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Paper 7
Entered: March 22, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SIMPSON STRONG-TIE COMPANY INC.,
Petitioner,

v.

COLUMBIA INSURANCE COMPANY,
Patent Owner.

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PGR2023-00048
Patent 11,649,626 B2

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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*

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e) "[1.3A] an extension portion including a first extension flange extending from the back flange of the connection portion to the channel-shaped portion"..... 35

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# I. INTRODUCTION

Simpson Strong-Tie Company Inc. ("Petitioner") filed a Petition (Paper 3, "Pet." or "–00048 Petition") requesting a post-grant review of claims 1, 22–27, 39–45, 50–53, 74–79, 92–98, and 103–105 ("Challenged Claims") of U.S. Patent No. 11,649,626 B2 (Ex. 1001, "the '626 patent").[1,2] Columbia Insurance Company ("Patent Owner") did not file a Preliminary Response to the Petition.

We have authority to determine whether to institute a post-grant review. 35 U.S.C. § 324(c) (2018); 37 C.F.R. § 42.4(a) (2023). 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 (as noted above, Patent Owner did not file a Preliminary Response), we determine that Petitioner has established that it is more likely than not that at least one claim of the '626 patent is

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[1] A Certificate of Correction issued on June 13, 2023, concerning claims 42, 52, 84, 95, and 105 of the '626 patent. Ex. 1001 (last page).

[2] Petitioner concurrently filed *three* Petitions collectively requesting post-grant review of claims 1–105 (i.e., all claims) of the '626 patent, namely, PGR2023-00047, PGR2023-00048, and PGR2023-00049. *See* Paper 1. We decline to exercise our discretion to deny institution of post-grant review as to any of these three Petitions due to the multiple petitions themselves, as discussed below in Section III.

unpatentable. Accordingly, we institute a post-grant review as to the Challenged Claims of the '626 patent on all grounds raised in the Petition.

## II. BACKGROUND

### *A. Real Parties in Interest*

Petitioner identifies itself and its parent company, Simpson Manufacturing Co., Inc., as real parties in interest. Pet. 183.

Patent Owner states:

> [Patent Owner] is a subsidiary of BH Columbia, Inc., which is a subsidiary of Berkshire Hathaway Inc.
>
> MiTek Inc. is the exclusive licensee of the '626 patent. MiTek Inc. is a subsidiary of MiTek Holdings, Inc., which is a subsidiary of MiTek Industries, Inc., which is a subsidiary of Berkshire Hathaway Inc.

Paper 4, 2.

### *B. Related Matters*

The parties identify the '626 patent as a continuation of U.S. Patent No. 11,021,867 B2 ("the '867 patent"). Pet. 183; Paper 4, 2–3. The '867 patent was involved in post-grant proceeding *Simpson Strong-Tie Company Inc. v. Columbia Insurance Company*, PGR2021-00109, Paper 73 (PTAB Mar. 15, 2023), which is on appeal in *Simpson Strong-Tie Company Inc. v. Columbia Insurance Company*, Appeal No. 23-1944, in the U.S. Court of Appeals for the Federal Circuit. The '626 patent and '867 patent are involved in a civil action in *Columbia Insurance Company et al. v. Simpson Strong-Tie Company Inc.*, No. 4:23-cv-02432 (N.D. Cal.) ("the '626 Litigation"). Pet. 183; Paper 4, 2–3. The '626 patent also is involved in PGR2023-00047 ("the –00047 Petition") and PGR2023-00049 ("the

–00049 Petition"), which Petitioner filed concurrently with this case. Paper 1, 1; Paper 4, 2–3.

The parties identify the '867 patent as a continuation of U.S. Patent No. 10,316,510 ("the '510 patent"). Pet. 183; Paper 4, 3. 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), and our Final Written Decision in that case was affirmed by the Federal Circuit. *See Columbia Ins. Co. v. Simpson Strong-Tie Co. Inc.*, Nos. 2021-2145, 2021-2157, 2023 WL 2733427, at *1 (Fed. Cir. Mar. 31, 2023); Pet. 183; Paper 4, 3. 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.). Paper 4, 3.

Patent Owner also identifies U.S. Patent Application No. 18/112,843, filed February 22, 2023, as claiming benefit of the '626 patent. Paper 4, 3. We note that this application issued as U.S. Patent No. 11,920,339 B2 on March 5, 2024. We also note that Patent Owner filed U.S. Patent Application No. 18/492,460 on October 23, 2023, which is a continuation of the '843 application, and filed U.S. Patent Application No. 18/520,333 on November 27, 2023, which is a continuation of the preceding '460 application.[3]

*C. The '626 Patent*

The '626 patent is titled "Hanger For Fire Separation Wall," and issued on May 16, 2023, from U.S. Application No. 17/235,349, filed

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

April 20, 2021. Ex. 1001, codes (10), (21), (22), (45), (54). The '626 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 '626 patent generally relates to "a truss hanger for connecting a truss to a wall including fire retardant sheathing." Ex. 1001, 1:21–22. Figure 2 of the '626 patent is reproduced below.

FIG. 2

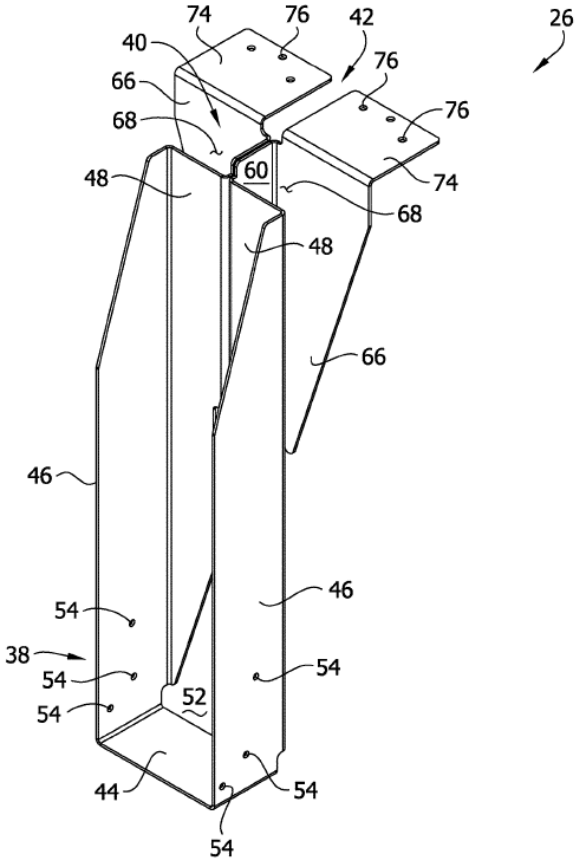



Figure 2 is a perspective view of a truss hanger. *Id.* at 2:59–60.

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 '626 patent, reproduced below. Ex. 1001, 5:32–41.

FIG. 10

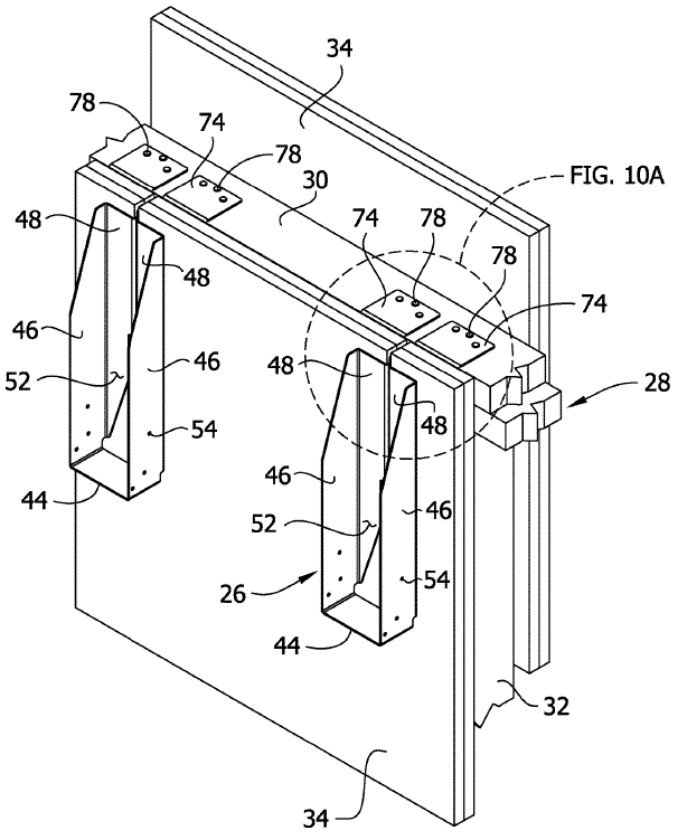



Figure 10 is a perspective view of wall 28 having fire retardant sheathing 34 with a slot cut in the sheathing to receive truss hanger 26.

*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 '626 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 '626 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, 1:26–42.

*D. Illustrative Claim*

The '626 patent includes 105 claims, of which claims 1, 22–27, 39–45, 50–53, 74–79, 92–98, and 103–105 are challenged in this case. Petitioner challenges the remaining claims in concurrently filed PGR2023-00047 and PGR2023-00049. Claims 1 and 53 are independent claims. Claim 1 is illustrative and reproduced below with labels, such as "[1.1]," added to limitations in the same manner as used by Petitioner.

> 1. [1.P] A fire wall hanger for connecting a structural component to a frame wall adapted to have two layers of ⅝-inch-thick drywall mounted thereon to form a fire separation wall, the fire wall hanger comprising:
>
> [1.1] a channel-shaped portion configured to receive the structural component;
>
> [1.2A] a connection portion including a top flange arranged to engage a top surface of a top plate of the frame wall and [1.2B] a back flange extending from an edge of the top flange, the back flange arranged to engage a vertical face of the top plate of the frame wall, the back flange having a front surface lying in a back flange plane; and
>
> [1.3A] an extension portion including a first extension flange extending from the back flange of the connection portion to the channel-shaped portion, [1.3B] the extension portion spacing the channel-shaped portion from the back flange plane by a distance sized large enough to permit the two layers of ⅝-inch-thick drywall of the fire separation wall to

be received between the channel-shaped portion and the back flange plane;

[1.4] wherein the channel-shaped portion, the extension portion and the connection portion are rigidly fixed with respect to one another.

Ex. 1001, 12:14–36.

*E. Evidence of Record*

Petitioner relies on the following patent and published patent application evidence.

| Name | Patent Document | Exhibit |
|---|---|---|
| Yamaguchi | Japanese Design Patent D1213894, issued August 9, 2004 | 1041 |
| Bundy | U.S. Patent No. 9,394,680 B2, issued July 19, 2016 | 1007 |
| Cullen | U.K. Patent App. Pub. 2451853A, published February 18, 2009 | 1039 |
| Adams | European Patent Pub. 0210744B1, published February 27, 1991 | 1040 |

Pet. 1–3.

Petitioner also relies upon the Declaration of W. Andrew Fennell (Ex. 1003).

Patent Owner did not file a Preliminary Response to the Petition, and therefore, has not submitted any expert testimony or other evidence at this stage of the proceeding.

*F. Asserted Challenges to Patentability*

Petitioner challenges the patentability of claims 1, 22–27, 39–45, 50–53, 74–79, 92–98, and 103–105 of the '626 patent on the following bases. Pet. 2–3.

| Claims Challenged | 35 U.S.C. § | References |
|---|---|---|
| 1, 39–44, 53, 92–97 | 103 | Yamaguchi, Bundy |
| 22–27, 45, 50–52, 74–79, 98, 103–105 | 103 | Yamaguchi, Bundy, Adams |
| 1, 22–27, 39–45, 50–53, 74–79, 92–98, 103–105 | 103 | Cullen, Bundy |
| 1, 22–27, 39–45, 50–53, 74–79, 92–98, 103–105 | 103 | Adams, Bundy |

## III. MULTIPLE PETITIONS CHALLENGING THE '626 PATENT

On August 17, 2023, Petitioner concurrently filed three Petitions collectively requesting post-grant review of claims 1–105 (i.e., all claims) of the '626 patent, namely, PGR2023-00047 (Paper 1 (203 pages, 18,694 words)), PGR2023-00048 (Paper 3 (227 pages, 18,670 words)), and PGR2023-00049 (Paper 1 (197 pages, 18,681 words)). *See* Paper 1. Petitioner submits that the Board should institute post-grant review of all 105 claims, and thus, all three Petitions. *Id.* Given the unique circumstances of this case, the Board's experience with the '867 and '510 patents (which are directly related to the '626 patent (*see supra* Section II.B)), and the lengthy history of the parties concerning these patents before the Board and in district court, we decline to exercise our discretion to deny institution of post-grant review as to any of these three Petitions due to the multiple petitions themselves, as discussed below. Instead, we will consider each Petition on the merits.

*A. The '626 Patent's 105 Claims and the Three Petitions*

Petitioner argues the '626 patent recites an unusually large number of claims:

> The '626 patent includes 105 total claims, altogether comprising over 7,300 words and thirteen columns. The '626 patent recites only two independent claims (i.e., claims 1 and 53), each further limited by various sequences of dependent claims (e.g., claims 2–8/54–60, 9–15/61–66, 16–20/68–72, 33–35/85–88, 39–45/92–98, 47–49/100–102, and 50–52/103–105) that cover distinct features of the recited hanger.

Paper 1, 1. Petitioner argues, "not only do the '626 patent claims cover many combinations and permutations of features, but many claims also include a variety of different features and different phrasings of similar features, justifying the need for three Petitions to sufficiently address the variety of claimed aspects." *Id.* at 2. Petitioner argues, "[a]t the time of filing these three Petitions, [Petitioner] does not know which claims will be asserted against it in district court," and "[n]ot knowing which claims Patent Owner will eventually assert in district court, [Petitioner] could not reasonably fit its analysis to address the large number of claims—105 total claims—in fewer than the three Petitions." *Id.*

Petitioner argues "different sets of claims are challenged in each Petition," and that "[t]he dependent claims covering different features of the recited hanger were divided among the three Petitions without any unnecessary overlap." Paper 1, 2–3. Petitioner submits the following table showing how Petitioner groups and addresses dependent claims across the three Petitions.

| Petition | Claims | Exemplary Distinct Features |
|---|---|---|
| 1 | 1, 2–8, 16–20, 28, 46–49, 53, 54–60, 68–72, 80, 99–102 | back panels/stop directly connected to side panels and extension flanges; a first axis normal to back flange's front surface and intersecting the first side panel |
| 2 | 1, 22–27, 39–45, 50–52, 53, 74–79, 92–98, 103–105 | one-piece hanger; second back and top flanges |
| 3 | 1, 9–15, 21, 29–38, 53, 61–67, 73, 81–91 | skewed hanger; juncture at extension flanges |

*Id.* at 3. We note that, in Petitioner's table above, Petitions 1, 2, and 3 correspond to the –00047, –00048, and –00049 Petitions, respectively. *See id.* at 3–4 (further explaining allocation of dependent claims across the three Petitions).

*B. General Plastic Factors*

The Board recognizes several factors that may merit denial of institution under § 314(a) when a party files multiple or "follow-on" petitions challenging the same patent as a previous petition. *See General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 15–16 (PTAB Sept. 6, 2017) (precedential as to § II.B.4.i) ("*General Plastic*"). A "non-exhaustive list" of such factors includes:

1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;
2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;

3. whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition;
4. the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition;
5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;
6. the finite resources of the Board; and
7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

*General Plastic*, Paper 19 at 16. The *General Plastic* factors "are not dispositive, but part of a balanced assessment of all relevant circumstances in the case, including the merits." Consolidated Trial Practice Guide 58 (Nov. 2019) ("CTPG"), https://go.usa.gov/xpvPF (citing *General Plastic*, Paper 19 at 15).

Petitioner requests that the Board exercise its discretion to institute all three Petitions "because the equities favor [Petitioner] and doing so would not significantly burden the Board or Patent Owner." Paper 1, 4. Patent Owner provides no response to Petitioner's request here. We agree with Petitioner for the reasons outlined above (*see supra* Section III.A), and for completeness, address below each of the *General Plastic* factors as they apply to the circumstances of this case.

*1. Factor One*

Under the first *General Plastic* factor, we consider "whether the same petitioner previously filed a petition directed to the same claims of the same patent." *General Plastic*, Paper 19 at 16. Petitioner argues, and we agree, that "the three Petitions are not directed to all the same claims and are not cumulative" (Paper 1, 4), as shown, for example, in Petitioner's table of exemplary distinct features in each set of claims challenged in the three Petitions (*see supra* Section III.A). As Petitioner explains, the –00047 Petition challenges 34 claims not covered in the remaining Petitions; the –00048 Petition challenges 32 claims not covered in the remaining Petitions; and the –00049 Petition challenges 37 claims not covered in the remaining Petitions. Paper 1, 4. Further, prior to the day that Petitioner concurrently filed all three Petitions, Petitioner had not previously filed a petition against the '626 patent.

Accordingly, we determine that the first *General Plastic* factor does not weigh against institution.

*2. Factors Two Through Five*

Under the second, third, fourth, and fifth *General Plastic* factors, we consider, in general, whether the timing of the filing of multiple petitions presents the potential for unfairness, inefficiency, or prejudice. *See General Plastic*, Paper 19 at 16. In this case, Petitioner concurrently filed all three Petitions—there is no staggering, follow-on, or other delay in filing of the Petitions relative to one another. *See* Paper 1, 4–5. Moreover, no entity has filed a previous petition against the '626 patent, and all asserted prior art in the three Petitions was put in play on the same day. *Id.* Thus, we agree with

Petitioner that "no time has elapsed between the Petitions, and [Petitioner] has not gained any advantage by using earlier preliminary responses or institution decisions as a 'roadmap' for its Petitions" (*id.*).

Accordingly, we determine that the second, third, fourth, and fifth *General Plastic* factors do not weigh against institution.

*3. Factors Six and Seven*

Under the sixth and seventh *General Plastic* factors, we consider "the finite resources of the Board" and "the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review." *General Plastic*, Paper 19 at 16. "The sixth and seventh factors are efficiency considerations." *See* CTPG 56 (noting that the Director's discretion under § 314(a) is informed by 35 U.S.C. § 316(b), which requires "the efficient administration of the Office, and the ability of the Office to timely complete proceedings instituted under this chapter").

Petitioner argues that "there would be no excessive burden on the Board's finite resources or Patent Owner in instituting all three Petitions":

> Simpson is filing three Petitions against a patent containing 105 claims. Each Petition applies the same analysis for the two independent claims, 1 and 53, so as not to gain any advantages for these claims from the separate Petitions. While this similarity does not make the Petitions redundant due to the different claims each Petition addresses, it does minimize the burden on the Board and Patent Owner.

Paper 1, 5. Petitioner also argues that, because the three Petitions were filed on the same day, "their respective [trial] schedules may be aligned and will not hinder the Board's ability to issue a final determination within one

year of institution," particularly as these proceedings may lend themselves to consolidation. *Id.* We agree with Petitioner's above arguments. In the context of these cases, and at this juncture, we foresee no unreasonable burden on the Board in managing these three cases and timely issuing Final Written Decision(s).

Accordingly, we determine that the sixth and seventh *General Plastic* factors do not weigh against institution.

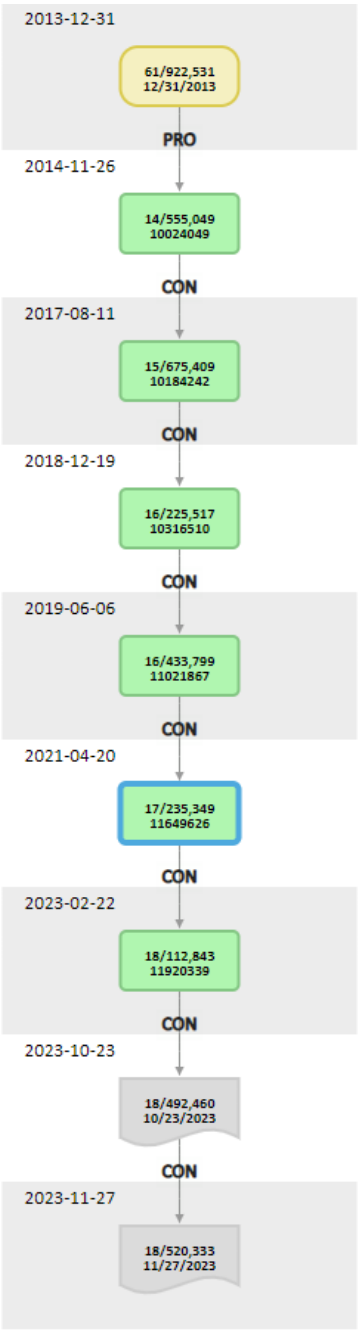
*C. Other Factors – CTPG and Merits*

Our Consolidated Trial Practice Guide explains that "one petition should be sufficient to challenge the claims of a patent *in most situations*" (CTPG 59 (emphasis added)), but does not preclude multiple petitions against the same patent if warranted:

> Two or more petitions filed against the same patent at or about the same time (e.g., before the first preliminary response by the patent owner) may place a substantial and unnecessary burden on the Board and the patent owner and could raise fairness, timing, and efficiency concerns. *See* 35 U.S.C. § 316(b). In addition, multiple petitions by a petitioner are not necessary in the vast majority of cases. To date, a substantial majority of patents have been challenged with a single petition.
>
> *Nonetheless, the Board recognizes that there may be circumstances in which more than one petition may be necessary, including, for example, when the patent owner has asserted a large number of claims in litigation* or when there is a dispute about priority date requiring arguments under multiple prior art references. In such cases two petitions by a petitioner may be needed, although this should be rare. Further, based on prior experience, the Board finds it *unlikely* that circumstances will arise where *three* or more petitions by a petitioner with respect to a particular patent will be appropriate.

CTPG 59 (emphases added). Based on our discussion above (*see supra* Sections III.A, B) and as further discussed below, we determine that Petitioner has presented us with the elusive unicorn—a scenario warranting three petitions.

The '626 patent—the subject of the three Petitions—is one of many patents and pending patent applications in a chain of continuation applications that includes the '510 and '867 patents, which were previously challenged in post-grant reviews before the Board. *See supra* Section II.B. The illustration at right depicts the continuity map for the '626 patent, as generated by the USPTO's PE2E–Docket and Application Viewer.




The Board has been considering the subject matter of the '626 patent since Petitioner requested post-grant review of the related '510 patent on September 5, 2019, i.e., for about four and a half years now. *See* PGR2019-00063, Paper 52. To date, the Board has held claims 1–20 (all claims) of the '510 patent *unpatentable*, which decision was *affirmed* on appeal to the Federal Circuit; and has held claims 1–12, 15–17, and 21–23 (but not claims 13, 14, and 18–20) of the '867 patent

*unpatentable*, which decision is pending before the Federal Circuit. *See supra* Section II.B.

While the Board was considering patentability of the claims of the '867 patent (August 13, 2021 (Petition) – March 15, 2023 (Final Written Decision)), Patent Owner prosecuted and procured the 105 claims of the '626 patent (*see* Ex. 1002 (April 20, 2021 (Filing Date) – February 28, 2023 (First Notice of Allowance) – March 20, 2023 (Second Notice of Allowance) – April 12, 2023 (Third/Final Notice of Allowance))). The 105 claims of the '626 patent amount to more than *twice* the number of claims of the '510 and '867 patents *combined*. Based on our preliminary review of the over 7,300 words and thirteen columns of claims in the '626 patent, independent claims 1 and 53 with their 103 *dependent* claims create, perhaps strategically, a spiderweb of variously defined fire wall hangers that, at their core, involve the same three primary components as in the claims of the '510 and '867 patents, namely, a channel-shaped portion, a connection portion, and an extension portion. In our view, to not consider all three Petitions, and thus all 105 claims, would cloud or potentially nullify the substantial work and patentability determinations of the Board and Federal Circuit to date. As Patent Owner's hands crafted the 105 claims of the '626 patent, Patent Owner cannot genuinely complain of any unfairness or prejudice in having to address those claims in post-grant review.

In addition, as explained below in Section V and based on the record before us, we determine that Petitioner has established that it is more likely than not that at least independent claims 1 and 53 of the '626 patent are unpatentable. Thus, the merits of the Petitions favor institution.

*D. Summary*

As discussed above, the evidence of record shows that none of the *General Plastic* or other noted factors weigh against institution. Although no single factor is dispositive, the evidence and circumstances as a whole weigh strongly in favor of institution in the three cases. As a result, we decline to exercise our discretion under § 314(a) to deny institution in any of the three Petitions.

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

Petitioner argues the Board should not exercise its discretion to deny institution of post-grant review under 35 U.S.C. § 325(d) because "grounds 2–5 [sic: 1–4] are substantially different than the art and arguments previously considered by the Office," and "[i]ndeed, each obviousness ground relies on prior-art never presented to the Patent Office during prosecution and raises arguments never considered by the Office." Pet. 8. Patent Owner itself does not request that we discretionarily deny institution here under § 325(d), but for completeness, we briefly address this matter. 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, we find the evidence of record demonstrates that Yamaguchi, Cullen, and Adams previously were not presented to the Office in this case. *See* Ex. 1001, code (56); *see generally* Ex. 1002. In addition, Petitioner argues persuasively that "[t]hese new references disclose a feature—a back flange extending from an edge of a top flange—that was deemed by the Examiner to be missing in the cited art and was the basis for the '867 patent claims remaining patentable after the FWD in the -00109 proceeding." Pet. 8. Petitioner also argues persuasively that, "[a]lthough Bundy was previously considered by the Office, Bundy is used as a secondary reference to disclose limitations—spacing a channel-shaped portion of a fire wall hanger from the wall frame to receive two layers of 5/8-inch-thick drywall and providing the channel-shaped portion with a stop—that were not material to the alleged patentability of the claims during prosecution." *Id.* Petitioner further argues persuasively that Patent Owner "made no arguments during examination against the combinations of prior-art applied" in the three Petitions (*id.* at 9).

Based on the record before us, we determine that the evidence does not demonstrate that the same or substantially the same art previously was

presented to the Office or the same or substantially the same arguments previously were presented to the Office. Because of this determination, we need not and do not consider the second prong of the *Advanced Bionics* framework. *See Advanced Bionics*, Paper 6 at 8. Accordingly, we decline to deny institution under § 325(d).

## V. PATENTABILITY

### *A. Applicable Law*

Petitioner challenges the patentability of claims 1, 22–27, 39–45, 50–53, 74–79, 92–98, and 103–105 of the '626 patent on grounds that the claims would have been obvious under 35 U.S.C. § 103 in light of various references, namely Yamaguchi, Bundy, Cullen, and Adams. 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).

A claim is unpatentable under 35 U.S.C. § 103 "if the differences between the claimed invention and the prior art are such that the claimed

invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103; *see 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."[4] *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.

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

*Id.* at 417. To reach this conclusion, however, requires more than a mere 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 '626 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. 5–6 (citing Ex. 1003 ¶¶ 12–15).

Patent Owner does not present an alternative definition at this stage of the proceeding.

In determining the level of ordinary skill in the art, various factors may be considered, including the "type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field." *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). The level of ordinary skill in the art also may be reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Neither party argues, at least at this stage of the proceeding, 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. Considering the subject matter of the '626 patent, the background technical field, the prior art, and Petitioner's proposed and unopposed definition of the skilled artisan, we apply the level of skill set forth above, which is consistent with the testimony of Mr. Fennell (Ex. 1003 ¶¶ 12–15).

*C. Claim Construction*

We construe claims "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.200(b); *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

In this context, claim terms "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in

question at the time of the invention. *Phillips*, 415 F.3d at 1312–13; *see CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (There is "a 'heavy presumption' that a claim term carries its ordinary and customary meaning."). "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 those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that "we need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

*1. PGR2019-00063*

In PGR2019-00063, which involved the '510 patent (a grandparent of the '626 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, 44–45 (PTAB Mar. 11, 2021));

(2) "*configured to extend through*" the sheathing[5]: 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.

*2. PGR2021-00109*

In PGR2021-00109, which involved the '867 patent (an immediate parent of the '626 patent), we construed certain claim limitations also relevant to this case, namely:

(1) "*each extension flange lying in an extension flange plane*": means "for each extension flange an extension flange plane is within the

[5] Petitioner argues "'sheathing,' as construed by the Board in the '510 and '867 patents, is equivalent to 'drywall' of the '626 patent." Pet. 6 n.1. We agree that "sheathing" includes "drywall."

extent of the extension flange from the channel-shaped portion to the connection portion" (*Simpson Strong-Tie Company Inc. v. Columbia Insurance Company*, PGR2021-00109, Paper 73, 31 (PTAB Mar. 15, 2023)); and

(2) "*configuring extension flanges to extend into one side and out the other side of sheathing*": configuring extension flanges to extend through sheathing, i.e., to extend into one side and out the other side of sheathing, means "the extension flanges define a space between the back flange of the connection portion and the channel-shaped portion to receive sheathing therein" (*id.* at 68; *see id.* at 56–69). We maintain these same constructions for these terms in this case for the same reasons given in PGR2021-00109.

Petitioner submits, "[g]iven the Specification is identical between the present patent and the '510 and '867 Patents (the subject of the Board's prior decisions), Petitioner applies the same construction to the same terms in the present claims." Pet. 7. Petitioner contends, "[u]nless otherwise noted, . . . the remaining claim terms should be given their plain and ordinary meaning." *Id.* (citing Ex. 1003 ¶¶ 16–20). As noted above, Patent Owner did not file a Preliminary Response, and thus has not presented any claim constructions in this case for our consideration at this stage of the proceeding.

### *D. Alleged Obviousness of Claims 1, 39–44, 53, and 92–97 over the Combination of Yamaguchi and Bundy*

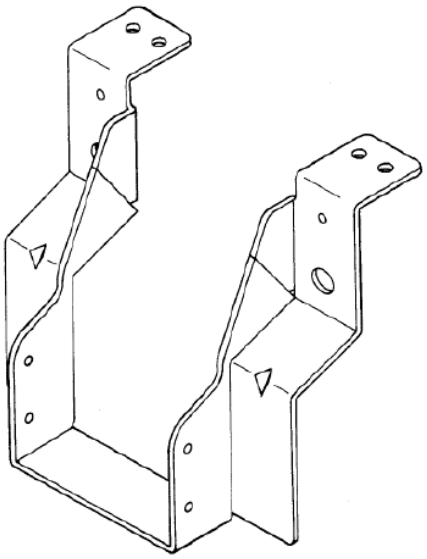
Petitioner contends claims 1, 39–44, 53, and 92–97 would have been unpatentable under 35 U.S.C. § 103 as obvious over the combination of Yamaguchi (Ex. 1041) and Bundy (Ex. 1007). Pet. 10–39. Patent Owner

did not file a Preliminary Response, and thus has not disputed Petitioner's contentions at this stage of the proceeding. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. 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, 39–44, 53, and 92–97 would have been unpatentable as obvious over the combination of Yamaguchi and Bundy, as discussed below.

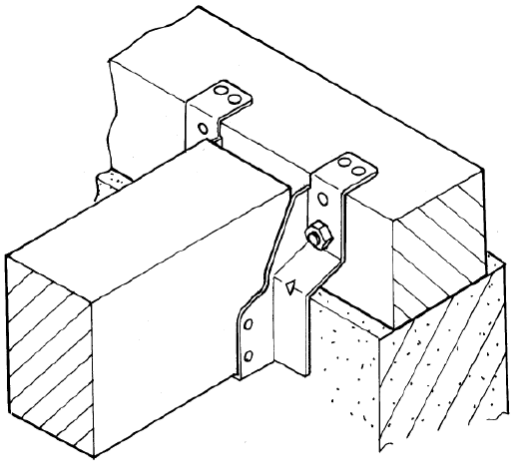
In concurrently filed PGR2023-00047, we determined already that Petitioner established that it is more likely than not that independent claims 1 and 53 would have been unpatentable as obvious over the combination of Yamaguchi and Bundy. PGR2023-00047, Paper 7. Because dependent claims 39–44 and 92–97 depend from independent claims 1 or 53 and are not addressed in PGR2023-00047, for completeness, we review below our analysis of independent claims 1 and 53 for purposes of then addressing the noted dependent claims. We again turn first to overviews of Yamaguchi and Bundy.

*1. Overview of Yamaguchi*

Yamaguchi is a Japanese design publication and generally is directed to "a joist bracket [i.e., a hanger] that is attached to [a] sill[] and bears a joist bridging the sill[] [to another sill]," as shown, for example, in a "Perspective View" (page 2) and "Reference Diagram Illustrating Usage State" view (page 5), reproduced below. Ex. 1041, 1, 2, 4, 5; *see* Pet. 16 n.2.



Perspective View



Reference Diagram Illustrating Usage State

*Id.* Yamaguchi explains that the left side of its bracket is symmetrical to the right side. *Id.* at 1.

Petitioner contends Yamaguchi discloses "each and every structural element listed in independent claims 1 and 53 but does not explicitly disclose that the space defined between its channel-shaped portion and back flange is sized large enough to receive two layers of 5/8-inch-thick drywall therein," for which Petitioner relies on Bundy. Pet. 10.

*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.

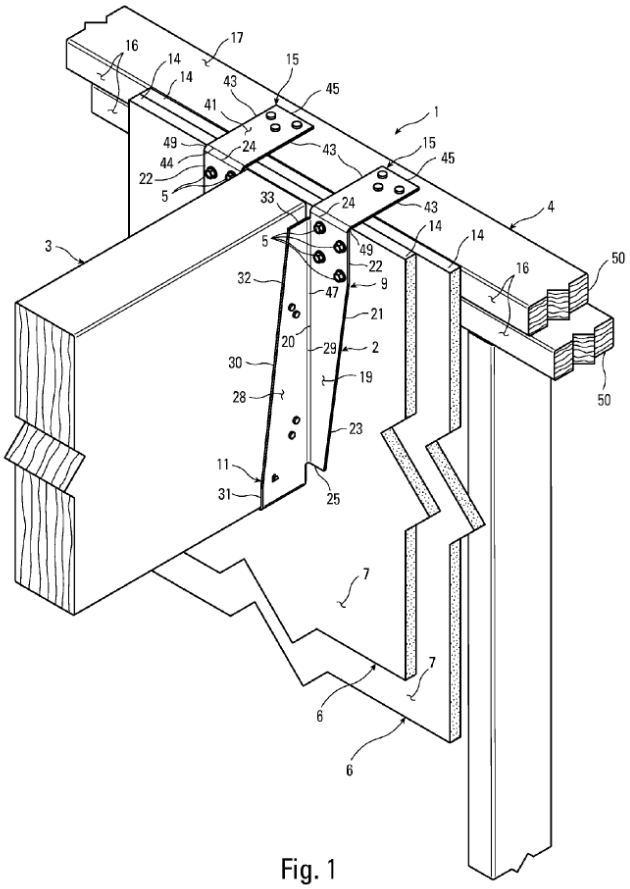



Figure 1 of Bundy is an upper right perspective view of a connection formed in which the joist hanger has a pair of top flanges.

*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 Yamaguchi and Bundy in connection with Petitioner's arguments.

*3. Independent Claim 1*

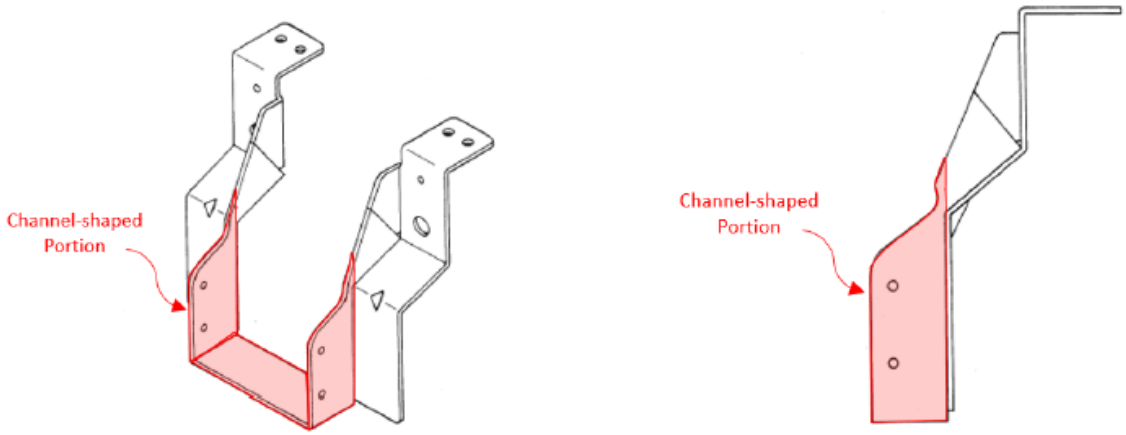
*a) "[1.P] A fire wall hanger for connecting a structural component to a frame wall adapted to have two layers of ⅝-inch-thick drywall mounted thereon to form a fire separation wall, the fire wall hanger comprising:"*

The preamble of claim 1 recites "[a] fire wall hanger for connecting a structural component to a frame wall adapted to have two layers of ⅝-inch-thick drywall mounted thereon to form a fire separation wall." Ex. 1001, 12:14–17.

Neither party at this stage of the proceeding argues that the preamble of claim 1 is limiting. *See* Pet. 14–16. Regardless, as discussed below, on the present record and for purposes of institution, we find that Petitioner persuasively shows that the combination of Yamaguchi and Bundy teaches or at least fairly suggests a fire wall hanger for connecting a structural component to a frame wall adapted to have two layers of ⅝-inch-thick drywall mounted thereon to form a fire separation wall *as defined in claim 1*. *See* Pet. 14–16.

*b) "[1.1] a channel-shaped portion configured to receive the structural component;"*

Claim 1 recites, *inter alia*, "a channel-shaped portion configured to receive the structural component." Ex. 1001, 12:18–19. Petitioner contends Yamaguchi teaches this limitation by disclosing a joist bracket having a channel-shaped portion that bears a joist, as shown, for example, in Petitioner's annotated version of the "Perspective" and "Side" views of Yamaguchi's bracket, reproduced below. Pet. 16–17 (citing Ex. 1003 ¶¶ 87–88; Ex. 1041, 1–5).



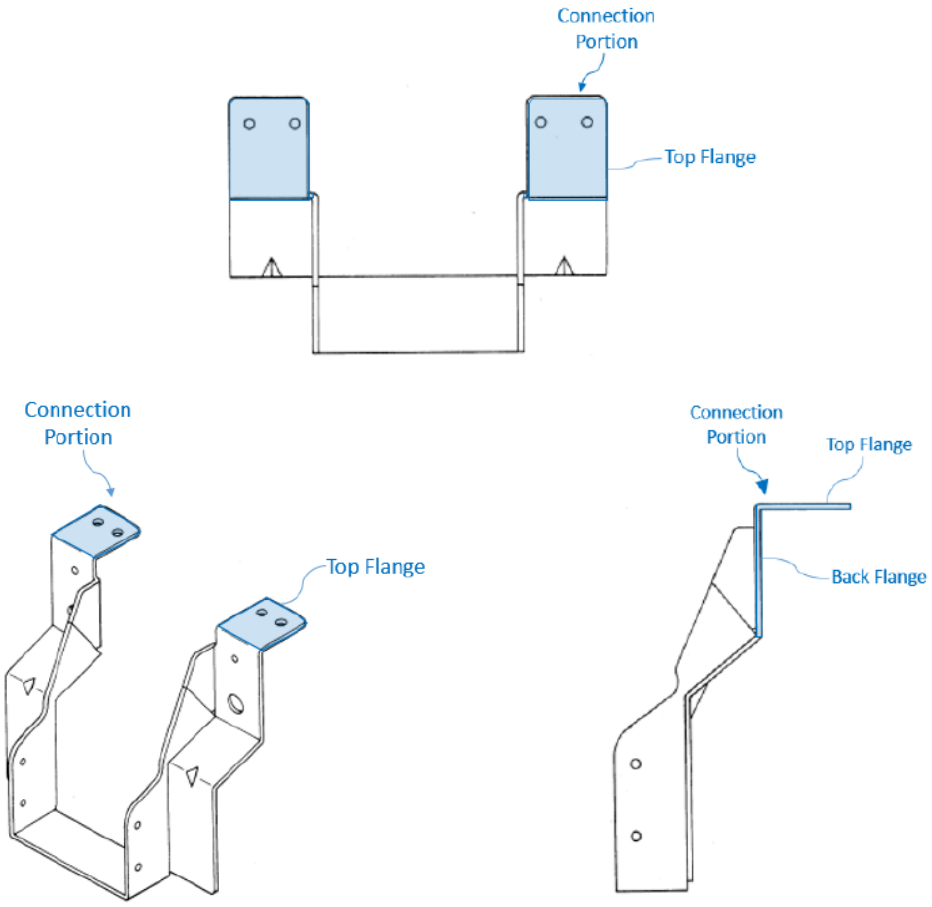

The above illustration shows the "Perspective" (right) and "Side" (left) views of Yamaguchi's bracket as annotated by Petitioner to show a "channel-shaped portion."

Ex. 1041, 1–5 (annotated); Pet. 16–17.

For the reasons stated in the Petition at pages 16–17, and based on the record before us, we find Petitioner sufficiently establishes that Yamaguchi teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

c) *"[1.2A] a connection portion including a top flange arranged to engage a top surface of a top plate of the frame wall and"*

Claim 1 recites, *inter alia*, "a connection portion including a top flange arranged to engage a top surface of a top plate of the frame wall." Ex. 1001, 12:20–21. Petitioner contends Yamaguchi teaches this limitation by disclosing a joist bracket having the recited connection portion with a top flange, as shown, for example, in Petitioner's annotated version of the "Plan," "Perspective," and "Side" views of Yamaguchi's bracket, reproduced below. Pet. 17–18 (citing Ex. 1003 ¶¶ 89–90; Ex. 1041, 2–5).



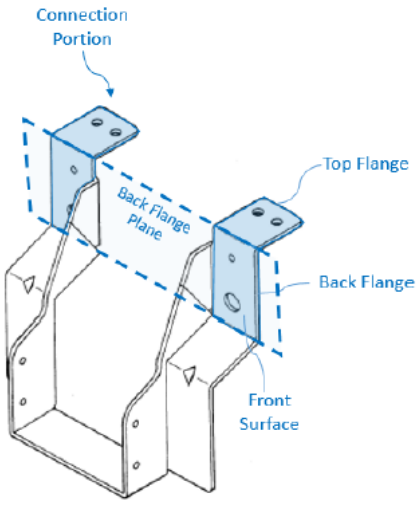

The above illustration shows the "Plan" (top), "Perspective" (bottom left) and "Side" (bottom right) views of Yamaguchi's bracket as annotated by Petitioner to show a "connection portion including a top flange."

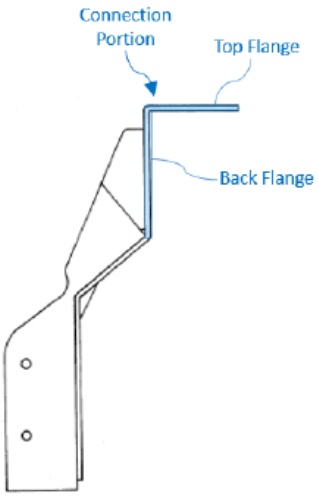
Ex. 1041, 2–5 (annotated); Pet. 17–18.

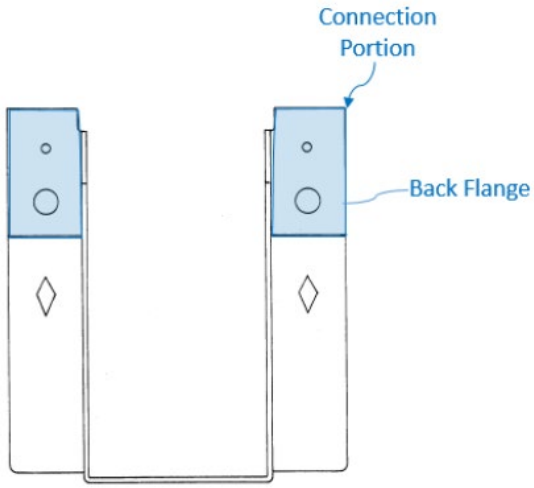
For the reasons stated in the Petition at pages 17–18, and based on the record before us, we find Petitioner sufficiently establishes that Yamaguchi teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

> d) *"[1.2B] a back flange extending from an edge of the top flange, the back flange arranged to engage a vertical face of the top plate of the frame wall, the back flange having a front surface lying in a back flange plane; and,"*

Claim 1 recites, *inter alia*, "a back flange extending from an edge of the top flange, the back flange arranged to engage a vertical face of the top plate of the frame wall, the back flange having a front surface lying in a back flange plane." Ex. 1001, 12:22–25. Petitioner contends Yamaguchi teaches this limitation by disclosing a joist bracket having the recited connection portion with a back flange extending from an edge of the top flange, as shown, for example, in Petitioner's annotated version of the "Perspective," "Side," and "Front" views of Yamaguchi's bracket, reproduced below. Pet. 18–19 (citing Ex. 1003 ¶¶ 91–92; Ex. 1041, 2–5).






The above illustration shows the "Perspective" (top left), "Side" (top right), and "Front" (bottom) views of Yamaguchi's bracket as annotated by Petitioner to show "a back flange extending from an edge of the top flange."

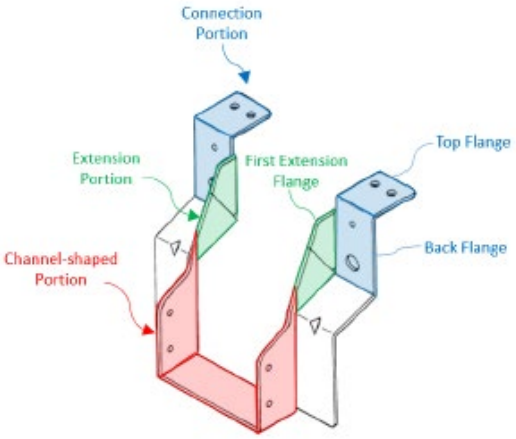
Ex. 1041, 2–5 (annotated); Pet. 18–19.

For the reasons stated in the Petition at pages 18–19, and based on the record before us, we find Petitioner sufficiently establishes that Yamaguchi teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

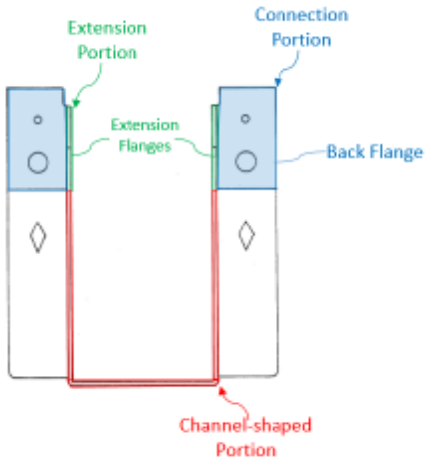
e) *"[1.3A] an extension portion including a first extension flange extending from the back flange of the connection portion to the channel-shaped portion"*

Claim 1 recites, *inter alia*, "an extension portion including a first extension flange extending from the back flange of the connection portion to the channel-shaped portion." Ex. 1001, 12:26–28. Petitioner contends Yamaguchi teaches this limitation by disclosing a joist bracket having the recited extension portion with a first extension flange, as shown, for example, in Petitioner's annotated version of the "Perspective," "Front,"

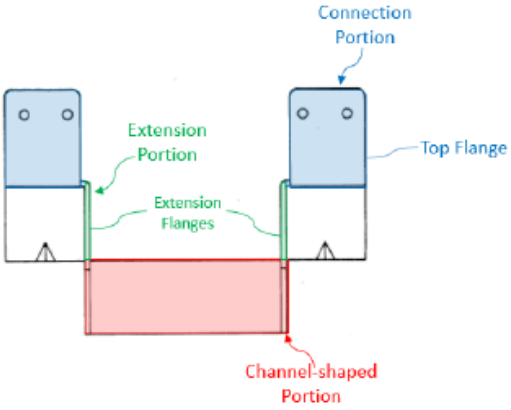
"Plan," "Side," and "Usage" views of Yamaguchi's bracket, reproduced below. Pet. 20–21 (citing Ex. 1003 ¶ 93; Ex. 1041, 1–5).



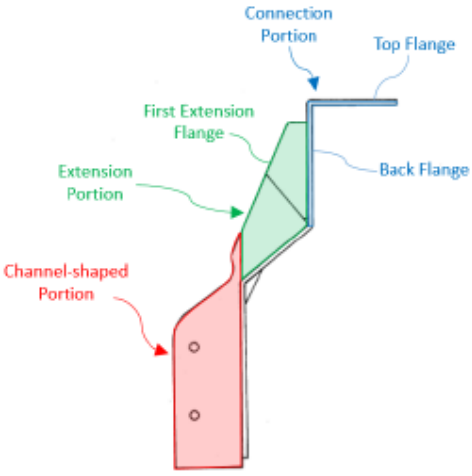

Perspective View



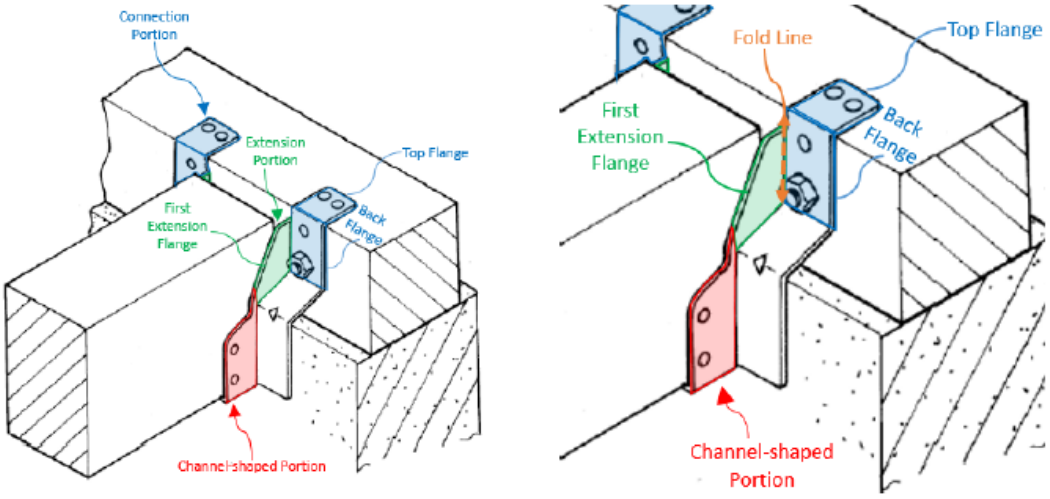

Front View




Plan View




Side View




Usage View

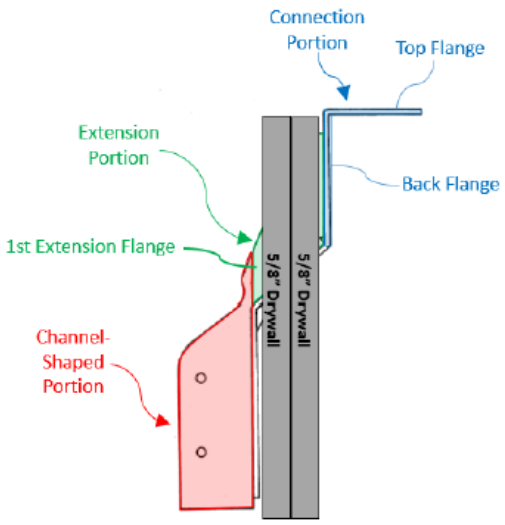
The above illustration shows the "Perspective," "Front," "Plan," "Side," and "Usage" views of Yamaguchi's bracket as annotated by Petitioner to show "an extension portion including a first extension flange."

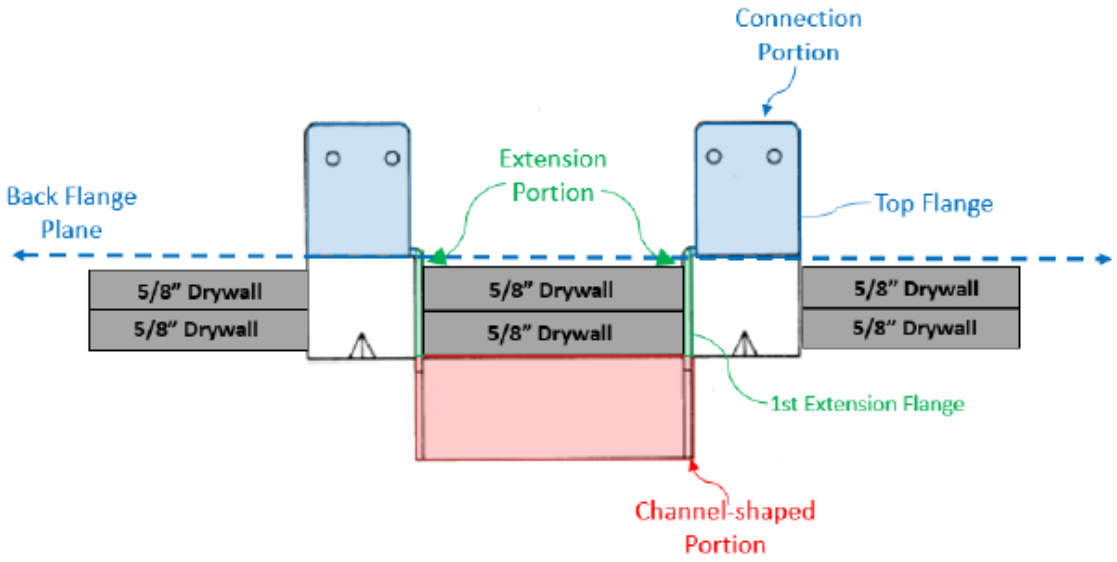
Ex. 1041, 2–5 (annotated); Pet. 20–21; *see* Pet. 21–22 (citing Ex. 1003 ¶¶ 94–95, Ex. 1041, 1–5) (proffering how Yamaguchi's first extension flange extends from the back flange of the connection portion to the channel-shaped portion).

For the reasons stated in the Petition at pages 20–22, and based on the record before us, we find Petitioner sufficiently establishes that Yamaguchi teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

*f)* *"[1.3B] the extension portion spacing the channel-shaped portion from the back flange plane by a distance sized large enough to permit the two layers of ⅝-inch-thick drywall of the fire separation wall to be received between the channel-shaped portion and the back flange plane;"*

Claim 1 recites, *inter alia*, "the extension portion spacing the channel-shaped portion from the back flange plane by a distance sized large enough to permit the two layers of ⅝-inch-thick drywall of the fire separation wall to be received between the channel-shaped portion and the back flange plane." Ex. 1001, 12:28–33. Petitioner contends Yamaguchi teaches a joist bracket having an extension portion (green below) that defines a space that would permit drywall to be inserted between its back flange (blue–vertical portion) and channel-shaped portion (red), as shown, for example, in Petitioner's annotated version of the "Side" and "Plan" views of Yamaguchi's bracket, reproduced below. Pet. 22–24 (citing Ex. 1003 ¶ 96; Ex. 1041, 2–5).






The above illustration shows the "Side" (top) and "Plan" (bottom) views of Yamaguchi's bracket as annotated by Petitioner to show "two layers of ⅝-inch-thick drywall" "received between the channel-shaped portion and the back flange plane."

Ex. 1041, 2–5 (annotated); Pet. 22–24.

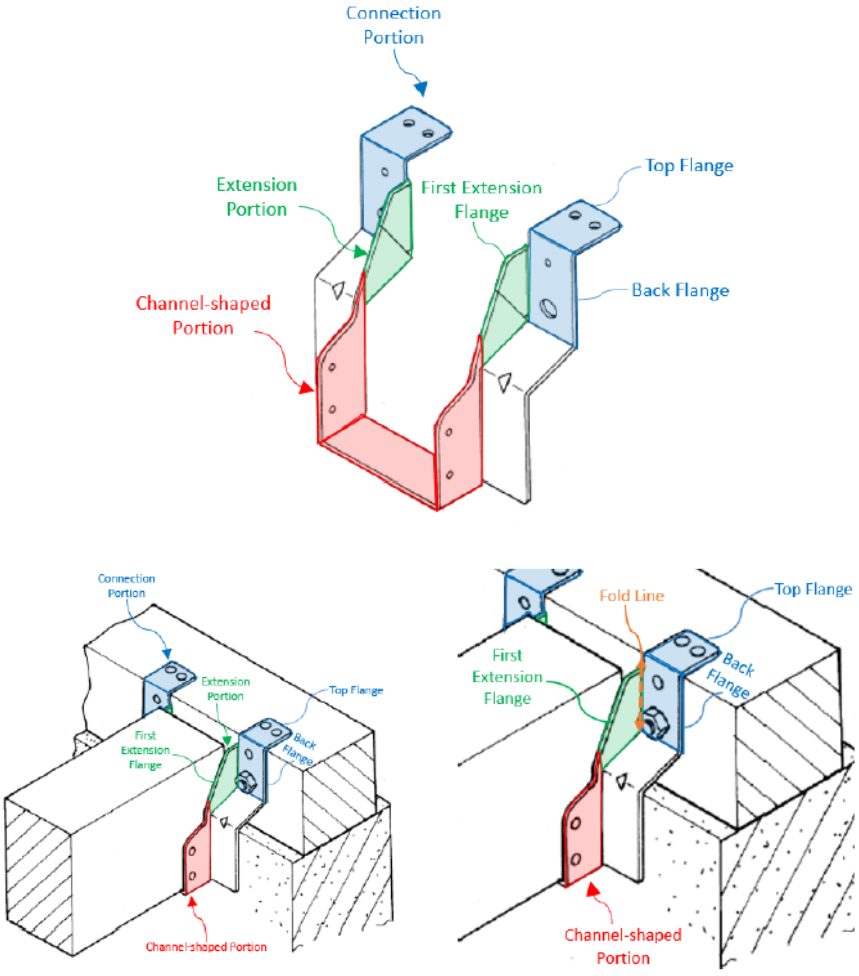
Although Yamaguchi does not explicitly disclose installing two layers of ⅝-inch-thick drywall between its back flange plane (blue) and channel-shaped portion (red), Petitioner argues the skilled artisan "would have found it obvious to size the length of Yamaguchi's extension flanges (green) to define a space sufficient for receiving two layers of 5/8-inch-thick drywall therein based on Bundy." Pet. 22–24 (citing Ex. 1003 ¶ 96). Petitioner argues "Bundy teaches installing two layers of 5/8" sheathing between a hanger's channel-shaped portion (Bundy's side members 11) and a wall frame," and in view of this disclosure, argues the skilled artisan "would have had an expectation of success in defining a specifically-sized drywall space between Yamaguchi's back flange plane (blue) and channel-shaped portion

(red)." Pet. 23 (citing Ex. 1007, 4:46–51, 5:18–20; Ex. 1003 ¶ 96; Ex. 1041, 2–4). As for why, Petitioner argues "Yamaguchi's and Bundy's hangers are used for similar purposes (e.g., hanging a joist to a wall)," and "Yamaguchi's extension portion (green) *already defines a space* between Yamaguchi's back flange plane (blue) and channel-shaped portion (red)." Pet. 23 (citing, *inter alia*, Ex. 1007, 4:46–51; Ex. 1003 ¶ 96; Ex. 1041, 2–4) (emphasis added); *see infra* Section V.D.3.h (discussing reasons to combine Yamaguchi and Bundy).

For the reasons stated in the Petition at pages 22–24, and based on the record before us, we find Petitioner sufficiently establishes that the combination of Yamaguchi and Bundy teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

*g) "[1.4] wherein the channel-shaped portion, the extension portion and the connection portion are rigidly fixed with respect to one another"*

Claim 1 recites, *inter alia*, "wherein the channel-shaped portion, the extension portion and the connection portion are rigidly fixed with respect to one another." Ex. 1001, 12:34–36. Petitioner contends Yamaguchi teaches this limitation by disclosing that its depicted joist bracket is a "bracket that . . . bears a joist," as shown, for example, in Petitioner's annotated version of the "Perspective" and "Usage" views of Yamaguchi's bracket, reproduced below. Pet. 24–25 (citing Ex. 1003 ¶¶ 97–98; Ex. 1041, 1–5).




The above illustration shows the "Perspective" (top) and "Usage" (bottom) views of Yamaguchi's bracket as annotated by Petitioner to show the "rigidly fixed" nature of the bracket.

Ex. 1041, 2–5 (annotated); Pet. 24–25. Petitioner argues the skilled artisan "would have understood that all portions of Yamaguchi's hanger are connected such that they do not move freely with respect to each other." Pet. 24 (citing Ex. 1003 ¶ 97; Ex. 1041, 1–5).

For the reasons stated in the Petition at pages 24–25, and based on the record before us, we find Petitioner sufficiently establishes that Yamaguchi

teaches this limitation. Patent Owner does not contend otherwise at this stage of the proceeding.

*h) Reasons to Combine Teachings of Yamaguchi and Bundy with a Reasonable Expectation of Success*

Petitioner contends the skilled artisan would have combined the teachings of Yamaguchi and Bundy to arrive at the invention of independent claim 1 and would have had a reasonable expectation of success in doing so. Pet. 11–14. Patent Owner does not contend otherwise at this stage of the proceeding. We are persuaded that Petitioner's cited evidence provides sufficient rational reasons for purposes of institution to combine Yamaguchi and Bundy to arrive at the invention of claim 1 for the reasons expressed below.

Petitioner argues, *inter alia*, that Yamaguchi teaches a joist hanger with an extension portion defining a space between its back flange and channel-shaped portion, and Bundy teaches to size a space created by an extension portion of its joist hanger to receive two layers of ⅝-inch-thick drywall between its back flange plane and channel-shaped portion. Pet. 11–14 (citing 1003 ¶¶ 75–78; Ex. 1007, 5:16–18, Fig. 1; Ex. 1041 ("Perspective View"; "Usage View")); *see id.* at 12–13 (discussing "advantages" of two layers of 5/8" drywall as "fire resistance in a fire separation wall"). Petitioner argues the skilled artisan "would have been motivated to receive drywall between Yamaguchi's back flange and channel-shaped portion to provide a shielded fire resistant wooden frame wall." Pet. 12 (citing Ex. 1003 ¶¶ 78–79; Ex. 1007, 2:10–24); *see id.* (["The skilled artisan] would have optimized the size of the spacing between Yamaguchi's back flange and channel-shaped portion to accommodate two

layers of 5/8"-thick-drywall according to the size preference described by Bundy for optimal fire protection and wall integrity." (citing Ex. 1003 ¶ 80; Ex. 1007, 5:10–22)). Petitioner concludes:

> This modification to Yamaguchi would have been nothing more than applying a known technique (Bundy's spacing a hanger seat from a wall frame by distance sufficient to accommodate two 5/8"-thick-drywall sheets for fire resistance) to a similar device (Yamaguchi's hanger having a spacing of indeterminate length) to obtain the predictable result of a firewall hanger having a space between its channel-shaped portion and a wall frame large enough for receiving drywall therebetween, thereby "protect[ing] the structural members of a building."

Pet. 12–13 (citing Ex. 1007, 5:18–20; Ex. 1003 ¶ 80).

Petitioner argues the skilled artisan would have had a reasonable expectation of success in modifying Yamaguchi as discussed above, "because doing so would still allow Yamaguchi's hanger to perform its intended function of securing a joist to a wall." Pet. 13 (citing Ex. 1041, 1; Ex. 1003 ¶ 81). Petitioner argues, "[r]ecognizing that Yamaguchi's and Bundy's hangers are constructed from sheet metal," the skilled artisan "would have understood how to modify the size of Yamaguchi's extension portions to accommodate two layers of 5/8"-thick-drywall while still allowing Yamaguchi's hanger to secure a joist's end to a frame wall." Pet. 13 (citing Ex. 1003 ¶¶ 81–83; Ex. 1007, 4:47–51); *see id.* at 13–14 (discussing that although "Yamaguchi's described setting is a sill plate," the skilled artisan "would have been motivated to use Yamaguchi's hanger on a wood frame wall in particular so that drywall could be installed in the space behind the joist as taught by Bundy" (citing Ex. 1003 ¶¶ 81–82)).

Based on the foregoing, and on the current record, we are persuaded that Petitioner's cited evidence provides sufficient rational reasons for purposes of institution to combine Yamaguchi and Bundy to arrive at the invention of claim 1 with a reasonable expectation of success in doing so.

*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 Yamaguchi 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 Yamaguchi and Bundy.

*4. Independent Claim 53*

Petitioner contends independent claim 53 would have been unpatentable as obvious over the combination of Yamaguchi and Bundy. Pet. 25–32. The Petition provides a detailed assessment of claim 53, with references to the Petition's analysis of claim 1, disclosures in Yamaguchi and Bundy, and the declaration testimony of Mr. Fennell. *Id.* Patent Owner does not contend otherwise at this stage of the proceeding. 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 Yamaguchi and Bundy. For the reasons set forth in the Petition (Pet. 25–32), we also are persuaded that the current record sufficiently supports Petitioner's challenges to independent claim 53 for purposes of institution.

*5. Dependent Claims 39–44 and 92–97*

Petitioner contends claims 39–44 and 92–97, which depend directly or indirectly from independent claims 1 or 53, would have been unpatentable as obvious over the combination of Yamaguchi and Bundy. Pet. 32–39. The Petition provides a detailed assessment of these claims, with references to the Petition's analysis of claims 1 and 53, disclosures in Yamaguchi and Bundy, and the declaration testimony of Mr. Fennell. *Id.* Patent Owner does not contend otherwise at this stage of the proceeding. As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner's contention that independent claims 1 and 53 are unpatentable as obvious over the combination of Yamaguchi and Bundy. For the reasons set forth in the Petition (Pet. 32–39), we also are persuaded that the current record sufficiently supports Petitioner's challenges to dependent claims 39–44 and 92–97 for purposes of institution.

We turn to Petitioner's contentions against dependent claim 44 as an example. Claim 44 depends from dependent claims 43, 42, 41, 40, and 39 and independent claim 1, in that order. *See* Ex. 1001, 15:34–16:5. In addition to the features recited in independent claim 1, dependent claims 43, 42, 41, 40, and 39 collectively introduce hanger features such as the following:

first and second back flanges;

first and second top flanges;

first and second rear edges;

a second extension flange;

a base with first and second side panels extending upward from the base;

a front edge of the first extension flange (claim 1) abuts a rear edge of the first side panel;

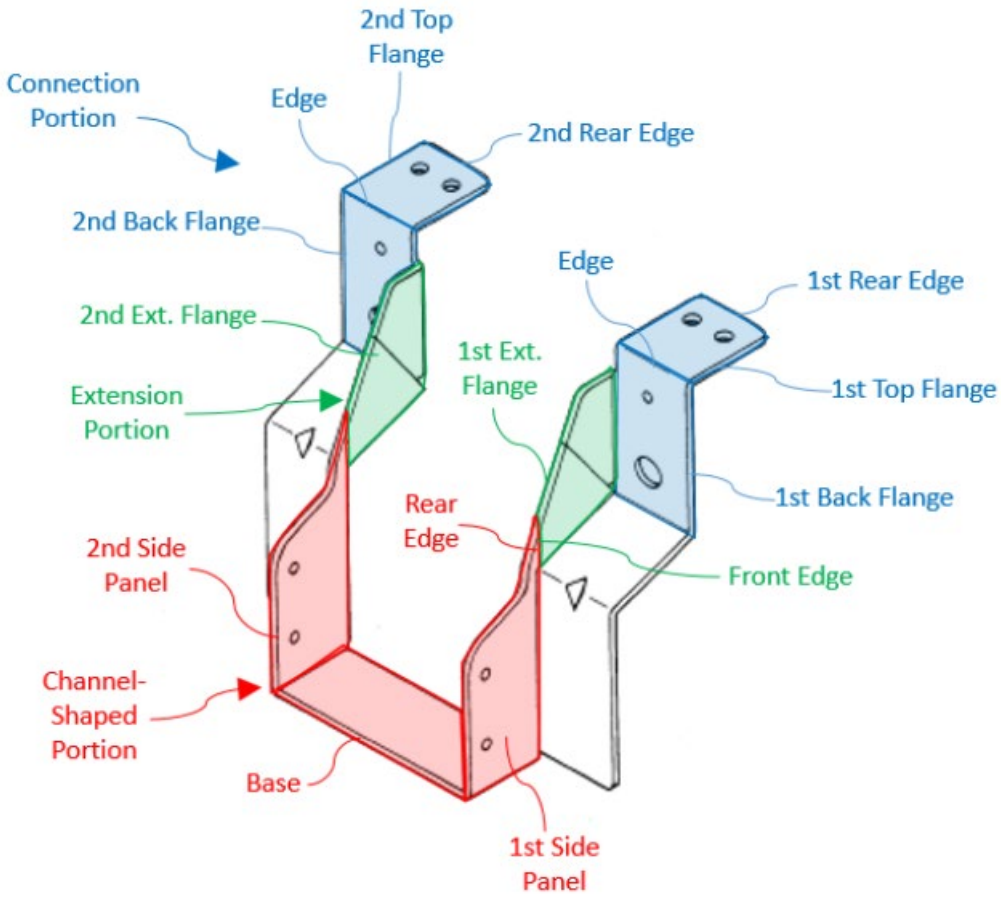
the first extension flange and the first back flange are directly attached to each other by a first bend;

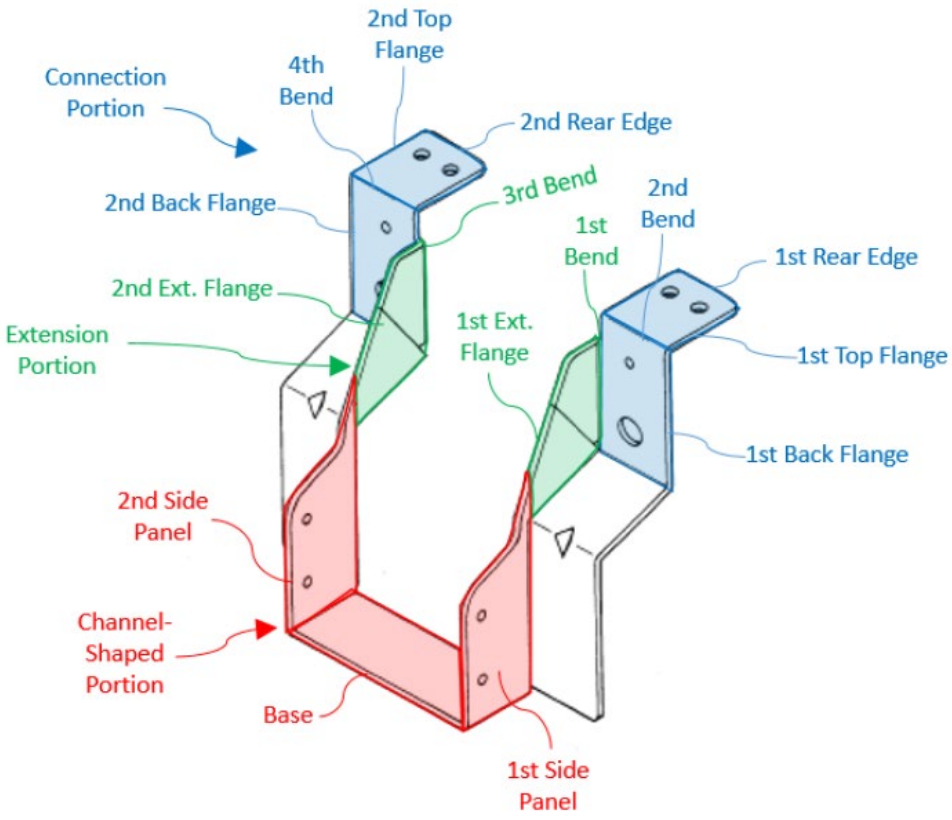
the first back flange and the first top flange are directly attached to each other by a second bend;

the second extension flange and the second back flange are directly attached to each other by a third bend; and

the second back flange and the second top flange are directly attached to each other by a fourth bend. *See id.* Dependent claims 43, 42, 41, 40, and 39 also recite interconnection relationships among these features. *See id.*

Petitioner contends Yamaguchi teaches the limitations directed to the above features by disclosing a joist hanger having such features, as shown, for example, in Petitioner's annotated versions of the "Perspective" view of Yamaguchi's bracket, reproduced below. Pet. 37–39 (citing Ex. 1003 ¶¶ 118–121; Ex. 1041, 2–5).


2nd Top Flange
Connection Portion
Edge
2nd Rear Edge
2nd Back Flange
Edge
1st Rear Edge
2nd Ext. Flange
1st Ext. Flange
1st Top Flange
Extension Portion
1st Back Flange
Rear Edge
2nd Side Panel
Front Edge
Channel-Shaped Portion
Base
1st Side Panel




The above illustrations show the "Perspective" view of Yamaguchi's bracket as annotated by Petitioner to show the subject features.

Ex. 1041, 2–5 (annotated); Pet. 37–39. Petitioner argues persuasively that Yamaguchi teaches all of the features defined by the limitations in dependent claims 43, 42, 41, 40, and 39, including the claimed interconnection relationships among these features. *See* Pet. 32–39 (citing Ex. 1003 ¶¶ 109–121; Ex. 1041, 2–5).

Dependent claims 92–97 substantively mirror claims 39–44, respectively, except that they depend ultimately from independent claim 53 rather than independent claim 1.

Thus, as stated above, we are persuaded that the current record sufficiently supports Petitioner's challenges to dependent claims 39–44 and 92–97 for purposes of institution.

*6. Summary*

For the foregoing reasons, and the reasons stated in the Petition (Pet. 10–39), we determine that Petitioner demonstrates that it is more likely than not that claims 1, 39–44, 53, and 92–97 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Yamaguchi and Bundy.

*E. Alleged Obviousness of Claims 22–27, 45, 50–52, 74–79, 98, and 103–105 over the Combination of Yamaguchi, Bundy, and Adams*

Petitioner contends claims 22–27, 45, 50–52, 74–79, 98, and 103–105, which depend directly or indirectly from independent claims 1 or 53, would have been unpatentable under 35 U.S.C. § 103 as obvious over the combination of Yamaguchi (Ex. 1041), Bundy (Ex. 1007), and Adams (Ex. 1040). Pet. 40–70. The Petition provides a detailed assessment of these claims, with references to the Petition's analysis of claims 1 and 53, disclosures in Yamaguchi, Bundy, and Adams, and the declaration testimony of Mr. Fennell. *Id.* Patent Owner did not file a Preliminary Response, and thus has not disputed Petitioner's contentions at this stage of the proceeding. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. As discussed above, we are persuaded that the cited evidence sufficiently supports Petitioner's contention that independent claims 1 and 53 are unpatentable as obvious over the combination of Yamaguchi and Bundy. For the reasons set forth in the Petition (Pet. 40–70), we also are persuaded that the current

record sufficiently supports Petitioner's challenges to dependent claims 22–27, 45, 50–52, 74–79, 98, and 103–105 as obvious over the combination of Yamaguchi, Bundy, and Adams for purposes of institution. We provide below certain guidance on these challenges to assist the parties in the upcoming trial, and turn first to an overview of Adams.

*1. Overview of Adams*

Adams generally is directed to "a joist hanger . . . for supporting a generally horizontal structural timber . . . from a load bearing wall of a building," as shown, for example, in Figure 2, reproduced below. Ex. 1040, 1:3–8, Fig. 2.

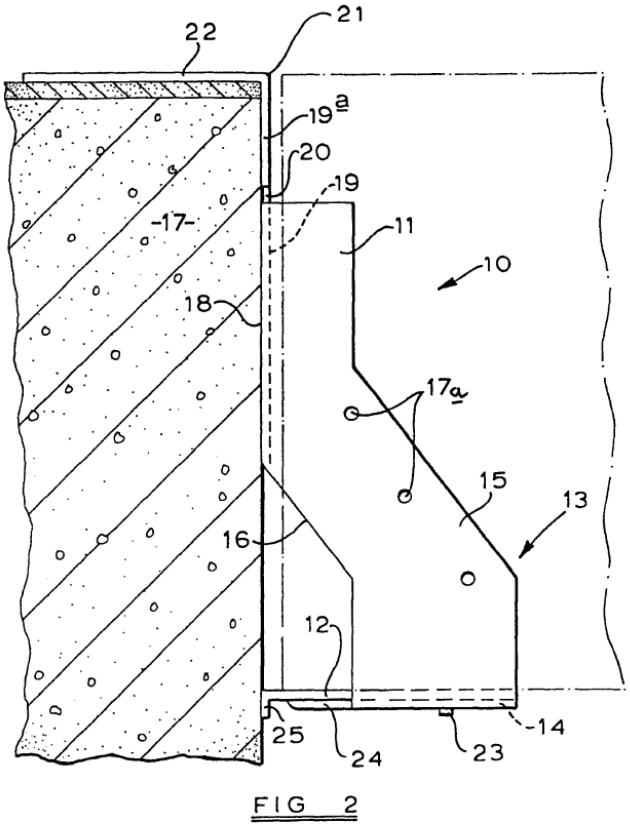



FIG 2

Figure 2 of Adams is a side elevational view of a joist hanger.

*Id.* at 3:26–27, Fig. 2.

Adams' hanger 10 includes "a stirrup part . . . which includes a base 14 and pair of substantially upright sidewalls 15 spaced to form a seating for a joist"; and "an abutment portion 19 which lies against the forward face of [the wall's] supporting element 17." Ex. 1040, 4:2–5, 4:22–26. According to Adams, side walls 15 "extend upwardly and rearwardly . . . away from the base 14" so that "base 14 is positioned away from the supporting element 17" such that "the end of the joist can be ventilated through the opening behind the inclined edge 16 of the side walls." *Id.* at 4:11–19.

Adams also discloses that hanger 10 may be "formed from a single sheet metal blank 11," as shown, for example, in Figure 1, reproduced below.

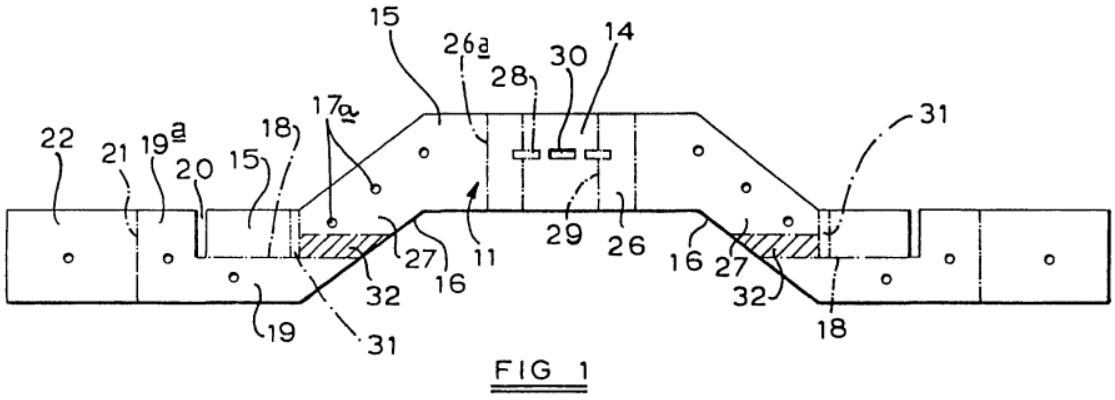



Figure 1 of Adams is a sheet metal blank from which joist hangers of various sizes may be formed.

Ex. 1040, 3:24–25, 3:55–58, Fig. 1. For purposes of the subject obviousness challenge, Petitioner relies on Adams for this teaching of forming joist hangers using one-piece of sheet metal, as discussed below.

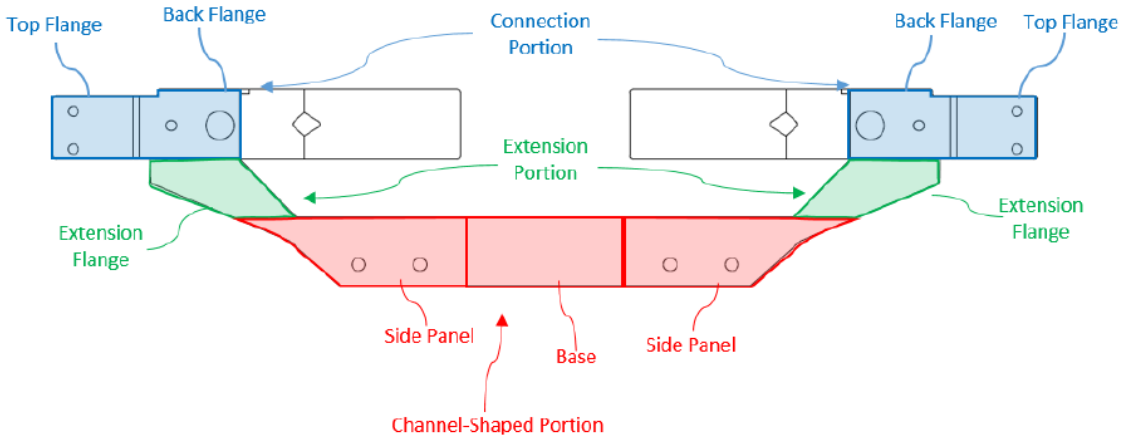
*2. Hanger Components "Formed as One-Piece" or "Formed as One-Piece of Sheet Metal"*

We turn to Petitioner's contentions against claim 22, which depends from independent claim 1, as an example. Ex. 1001, 14:23–25; *see* Pet. 43–44. In addition to the features recited in independent claim 1, dependent claim 22, as well as dependent claims 23–27, 45, 50–52, 74–79, 98, and 103–105, recite that certain components of the hanger are formed, for example, as "one-piece of sheet metal" or "one-piece." *See, e.g.*, *id.* at 14:23–25 (claim 22), 14:36–38 (claim 27).

Petitioner argues persuasively:

> While Yamaguchi and Bundy are silent about the hanger's manufacturing process, Adams discloses forming a joist hanger's extension portion (sidewalls 15 above edge 16), including its first extension flange (first sidewall 15 above edge 16), its channel-shaped portion (base 14 and portions of sidewalls 15 thereabove), and its connection portion (abutment and bearing portions 19, 22) *all as one-piece of sheet metal (blank 11)*.

Pet. 43 (emphasis added) (citing, *inter alia*, Ex. 1003 ¶¶ 129–132; Ex. 1040, 3:55–57, 6:3–22). Petitioner's expert, Mr. Fennell, testifies that, "[e]mploying the teachings of [Adams'] manufacturing process with the Yamaguchi-Bundy hanger," it would have been obvious to the skilled artisan to form the hanger as "one-piece of sheet metal," as shown, for example, in Mr. Fennell's rendering of a "blank" for Yamaguchi's hanger, reproduced below. Ex. 1003 ¶ 130 (cited at Pet. 43–44).




The above illustration shows Petitioner's expert's rendering of a sheet metal blank for use in forming Yamaguchi's hanger from one piece of sheet metal.

Ex. 1003 ¶ 130 (cited at Pet. 43–44); *see* Ex. 1040, 3:55–58 (disclosing that Adams' hanger 10 may be "formed from a single sheet metal blank 11").

Petitioner sufficiently establishes that the combination of Yamaguchi, Bundy, and Adams teaches all of the features defined by the limitations in dependent claims 22–27, 45, 50–52, 74–79, 98, and 103–105, including the claimed feature of forming particular hanger components as "one-piece" or "one-piece of sheet metal." *See* Pet. 40–70; *infra* Section V.E.3 (reasons to combine references).

*3. Reasons to Combine Teachings of Yamaguchi, Bundy, and Adams with a Reasonable Expectation of Success*

Petitioner contends the skilled artisan would have combined the teachings of Yamaguchi, Bundy, and Adams to arrive at the inventions of dependent claims 22–27, 45, 50–52, 74–79, 98, and 103–105 and would have had a reasonable expectation of success in doing so. Pet. 40–42. Patent Owner does not contend otherwise at this stage of the proceeding.

We are persuaded that Petitioner's cited evidence provides sufficient rational reasons for purposes of institution to combine Yamaguchi, Bundy, and Adams to arrive at the inventions of dependent claims 22–27, 45, 50–52, 74–79, 98, and 103–105 for the reasons expressed below.

Petitioner argues, *inter alia*, that "[although] Yamaguchi does not explicitly disclose how its hanger is manufactured," the skilled artisan "would have understood that Yamaguchi's hanger may be manufactured by two alternative processes: (1) folding one piece of sheet metal, or (2) cutting and combining two pieces of metal," and the skilled artisan "would have been motivated to manufacture Yamaguchi's hanger by folding a single piece of sheet metal in view of Adams." Pet. 40 (citing Ex. 1003 ¶¶ 124, 130; Ex. 1040, 3:55–58, 1:12–14). More specifically, Petitioner argues:

> Adams teaches manufacturing a joist hanger "from a single sheet metal blank 11" . . . . EX1040, 3:55–58. In doing so, Adams teaches that "[a] series of blanks can be cut side-by-side from a metal sheet without substantial wastage." EX1040, 6:2–3. [The skilled artisan] would have understood in view of Adams that forming a hanger as a single piece of sheet metal that is then bent into shape provides the most pragmatic, economically-efficient way to manufacture a high number of hangers. EX1003, ¶125. Thus, [the skilled artisan] would have been motivated to form Yamaguchi's hanger as one of piece of sheet metal, as taught by Adams, to yield a hanger with less wastage and manufacturing complexity. EX1003, ¶125; EX1040, 5:55–6:3.

Pet. 40–41; *see* Ex. 1040, Fig. 1.

Petitioner argues the skilled artisan would have had a reasonable expectation of success in modifying the Yamaguchi-Bundy combination as discussed above, "because Adams provides a blueprint (Figure 1) for sectioning a single of piece of metal into a hanger having a shape—

specifically, a channel-shaped portion, an extension portion, and a connection portion—analogous to Yamaguchi's hanger." Pet. 41 (citing Ex. 1003 ¶ 126; Ex. 1040, 3:55–58, 6:4–22). Petitioner submits that the skilled artisan "would have been able to determine, using common CAD tools, how to create a single sheet blank that maintains the fundamental shape of the Yamaguchi's hanger." Pet. 41 (citing Ex. 1003 ¶ 127); *see id.* at 41–42 (citing Ex. 1003 ¶¶ 127–128 (Petitioner's expert discussing how the skilled artisan would have understood to bend and weld a single sheet metal blank to form Yamaguchi's hanger); Ex. 1040, "Usage View").

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 Yamaguchi, Bundy, and Adams with a reasonable expectation of success, and sufficiently supports Petitioner's contention that dependent claims 22–27, 45, 50–52, 74–79, 98, and 103–105 are unpatentable as obvious over the combination of Yamaguchi, Bundy, and Adams.

*4. Summary*

For the foregoing reasons, and the reasons stated in the Petition (Pet. 40–70), we determine that Petitioner demonstrates that it is more likely than not that claims 22–27, 45, 50–52, 74–79, 98, and 103–105 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Yamaguchi, Bundy, and Adams.

*F. Alleged Obviousness of Claims 1, 22–27, 39–45, 50–53, 74–79, 92–98, and 103–105 over the Combinations of (i) Cullen and Bundy; and (ii) Adams and Bundy*

Petitioner additionally contends (1) claims 1, 22–27, 39–45, 50–53, 74–79, 92–98, and 103–105 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Cullen and Bundy (Pet. 71–121 ("Ground 3")); and (2) claims 1, 22–27, 39–45, 50–53, 74–79, 92–98, and 103–105 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Adams and Bundy (Pet. 121–182 ("Ground 4")). Patent Owner did not file a Preliminary Response, and thus has not disputed Petitioner's contentions at this stage of the proceeding. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. Because we determine that Petitioner demonstrates that it is more likely than not that (1) claims 1, 39–44, 53, and 92–97 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Yamaguchi and Bundy (*see supra* § V.D), and (2) claims 22–27, 45, 50–52, 74–79, 98, and 103–105 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Yamaguchi, Bundy, and Adams (*see supra* § V.E), such that we institute this proceeding, and because we must therefore institute post-grant review on all claims and all challenges in the Petition (*see* 37 C.F.R. § 42.208(a)), for purposes of institution, we need not and do not herein address in detail Petitioner's foregoing challenges to the noted claims. However, we do provide below certain guidance on these challenges to assist the parties in the upcoming trial.

We have reviewed Petitioner's additional contentions above (*see* Pet. 71–182), and based on the record before us, preliminarily find each of

them persuasive. The Petition provides a detailed assessment of these claims, with references to disclosures in Yamaguchi, Bundy, and Adams and to the declaration testimony of Petitioner's expert, Mr. Fennell. *Id.* At this stage of the proceeding and based on the record before us, we preliminarily are persuaded that the cited evidence sufficiently supports Petitioner's above contentions (1) and (2) for purposes of institution.

## VI. CONCLUSION

Based on the evidence before us, we determine that Petitioner has established that it is more likely than not that at least one claim of the '626 patent is unpatentable. Accordingly, we institute trial on all the challenges 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.

## VII. 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, 22–27, 39–45, 50–53, 74–79, 92–98, and 103–105 of the '626 patent is instituted with respect to all grounds set forth in the Petition;[6] and

[6] In PGR2023-00047, which Petitioner concurrently filed with the present Petition, we already instituted a post-grant review of independent claims 1

FURTHER ORDERED that, pursuant to 35 U.S.C. § 324 and 37 C.F.R. § 42.4(b), post-grant review of the '626 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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and 53, among a set of dependent claims not at issue in this Petition. *See* PGR2023-00047, Paper 7. We again list independent claims 1 and 53 in our Order on institution in this case because they are the same underlying base claims for the set of dependent claims at issue in this Petition. The instituted grounds for challenging independent claims 1 and 53 remain the same between these Petitions.

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