether a patent claim satisfies the written description requirement depends on whether the description “clearly allow[s] persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.” *Vas-Cath*, 935 F.2d at 1562–63 (internal quotation marks omitted) (quoting *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989)). But “one cannot disclose a forest in the original application, and then later pick a tree out of the forest and say here is my invention. In order to satisfy the written description requirement, the blaze marks directing the skilled artisan to that tree must be in the originally filed disclosure.” *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1326–27 (Fed. Cir. 2000).

Dependent claims 5 and 17 each recite “the first and second extension flanges are *configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of the sheathing.*” Ex. 1001, 12:53–56, 14:19–22 (emphases added). Petitioner argues “nowhere does the ’867 patent disclose that the sheathing alone has a 2 hour fire resistance rating, such that there is no support for the claimed term ‘maintaining a 2 hour fire resistance rating of the sheathing.’” Pet. 24 (citing Ex. 1003 ¶¶ 88–90). Petitioner acknowledges “[t]he specification *only ever* refers to a 2 hour fire resistance rating of the ‘wall assembly,’ *not the sheathing itself*,” and that “other materials and wall components [are] needed to achieve the desirable fire

resistance rating of the entire assembly, *even using the '867 Patent's own hanger.*" Pet. 24 (emphases added).

Patent Owner argues Petitioner "fails to consider how the [skilled artisan] would construe this limitation in view of the specification and knowledge possessed by the [skilled artisan]." Prelim. Resp. 70 (citing Ex. 2001 ¶ 186). Specifically, Patent Owner argues the skilled artisan ["would understand 'wherein the first and second extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of the sheathing' within the context of the '867 Patent to mean 'wherein the first and second extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of a wall assembly including the wall[/frame wall] and the sheathing.'" *Id.* (citing Ex. 2001 ¶ 187); *see id.* at 48 ("[The skilled artisan] would recognize the recitation of a 2 hour fire rating is not referring to a property of the sheathing alone, but rather as a property of the wall assembly that the sheathing is a part of."); *see also id.* at 44–49. Patent Owner argues that under this construction the skilled artisan "would understand that the specification of the '867 Patent reasonably conveys that the inventor was in possession of the claimed subject matter." *Id.* at 70.

We agree with Patent Owner's claim construction argument that, in the context of the '867 patent, *the skilled artisan* would interpret the phrase "while maintaining a 2 hour fire resistance rating of the sheathing" to mean "while maintaining a 2 hour fire resistance rating of a wall assembly including the frame wall and the sheathing," for the reasons given by Patent Owner (*see* Prelim. Resp. 44–49). We also agree with Patent Owner that

Petitioner concedes the '867 patent describes fire ratings *only* in the context of the entire wall assembly (Pet. 24), which includes sheathing (“the only part of the wall assembly affected by the hanger” (Prelim. Resp. 44)), and that this supports Patent Owner’s proposed claim construction here.

But this does not end the indefiniteness inquiry before us. Petitioner challenges whether the Specification of the '867 patent discloses the full scope of dependent claims 5 and 17, and in particular, whether the Specification provides written description support for extension flanges “*configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of the sheathing.*” See Pet. 24–25. For the same reasons we determined the subject limitation fails to inform with reasonable certainty *how* the limitation allegedly *further limits the claimed hanger* (i.e., affects the scope of the claimed *apparatus*) (see Section III.D.3, *supra*), based on the record before us, we are persuaded that the Specification does not sufficiently describe *how* the claimed extension flange structure is “configured to” extend through sheathing “while maintaining a 2 hour fire resistance rating of the sheathing,” particularly where sheathing is not even required by the claims and the claims are not directed to a method of installation. Indeed, claim 1, from which claim 5 depends, is an apparatus claim directed to “[a] hanger”—just the hanger—and there is no evidence of record that the structure of that hanger, as one may find for sale in a local home center, includes a “structural component” (like a joist), a “wall,” or “sheathing” (like gypsum board), mounted on a wall. See Ex. 1002, 347, 353 (“[T]o clarify the claim is drawn solely to the hanger . . . and not the combination of the hanger and frame wall.”). Similarly, in the Related

Litigation, Patent Owner accuses certain of Petitioner's hangers—just the hangers—of infringing the related '510 patent with similar claims to a “hanger.” *See* Ex. 1031. Having reviewed the Specification, we find no description in the Specification, and the parties do not direct us to any, disclosing what structural features of the extension flanges (let alone the full scope of such features) are required for such flanges not only to be configured to extend through sheathing, but further configured to extend through sheathing “while maintaining a 2 hour fire resistance rating of the sheathing.”

Accordingly, at this stage of the proceeding, we determine that Petitioner demonstrates that it is more likely than not that claims 5 and 17 are unpatentable under 35 U.S.C. § 112(a) for lack of written description.

In addition, as noted above in Sections I and III.D.3, Patent Owner obtained a Certificate of Correction that, in part, amended the phrase “while maintaining a 2 hour fire resistance rating of the sheathing” in claims 5 and 17 to instead recite “while maintaining a 2 hour fire resistance rating of *a wall assembly including the frame wall and the sheathing.*” Ex. 2032 (emphasis added). As discussed above, we find this change does not affect our written description analysis here. Thus, we need not and do not decide at this juncture whether the Certificate of Correction, which issued subsequent to the filing of the Petition, has effect in this proceeding.

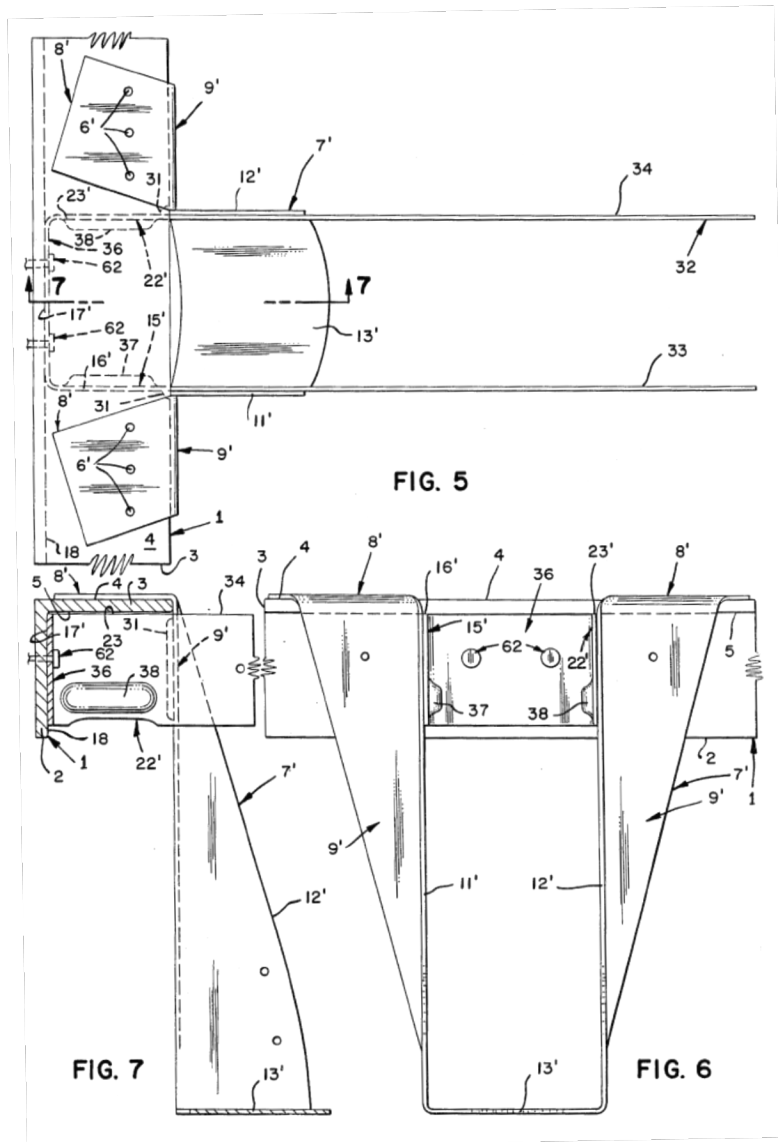
*F. Obviousness of Claims 1–12, 15–17, and 21–23 Over Gilb ’792 and Bundy*³

Petitioner contends claims 1–12, 15–17, and 21–23 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Gilb ’792 (Ex. 1035) and Bundy (Ex. 1007). Pet. 13–15, 28–59. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 49–52, 88–94. Based on our review of the record before us, we determine that Petitioner has established that it is more likely than not that claims 1–12, 15–17, and 21–23 are unpatentable as obvious over the combination of Gilb ’792 and Bundy, as discussed below. We turn first to an overview of Gilb ’792 and Bundy.

1. Overview of Gilb ’792

Gilb ’792 generally is directed to a “gusset metal ledger hanger” that attaches to a metal ledger, as shown, for example, in Figures 5, 6, and 7, reproduced below. Ex. 1035, 2:29–30, 3:22–55.

³ As noted above in Section I, a Certificate of Correction was filed and issued after Petitioner filed the Petition. The Certificate of Correction concerns claims 5, 11, 16, and 17 of the ’867 patent. Our determinations as to Petitioner’s prior art grounds of unpatentability are based on the original phrasing of these claims. As discussed in Sections III.D and III.E above, we would reach the same results regardless of whether the Certificate of Correction has effect in this proceeding. In any event, we need not and do not decide at this juncture whether the Certificate of Correction has effect in this proceeding.



Figures 5, 6, and 7 of Gilb '792 are top plan, front elevational, and partial cross sectional (line 7—7) views of the same hanger.

Id. at 2:7–12. Petitioner contends that Gilb '792 discloses “each and every structural element listed in claim 1 of the '867 Patent, but does not explicitly disclose that the space between its hanger’s channel-shaped portion and back flange is sized and shaped to receive sheathing therein,” for which Petitioner relies on Bundy. Pet. 28.

2. Overview of Bundy

Bundy generally is 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. 1007, 1:5–11.

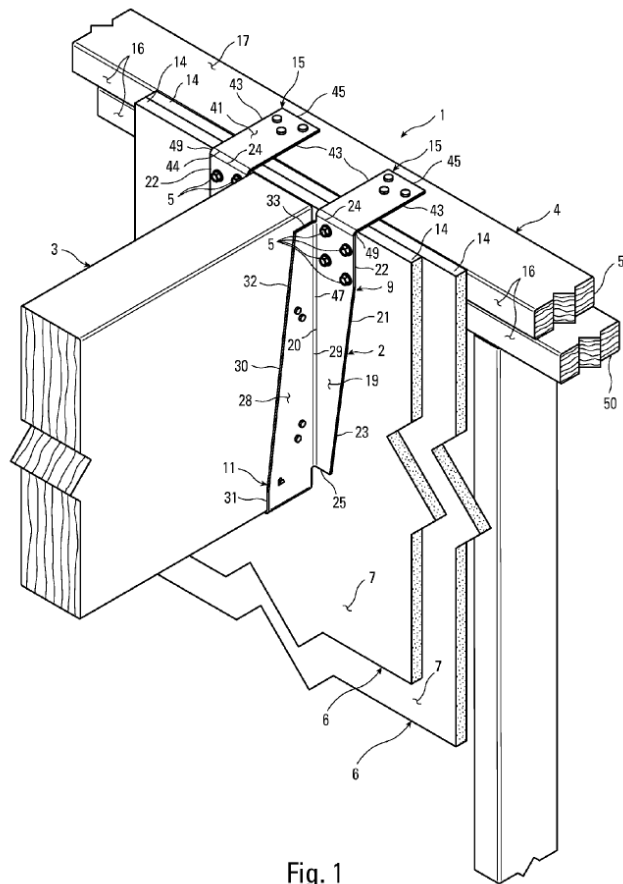


Fig. 1

Figure 1 of Bundy is an upper right perspective view of a connection formed in which the joist hanger has a pair of top flanges.

Id. at 3:7–9, 3:55–67. 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 (emphasis added).

We further discuss below the disclosures of Gilb ’792 and Bundy in connection with the parties’ arguments.

3. *Independent Claim 1*

- a) “*A hanger for connecting a structural component to a wall adapted to have sheathing mounted thereon, the hanger comprising:*”

The preamble of claim 1 recites “[a] hanger *for connecting a structural component to a wall adapted to have sheathing mounted thereon.*” Ex. 1001, 12:15–17 (emphasis added). Gilb ’792 discloses a “gusset metal ledger hanger 7” “adapted for holding a structural beam member” to a wall. Ex. 1035, 3:22–38, Figs. 5, 6, 7; *see* Pet. 8 (citing Ex. 1003 ¶ 37; Ex. 1035, Abstract, 1:5–11, 3:22–50). Petitioner argues that the phrase “for connecting a structural component to a wall adapted to have sheathing mounted thereon” is not a limitation, but rather “recites an intended use of the claimed invention [i.e., a hanger], satisfied by any prior art structure capable of performing the intended use.” Pet. 30 (citing, in part, Ex. 1003 ¶¶ 46, 98, 99).

“Whether to treat a preamble as a limitation is a determination ‘resolved only on review of the entire[] . . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.’” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989)) (alterations in original).

“In general, a preamble limits the invention if it recites essential structure or steps, or if it is ‘necessary to give life, meaning, and vitality’ to the claim.” *Id.* (quoting *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)). “Conversely, a preamble is not limiting ‘where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.’” *Id.* (quoting *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997)). “No litmus test defines when a preamble limits claim scope.” *Id.* (citing *Corning Glass*, 868 F.2d at 1257).

In this case, we are persuaded that the above preamble phrase is not limiting, because the patentee recites a structurally complete invention in the body of claim 1, and uses the preamble only to state a purpose or intended use for the claimed invention. Claim 1 is an apparatus claim directed to “[a] hanger”—just the hanger—and, as noted above, there is no evidence of record that the structure of that hanger, as one may find for sale in a local home center, includes a “structural component” (like a joist), a “wall,” or “sheathing” (like gypsum board), mounted on a wall. *See* Ex. 1002, 347, 353 (“[T]o clarify the claim is drawn solely to the hanger . . . and not the combination of the hanger and frame wall.”). Indeed, in the Related Litigation, where claim 1 of the related ’510 patent also recites this same hanger preamble, Patent Owner accuses certain of Petitioner’s hangers—just the hangers—of infringing the ’510 patent. *See* Ex. 1031. If a hanger, standing separate from any joist, wall, or installed sheathing, may fall within the scope of such a claim for infringement purposes, then a prior disclosure of the structure of such a hanger (alone) may anticipate or in combination

with other prior art render obvious that claim. *See Int’l Seaway Trading Corp. v. Walgreens Corp.*, 589 F.3d 1233, 1239 (Fed. Cir. 2009) (citing *Peters v. Active Mfg. Co.*, 129 U.S. 530, 537 (1889)) (“[I]t has been well established for over a century that the same test must be used for both infringement and anticipation,” and “[t]his general rule derives from the Supreme Court’s proclamation 120 years ago in the context of utility patents: ‘[t]hat which infringes, if later, would anticipate, if earlier.’”).

For the reasons expressed above, and based on the record before us, we determine that the preamble phrase “for connecting a structural component to a wall adapted to have sheathing mounted thereon” in claim 1 is not a limitation, and find Gilb ’792 discloses a “hanger,” as recited in claim 1.

- b) *“a channel-shaped portion configured to receive the structural component, the channel-shaped portion including a base configured to receive an end portion of the structural component thereon to support the structural component, the base having an upper surface configured to engage the structural component, the upper surface lying in a base plane;”*

Petitioner contends Gilb ’792 discloses a channel shaped portion (e.g., stirrup members 11’/12’ and depending flanges 9’) configured to receive the structural component (e.g., structural beam), as shown, for example, in Figures 5, 6, and 7, reproduced above. Pet. 31 (citing Ex. 1003 ¶¶ 101–102; Ex. 1035, 3:29–31 (“First and second stirrup members 11’ and 12’ are attached to the depending flanges 9’ and are adapted for holding a structural beam member”)). Petitioner contends Gilb ’792 discloses the channel-

shaped portion (stirrup members 11'/12' and depending flanges 9') includes a base (seat member 13') configured to receive an end portion of the structural component (beam) thereon to support the structural component. Pet. 32 (citing Ex. 1003 ¶¶ 103–104; Ex. 1035, 3:51–52). Petitioner contends Gilb '792 discloses the base (seat member 13') has an upper surface (its two-dimensional top surface) configured to engage the structural component, and that the upper surface of the base lies in a base plane. Pet. 32–33 (citing Ex. 1003 ¶¶ 105–106; Ex. 1035, 3:51–52).

For the reasons stated in the Petition at pages 31–33, and based on the record before us, we find Petitioner sufficiently establishes that Gilb '792 teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

- c) *“a connection portion configured for attachment to the wall, the connection portion including a back flange having an upper edge, the back flange extending from the upper edge in a direction generally toward the base plane, the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another; and”*

Petitioner contends Gilb '792 discloses a connection portion (base 36) configured for attachment to the wall. Pet. 33 (citing Ex. 1003 ¶¶ 107–110; Ex. 1035, 3:43–44; 3:47–50 (“First and second gusset members 15' and 22' are held in position by shooting nail means 62 through base 36 of the U-shaped member into lower leg 2 of the metal ledger.”)). Petitioner argues the skilled artisan “would have understood that Gilb'792's base 36 corresponds to the recited ‘connection portion,’ and that nail means 62 extend past the ledger into the wall.” Pet. 33 (citing Ex. 1003 ¶¶ 107–108;

Ex. 1035, Figs. 5, 6); *see* Ex. 1001, Fig. 7. Petitioner contends Gilb '792 discloses that the connection portion (base 36) includes a back flange having an upper edge (i.e., the very top of the back flange) and that the back flange extends downward from the upper edge in a direction generally toward the base plane. Pet. 35 (citing Ex. 1003 ¶¶ 111–112; Ex. 1035, 3:39–49).

Petitioner contends Gilb '792 discloses that the connection portion (base 36) and channel-shaped portion (stirrup members 11'/12' with flanges 9') are in a fixed, spaced apart relation relative to one another, noting that the “elements are welded sheet metal and thus are fixed.” Pet. 35–36 (citing Ex. 1003 ¶¶ 113–114; Ex. 1035, 3:39–44).

For the reasons stated in the Petition at pages 33–36, and based on the record before us, we find Petitioner sufficiently establishes that Gilb '792 teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

d) *“an extension portion including first and second extension flanges extending from the channel-shaped portion to the connection portion,”*

Petitioner contends Gilb '792 discloses an extension portion (gusset members 15'/22') including first and second extension flanges (gusset members 15'/22') extending from the channel-shaped portion (stirrup members 11'/12') to the connection portion (base 36). Pet. 36–37 (citing Ex. 1003 ¶¶ 115–117; Ex. 1035, 3:[31]–42 (“A first gusset member 15' is . . . directly connected to stirrup member 11' by weld 31.”), Figs. 5–7). Petitioner argues the skilled artisan “would have understood that the Gilb'792's gusset members 15'/22' (along with weld 31), correspond to the

recited first and second extension flanges.” Pet. 37 (citing Ex. 1003 ¶¶ 115–116).

For the reasons stated in the Petition at pages 36–37, and based on the record before us, we find Petitioner sufficiently establishes that Gilb ’792 teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

- e) *“each extension flange being configured to extend through the sheathing, each extension flange lying in an extension flange plane, the extension flange planes being generally perpendicular to the base plane, the back flange and the channel-shaped portion defining a sheath space sized and shaped to receive the sheathing therein so that the channel-shaped portion is located on one side of the sheathing and the back flange is located on an opposite side of the sheathing when the hanger and sheathing are installed on the wall”*

This limitation recites, *inter alia*, that the “extension portion,” and more specifically “each extension flange” thereof, is “*configured to extend through the sheathing* [mounted on a wall],” and that “the back flange and the channel-shaped portion defin[e] a *sheath space sized and shaped to receive the sheathing therein* so that the channel-shaped portion is located on one side of the sheathing and the back flange is located on an opposite side of the sheathing *when the hanger and sheathing are installed* on the wall.” Ex. 1001, 12:32–41 (emphases added). But, as argued by Petitioner, claim 1 is directed to and claims only “[a] hanger.” See Pet. 30 (“[T]he limitation ‘for connecting a structural component to a wall adapted to have sheathing mounted thereon’ recites an intended use of the claimed invention.”), 4–5

(“[T]he claimed hanger of the ’867 Patent is not limited to a specific wall configuration.”). Based on the current record at this stage of the proceeding, we find the claimed hanger’s *structure* does not include a “wall.” It does not include “sheathing.” And it does not include “sheathing” between certain portions of the hanger. In addition, claim 1 recites no limitation on the size of any sheathing cutout necessary to allow a hanger’s extension portion to “extend through the sheathing.” In other words, claim 1 recites a hanger having certain structural features, and would cover a hanger having the structural limitations of claim 1 whether that hanger were on a shelf in a hardware store or installed as shown, for example, in Figure 1 of the ’867 patent (or even incorrectly installed). Nevertheless, as in PGR2019-00063, the parties continue to dispute whether the prior art discloses extension flanges configured to extend through the sheathing and a sheath space sized and shaped to receive the sheathing therein.

(1) *“each extension flange being configured to extend through the sheathing”*

Petitioner argues that although Gilb ’792 “does not explicitly disclose extending gusset members 15’/22’ through sheathing,” the skilled artisan “would have found it obvious to use Gilb’792’s hanger 7’ with sheathing.” Pet. 38 (citing Ex. 1003 ¶ 119). Petitioner relies on “Bundy’s use with sheathing,” and argues this “would simply have been applying a known technique . . . to a known device (Gilb’792’s hanger), yielding the predictable result of optimizing the size of the hanger’s spacing to receive sheathing, thereby ‘cover[ing] and protect[ing] the structural members of a building.’” Pet. 38 (citing Ex. 1007, 5:18–20; Ex. 1003 ¶ 119); *see* Pet. 28–

29. Patent Owner, on the other hand, argues that extension flanges in the prior art must “be specifically ‘meant to’ or ‘designed to’ extend into one side and out of the other side of the sheathing, not simply be[] ‘capable of doing so.’” Prelim. Resp. 89. Patent Owner argues “neither Gilb ’792, nor Bundy, disclose a hanger with an extension flange that is ‘designed to’ or ‘meant to’ extend through sheathing.” *Id.* at 90 (citing Ex. 2001 ¶¶ 195–196) (“Gilb ’792 is entirely silent as to the use of the disclosed hanger with sheathing.”); *see id.* at 49–52, 88–94. We find Patent Owner’s argument unavailing.

First, we addressed Patent Owner’s proposed construction of “configured to,” along with its arguments and cited support, in PGR2019-00063, and found them unpersuasive. *See* Ex. 2006, 39–52. We continue to find them unpersuasive in the context of the same apparatus—a hanger—at issue in this proceeding. In PGR2019-00063, we construed “configured to extend through the sheathing,” in the context of “an extension portion extending from the channel-shaped portion and configured to extend through the sheathing,” to mean (or require structurally) “an extension portion extending from the channel-shaped portion towards the connection portion and defining a space to receive sheathing.” Ex. 2006, 51; *see id.* at 41–52. In this case, we maintain the same construction, and thus construe “each extension flange being configured to extend through the sheathing” to mean (or require structurally) “each extension flange defining a space to receive sheathing.”

Second, Patent Owner does not explain why a hanger having the *structural* features recited in claim 1, particularly the recited “extension

portion including first and second extension flanges extending from the channel-shaped portion to the connection portion” such as disclosed in Gilb ’792 (*see* Pet. 36–37 (citing Ex. 1003 ¶¶ 115–117; Ex. 1035, 3:[31]–42, Figs. 5–7 (gusset members 15’/22’))), would not necessarily be *configured* to extend through sheathing mounted on a wall (and provide a sheath space sized and shaped to receive the sheathing therein), regardless of whether anyone installs sheathing around the extension portion. Indeed, in the Related Litigation, Patent Owner accuses certain of Petitioner’s hangers—just the hangers—of infringing the related ’510 patent. *See* Ex. 1031. As noted above, if a hanger, standing separate from any wall or installed sheathing, may fall within the scope of a claim for infringement purposes, then a prior disclosure of such a hanger may anticipate or in combination with other art render obvious that claim. *See Int’l Seaway*, 589 F.3d at 1239 (citing *Peters*, 129 U.S. at 537). In this case, Patent Owner repeatedly argues that the claimed extension flanges are “specifically ‘meant to’ or ‘designed to’ extend into one side and out of the other side of the sheathing,” but does not explain what that means structurally for the claimed apparatus (hanger), i.e., how the skilled artisan would know *based only on the structure of an alleged extension flange* whether it is “meant to” or “designed to” extend through sheathing. *See* Prelim. Resp. 27, 49–52, 88–94.

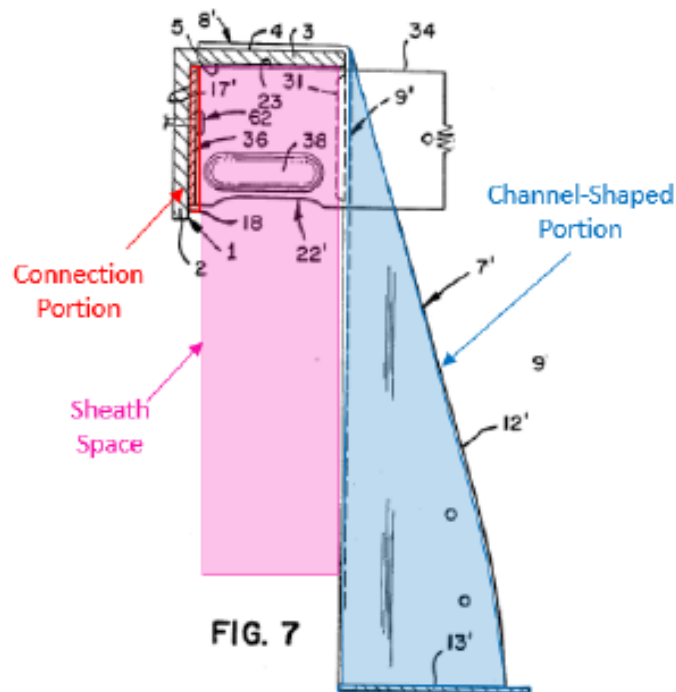
We further address Patent Owner’s dispute over the “use” of Gilb ’792 with sheathing in connection with our analysis of the “sheath space” limitation below. *See* Section III.F.3.e.3, *infra*.

- (2) *“each extension flange lying in an extension flange plane, the extension flange planes being generally perpendicular to the base plane”*

Petitioner contends the extension flanges (gusset members 15'/22') disclosed in Gilb '792 “maintain the same generally perpendicular relationship with the base plane as is illustrated in the '867 Patent.” Pet. 39 (citing Ex. 1003 ¶¶ 121–122; Ex. 1035, Fig. 7 (annotated)). Patent Owner does not contend otherwise at this stage of the proceeding.

- (3) *“the back flange and the channel-shaped portion defining a sheath space sized and shaped to receive the sheathing therein so that the channel-shaped portion is located on one side of the sheathing and the back flange is located on an opposite side of the sheathing when the hanger and sheathing are installed on the wall”*

Petitioner contends Gilb '792 discloses positioning base 36 (the back flange) at one end of gusset members 15'/22' and welding stirrup members 11'/12' (the channel-shaped portion) at opposite ends of gusset members 15'/22'. Pet. 40 (citing Ex. 1035, 3:31–44; Ex. 1003, 59). Petitioner argues “gusset members 15'/22' define a space that would permit sheathing to be inserted so that the channel-shaped portion is located on one side of the sheathing and the back flange is located on an opposite side of the sheathing when the hanger and sheathing are installed on the wall,” as shown, for example, in Petitioner's annotated version of Figure 7, reproduced below. Pet. 40–41 (Ex. 1003, 59; Ex. 1035, 3:23–55).



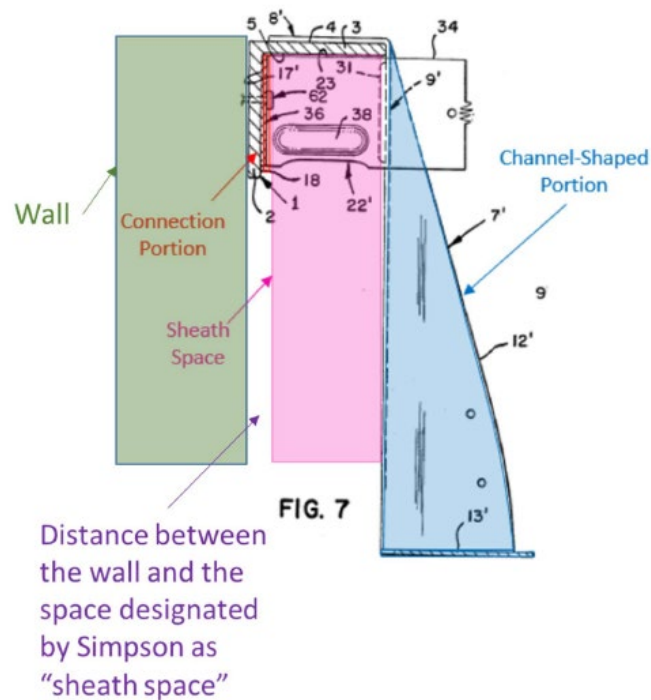
The above illustration shows Figure 7 of Gilb '792 annotated by Petitioner to show a “sheath space.”

Ex. 1035, Fig. 7 (annotated); Pet. 41.

Petitioner argues, “[w]hile Gilb’792 does not explicitly disclose installing sheathing between Gilb’792’s stirrup members 11’/12’ and base 36, [the skilled artisan] would have found it obvious to size the length of Gilb’792’s gusset members 15’/22’ to define a sheathing space therein for receiving sheathing based on Bundy.” Pet. 41 (citing Ex. 1003 ¶ 123). Petitioner argues Bundy discloses “installing two layers of 5/8” sheathing between a hanger’s channel shaped portion (Bundy’s side members 11) and wall frame.” Pet. 41 (citing Ex. 1007, 5:18–20; Ex. 1003 ¶ 123).

Patent Owner argues, not only is Gilb ’792 “entirely silent as to the use of the disclosed hanger with sheathing,” but “the intended use of the

Gilb '792 hanger would be impractical with extending the gusset members 15'/22' through sheathing," as shown, for example, in Patent Owner's annotated version of Figure 7, reproduced below. Prelim. Resp. 90 (citing Ex. 2001 ¶¶ 196–197).



The above illustration shows Figure 7 of Gilb '792 annotated by Patent Owner to show a gap between a wall and alleged "sheath space."

Ex. 1035, Fig. 7 (annotated); Prelim. Resp. 92; Ex. 2001 ¶ 200.

According to Patent Owner, "the presence of the ¼ inch thick ledger (2) together with the 7-gauge base (36) would separate the sheathing from the wall by nearly half an inch," and the skilled artisan "would readily recognize that sheathing is secured flush to the wall, not floating in space approximately half an inch away from the wall." Prelim. Resp. 92 (citing Ex. 2001 ¶¶ 202–203). Patent Owner argues "[t]here is little doubt that the

gusset members (15'/22') of the Gilb '792 hanger were not designed to or meant to extend through sheathing," because "the installation of sheathing (to the extent that sheathing would be installed at all) would be stopped below the ledger and gusset members (15'/22')." *Id.* at 92–93 (citing Ex. 2001 ¶¶ 204–206). Patent Owner submits that "it would require a significant deviation from the intended application of the Gilb '792 hanger (e.g. omitting the metal ledger) to make the hanger compatible with installing sheathing up to and around the gusset members (15'/22')." *Id.* at 93 (citing Ex. 2001 ¶ 206). Based on the record before us and at this stage of the proceeding, we find Patent Owner's argument unavailing.

Although Patent Owner has selectively drawn a "wall" in the above annotated version of Figure 7 of Gilb '792 (which does not appear in the Gilb '792 figures) and alleged that Petitioner's "sheath space" leaves an unworkable gap between that sheath space and the wall, Patent Owner does not address readily apparent resolutions to its alleged problem. For example, Patent Owner alleges that the unworkable gap is about 1/2", but applying an initial 1/2" sheathing to the wall up to the ledger and then applying sheathing in Petitioner's designated "sheathing space" would appear to moot Patent Owner's alleged problem with using the Gilb '792 hanger with sheathing. We note that claim 1 is a "comprising" claim, and does not preclude elements in addition to those required by the claim. Similarly, claim 1 does not preclude other means for accounting for such an alleged gap, like intermediary furring strips applied to the wall, to which sheathing in the "sheathing space" is applied. Still further, had Patent Owner drawn the "wall" as a concrete wall purposely formed with a 1/2" recess to receive the

ledger, then no such alleged gap would exist, which again would appear to moot Patent Owner's alleged problem with using the Gilb '792 hanger with sheathing. Nevertheless, we encourage the parties to further brief this issue in their respective trial briefs.

(4) *Reason to Combine Gilb '792 and Bundy*

Petitioner argues Gilb '792 "already discloses a space between its back flange (base 36 having side face 17') and its channel-shaped portion (stirrup members 11'/12'), the width of the space defined by gusset members 15'/22'." Pet. 28–29 (citing Ex. 1003 ¶ 92). Petitioner argues the skilled artisan "would have found it obvious to receive sheathing between Gilb'792's stirrup members 11'/12' and base 36, as Bundy teaches receiving sheathing between a channel-shaped portion of a hanger and the wall." Pet. 29 (Ex. 1003 ¶¶ 93–94). Petitioner argues "it would have been obvious to optimize the size of the spacing between Gilb'792's stirrup members 11'/12' and base 36 to accommodate two layers of 5/8" thick sheathing according to the size preference described by Bundy." *Id.* Petitioner argues "[t]his modification would have been nothing more than applying a known technique (Bundy's spacing to accommodate two sheets of 5/8" sheathing) to a similar device (Gilb'792's space defined by gusset members 15'/22') to obtain the predictable result of optimizing the size of the hanger's spacing to receive sheathing, thereby 'protect[ing] the structural members of a building.'" Pet. 29 (citing Ex. 1007, 5:18–20; Ex. 1003 ¶ 94).

Petitioner also argues the skilled artisan "would have had an expectation of success in defining a sheath space between Gilb'792's stirrup members 11'/12' and base 36, because Gilb'792's and Bundy's hangers are

used for similar purposes (e.g., hanging a structural object to a wall) and Gilb’792’s stirrup members 11’/12’, flanges 9’, and base 36 already define a space therebetween.” Pet. 41 (citing Ex. 1003 ¶ 123; Ex. 1007, 4:46–51; Ex. 1035, 1:5–11, 3:23–55); *see* Pet. 29 (citing Ex. 1003 ¶ 95; Ex. 1007, 4:47–51; Ex. 1035, 2:33–58).

Except as noted above concerning the alleged “unworkable gap” (between the wall and alleged “sheath space”) formed by placing Bundy’s sheathing in the “sheath space” of the Gilb ’792 hanger as identified by Petitioner, Patent Owner does not otherwise challenge Petitioner’s reason(s) to combine Gilb ’792 and Bundy at this stage of the proceeding. Instead, Patent Owner appears to concede that, but for the alleged “unworkable gap,” the combination of Gilb ’792 and Bundy would teach extension flanges that extend through sheathing and otherwise satisfy the limitations of claim 1. *See* Prelim. Resp. 91 (“Further annotating Ex. 1035, FIG. 7 . . . *demonstrates the installation* were sheathing installed overlapping the ledger and base 36 . . . of the hanger *such that the gusset members 15’/22’ would extend through the sheathing.*” (emphases added)).

(5) *Summary*

For the reasons stated in the Petition at pages 37–42, Petitioner sufficiently establishes that the combination of Gilb ’792 and Bundy teaches this limitation. We are persuaded that Petitioner’s cited evidence provides sufficient rational reasons for purposes of institution to combine Gilb ’792 and Bundy to arrive at this limitation.

f) Conclusion

At this stage of the proceeding and based on the record before us, we are persuaded that Petitioner's cited evidence provides sufficient rational reasons for purposes of institution to combine Gilb '792 and Bundy with a reasonable expectation of success, and sufficiently supports Petitioner's contention that independent claim 1 is unpatentable as obvious over the combination of Gilb '792 and Bundy.

To the extent that Patent Owner attempts to refute Petitioner's obviousness showing based on allegedly different objectives or purposes of the systems of Gilb '792, Bundy, and the '867 patent (*see, e.g.*, Prelim. Resp. 90 ("Gilb '792 is entirely silent as to the use of the disclosed hanger with sheathing."), 93 ("intended application of the Gilb '792 hanger")), we are not persuaded. It is sufficient that the skilled artisan would have had a rational reason to combine Gilb '792 and Bundy to arrive at the invention of claim 1, even if the particular purpose of the invention of claim 1 is different from that of the references. *See In re Heck*, 699 F.2d 1331, 1333 (Fed. Cir. 1983) (citing *In re Gershon*, 372 F.2d 535, 538–39 (CCPA 1967)); *In re Graf*, 343 F.2d 774, 777 (CCPA 1965) ("Obviousness is not to be determined on the basis of purpose alone."). The prior art also need not have the same or similar utility as the patented invention. *In re Dillon*, 919 F.2d 688, 692–93 (Fed. Cir. 1990) (en banc) (overruling *In re Wright*, 848 F.2d 1216 (Fed. Cir. 1988)).

Accordingly, at this stage of the proceeding, we are persuaded that Petitioner has shown that it is more likely than not that independent claim 1

would have been obvious over the combined teachings of Gilb '792 and Bundy.

4. *Independent Claim 16*

Petitioner contends independent claim 16 would have been unpatentable as obvious over the combination of Gilb '792 and Bundy. Pet. 53–58. The Petition provides a detailed assessment of claim 16, with references to the Petition's analysis of claim 1, disclosures in Gilb '792 and Bundy, and the declaration testimony of Mr. Fennell. *Id.* At this stage of the proceeding, Patent Owner does not present any separate arguments that are distinct to claim 16. Rather, Patent Owner generally states the view that the alleged deficiencies in the Petition with respect to claim 1 also are applicable to claim 16. *See generally* Prelim. Resp. 49–52, 88–94. As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner's contention that independent claim 1 is unpatentable as obvious over the combination of Gilb '792 and Bundy. For the reasons set forth in the Petition (Pet. 53–58), we also are persuaded that the current record sufficiently supports Petitioner's challenges to independent claim 16 for purposes of institution.

5. *Dependent Claims 2–12, 15, 17, and 21–23*

Petitioner contends claims 2–12, 15, 17, and 21–23, which depend directly or indirectly from independent claims 1 or 16, would have been unpatentable as obvious over the combination of Gilb '792 and Bundy. Pet. 42–53, 58–59. The Petition provides a detailed assessment of these claims, with references to the Petition's analysis of claims 1 and 16, disclosures in Gilb '792 and Bundy, and the declaration testimony of

Mr. Fennell. *Id.* At this stage of the proceeding, Patent Owner does not present any separate arguments that are distinct to any of these claims. Rather, Patent Owner generally states the view that the alleged deficiencies in the Petition with respect to claim 1 also are applicable to these challenged claims. *See generally* Prelim. Resp. 49–52, 88–94. As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner’s contention that independent claims 1 and 16 are unpatentable as obvious over the combination of Gilb ’792 and Bundy. For the reasons set forth in the Petition (Pet. 42–53, 58–59), we also are persuaded that the current record sufficiently supports Petitioner’s challenges to dependent claims 2–12, 15, 17, and 21–23 for purposes of institution.

6. *Summary*

For the foregoing reasons, and the reasons stated in the Petition (Pet. 13–15, 28–59), we determine that Petitioner demonstrates that it is more likely than not that claims 1–12, 15–17, and 21–23 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Gilb ’792 and Bundy.

G. *Anticipation of Claims 1–4, 6, 10, and 11 by Timony*

Petitioner contends claims 1–4, 6, 10, and 11 are unpatentable under 35 U.S.C. § 102 as anticipated by Timony (Ex. 1008). Pet. 13–15, 59–74. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 49–52, 94–100. Based on our review of the record before us, we determine that Petitioner has established that it is more likely than not that claims 1–4, 6, 10, and 11 are unpatentable as anticipated by Timony, as discussed below. We turn first to an overview of Timony.

2. *Independent Claim 1*

- a) *“A hanger for connecting a structural component to a wall adapted to have sheathing mounted thereon, the hanger comprising:”*

The preamble of claim 1 recites “[a] hanger *for connecting a structural component to a wall adapted to have sheathing mounted thereon.*” Ex. 1001, 12:15–17 (emphasis added). Petitioner contends Timony discloses “hanger 100 connects a structural component (object 238) to a wall 110, with adequate spacing for a foam panel (i.e., sheathing).” Pet. 59 (citing Ex. 1003 ¶¶ 173–174; Ex. 1008, Abstract, Figs. 1–8, ¶¶ 34, 48). Regardless, for the reasons expressed in Section III.F.3.a above, and based on the record before us, we determine that the preamble phrase “for connecting a structural component to a wall adapted to have sheathing mounted thereon” in claim 1 is not a limitation, and find Timony discloses a “hanger,” as recited in claim 1.

- b) *“a channel-shaped portion configured to receive the structural component, the channel-shaped portion including a base configured to receive an end portion of the structural component thereon to support the structural component, the base having an upper surface configured to engage the structural component, the upper surface lying in a base plane;”*

Petitioner contends Timony discloses a channel shaped portion (support 265) configured to receive the structural component (object 238), where “support 265 is inserted between and secured to both hanging portions 260a and 260b via apertures 270 and 275.” Pet. 60–61 (citing Ex. 1003 ¶¶ 176–177; Ex. 1008, ¶¶ 38, 48, 50, Figs. 8, 9). Petitioner

contains channel-shaped portion (265) includes a base configured to receive an end portion of the structural component thereon to support the structural component, where the base is the horizontal flat portion of support 265 (i.e., the bottom of the U-shaped bracket 265). Pet. 61 (citing Ex. 1003 ¶¶ 178–179; Ex. 1008, Fig. 8, ¶ 48). Petitioner contends “Timony’s base has an upper surface configured to engage the structural component and lying in a base plane.” Pet. 62 (citing Ex. 1003 ¶¶ 180–181; Ex. 1008, Fig. 8, ¶ 48).

For the reasons stated in the Petition at pages 60–62, and based on the record before us, we find Petitioner sufficiently establishes that Timony discloses this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

- c) *“a connection portion configured for attachment to the wall, the connection portion including a back flange having an upper edge, the back flange extending from the upper edge in a direction generally toward the base plane,”*

Petitioner contends Timony discloses a connection portion (retaining portion 203) configured for attachment to the wall. Pet. 62 (citing Ex. 1003 ¶¶ 182–183; Ex. 1008, ¶ 47 (“Retrofit plate 230 has a retaining portion 203, which comprises one or more retaining apertures . . . to accommodate . . . securing means . . .”), 49 (“Retaining portion 203 is then fastened to concrete core 250.”), Fig. 8). Petitioner contends the connection portion (retaining portion 203) includes a back flange having an upper edge and that the back flange extends from the upper edge in a direction generally toward the base plane, and argues that “[w]hile Figure 8 [of Timony] illustrates the hanger in an exploded configuration, when assembled the upper surface of

support 265's base is below the extension flange.” Pet. 63 (citing Ex. 1003 ¶¶ 184–185; Ex. 1008, ¶ 49, Figs. 8, 9).

For the reasons stated in the Petition at pages 62–64, and based on the record before us, we find Petitioner sufficiently establishes that Timony discloses this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

d) *“the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another; and”*

Petitioner contends Timony discloses the connection portion (retaining portion 203) and channel-shaped portion (support 265) are in a fixed, spaced apart relation relative to one another, because “support 265 is ‘secured’ to hanging portions 260a/260b.” Pet. 64 (citing Ex. 1003 ¶¶ 186–187; Ex. 1008, ¶ 48 (“[S]upport 265 is inserted between and secured to both hanging portions 260a and 260b.”)). Petitioner contends Timony discloses “securing support 265 to hanging portion 260 of retrofit plate 230 by inserting screws or nails through aligned apertures 270, 275 so that support 265 does not move freely with respect to hanging portion 260.” Pet. 65 (citing Ex. 1008, ¶ 50; Ex. 1003 ¶ 186). Petitioner argues the skilled artisan “would have understood that the arrangement between Timony’s retaining portion 203 and support 265 is in a fixed, spaced apart relation relative to one another.” Pet. 65 (citing Ex. 1003 ¶ 186).

Patent Owner observes that, “[a]s delivered to the job site, the connection portion (retrofit plate 230) and channel-shaped portion (support (265)) of the Timony hanger are *separate parts*, and require securing the support (265) to the retrofit plate (230) ‘by inserting screws or nails through

aligned apertures 270, 275 so that support 265 does not move freely.”

Prelim. Resp. 95 (emphases added). Patent Owner argues “the components of the Timony retrofit hanger (especially the support (265)) *may be moved freely prior to securing* the hanger components and the object (238) together during installation.” *Id.* at 97 (emphasis added). Patent Owner argues “even after the support (265) is secured to the retrofit plate (230), the components still are not *permanently fixed* together as the nails or screws could later be removed allowing further movement of the components with respect to each other.” *Id.* at 97–98 (citing Ex. 2001 ¶ 217). We find Patent Owner’s argument unavailing.

Patent Owner effectively concedes that, although the relevant hanger components are not placed in “a fixed, spaced apart relation relative to one another” in a manufacturing setting, they are placed in such a relationship in the field, thus producing (so be it not in a factory) a hanger having a connection portion and channel-shaped portion in a fixed, spaced apart relation relative to one another. *See* Prelim. Resp. 95–98. Patent Owner’s point of contention here is that such components are not “permanently” fixed in such a relationship. *Id.* at 97–98. But claim 1 recites only “fixed . . . relative to one another,” not “permanently” fixed, and Patent Owner does not provide any claim construction analysis supporting the interpretation of “fixed” as used in claim 1 to mean “permanently” fixed.

For the reasons stated in the Petition at pages 64–66, and based on the record before us, we find Petitioner sufficiently establishes that Timony discloses this limitation.

- e) *“an extension portion including first and second extension flanges extending from the channel-shaped portion to the connection portion,”*

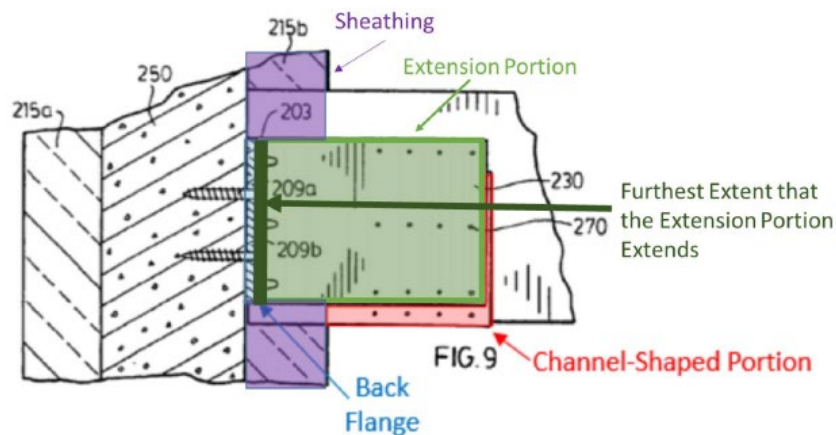
Petitioner contends Timony discloses an extension portion (retrofit plates 230a/230b and hanging portions 260a/260b) including first and second extension flanges extending from the channel-shaped portion to the connection portion. Pet. 66–67 (citing Ex. 1003 ¶¶ 188–189). Petitioner contends retrofit plates 230a/230b include hanging portion 260 that directly contacts and is secured to support 265 and extends from support 265 to retaining portion 203. Pet. 66–67 (citing Ex. 1008 ¶¶ 47–48). Petitioner argues the skilled artisan “would have understood that Timony’s retrofit plates 230a/230b having hanging portions 260a/260b correspond to the recited first and second extension flanges.” Pet. 66–67 (citing Ex. 1003 ¶ 188).

For the reasons stated in the Petition at pages 66–67, and based on the record before us, we find Petitioner sufficiently establishes that Timony discloses this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

- f) *“each extension flange being configured to extend through the sheathing,”*

Petitioner contends “[e]ach of Timony’s extension flanges (retrofit plates 230a/230b having hanging portions 260a/260b) is configured to extend through sheathing.” Pet. 67 (citing Ex. 1003 ¶¶ 190–191). Petitioner contends “retrofit plate 230 extends through outer foam wall 215b—a form of sheathing that includes foam ‘panels.’” Pet. 67 (citing Ex. 1008 ¶ 49, Figs. 8, 9).

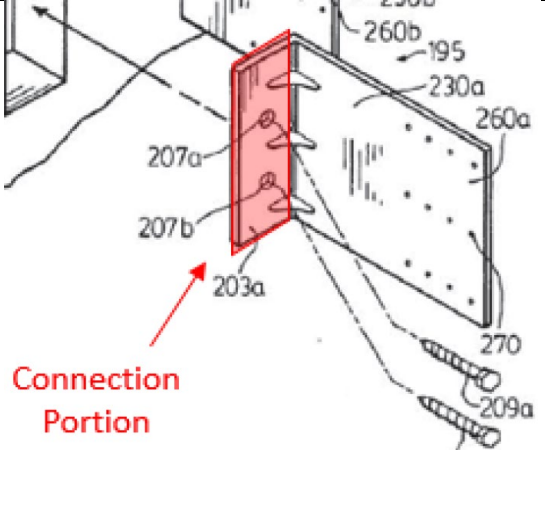
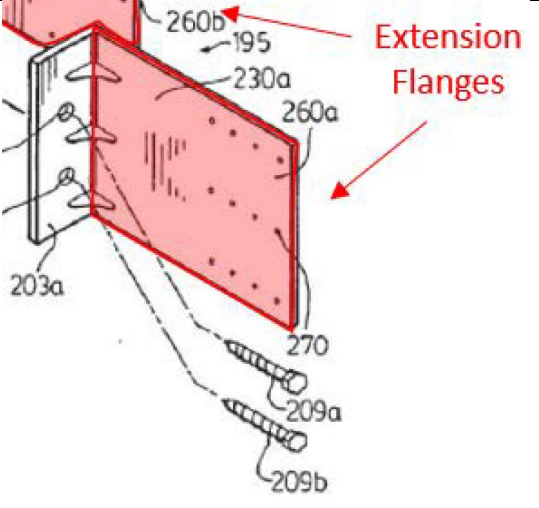
Patent Owner alleges Petitioner “is excluding the retaining portion (203a/203b) of the retrofit plate from its identification of the extension flanges.” Prelim. Resp. 98. Patent Owner alleges “[w]hile the portion of the retrofit plates 230a/230b that [Petitioner] identifies as an extension flange would extend into one side of the sheathing, . . . it would not extend out of the other side of the sheathing,” as allegedly shown, for example, in Patent Owner’s annotated version of Timony’s Figure 9, reproduced below. *Id.* at 99–100.



The above illustration shows Figure 9 of Timony as annotated by Patent Owner.

Ex. 1008, Fig. 9 (annotated); Prelim. Resp. 100. According to Patent Owner, “[Petitioner] agrees that the extension flange *stops at the front face of retaining portion 203* and does not extend all the way to the concrete core, and therefore terminates within the sheathing.” Prelim. Resp. 100. We find Patent Owner’s argument unavailing, at least at this stage of the proceeding.

We reproduce below enlarged versions of Timony’s Figure 8 as annotated by Petitioner to identify a “connection portion” and “extension flanges.”

 The left diagram shows a perspective view of a bracket assembly. A red rectangular area is highlighted on the vertical flange, labeled 'Connection Portion' with a red arrow. The assembly includes a horizontal base (260a), a vertical flange (260b), and a bracket arm (230a). Other components labeled include 195, 207a, 207b, 203a, 270, and 209a.	 The right diagram shows a perspective view of the same bracket assembly. A red rectangular area is highlighted on the vertical flange, labeled 'Extension Flanges' with a red arrow. The assembly includes a horizontal base (260a), a vertical flange (260b), and a bracket arm (230a). Other components labeled include 195, 207a, 207b, 203a, 270, and 209a.
The above illustration shows an enlarged portion of Timony's Figure 8 as annotated by Petitioner to identify a "connection portion."	The above illustration shows an enlarged portion of Timony's Figure 8 as annotated by Petitioner to identify "extension flanges."

Pet. 63, 67; Ex. 1008, Fig. 8; *see* Pet. 66 (annotated Fig. 8 showing "connection portion"). Petitioner identifies the connection portion (left figure above) as stopping short of its right edge (the corner of the "L" bracket), and the extension flange (right figure above) as running the full length of the bracket side (i.e., past the thickness of the connection portion), which aligns with Petitioner's argument discussed above that Timony's "extension flange" extends through the sheathing (outer foam wall 215b).

For the reasons stated in the Petition at pages 62–67, and based on the record before us, we find Petitioner sufficiently establishes that Timony discloses this limitation.

We understand Petitioner, in arguing anticipation of claim 6 by Timony, makes a statement that appears to contradict its foregoing identification of the extent of the "connection portion" and "extension flanges," namely: "The edge of retaining portion 203 extends *to the inner*

surface of plate 230, thereby being in opposed, spaced apart relation to the edge of support 265 disposed flush against the inner surface of retrofit plate 230.” Pet. 72–73 (emphasis added). We encourage the parties to address this potential discrepancy, as well as to construe the term “opposed” as used in the context of claim 6, in their respective trial briefs.

g) *“each extension flange lying in an extension flange plane, the extension flange planes being generally perpendicular to the base plane, the back flange and the channel-shaped portion defining a sheath space sized and shaped to receive the sheathing therein so that the channel-shaped portion is located on one side of the sheathing and the back flange is located on an opposite side of the sheathing when the hanger and sheathing are installed on the wall”*

Petitioner contends Timony discloses that each extension flange (retrofit plates 230a/230b having hanging portions 260a/260b) is generally perpendicular to the base plane. Pet. 68 (citing Ex. 1003 ¶¶ 192–193; Ex. 1008 ¶ 49, Figs. 4, 8). Petitioner argues “Timony’s retrofit plates 230a/230b maintain the same relationship with the base plane as is illustrated in the ’867 Patent.” Pet. 68 (citing Ex. 1003 ¶ 192).

Petitioner also contends Timony discloses “positioning support 265 ‘between hanging ends 260a and 260b of retrofit plates 230a and 230b,’ and locating retaining portions 203 next to the wall at opposite ends of retrofit plates 230a,b,” and “locating retaining portion 203 on an interior side of foam wall 215b and support 265 on an opposite exterior side of foam wall 215b such that foam wall 215b is between support 265 and retaining portion 203, to avoid making U-shaped slots in the foam wall.” Pet. 69–70 (citing Ex. 1008 ¶¶ 7, 47–50; Ex. 1003 ¶¶ 194–195). Petitioner argues “Timony’s

retrofit plates 230a/230b having hanging portions 260a/260b permit sheathing (foam wall 215b) to be inserted therebetween.” Pet. 69 (citing Ex. 1003 ¶¶ 194–195).

For the reasons stated in the Petition at pages 68–70, and based on the record before us, we find Petitioner sufficiently establishes that Timony discloses this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

h) Conclusion

At this stage of the proceeding and based on the record before us, we are persuaded that Petitioner’s cited evidence sufficiently supports Petitioner’s contention that independent claim 1 is unpatentable as anticipated by Timony. Accordingly, at this stage of the proceeding, we are persuaded that Petitioner has shown that it is more likely than not that independent claim 1 would have been anticipated by Timony.

3. Dependent Claims 2–4, 6, 10, and 11

Petitioner contends claims 2–4, 6, 10, and 11, which depend directly or indirectly from independent claim 1, would have been unpatentable as anticipated by Timony. Pet. 70–74. The Petition provides a detailed assessment of these claims, with references to the Petition’s analysis of claim 1, disclosures in Timony, and the declaration testimony of Mr. Fennell. *Id.* At this stage of the proceeding, Patent Owner does not present any separate arguments that are distinct to any of these claims. Rather, Patent Owner generally states the view that the alleged deficiencies in the Petition with respect to claim 1 also are applicable to these challenged claims. *See generally* Prelim. Resp. 94–100. As discussed above, we are

persuaded that the cited evidence sufficiently supports Petitioner's contention that independent claim 1 is unpatentable as anticipated by Timony. For the reasons set forth in the Petition (Pet. 70–74), we also are persuaded that the current record sufficiently supports Petitioner's challenges to dependent claims 2–4, 6, 10, and 11 for purposes of institution.

4. *Summary*

For the foregoing reasons, and the reasons stated in the Petition (Pet. 13–15, 59–74), we determine that Petitioner demonstrates that it is more likely than not that claims 1–4, 6, 10, and 11 are unpatentable under 35 U.S.C. § 102 as anticipated by Timony.

H. Obviousness of Claims 5, 7–9, 12, 15–17, and 21–23 Over Timony and Bundy

Petitioner contends claims 5, 7–9, 12, 15–17, and 21–23 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Timony (Ex. 1008) and Bundy (Ex. 1007). Pet. 13–15, 75–89. Claim 16 is an independent claim reciting structure commensurate in scope with structure recited in independent claim 1, and claims 5, 7–9, 12, 15, 17, and 21–23 depend directly or indirectly from independent claims 1 or 16. The Petition provides a detailed assessment of these claims, with references to the Petition's analysis of claim 1, disclosures in Timony and Bundy, and the declaration testimony of Mr. Fennell. Pet. 13–15, 75–89. Similar to its case for combining the teachings of Gilb '792 and Bundy (*see* Section III.F.3.e.4, *supra*), Petitioner also evidences sufficient rational reasons for purposes of institution to combine Timony and Bundy, and to do so with a reasonable expectation of success. Pet. 75–77 (citing, *inter alia*, Ex. 1003 ¶¶ 208–211).

At this stage of the proceeding, Patent Owner does not present any separate arguments that are distinct to any of these claims. Rather, Patent Owner generally states the view that the alleged deficiencies in the Petition with respect to claim 1 also are applicable to these challenged claims. *See generally* Prelim. Resp. 94–100. As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner’s contention that independent claim 1 is unpatentable as anticipated by Timony. For the reasons set forth in the Petition (Pet. 13–15, 75–89), we also are persuaded that the current record sufficiently supports Petitioner’s challenges to claims 5, 7–9, 12, 15–17, and 21–23 under 35 U.S.C. § 103 as obvious over the combination of Timony and Bundy for purposes of institution.

Accordingly, for the foregoing reasons and those stated in the Petition (Pet. 13–15, 75–89), we determine that Petitioner demonstrates that it is more likely than not that claims 5, 7–9, 12, 15–17, and 21–23 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Timony and Bundy.

I. Obviousness of Claims 1–12, 15–17, and 21–23 Over Tsukamoto and Bundy

Petitioner contends claims 1–12, 15–17, and 21–23 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Tsukamoto (Ex. 1009) and Bundy (Ex. 1007). Pet. 13–15, 89–120. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 49–52, 100–108. Based on our review of the record before us, we determine that Petitioner has established that it is more likely than not that claims 1–12, 15–17, and 21–23

are unpatentable as obvious over the combination of Tsukamoto and Bundy, as discussed below. We turn first to an overview of Tsukamoto.

1. Structure Disclosed by Tsukamoto (Ex. 1009)

Tsukamoto generally is directed to a “beam hanger” for connecting a beam to a wall, as shown, for example, in Figure 5, reproduced below.

Ex. 1009, 1–3, Fig. 5.

FIG. 5

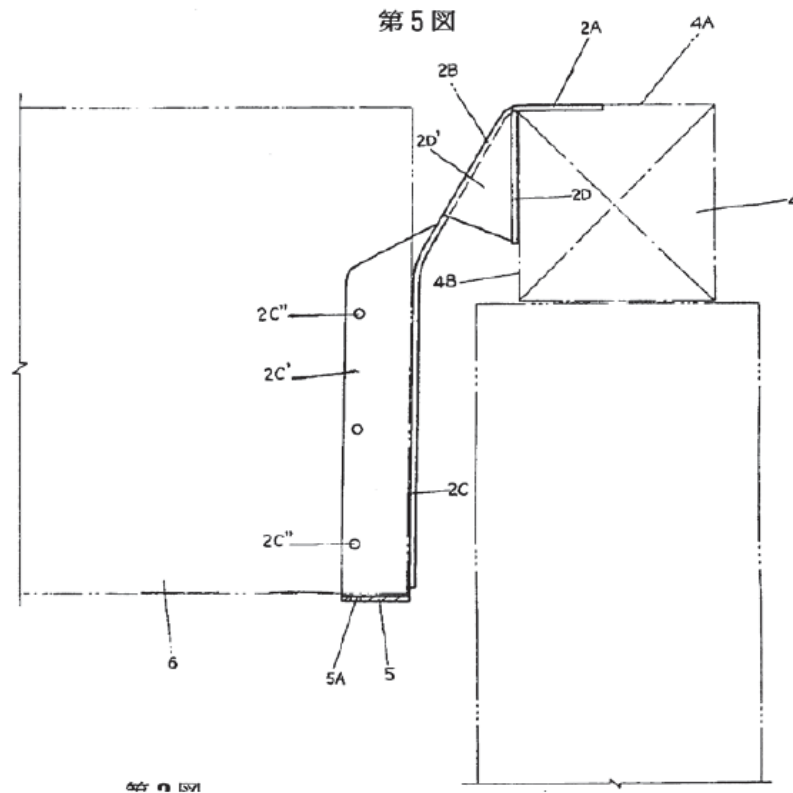


Figure 5 of Tsukamoto is a cross-sectional view of a beam hanger connecting a beam to a wall.

Id. at 3. Petitioner contends “Tsukamoto discloses every structural component listed in claim 1 of the ’867 Patent, but does not explicitly disclose that its spacing is ‘sized and shaped to receive the sheathing

therein,” for which Petitioner turns to Bundy. Pet. 89. We turn to the limitations recited in independent claim 1.

2. *Independent Claim 1*

- a) *“A hanger for connecting a structural component to a wall adapted to have sheathing mounted thereon, the hanger comprising:”*

The preamble of claim 1 recites “[a] hanger *for connecting a structural component to a wall adapted to have sheathing mounted thereon.*” Ex. 1001, 12:15–17 (emphasis added). Petitioner contends Tsukamoto discloses a hanger for connecting a structural component to a wall. Pet. 92–93 (citing Ex. 1003 ¶¶ 254–257; Ex. 1009, 2, Figs. 1–6). Regardless, for the reasons expressed in Section III.F.3.a above, and based on the record before us, we determine that the preamble phrase “for connecting a structural component to a wall adapted to have sheathing mounted thereon” in claim 1 is not a limitation, and find Tsukamoto discloses a “hanger,” as recited in claim 1.

- b) *“a channel-shaped portion configured to receive the structural component, the channel-shaped portion including a base configured to receive an end portion of the structural component thereon to support the structural component, the base having an upper surface configured to engage the structural component, the upper surface lying in a base plane;”*

Petitioner contends Tsukamoto discloses a channel-shaped portion (beam receiving plate 5 and beam holding side plates 2C’/3C’) configured to receive a structural component (beam). Pet. 93 (citing Ex. 1003 ¶¶ 258–259; Ex. 1009, 3, Figs. 1–6). Petitioner contends the channel-shaped portion

includes a base (beam receiving plate 5) configured to receive an end portion of the structural component thereon to support the structural component.

Pet. 94 (citing Ex. 1003 ¶¶ 260–261; Ex. 1009, 3 (“Reference numeral 5 is a plate for receiving the beam which bridges horizontally between lower ends of holding plates 2C’/3C’.”)). Petitioner contends the base (receiving plate 5) has an upper surface configured to engage the structural component, and argues that “[b]ecause the two-dimensional upper surface of receiving plate 5 is flat, the surface defines a plane in which it lies.” Pet. 95 (citing Ex. 1009, 2–3, Fig. 3; Ex. 1003 ¶¶ 262–263).

For the reasons stated in the Petition at pages 93–96, and based on the record before us, we find Petitioner sufficiently establishes that Tsukamoto teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

- c) *“a connection portion configured for attachment to the wall, the connection portion including a back flange having an upper edge, the back flange extending from the upper edge in a direction generally toward the base plane,”*

Petitioner contends Tsukamoto discloses a connection portion (horizontal portions 2A/3A and vertical plates 2D/3D) configured for attachment to a wall. Pet. 96 (citing Ex. 1003 ¶¶ 264–266; Ex. 1009, 2 (“The horizontal portions 2A,3A abut a top surface 4A of base 4, and the vertical plates 2D/3D abut a side surface 4B of the base 4.”), Fig. 5).

Petitioner argues the skilled artisan “would have understood that Tsukamoto’s vertical plates 2D/3D correspond to the recited ‘connection portion.’” Pet. 97 (citing Ex. 1003 ¶ 265). Petitioner contends the

connection portion includes a back flange (vertical plates 2D/3D) having an upper edge and that the back flange extends from the upper edge in a direction generally toward the base plane. Pet. 97–98 (citing Ex. 1003 ¶¶ 267–268; Ex. 1009, Fig. 1).

For the reasons stated in the Petition at pages 96–98, and based on the record before us, we find Petitioner sufficiently establishes that Tsukamoto teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

- d) *“the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another; and”*

Petitioner contends Tsukamoto discloses the connection portion (vertical plates 2D/3D and horizontal portions 2A/3A) and channel-shaped portion (e.g., holding plates 2C'/3C') are in a fixed, spaced apart relation relative to one another. Pet. 98–99 (citing Ex. 1003 ¶¶ 269–270; Ex. 1009, 2–3, Fig. 3).

For the reasons stated in the Petition at pages 98–99, and based on the record before us, we find Petitioner sufficiently establishes that Tsukamoto teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

- e) *“an extension portion including first and second extension flanges extending from the channel-shaped portion to the connection portion,”*

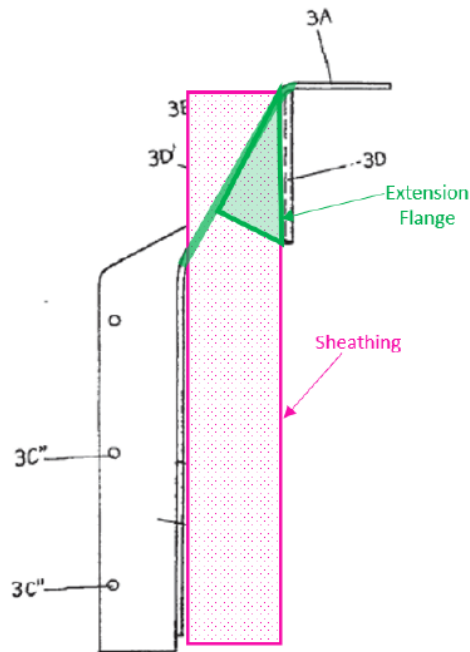
Petitioner contends Tsukamoto discloses an extension portion (inclined portion 2B/3B with connection plate 2D'/3D') including first and second extension flanges (inclined portion 2B/3B with connection plate

2D'/3D') extending from the channel-shaped portion (holding plates 2C'/3C') to the connection portion (vertical plate 2D/3D). Pet. 99–100 (citing Ex. 1003 ¶¶ 271–273; Ex. 1009, Fig. 3). Petitioner argues the skilled artisan “would have understood that Tsukamoto’s connection plates 2D'/3D' and inclined portions 2B/3B collectively correspond to the recited first and second extension flanges.” Pet. 100 (citing Ex. 1003 ¶ 272).

For the reasons stated in the Petition at pages 99–100, and based on the record before us, we find Petitioner sufficiently establishes that Tsukamoto teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding, except as discussed below concerning the limitation “each extension flange lying in an extension flange plane, the extension flange planes being generally perpendicular to the base plane.”

f) *“each extension flange being configured to extend through the sheathing,”*

Petitioner contends the combination of Tsukamoto and Bundy teaches each extension flange (connection plates 2D'/3D' with inclined portions 2B/3B) being configured to extend through sheathing, as shown, for example, in Tsukamoto’s Figure 3 as annotated by Petitioner, reproduced below. Pet. 100–101 (citing Ex. 1003 ¶¶ 274–276); Ex. 1009, Fig. 3.



The above illustration shows Figure 3 of
Tsukamoto as annotated by Petitioner.

Ex. 1009, Fig. 3 (annotated); Pet. 101. Petitioner argues that, although “Tsukamoto does not explicitly disclose extending connection plates 2D’/3D’ and inclined portions 2B/3B through sheathing,” the skilled artisan “would have found it obvious to use Tsukamoto’s hanger with sheathing, as applying a known technique (Bundy’s use with drywall) for a known device (Tsukamoto’s hanger), yielding the predictable result of ‘cover[ing] and protect[ing] the structural members of a building.’” Pet. 101 (citing Ex. 1007, 5:18–20; Ex. 1009, 2–3; Ex. 1003 ¶ 275). Petitioner argues that because Tsukamoto’s connection plates 2D’/3D’ and inclined portions 2B/3B are constructed as a continuous metal sheet, the skilled artisan “would have understood that Tsukamoto’s extension flange is configured to extend into one side of sheathing and out of the other side of sheathing,” and

“had an expectation of success extending Tsukamoto’s connection plates 2D’/3D’ and inclined portions 2B/3B through the sheathing.” Pet. 101–102 (citing Ex. 1003 ¶ 275). Petitioner provides additional explanation of reasons for combining the teachings of Tsukamoto and Bundy at pages 90–92 of the Petition. Pet. 90–92.

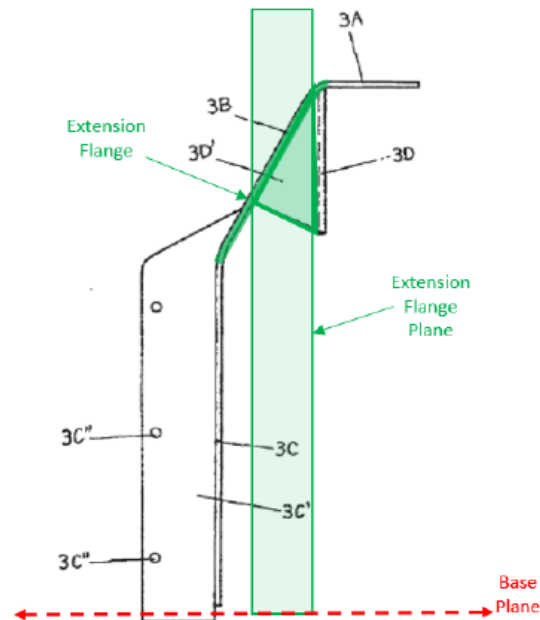
Patent Owner argues that Petitioner’s arguments here “merely suggest modifying the Tsukamoto hanger such that it would be *capable of* extending through sheathing,” and “there is no evidence that Tsukamoto was ever contemplated for use with sheathing, much less ‘designed to’ or ‘meant to’ extend through sheathing.” Prelim. Resp. 101–102 (citing Ex. 2001 ¶¶ 233–236). Patent Owner also argues “neither Tsukamoto, nor Bundy, disclose an ‘extension flange being configured to extend through the sheathing.’” *Id.* at 102 (citing Ex. 2001 ¶¶ 237–238). As with this same argument applied to Gilb ’792 by Patent Owner, we find it unavailing here too. *See* Section III.F.3.e.1, *supra*. Moreover, Patent Owner argues against Tsukamoto and Bundy individually, but does not address their combined teachings as argued and evidenced by Petitioner. The test for obviousness is not whether the claimed invention is expressly suggested in any one or all of the references, as argued by Patent Owner, but whether the claimed subject matter would have been obvious to those of ordinary skill in the art *in light of the combined teachings of those references*. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981); *In re Burckel*, 592 F.2d 1175, 1179 (CCPA 1979) (“[A] reference must be considered not only for what it expressly teaches, but also for what it fairly suggests.”). We also again note that, although Patent Owner argues the Tsukamoto hanger needs some “modification” such

that it would be capable of extending through sheathing, Patent Owner does not identify any such “modification” that would be needed for the disclosed structure of the Tsukamoto hanger to do so, where an installer chooses to install such sheathing.

For the reasons stated in the Petition at pages 90–92 and 100–102, and based on the record before us, we find Petitioner sufficiently establishes that the combination of Tsukamoto and Bundy teaches this limitation. We are persuaded that Petitioner’s cited evidence provides sufficient rational reasons for purposes of institution to combine Tsukamoto and Bundy to arrive at this limitation.

g) *“each extension flange lying in an extension flange plane, the extension flange planes being generally perpendicular to the base plane,”*

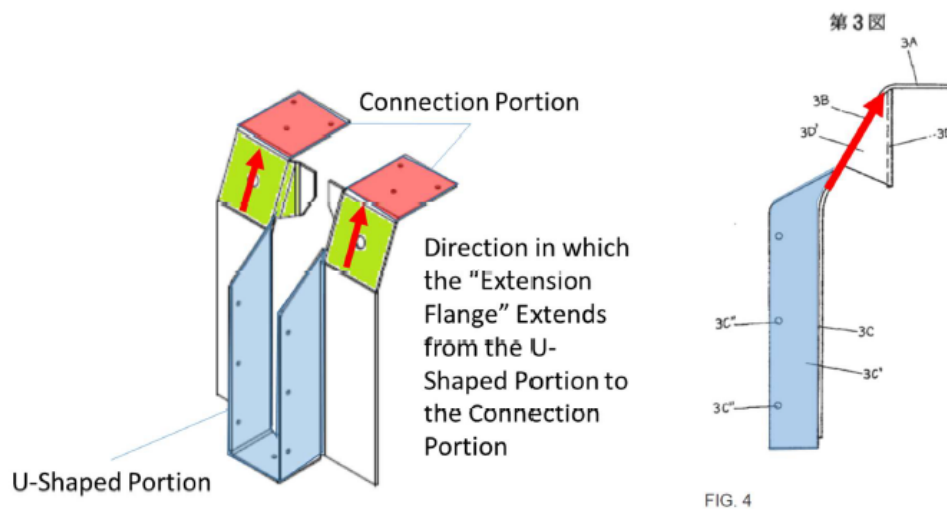
Petitioner contends Tsukamoto discloses that “each extension flange has a surface (connection plates 2D’/3D’) that lies in a plane, the planes being generally perpendicular to the base plane,” as shown, for example, in Tsukamoto’s Figure 3 as annotated by Petitioner, reproduced below.
Pet. 102 (citing Ex. 1003 ¶¶ 277–278; Ex. 1009, 2–3, Figs. 1–6).



The above illustration shows Figure 3 of
Tsukamoto as annotated by Petitioner.

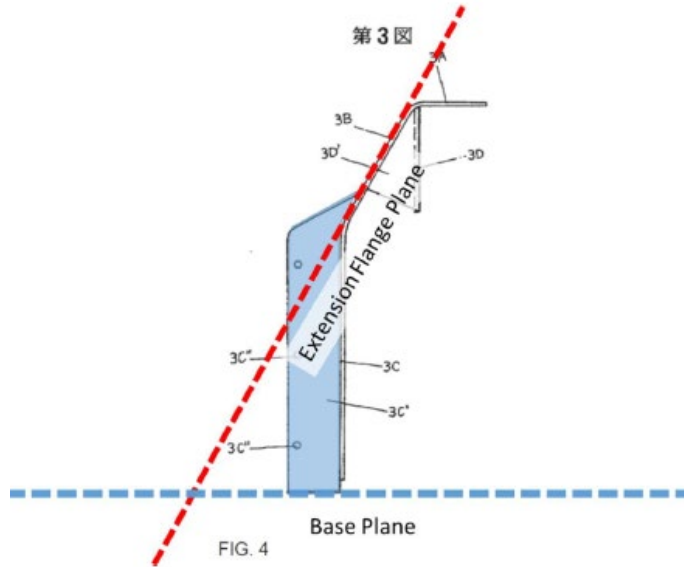
Ex. 1009, Fig. 3 (annotated); Pet. 102.

Patent Owner argues that for each set of Tsukamoto's inclined portions 2B/3B and respective connection plates 2D'/3D', the skilled artisan "would have considered each of the inclined portions (2B/3B) and connection plates (2D'/3D') to be separate flanges"; and regardless, "to the extent each set of the inclined portion (2B/3B) and connection plate (2D'/3D') could be considered as a single flange, the extent of the 'flange' as it extends from the channel-shaped portion to the connection portion would be along the inclined portion (2B/3B)," as shown, for example, in Patent Owner's illustrations of Tsukamoto's hanger, reproduced below. Prelim. Resp. 102–104 (citing Ex. 2001 ¶¶ 241–243).



The above illustrations show Patent Owner's interpretation of Tsukamoto's hanger.

Prelim. Resp. 104; Ex. 1009, Fig. 4 (annotated). Patent Owner argues "[Petitioner's] identification of an extension flange would result [sic] not result in an 'extension flange plane' that is perpendicular to the 'base plane,'" as shown, for example, in Patent Owner's annotated version of Tsukamoto's Figure 4, reproduced below. Prelim. Resp. 104–105 (citing Ex. 2001 ¶ 244; Ex. 1009, Fig. 4).



The above illustration shows Figure 4 of Tsukamoto as annotated by Patent Owner.

Prelim. Resp. 105; Ex. 1009, Fig. 4 (annotated). We find Patent Owner's argument unavailing.

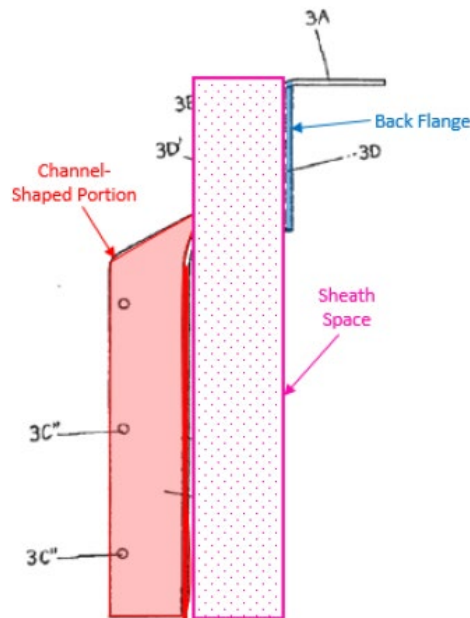
Having argued that the skilled artisan “would have considered each of the inclined portions (2B/3B) and connection plates (2D’/3D’) to be separate flanges” (Prelim. Resp. 103), Patent Owner does not meaningfully address Petitioner’s argument (Pet. 102) that Tsukamoto’s *connection plates* 2D’/3D’ each lie in a plane that is generally perpendicular to the base plane. Indeed, in its rendering of Tsukamoto’s hanger (reproduced above), Patent Owner identifies the “connection portion” in Tsukamoto as only the top flanges (i.e., horizontal portions 2A/3A) (colored in red) and addresses Tsukamoto’s inclined portions 2B/3B as extension flanges, but ignores that Petitioner argues Tsukamoto’s vertical plates 2D/3D also are part of the “connection portion.” See Pet. 97 (citing Ex. 1003 ¶ 265) (arguing the skilled artisan “would have understood that Tsukamoto’s vertical plates

2D/3D correspond to the recited ‘connection portion’”). Patent Owner does not explain why Petitioner’s designated extension flanges in Tsukamoto may not lay in more than one plane (under Patent Owner’s construction thereof), and more particularly, why there is no plane within the extent of Tsukamoto’s connection plates 2D’/3D’ from the channel-shaped portion to the connection portion (i.e., vertical plates 2D/3D).

For the reasons stated in the Petition at page 102, and based on the record before us, we find Petitioner sufficiently establishes that Tsukamoto teaches this limitation.

- h) *“the back flange and the channel-shaped portion defining a sheath space sized and shaped to receive the sheathing therein so that the channel-shaped portion is located on one side of the sheathing and the back flange is located on an opposite side of the sheathing when the hanger and sheathing are installed on the wall”*

Petitioner contends the combination of Tsukamoto and Bundy teaches the back flange (vertical plates 2D/3D) and the channel-shaped portion (holding plates 2C’/3C’) defining a sheath space sized and shaped to receive the sheathing therein so that the channel-shaped portion (holding plates 2C’/3C’) is located on one side of the sheathing, and the back flange (vertical plates 2D/3D) is located on an opposite side of the sheathing when the hanger and sheathing are installed on the wall, as shown, for example, in Tsukamoto’s Figure 3 as annotated by Petitioner, reproduced below. Pet. 103 (citing Ex. 1003 ¶¶ 279–281; Ex. 1009, Fig. 3).



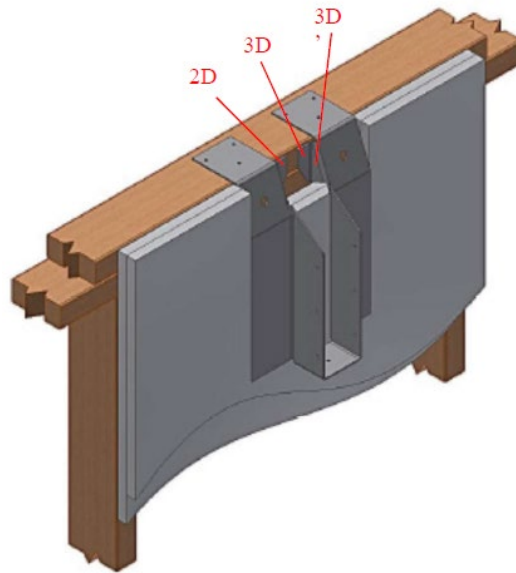
The above illustration shows Figure 3 of Tsukamoto as annotated by Petitioner.

Ex. 1009, Fig. 3 (annotated); Pet. 104.

Petitioner argues that, although “Tsukamoto does not explicitly disclose installing sheathing in the space between Tsukamoto’s holding plates 2C’/3C’ and vertical plates 2D/3D,” the skilled artisan “would have found it obvious to size such a space to receive sheathing based on Bundy.” Pet. 104 (citing Ex. 1003 ¶ 280). Petitioner contends Bundy discloses installing two layers of 5/8" sheathing between a hanger’s channel shaped portion (Bundy’s side members 11) and wall frame “to cover and protect the structural members of a building.” Pet. 104 (citing Ex. 1007, 5:18–20; Ex. 1003 ¶ 280). Petitioner argues the skilled artisan would have had an expectation of success in defining a sheath-sized space as taught by Bundy between Tsukamoto’s holding plates 2C’/3C’ and vertical plates 2D/3D, “because Tsukamoto’s and Bundy’s hangers are used for similar purposes

(e.g., hanging a structural object to a wall) and Tsukamoto's holding plates 2C'/3C' and vertical plates 2D/3D already define a space therebetween." Pet. 104–105 (citing Ex. 1003 ¶ 280; Ex. 1007, 4:46–53; Ex. 1009, 1–3).

Patent Owner argues Tsukamoto's "vertical plates (2D/3D) do not define any part of the sheathing space sized and shaped to receive the sheathing (to the extent Tsukamoto's hanger receives sheathing at all)." Prelim. Resp. 107 (citing Ex. 2001 ¶ 251). According to Patent Owner, this is so because a rendering of Tsukamoto's hanger (modified in view of Bundy), reproduced below, used by Petitioner in PGR2019-00063 does not show sheathing adjacent the vertical plates. *Id.* at 107.



The above illustration is a rendering of the combination of Tsukamoto and Bundy prepared by Petitioner in PGR2019-00063.

Prelim. Resp. 107. We find Patent Owner's argument unavailing.

But for the fortuity of Petitioner's above rendering for purposes of another case, Patent Owner provides no explanation as to why the sheathing

in the above rendering, for purposes of this case, could not pass over Tsukamoto's vertical plates 2D/3D, such as, for example, by cutting two generally rectangular openings or notches in the sheathing as shown below:



See id. at 108 (Patent Owner arguing Petitioner has taken the position that openings in sheathing would be “generally rectangular with straight edges to fit around a hanger.”). Given that claim 1 does not require sheathing, let alone sheathing installed in any specific manner around the hanger, we also note that Patent Owner does not explain why sheathing must pass over the back flange in order for the back flange to *define* structurally a sheath space or to be *located* structurally on a side of the sheathing.

For the reasons stated in the Petition at pages 90–92 and 103–105, and based on the record before us, we find Petitioner sufficiently establishes that the combination of Tsukamoto and Bundy teaches this limitation. We are persuaded that Petitioner's cited evidence provides sufficient rational reasons for purposes of institution to combine Tsukamoto and Bundy to arrive at this limitation.

i) Conclusion

At this stage of the proceeding and based on the record before us, we are persuaded that Petitioner's cited evidence provides sufficient rational reasons for purposes of institution to combine Tsukamoto and Bundy with a reasonable expectation of success, and sufficiently supports Petitioner's contention that independent claim 1 is unpatentable as obvious over the combination of Tsukamoto and Bundy. Accordingly, at this stage of the proceeding, we are persuaded that Petitioner has shown that it is more likely

than not that independent claim 1 would have been obvious over the combined teachings of Tsukamoto and Bundy.

3. Independent Claim 16

Petitioner contends independent claim 16 would have been unpatentable as obvious over the combination of Tsukamoto and Bundy. Pet. 115–120. The Petition provides a detailed assessment of claim 16, with references to the Petition’s analysis of claim 1, disclosures in Tsukamoto and Bundy, and the declaration testimony of Mr. Fennell. *Id.* At this stage of the proceeding, Patent Owner does not present any separate arguments that are distinct to claim 16. Rather, Patent Owner generally states the view that the alleged deficiencies in the Petition with respect to claim 1 also are applicable to claim 16. *See generally* Prelim. Resp. 49–52, 100–108. As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner’s contention that independent claim 1 is unpatentable as obvious over the combination of Tsukamoto and Bundy. For the reasons set forth in the Petition (Pet. 115–120), we also are persuaded that the current record sufficiently supports Petitioner’s challenges to independent claim 16 for purposes of institution.

4. Dependent Claims 2–12, 15, 17, and 21–23

Petitioner contends claims 2–12, 15, 17, and 21–23, which depend directly or indirectly from independent claims 1 or 16, would have been unpatentable as obvious over the combination of Tsukamoto and Bundy. Pet. 105–115, 120. The Petition provides a detailed assessment of these claims, with references to the Petition’s analysis of claims 1 and 16, disclosures in Tsukamoto and Bundy, and the declaration testimony of

Mr. Fennell. *Id.* At this stage of the proceeding, Patent Owner does not present any separate arguments that are distinct to any of these claims. Rather, Patent Owner generally states the view that the alleged deficiencies in the Petition with respect to claim 1 also are applicable to these challenged claims. *See generally* Prelim. Resp. 49–52, 100–108. As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner’s contention that independent claims 1 and 16 are unpatentable as obvious over the combination of Tsukamoto and Bundy. For the reasons set forth in the Petition (Pet. 105–115, 120), we also are persuaded that the current record sufficiently supports Petitioner’s challenges to dependent claims 2–12, 15, 17, and 21–23 for purposes of institution.

5. *Summary*

For the foregoing reasons, and the reasons stated in the Petition (Pet. 13–15, 89–120), we determine that Petitioner demonstrates that it is more likely than not that claims 1–12, 15–17, and 21–23 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Tsukamoto and Bundy.

IV. CONCLUSION

Based on the evidence before us, we determine that Petitioner has established that it is more likely than not that at least claims 1–12, 15–17, and 21–23 of the ’867 patent are unpatentable. Accordingly, we institute trial on all the challenges in the Petition.

At this stage of the proceeding, the Board has not made a final determination on the construction of any claim term or the patentability of any challenged claim.

V. ORDER

Upon consideration of the record before us, it is:

ORDERED that, pursuant to 35 U.S.C. § 324, a post-grant review of claims 1–23 of the '867 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 324 and 37 C.F.R. § 42.4(b), post-grant review of the '867 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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